

**MARKET DEFINITION IN EUROPEAN SPORTS
BROADCASTING AND COMPETITION FOR
SPORTS BROADCASTING RIGHTS**

A STUDY FOR DGIV OF THE EUROPEAN COMMISSION

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1. Introduction and Summary

1.1 Purpose of the study

The Commission's services are currently handling a number of competition cases in the field of European sports broadcasting. In these cases the analysis of competition in the sports broadcasting market, and the potential for anticompetitive conduct by undertakings, will largely depend upon the degree to which different sports events or broadcasts compete with each other, i.e. the degree to which they are viewed as interchangeable by viewers (or possibly broadcasters). The definition of the relevant market will hence be an important step in determining the existence, or not, of an appreciable restriction of competition in any particular case.

These issues have already been raised in a number of significant European cases. For instance, in the recent Monopolies Commission inquiry in the UK concerning the proposed take-over of Manchester United by British Sky Broadcasting, a fundamental issue was whether exclusive ownership of Premier League Football broadcasting rights for an extended period of time conferred market power upon BSkyB, either over television viewers or its competitors in the UK pay television market.¹ Similarly in the so-called 'Premier League Case' before the UK's Restrictive Trade Practices Court, market definition was an important issue. The Monopolies Commission defined the relevant antitrust market as 'the market for pay TV sports premium channels', while in the Premier League case Professor Martin Cave, on behalf of the Director General of Fair Trading, argued that the relevant antitrust market was 'the market in the television rights to live Premier League matches'.²

In recent sports rights cases other European countries a variety of market definitions have been adopted. The Netherlands Ministry for Economic Affairs, in a case concerning the collective selling of highlights to football matches, defined a separate antitrust market for football broadcasts. The decision of the Bundeskartellamt, in the case against the German Football Association on the other hand, considered TV broadcasts of sport events to be the relevant market. The Spanish Tribunal de Defensa de la Competencia in its resolution of 10 June 1993 against the Spanish League Association (LNFP) defined the relevant antitrust market to be 'football television broadcasting rights for competitions of national interest, as well as for international competitions which attracted similar interest in their different varieties.'

In another important and ongoing case, the Commission has for some time been considering whether the European Broadcasting Union, which acts as a 'cartel' in the purchase of sports broadcasting rights in Europe, distorts competition in the sports rights

¹ It is not easy to write a report on the economics of market definition avoiding use of the term 'market' in its normal sense, i.e. a place where, or a medium whereby, goods or services are exchanged between buyers and sellers. We shall not attempt to do so in this report. We shall use the term 'market' in its normal sense throughout, and when referring explicitly to market definition, and when the context does not otherwise make it clear, we shall refer to the relevant 'antitrust market'.

² The Monopolies Commission however, noted that there was evidence to suggest that a separate pay TV market for 'football,' or some subset of football broadcasts, might be appropriate.

auctions in which it participates. The answer to this question depends at least in part on how ‘narrowly’ or ‘widely’ the antitrust market within which the EBU operates is defined. It has been argued, on the one hand, that the appropriate market definition is the ‘market for the acquisition of the television rights to important sporting events in all disciplines of sport, irrespective of the national or international character of the event.’ The Commission however takes the view that there are at least two different antitrust markets: one for the acquisition of the television rights to sports events of a pan-European or international interest, and another for the acquisition of the television rights to sports events of purely national interest. The Commission views the particular characteristics of sports programmes which are able to achieve extremely high viewing figures and reach an identifiable audience, and which are a special target for certain important advertisers, as being decisive, particularly with regard to outstanding international events such as the Football World Cup or the Olympic Games.³

The primary purpose of this study is to provide both a theoretical framework within which the market definition issues in European sports broadcasting may be analysed, and empirical evidence on whether or not particular sports events may be viewed as ‘substitutes’ for each other in the relevant sense. A theoretical framework is essential to any interpretation of market data, and as we have seen, many interpretations are possible, in this area as in others. Based on available price and demand data we shall seek to reach market definitions for those events for which sufficiently detailed information has been available.⁴

The second, but no less important, purpose of the study is to provide a framework for the analysis of issues of market power and ‘dominance’ in the markets for sports broadcasting rights in Europe. Since these markets are typically, and increasingly, organised as bidding contests or auctions, an understanding of the relevant auction theory is of primary importance here. In addition, relevant empirical evidence available in the auction literature should also be taken into account. Indeed before it is possible to even begin an analysis of market definition or market power in sports rights auctions, it is important to first consider whether, and to what extent, the usual techniques and approaches apply directly to such markets, in order to correctly interpret the price and demand data from these markets.

The remainder of this introductory section summarises the key arguments made, and the conclusions reached, in this report. Section 2 briefly surveys the relevant cases which are directly concerned with the subject of the current study. Section 3 specifies our approach to market definition in general, and extends the methodology to take into account the particular characteristics of sports broadcasting markets and rights auctions. In Section 4 we then consider, in a relatively theoretical manner, the way in which market definition should proceed in sports broadcasting markets, given the economics of the broadcasting industry, and in particular its vertical structure.

³ Other sport events of a pan-European interest include for example the European Football Championships; the World and European Athletics Championships; Wimbledon, the US and French tennis Opens, and NBA basketball.

⁴ These market definitions are based on only the limited relevant data which has so far been collected. The Commission is currently surveying European broadcasting companies for additional data which should be of considerable relevance to this study.

Section 5 describes our empirical evidence concerning the historical prices paid for sports broadcasting rights (Section 5.2), and their rates of change since 1982 (Section 5.3). Section 5.4 contains an empirical analysis of the substitutability of different sports broadcasts at the level of viewers, for a limited number of sports events, and Section 6 describes our market definitions.

Section 7 then considers the issues of market power in sports rights auctions by describing the theory and empirical evidence available in the auctions literature. Section 8 concludes.

1.2 Summary of Conclusions

1.2.1 Market Definitions

Following a trend in recent cases (see Section 2), in this report we recommend adopting very narrow market definitions for all of the major sports events which we have studied. These are the Summer Olympics, the Winter Olympics, the Football World Cup, UK Premier League Football, German Bundesliga Football, English Five Nations Rugby, and possibly Wimbledon Tennis and British Grand Prix Racing. The evidence we have collected convinces us that each of these sports events earns significant ‘rents’ or supranormal profits. Equivalently, ownership of the rights to these events confers significant market power upon rights owners, broadcasters, or both. We also believe that each of these events can probably safely be defined as a relevant antitrust market, based upon rigorous market definition reasoning and available data. In particular:

- data on the prices of rights since 1984 indicates that a vertically integrated monopoly rights owner and broadcaster would earn significant rents or supranormal profits from the broadcast of these events to viewers; and
- data on viewer behaviour indicates that for at least some of these events, the cross price elasticities of demand in particular directions appear to be near zero, and for extremely large (i.e. infinite) price increases. The data also tell us, more generally, that sports viewing behaviour does not appear to be influenced by the coincidence of other major sports events being broadcast simultaneously, or nearly simultaneously. That is, viewing figures for the major sports events we have studied appear to be largely independent of whatever other major sports are broadcast near in time to them.

Reaching these conclusions, however, requires very careful application of market definition reasoning to the imperfectly competitive, vertically related sports rights and broadcasting markets in Europe, which exhibit a number of peculiar economic features. Much of this report is concerned with explaining our approach to these issues, and may be viewed as laying the appropriate foundations for further applications in this area.

1.2.2 Collusion in Rights Auctions

As noted above, the Commission has for some time been considering whether the activities of the European Broadcasting Union either distort competition in the sports rights auctions in which it participates, or otherwise result in a significant restriction of competition in European broadcasting markets. The answer to these questions depends at least in part on how ‘narrowly’ or ‘widely’ the antitrust market within which the EBU operates is defined. In this report we suggest that it is probably safe to conclude that each

of the sports rights auctions that the EBU participates in as a bidder is an auction for ‘monopoly’ broadcasting rights.

In Section 7 however we point out that it is entirely unclear that buyer collusion in *common value auctions*, such as those for sports broadcasting rights, is detrimental either to the price received by the seller, or to economic efficiency. The conclusions from the study of collusion in common value auctions are deeply ambiguous. While collusion *might* have the effect of lowering sellers’ revenues by reducing the number of active bidders in an auction, informational and other effects tend to go in the opposite direction. Collusion in common value auctions can lead to more aggressive bidding behaviour, and hence higher prices for sellers, because of the effects of information sharing on the so-called ‘Winners’ Curse’. This issue requires additional study, however it could certainly be argued on the basis of the theoretical auctions literature, that the EBU’s participation as a cartel in these auctions is as likely to result in higher, rather than lower, prices paid to rights sellers.

The implications of this are that the EBU should probably not be prohibited from participating as a cartel in major European sports rights auctions, and particularly those in which the individual EBU members would be unlikely to bid on their own behalf. However, since when successful, the EBU will thereby be acquiring monopoly power, an argument for regulating its behaviour in downstream broadcasting markets can be made. This conclusion is buttressed by our arguments concerning the practice of the exclusive sales of rights in Section 4.2.

1.3 Summary of Analysis

Most attempts to define relevant antitrust markets in sports broadcasting have to date been based upon little or no empirical evidence,⁵ and not infrequently upon only a limited understanding of the economic issues involved. The latter is partly due to the fact that market definition and the analysis of market power in vertically related markets (i.e. in a vertical supply chain) is complex, and frequently controversial, especially where there is imperfect competition at each level of the vertical supply chain. It is also due to some special economic features of upstream broadcasting rights auctions and downstream broadcasting markets which we shall analyse in some detail in this report.

The starting point of the analysis at least is the familiar one. Market definition, in sports broadcasting markets as elsewhere, asks whether a hypothetical monopolist producer of a broadcast or program could profitably impose a sustained and significant increase in the price of the program above the competitive program price level, given the availability (or prices) to consumers of potential substitute programs.⁶ If the answer to this question is yes, then the program in question is defined as a relevant antitrust market. If the answer is no, the analysis proceeds by considering ever wider market definitions by including

⁵ With the notable exception of the recent investigation by UK’s Monopolies Commission. See MMC(1999).

⁶ This definition assumes that we should take as our starting point the competitive program price, so as to avoid committing the so-called ‘Cellophane fallacy’. See Schmalensee (1987) or Fisher (1987) and Section 3.1 below.

additional products or programs, until the smallest set of programs for which the answer is ‘yes’ has been identified (see Section 3.1 below).

Implementing this market definition test requires us to resolve a number of issues which are treated in some detail in this report. What is the ‘price’ of a program? At which level in the vertical chain of supply, from rights owners to broadcasters to advertisers to viewers, should the analysis be focused? What are the potential substitute products, and what are their prices? Should these prices be the current market prices or the ‘competitive’ price levels? We will not attempt to summarise all of this analysis here. Rather we explain the main points by briefly reviewing the principal lines of argument.

The first issue requiring clarification is the purpose of the market definition exercise itself. Market definition guidelines, or tests, leave open considerable room for interpretation and disagreement, and we have noted above a number of the questions which need to be answered in implementing them in any particular case. One interpretation of market definition is that its goal is to identify *those firms or producers which possess market power, given the market behaviour of potential competitors*. Another is that it seeks to identify *the smallest group of firms or producers who would possess monopoly power, independently of the market behaviour of potential competitors*. These definitions are closely related, but they are not asking precisely the same question.⁷ For instance, two duopolists producing a perfectly homogeneous, and hence substitutable, product under identical cost conditions - for example, ordinary table salt - will typically charge prices well in excess of marginal cost in the duopoly (e.g. Cournot) equilibrium, so either firm has *market power given the market behaviour of the other firm*. Neither firm has *monopoly power* however, since if one firm sets its price equal to marginal cost (e.g. in a Bertrand equilibrium), the other firm will lose *all* of its customers if it attempts to charge any price higher than this. If we call these firms Firm X and Firm Y respectively, then under the first interpretation of market definition given above, both Brand X Salt and Brand Y Salt would be separately defined as relevant antitrust markets if the duopoly equilibrium was Cournot-like, while neither would be defined as a relevant antitrust markets if firm behaviour was Bertrand-like.⁸

If our purpose is simply to identify firms with market power then it probably does not matter very much whether we distinguish market power from monopoly power in our approach to market definition. However if we wish to undertake a general market definition exercise, not specifically aimed at identifying an abuse of market power by any particular firms or undertakings, then we shall need to be more careful than this. In this study we are attempting to define relevant antitrust markets in sports broadcasting markets across a number of European countries with different competitive conditions and market structures. Hence we shall need to specify an approach to market definition which is consistent with, or robust under, different competitive conditions, and in particular which

⁷ See further Section 3.1. below. Also Kaserman and Zeisel (1996) who assume that market definition is solely concerned with the first of these questions.

⁸ We term this the ‘oligopoly problem’ or the ‘oligopoly fallacy’ in market definition. The problem is recognised in passing by NERA (1992).

does not depend upon market structure, or the types of (oligopoly) pricing behaviour observed in any particular market.⁹

We thus specify the market definition test as asking whether *a hypothetical monopolist producer of a broadcast or program could profitably impose a sustained and significant increase in the price of the program above the competitive program price level, given that all potential substitute programs are available at competitive market prices.* A firm which can profitably increase its price significantly when all potential substitute products are priced competitively (e.g. at marginal cost) is unambiguously a monopolist rather than an oligopolist. Defining antitrust markets in this way makes our definitions independent of the pricing behaviour of firms in any particular market or geographic area, but not, of course, independent of viewers' preferences in different markets or areas.¹⁰

Our approach to market definition, then, is to define sets of sports broadcasts or programs which confer *monopoly power* upon original rights owners or broadcasters, or both. The next question is then: *'What is the relevant 'program price' for market definition?'* Since most sports broadcasts (or programs) are still shown 'free to air', in Europe as elsewhere, and financed largely from advertising revenues, consumers do not pay directly to view a particular program.¹¹ Leaving aside viewers' 'opportunity costs', and the possible psychic costs of watching advertising, the relevant price from the consumer's point of view can likely be taken to be zero.¹² Program 'prices' are typically paid elsewhere in the vertical supply chain.

An obvious alternative might be to take the price paid by broadcasters for broadcasting rights as the relevant 'program price'. This is inadequate, however, because the total value realised from broadcasting a program is normally divided between the original rights owners and broadcasters according to their market positions (or their 'bargaining power') in the vertical supply chain (see Section 4 below; also Cave, 1989). Indeed, it would be impossible to implement this definition of price *for a program which was produced by a broadcaster*, since there is no such price (although we might attempt to impute one). We clearly do not wish to treat programs *purchased* by broadcasters completely differently

⁹ While the markets for sports broadcasting rights have to a large degree become internationalised in recent years, broadcasting markets are still largely defined by national, regional and linguistic boundaries. Hence we can and do observe different market structures and competitive conditions in different European countries.

¹⁰ The value of a program to a vertically integrated rights owner and 'free to air' broadcaster, as we shall see immediately below, is determined by viewers' preferences over the programs available to them, as this directly determines advertising revenues. In the case of a pay television broadcaster of course, viewers' preferences also determine their willingness to pay. Given the set of choices available to viewers, and competitive advertising rates, whether or not a program is a 'monopoly' i.e. attracts monopoly rents, does not depend upon the nature of competition between broadcasters. It may however depend upon competition at the level of advertisers, which we treat as fixed throughout our analysis. Hence the statement in the text is only *literally true* if we take advertising rates to be unaffected by changes in market structure and competition at the level of broadcasting.

¹¹ Even where they do now pay subscription charges, these are typically payments for channels, or bundles of channels, rather than for particular programs. Advertising revenues remain, in any event, an important source of revenue for pay TV companies.

¹² See Williams and Yarrow (1995) who reach a similar conclusion. Nothing in our analysis depends upon assuming that 'free to air' broadcasts are literally 'free' for viewers.

from programs *produced* by broadcasters for the purposes of market definition, or for an evaluation of market power in the vertical supply chain.

Since programs are financed, or paid for, by a combination of advertising revenues and subscriptions, the obvious definition of a ‘program price’ is the total value of advertising and subscription revenue broadcasters earn from broadcasting a particular program, net of incremental or marginal broadcasting costs. This is the *maximum price* that broadcasters would ever be willing to pay to rights owners for the broadcasting rights, or alternatively, the value that a vertically integrated rights owner and broadcaster would impute to the program.¹³ Thus this definition treats vertically integrated producers/broadcasters entirely symmetrically with vertically separated ones, and it is clearly the relevant definition of a ‘program price’ for our purposes. In this report we shall typically denote such prices, or values, by the letter *V*.

This means that we should refine our market definition test to ask whether *a hypothetical vertically integrated monopolist program producer(or rights owner) and broadcaster could profitably impose a small but significant and nontransitory increase in price over the competitive price, assuming that all other potential substitute products are sold at competitive market prices*. We shall take this as our market definition test for the purposes of this report (see Section 3.2).

Our observations, or data, however are of the prices paid by broadcasters for broadcasting rights, which is not the same thing as *the value that a vertically integrated rights owner and broadcaster would impute to the program*. The markets for sports broadcasting rights are typically auctions, which means that there will usually be imperfect competition on both sides of the market. These auctions will result in the total value of a program being divided between rights owners and broadcasters in a manner which depends upon the number of competing buyers, informational conditions, and the auction design itself (see McMillan, 1995). However, under circumstances which we explain in Sections 3.3 and 4.1 below, the maximum willingness to pay (i.e. the highest valuation) of any buyer in the auction can be taken to be the markets’ *best estimate* of the value that a vertically integrated rights owner and broadcaster would place upon the program, and hence this is the estimate of *V* which we require for market definition.

We obviously cannot observe the highest buyer, or broadcaster, valuation however, only the highest bid made in any auction. Nevertheless we shall argue that the highest bid in recent auctions can be taken to be a reasonably accurate *lower bound* for the highest valuation of any buyer, so we know that (on average) the rights would be worth at least this amount to a vertically integrated program producer and broadcaster.¹⁴ We also argue that the lower prices paid in past auctions, when there was less competition for rights from capacity constrained broadcasters, can be taken as an *upper bound* on the rights sellers’ costs of production, or more precisely, the sellers’ valuations. This means that price data

¹³ Assuming that the marginal costs of producing the program are zero. This seems realistic since most costs at this level will be fixed, or indeed, sunk (see Williams and Yarrow, 1995). If not however, the analysis is easily adjusted to allow for positive program marginal costs, which for simplicity, we will ignore here.

¹⁴ Because of the ‘Winners Curse’ effect in common value auctions, bidders in auctions will occasionally make mistakes and find that they have bid too much. Hence the statement is only true ‘on average’. See Section 7.

from both past and more recent rights auctions is directly relevant to both market definition, and to diagnosing the existence of market power, in sports broadcasting markets. If prices from auctions in the more distant past can be taken to be at least as great as the current valuations of the sellers, and prices paid for rights in more recent auctions can be taken to be no higher than the current valuations of broadcasters,¹⁵ then where the difference between these (inflation adjusted) prices is large, it is immediately apparent that large ‘rents are being earned by current rights owners. This tells us that rights ownership confers market power.

In fact, for each of the events for which we have data, the prices paid for broadcasting rights in recent auctions have risen considerably, and in many cases dramatically, although neither the quality of the events nor the quantity viewed has changed significantly.^{16,17} These price rises (adjusted for inflation), over the price levels that the owners of the rights previously found sufficient to justify continued supply of the events to broadcasters, are themselves, we argue, direct evidence that the owners of the rights have an ability to exercise market power over broadcasters, advertisers, or final customers.

In some cases sports broadcasts have moved from ‘free to air’ television to pay television (e.g. Premier League Football and English Five Nations Rugby). The result has been a significant increase in the price of watching these events to the viewers, accompanied by a large increase in the prices paid for the rights, usually at the cost of a considerable fall in demand (i.e. the number of viewers or viewer hours). That such an increase in price to viewers has been profitable enough, in the face of falling demand, to pay for a large increase in the price of the broadcasting rights, may itself be viewed as compelling evidence that ownership of the broadcasting rights confers considerable market power on a pay TV broadcaster.¹⁸

Hence we argue that the increases in the prices paid for the broadcasting rights to a number of major sports events in recent years allow us to directly infer the exercise of market power. *They do not allow us to directly infer monopoly power however*, or that each is a relevant antitrust market, even where the price rises have been accompanied by an increase in the prices charged to viewers, as in the case of sports rights purchased by pay TV companies. This is because what we are likely observing in most cases is a transfer of ‘monopoly rents’ from broadcasters to rights owners, rather than an increase in

¹⁵ Note that a seller’s valuation in an auction is the lowest price he would be willing to accept, while a buyer’s valuation is the highest price she would be willing to pay. We argue below that prices observed in recent auctions are likely approaching the broadcasters’ valuations.

¹⁶ In the case of Premier League Football the number of matches shown has increased to 61 per annum from less than 20, since 1992. However the relevant quantity comparison is the number of viewers or viewer hours. The number of viewers annually has fallen from approximately 140 million in 1991/2 to less than 100 million in 1997/8, and viewer hours from more than 200 million to less than 140 million, since the live matches were moved onto to BSkyB in 1992.

¹⁷ Indeed, the price rises for these events have occurred during a period in which the total amount of sports broadcasting available on television in most European countries has risen quite considerably (Section 5.1), so the broadcasting rights to these events have attracted higher prices despite the increase in the availability of potential substitute broadcasts

¹⁸ These arguments have been rehearsed in a number of recent UK cases (see Section 2), and although we adopt a somewhat different approach to analysing the issues, we concur with this conclusion.

the value of the rights per se. We suggest in Section 4.1 that this transfer has occurred because: (i) broadcasting capacity constraints have been relaxed with the introduction of pay television and the advent of new technologies such as cable, satellite, and digital; and (ii) entry of new broadcasters in most European countries has led to increased competition for valuable programming rights. We cannot therefore, without further analysis, take such price increases as direct evidence for monopoly power (or market definition), because they represent nothing more than a transfer of profits between levels in the vertical chain of supply, while the price of sports programming to viewers has not changed. Evidence for the existence of market power, as we have explained, is not in general sufficient to establish a market definition. For this we require evidence that the product(s) in question would continue to earn significant rents even when competing with ‘competitively priced’ substitute products.

Deciding whether a particular sports event (or program) constitutes a relevant antitrust market then, depends upon the prices charged to viewers for potential substitute events or programs. What are these prices? Many sports events are still broadcast ‘free to air’, and it might be argued that since broadcasters have found it profitable to pay higher prices for broadcasting rights even where their programs compete with other programs which are broadcast ‘free’ to viewers, ownership of the sports programs in question must, by definition, confer monopoly power. This inference is not correct however. ‘Free to air’ broadcasts earn profits by attracting large advertising revenues in competition with other ‘free to air’ broadcasts, and with broadcasts on pay television. Taking advertising revenues to be a function of the size of the (expected) audience, or number of viewers,¹⁹ then it is possible that two or more simultaneously broadcast ‘free to air’ sports programs will still attract sufficiently large audiences to earn large advertising revenues, *even if all consumers view these broadcasts as perfect substitutes.*²⁰

The interpretation of ‘free to air’ broadcasting as ‘competitive pricing’ is not helpful here, even where valid. Since we haven’t, in the case of ‘free to air’ broadcasts, observed price increases to viewers, we do not know how viewers would react to small changes in the price of a broadcast, holding the prices of all other broadcasts fixed.²¹

¹⁹ In this report we consistently make the (sometimes implicit) assumption that advertising is a competitive industry, and hence that advertising rates for programs are fixed at competitive levels. To make matters particularly transparent, we might assume that all advertisers are identical and have perfectly inelastic demand curves up to a price a per viewer. Hence if a program attracts an audience of size S total advertising revenues will be aS . Advertisers are, of course, another link in the vertical supply chain, and is possible that recent price increases also represent a transfer of rents from advertisers to rights holders. This makes no substantive difference to any of the analysis in this report, and in Section 4.2. we briefly relax this assumption.

²⁰ That is, if we attempted to charge viewers a ‘positive’ price for watching any of the broadcasts, all viewers would switch to one of the substitute broadcasts.

²¹ It might be argued that we should consider an increase in the price to advertisers, or even broadcasters, to address the issue of substitutability. However advertisers only care about the expected audience size and composition S , and broadcasters care only about the total advertising revenue aS , net of marginal broadcasting costs (i.e. V). S , and hence V , is determined by the attractiveness of the broadcast to viewers, in competition with other broadcasts, available either free to air or on pay television. Thus it depends solely upon viewer preferences, given the prices of substitute programs. See Sections 2 and 4.1 where these issues are discussed in some detail.

Excepting those cases where sports broadcasts have been moved from ‘free to air’ to pay television, we cannot directly observe viewers’ reactions to changes in the price of broadcasts, and hence we cannot directly observe evidence on the price elasticities of demand. We can ask directly however, whether the sports events in question are potential substitutes for viewers where they are only *periodically* broadcast in competition with each other, and here we do have some relevant data. That is, if we observe that sports broadcasts achieve the same or similar sized audiences whether or not they are competing with simultaneously broadcast sports events, we will have strong evidence that the events in question are not substitutes for each other in the preferences of viewers.

The data we have collected for a number of major sports events (see Section 5.4). indicates that even where events are broadcast simultaneously (or nearly simultaneously) there is no discernible substitution effect. That is, the audiences for these events do not appear to depend upon the availability, ‘free to air’ or otherwise, of other major sports events. Since we assume that viewers’ preferences are such that other types of broadcasts (movies, documentaries, etc.) are not likely to be closer substitutes for major sports events than other major sports events, we may conclude that the events in question are relevant antitrust markets.

Our evidence on substitutability is not evidence concerning the own price elasticity of demand for any event.²² Rather it is evidence on the cross price elasticities of demands in particular directions.²³ What we observe is that when major sport event A is broadcast simultaneously with another major sport event B, event A achieves (on average) the same audience as it does when event B is not available (i.e. when event B effectively has an infinite price). This tells us that cross price elasticity of demand of event A with respect to the ‘price’ of event B is small, or even zero, and for very large price changes for event B.

We thus learn, for example, that the cross price elasticity of demand for the Wimbledon Finals with respect to the World Cup Football is very small, and probably zero. World Cup Football viewers do not appear to watch Wimbledon Finals, even when the World Cup is not available. This provides fairly compelling, if one sided evidence, that these sports broadcasts are not close substitutes in the preferences of viewers.²⁴

Where sports events have moved to pay television, somewhat more direct evidence is available. Here we observe directly that significant increases in the price of sports programs to final consumers have been profitable, although they frequently result in a significant curtailment in viewer demand. This tells us that the own price elasticity of demand is positive for these sports broadcasts, at least for large enough price increases,

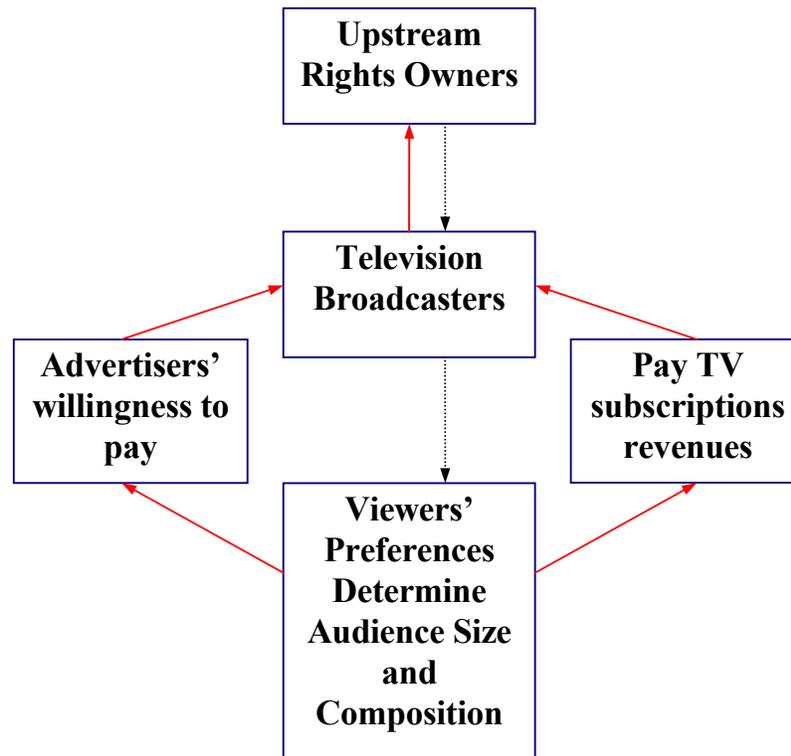
²² Evidence on the own price elasticity of demand is not, in any case, what is needed here. See further below.

²³ See Kaserman and Zeisel (1996) for a discussion of the relevance of cross price elasticities in market definition; also NERA (1992), pp.31-33.

²⁴ In the language of economics texts, Wimbledon Finals is not a *gross substitute* for the World Cup Football in the preferences of viewers. This does not tell us that the World Cup Football is not a gross substitute for Wimbledon Finals however. That is, it is possible that a rise in the price of viewing Wimbledon Finals would result in some viewers switching to the World Cup Football, at least in the years that it is available. However the fact that World Cup Football overlaps with Wimbledon Finals only once in every four years, and only for a number of days, makes this a rather unlikely scenario.

but not large enough to make the increase in the price unprofitable. Indeed the price of viewing major sporting events, such as Premier League Football, on pay TV in the UK have continued to rise over the past six years.²⁵

Figure 1: Vertical Structure in Sports Broadcasting and Rights Markets



Explanation of Figure 1: The black dotted arrows follow the sales of rights, or programming, downstream. Red solid arrows follow the flow of values upstream. The preferences of viewers determine the value of a program to advertisers and pay TV broadcasters. Broadcasters receive V , i.e. total broadcast revenues from all sources less marginal broadcasting costs. Rights auctions (or more generally, negotiations or bargaining) result in a division of the program value V between broadcasters and rights owners. Increased competition between broadcasters results in a greater flow of the rents V upstream.

²⁵ See the evidence presented by the MMC (1999). There are a number of problems with this interpretation, so it is fortunate that we need not place heavy reliance on it. First, pay TV broadcasts of sports events typically have fewer advertisements, so the *net* price change for viewers, taking account of the psychic costs of viewing advertising, is indeterminate. Secondly, pay TV subscribers pay for bundles of channels which include many different sports events. So again determination of the viewer price for watching any particular event is complex and in any case, unobservable. Third, with respect to the price increases mentioned above, Williams and Yarrow (1995) argue that they may have (at least partly) reflected quality improvements in the packages and programming offered. However since we have direct evidence that sports events on pay TV earn large rents for rights owners, and that these events are not viewed as substitutes by viewers for other major sports events, we do not need to infer our conclusions from difficult to interpret evidence of price increases for viewers.

Idealised Example of Pricing and Substitution in a ‘Magazine’ Market

A useful example which may help to clarify the points made in the text is the following. Consider two magazines which compete in a given geographic area for both reader subscriptions and advertising revenue. Each magazine buys most of its content from upstream ‘content providers’ (e.g. writers) in periodic ‘auctions,’ and we take it as given that it is content which attracts readers to magazines. Taking advertising revenues to be function of the (average) number of the magazines sold per period (i.e. the average number of readers), one possible pricing solution is for the magazines to be given away ‘free’ to readers as a result of intense competition to increase sales, and hence advertising revenues.²⁶ However it is also possible that even when the two magazines have entirely distinct and separate readerships, neither of which view the competing magazine as a substitute for their preferred magazine, the profit maximising solution would still be to set subscription rates at zero. Observing that each magazine earns substantial revenues from advertising when either or both are ‘free’ to readers does not tell us anything about their substitutability for readers, and hence whether or not they are in direct competition with each other. For this we would need to observe what happens to demand for each magazine when one newspaper was priced above the other, i.e. evidence on the cross price elasticities of demand.

Suppose, in addition, that we are unable to observe the revenues earned by each magazine directly, but that we can observe the prices paid to ‘writers’ in the periodic upstream auctions for magazine ‘content’. Observing at a particular point in time that ‘writers’ are being paid substantially more for the same content than they were previously is evidence that, ceteris paribus, the magazine ‘content’ earns significant rents, or alternatively that ownership of the content confers significant market power. However, the observation that each magazine’s content earns rents for the ‘writers’ when given away free to viewers tells us nothing directly about the degree to which magazine readers view each magazines’ content as substitutable.

To see why it is evidence on the cross elasticities, and not the own price elasticities, of demand which we need to decide this issue, consider for a moment a monopoly magazine owner who faces no competition at all. It might still remain optimal for the monopolist to choose a low, or even zero, subscription price, because this subscription price maximises total (i.e. advertising plus subscription) revenue, and hence profit. The own price elasticity of demand is relevant to this profit calculation, but it does not tell us whether readers would switch in large numbers to a competing magazine if the price of the monopolist’s magazine were increased (by definition of a monopoly of course, they would

²⁶ *Another is for the magazines to adopt different pricing strategies, so that one charges higher subscription rates and receives less advertising revenue, while the other remains ‘free’ to subscribers. Note that in this example, as in television broadcasting, a price of zero is a ‘corner solution’. Nothing tells us that it wouldn’t be even more profitable to charge negative prices to consumers, if this were logistically possible*

not do so in this example). Only evidence on the cross price elasticities of demand will tell us this.

Finally, returning to the duopoly magazine example, suppose that we do in fact observe that at a certain point in time 'writers' are paid substantially more than before for providing the same quantity and quality of 'content'. We may certainly deduce that the 'terms of trade' between magazines and writers have changed, so that writers now obtain a greater share of the rents.²⁷ But as noted, so long as both magazines continue to be given away free to readers, we cannot deduce anything about reader substitutability because we cannot observe what happens to demand to each when one magazine is priced slightly higher than the other. If coincidentally however, it so happens that the magazines entered the market sequentially, some relevant evidence may be available. If we knew that Magazine A achieved a readership of 100 at a zero subscription price before Magazine B entered the market, and that after magazine B enters the market (with a zero subscription price), we observe that Magazine A still achieves a readership of 100 (and so does Magazine B) then evidently the 100 potential Magazine B readers did not view Magazine A as a substitute, even when Magazine B's price was effectively infinite. We cannot say how Magazine A readers view Magazine B however, except that at identical prices they were not induced to switch magazines. The likelihood is that if Magazine A raised its subscription price it would retain a substantial number of readers, however the market data does not tell us this.

²⁷ *And since writers were willing in the past to provide the content at (inflation adjusted) lower prices, our claim that these are 'rents' is indeed correct.*

2. Review of European Cases

In this section we briefly survey a number of the recent European competition cases and competition authority reviews directly concerned with sports broadcasting and the European markets for sports broadcasting rights. We are particularly interested in the approaches which have been taken to market definition in these cases. The UK cases include the Office of Fair Trading's 1996 review of BSkyB's position in the wholesale pay TV market, (OFT Report, 1996) and the Monopolies and Merger Commission's investigation into the proposed merger of BSkyB and Manchester United (MMC, 1999). Other European cases include KNVB vs. Feyenoord Rotterdam, UFA Film and ISPR vs. Bundeskartellamt, the Spanish (TDC) Case, and the ongoing 'EBU case'.

2.1 United Kingdom Cases and Competition Authority Reviews

2.1.1 UK Office of Fair Trading 1996 Review of BSkyB's Position in the Wholesale Pay TV Market

The OFT (1996) report contains a review of the position of BSkyB in the market for the supply of programming to Pay-TV in the UK. The relevant market definition was that for Pay-TV in the United Kingdom. The review states that it views Pay-TV as a separate market from free-to-air broadcasting because Pay-TV operators could provide viewers with a far greater choice of viewing than terrestrial channels in the UK could. Almost all free to air channels in the UK were at that time terrestrial. Furthermore it was argued that BSkyB owned a significant amount of exclusive rights. This, it was found, afforded them 'considerable independence in setting subscription levels.'

The OFT concluded that:

1. Terrestrial television is not a close substitute for subscription television, and there exists a separate market for retail subscription television in the UK
2. There are also distinct and separate markets for premium sports and movie channels.
3. Derived wholesale or input markets for the supply of premium sports channels, and for the supply of sports broadcasting rights.

Fairly strong evidence that such markets exist may be inferred from the fact that the prices of premium sports and other channels to BSkyB's customers rose sharply over the previous five years, with an average annual increase of 11.27% from January 1994 to January 1997. Premium sports channels retail prices evidently increased by more than this.

The OFT additionally seemed to accept that there were no substitutes for live Premier League football²⁸, although only a hypothetical test is offered as evidence of this.

²⁸ Item 41

2.1.2 Monopolies and Mergers Commission's 1999 Investigation into the Proposed Merger between BSkyB and Manchester United

This case concerned the proposed take-over of Manchester United football club by British Sky Broadcasting. A fundamental issue was whether exclusive ownership of Premier League Football broadcasting rights for an extended period of time conferred market power upon BSkyB, either over television viewers, or its competitors in the UK pay television market, and whether by its purchase of Manchester United BSkyB would gain any advantages in future auctions for Premier League television broadcasting rights.

In defining the relevant broadcasting markets in which BSkyB was active the MMC considered the following possibilities:

'all TV, pay TV, premium pay TV, premium sports pay TV, football on TV and different types of football on pay TV'.

The MMC concluded that there is *'a separate market for premium sports on pay TV'*, while accepting that free-to-air broadcasting will place an upper limit on the prices that pay TV can charge. However the MMC also stated that a narrower market definition might be appropriate, for instance *'football, or a subset of football on pay TV.'*

The evidence which the MMC advanced for these conclusions takes two forms. To begin with the MMC had to establish that a Pay-TV channel is a separate market. The MMC advanced the argument that a consumer who had access to a Pay-TV channel automatically has access to free-to-air television in the UK. Thus such a consumer could watch free-to-air television at no extra cost. If the consumer nonetheless decided to pay a subscription fee for the Pay-TV channel, then this consumer could not be seen to regard free-to-air television as a substitute for Pay-TV. Thus Pay-TV channels, and within this category premium sports channels, are taken to constitute separate antitrust markets.

The MMC implicitly refer to the test in the Merger guidelines of the United States Department of Justice in reaching this conclusion. They consider BSkyB to be close to being a monopoly provider of sports premium channels and consider it improbable that a monopoly provider of sports premium channels could not raise prices 5 to 10 per cent above competitive levels. A formal test of this capacity to raise prices is not carried out however.

The evidence that a narrower definition of markets might be appropriate (e.g. football on pay TV) is based on a survey of consumers carried out by NOP Media. This survey established that Premier League football was far more important to the subscribers of BSkyB than all other football shown by that broadcaster combined or in fact all other sports shown by the broadcaster combined.²⁹ Thus the MMC concluded that Premier League football was an important factor in persuading customers to pay for the BSkyB packages on offer.

Regarding the price increases for BSkyB's premium sports (and other) channels (which is the key element in the argument for a separate Pay-TV market in the UK), BSkyB maintained that its prices were initially low to promote its products, and that they had subsequently risen because of the higher quality of their products, and the fact that input

²⁹ item 2.46 and table 4.13 MMC report.

prices had also risen dramatically.³⁰ BSkyB argued that sports rights have become significantly more expensive, and that sports rights owners have been able to appropriate a large part of the rents associated with these price increases. Furthermore BSkyB suggest that the price increases have been sustainable because there is a segment of viewers which is willing to pay higher prices to watch televised sport.

2.2 Other European Cases

2.2.1 The Dutch Football Case (KNVB v Feyenoord, High Court of Amsterdam verdict of 8.11.1996)

In this case the Dutch F.A (KNVB) were taken to court by on affiliated club (Feyenoord). The KNVB decided in 1996 to sell the rights to transmission of all national league games, and all games of the Dutch national team, to a sports channel for seven years. The plaintiff maintained that under Dutch Law this amounted to an illegal price fixing agreement. This view was upheld by the court.

Detailed arguments on market definition have not been made available, however the court held that the relevant product market was *'the market for (Dutch) football broadcasting rights.'*

2.2.2 The German Case (DFB v Bundeskartellamt/Bundesgerichtsh, verdict of 11.12.97)

This case was brought against the German Football Association by the competition authority in Germany (Bundeskartellamt). The Bundeskartellamt wanted to test whether the German FA was restricting competition by centrally marketing the rights to European Cup home games of German football clubs. In this context the relevant product market was not considered central to the issue, and was defined, with little argument, as *'the market for TV broadcasts of sport.'*

2.2.3 The Spanish (TDC) Case

The Spanish national football league (LNFP) sold the live football broadcasting rights to the regional television companies in Spain via an intermediary. These television companies then signed an agreement with Canal Plus and TVE which prevented all other private broadcasters from gaining access to the rights.

The Spanish competition tribunal (TDC) defined the relevant market to be *'the market for football television broadcasting rights for competitions of national interest, as well as international competitions attracting similar interests'*. It did not consider different derivative programs of the original broadcasts to constitute separate antitrust markets.

The decision was to restrict the definition to sports on the basis of the very different characteristics of sports and other forms of entertainment on television. Furthermore the tribunal decided that football represents a separate antitrust market on the basis of audience data that shows that football attracts by far the biggest audiences, and data that shows that the price of different sports varies accordingly.

³⁰ item 5.15 MMC report

2.2.4 The 'EBU Case'

The European Broadcasting Union (EBU) is an association of European radio and television public service broadcasters. The aims of the EBU are to negotiate the acquisition of broadcasting rights for international sport events on behalf of its members, provide a framework for the interchange of programs, and promote collaboration among members. All members of the EBU are eligible to participate in an institutionalised exchange system for television programs - 'Eurovision' - and to participate in a system of joint acquisition of television rights to international sports events.

In 1989 the EBU applied for negative clearance or for exemption pursuant to article 85(3) of the EC Treaty. In 1993 the Commission granted the exemption conditional on a sub-licensing scheme to third parties, and an obligation of notification of some aspects of the EBU's functioning. On 11 July 1996 the Court of First Instance (CFI) annulled the Commission decision on the grounds that the Commission should have considered whether the EBU's membership rules are objective and sufficiently determinate to be applied uniformly and in a non-discriminatory manner vis-à-vis all potential active members. The EBU is currently appealing the CFI decision before the Court of Justice, and this appeal is supported by the Commission. The notified arrangements are the so-called 'Eurovision system,' i.e. the rules which govern the EBU and the Eurovision/Sports system: (1) the joint acquisition of sports television rights; (2) the sharing of jointly acquired sports television rights; (3) the exchange of the signal for sports events; and (4) the access scheme for non EBU members to Eurovision sports rights.

In its appeal the EBU claims that the relevant market within which it operates is '*the market for important sporting events of both national and international interest*'. The EBU argues that it is not 'predominant' under this evidently wide market definition, and therefore not in a position to prevent, restrict or distort competition in the Common Market. The EBU bids only for sport events of a pan-European interest, to acquire the television rights from the organisers of such events.³¹ The Commission however takes the view that there are at least two different antitrust markets: one for the acquisition of the television rights to sports events of a pan-European or international interest, and another for the acquisition of the television rights to sports events of purely national interest. The Commission views the particular characteristics of sports programmes which are able to achieve extremely high viewing figures and reach an identifiable audience, and which are a special target for certain important advertisers, as being decisive, particularly with regard to outstanding international events such as the Football World Cup or the Olympic Games.³²

The EBU Arguments

As noted, the EBU argues that the relevant antitrust market is '*the market for important sporting events of both national and international interest*'. It considers these to be sports rights which are capable of attracting both advertising and subscribers/viewers to a

³¹ For instance, the 2002 and 2006 Football World Cups.

³² Other sport events of a pan-European interest include for example the European Football Championships; the World and European Athletics Championships; Wimbledon, the US and French tennis Opens, and NBA basketball.

channel. The EBU rejects the view that there are separate markets for national versus international events or indeed, for football, Formula One and all other sports.

The EBU argues that a proper definition of a relevant antitrust market must be based on substitutability from the buyer's point of view. However the EBU takes the view that it is **the broadcasters** and not **the viewers** who are the relevant 'buyers,' and hence it is substitution patterns of broadcasters which matter when the relevant antitrust market is defined.

In Section 4 of this study we shall explicitly reject the idea that substitutability at the level of broadcasters can properly be used as evidence in defining relevant broadcasting markets. This is because from the point of view of broadcasters, all profit making programs are substitutes. While the EBU presents no relevant economic arguments in favour of their preferred approach, they helpfully confirm our point for us in writing:

“The cost of rights is also relevant to substitutability: if an event is very popular the price of rights is very high, the audience is very high, as are the revenues. On the other hand if a broadcaster shows a less popular event, the costs of rights will be low, as will the audience and revenue. However the amount of profit expressed relative to the expenditure will usually be quite similar. The bottom line is that the broadcaster can attract an audience by spending money on programming.”

What the EBU appears to be arguing here is first that the value of the rights to a program is determined by its popularity to viewers (and hence substitutability at the level of viewers is directly relevant here); and secondly, that all programs making similar profits for broadcasters are perfect substitutes *from broadcaster's point of view*. Hence the EBU argues that all sports are substitutes from the point of view of broadcasters so long as they earn similar profits. This also means that opera and football may be perfect substitutes from the broadcaster's point of view, which does not imply that are relevant economic substitutes for the purposes of market definition.³³

3. Approach to Market Definition

3.1 Generalities: Definition of the relevant market

Our proposed methodology for undertaking this study naturally begins with the Commission's own market definition guidelines³⁴, which are consistent with the approaches to market definition taken by regulatory and competition authorities in Europe, the United States and elsewhere. The definition of the relevant market is intended to identify the set of products, and consequently, firms, which are capable imposing significant competitive restraints upon the behaviour of undertakings (firms or organisations) being investigated. A competitive restraint refers to an ability to restrain the

³³ The EBU does admit, however, that football is a particularly important source of broadcaster profits, and suggest that *even for broadcasters* there are few if any substitutes for major football events.

³⁴ Commission Notice on the definition of the relevant market for the purposes of Community competition law (OJ C 372 on 9/12/1997).

actions of the undertakings vis-à-vis their customers (i.e. price setting, quantity and quality of product supplied) through competition for these customers.

The clearest statement outlining this approach to market definition, and the one most often cited by economists, was given in the 1992 US Department of Justice *Horizontal Merger Guidelines*:

“A market is defined as a product or group of products and a geographic area in which it is sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present or future producer or seller of those products in that area likely would impose at least a “small but significant and nontransitory increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area no bigger than is necessary to satisfy this test.”

This approach essentially asks whether a hypothetical monopolist supplier would face a downward sloping (residual) demand curve which is sufficiently inelastic with respect to price so that a significant increase in price would not result in sufficient loss in custom to make the price increase unprofitable.

A number of aspects of this test, or definition, require elaboration and clarification. First, the test requires that we look for the smallest set of products which satisfy this definition. When a single product or service satisfies the definition this raises few additional problems. When more than one good or service is required however (i.e. no single product or service in a given group satisfies the definition) then there is a potential nonuniqueness problem. For example, it might be that none of the Olympic Games, the World Cup, or Formula One racing would satisfy the definition alone, but that any combination of two of them would do so. Should our market definition then be Olympics + Formula One or World Cup + Olympics etc. or the combination of the three of them?

A second, and much discussed issue, is the price from which a “*small but significant and nontransitory increase in price*” should be considered. If we use the current market price we may then commit what is known as the “Cellophane fallacy”: that is, if the product in question is already monopolised and a monopoly price being charged for it, by definition no further price increase is profitable, although the product would have indeed been defined as a ‘market’ if a lower price were taken as the starting point for analysis. The response of most economists to this has been to argue that the ‘competitive’ market price should be taken as the starting point.³⁵ Adopting this approach means that if we observe a product being supplied at price which is significantly higher than its competitive price (however defined) we can infer immediately that the market definition test has been satisfied.

We shall therefore define Version 1 of the market definition test as follows:

Version 1
Product X constitutes a relevant market if a hypothetical monopolist of X could profitably impose a “small but significant and nontransitory increase in price over the competitive

³⁵ See Schmalensee (1987), Fisher (1987), Willig (1991), Kaserman and Zeisel (1996), and NERA (1992).

price, assuming the terms of sale of all other products are held constant at observed market levels.”

This definition essentially defines an antitrust market, to paraphrase Schmalensee (1987), as ‘something worth monopolising.’ However, asking whether a hypothetical monopolist could profitably impose an increase in price over the competitive level, assuming the terms of sale of all other products are held constant at observed market levels, means that we could consistently identify each brand of otherwise indistinguishable ordinary table salt sold by two duopolists as separate markets, because each will, in the (e.g. Cournot) duopoly equilibrium, charge a high price. Hence both firms will find it profitable to increase price significantly above marginal cost, given that the other firm is already doing so. This is true even though all consumers view the two brands of salt as *perfect substitutes* (i.e. they will buy whichever is cheapest). We call this the ‘*oligopoly problem*’ or the ‘*oligopoly fallacy*’ in market definition.

To provide another example, this time with differentiated products, suppose there are two brands of ‘track shoe’ for sale, Adidas and Nikes. Sports fans view them as sufficiently close substitutes so that it never profitable for Nike to price itself more than a few pennies above the price of Adidas, so if Adidas prices at marginal cost, Nike earns negligible profits. Given that Adidas prices are well in excess of marginal cost however in the duopoly equilibrium, *Nikes are certainly something worth monopolising.*

Few authors on market definition appear to address this issue directly, however many recommend in practice that the test should in fact be whether a hypothetical monopolist could profitably impose a price increase given that all other products are supplied competitively.³⁶ Hence the market definition test should be revised as follows:

Version 2
 “ Product X is relevant market if *a hypothetical monopolist of X could profitably impose a small but significant and nontransitory increase in price over the competitive price, assuming that all other potential substitute products are also sold at competitive market prices.*

This version of the test may be intellectually coherent, but it is clearly more difficult to implement. That is, it requires knowledge of the demand curve for product X at prices which are not observed in the market, whereas the previous versions of the test only required knowledge of the demand curve around existing prices or around the competitive price for product X, given existing prices for other products. Nevertheless only Version 2 will prevent us from identifying two producers of a perfectly substitutable and homogeneous good (e.g. salt) as being monopolists in their respective salt markets.

We have expounded on this issue at some length because it is directly relevant to the market definition problem faced in European sports rights. We argue in this report that there is considerable evidence that each of the major sporting events for which we have collected evidence attracts significant ‘rents’, which is just another way of saying that the owners of such rights have possess considerable ‘market power’ (i.e. they are able to obtain prices for the rights significantly above the lowest price at which they would be

³⁶ In a somewhat confusing discussion, NERA (1992) come close to recommending this approach when considering the problem of ‘price leadership’ in a market definition context.

willing to supply them). Indeed, we shall suggest that we can observe directly price rises which more than satisfy Version 1 of the market definition test above. However we cannot claim from this that each of these events is constitutes a separate market, because it remains possible that each is a close substitute for the other and we are observing noncooperative oligopoly behaviour of some kind. Despite the greater difficulties in implementation therefore, Version 2 of the market definition test captures the appropriate distinctions and is the one we shall use.

3.2 Market Definition in Vertically Related Markets

In vertically related markets application of the market definition test specified above can be far from straightforward. This is particularly true where there is imperfect competition at more than one level in the vertical supply chain. To illustrate the issues we take the following simple, but highly relevant, example.³⁷

Suppose an upstream monopoly producer of “perfume” can only sell its product to final consumers through a single downstream monopolist retailer. Further suppose that perfumes are a highly profitable product in the sense that the monopoly price P^M for perfume charged by the monopoly retailer to final customers is well in excess of the total costs of producing the monopoly quantity Q^M and distributing it to final consumers. We let π^M denote the monopoly profits earned by selling Q^M units of perfume at the monopoly price P^M . Since the upstream perfume manufacturer has only a single downstream buyer for his product, the payment he receives for Q^M units will depend upon the outcome of negotiations with the monopoly retailer.³⁸ This is a *two-person bargaining game* with many possible solutions, all of which can be represented by the monopoly producer receiving a fraction $\alpha\pi^M$ and the monopoly retailer receiving a fraction $(1-\alpha)\pi^M$ of the total monopoly profits.

One possible solution to this bargaining problem is for the upstream producer to make a ‘take it or leave it’ offer to the retailer and receive a 100% share of π^M (i.e. $\alpha=1$); another is for the retailer to make a ‘take it or leave it’ offer to the upstream producer and receive a 100% share of π^M (i.e. $\alpha=0$). Typically we would expect the bargaining solution to lie somewhere between these two outcomes (i.e. $0<\alpha<1$) depending upon the parameters of the bargaining situation, and possibly upon the ‘bargaining skills’ of the parties. But the question of concern here is not *what* agreement will be reached between the two vertically related monopolists, but whether the approach taken to market definition should be allowed to depend upon whatever bargaining outcome actually occurs. And if so, for which values of α should we define ‘perfume’ or ‘retailing’ as a relevant antitrust market?

³⁷ An extended example in the context of broadcasting markets is provided in Section 4.1.

³⁸ Since we allow for non-linear pricing, the downstream monopoly profit will not depend upon the division of this profit between retailer and producer, i.e. there is no ‘chain of monopolies’ or ‘double marginalisation’ problem. That is, we assume that the upstream monopolist charges the downstream retailer a price equal to upstream marginal cost and negotiates a share of the profits π^M , which are net of all marginal manufacture and retailing costs. To keep things simple denote the perfume manufacturer’s marginal cost by c , and assume that retail marginal costs are zero. See Hart and Tirole (1990) for further elaboration.

The question arises because a competition authority investigation into the potential for abuse of monopoly power by the perfume manufacturer would presumably ask whether the perfume manufacturing monopolist was able to profitably raise the *wholesale* price of perfume significantly above competitive levels (c) for a sustained period of time. Observing that the perfume manufacturer receives a payment equal to $cQ^M + \alpha\pi^M$ for supplying the quantity Q^M , the answer would then depend upon the value of α . Similarly, an investigation into ‘dominance’ in retailing would ask if the perfume retailer could profitably raise price so as to achieve a high ‘retail margin’, and observing that the retailer receives a gross ‘margin’ of P^M on Q^M units, but pays input costs of $cQ^M + \alpha\pi^M$, the net retail margin is just $(1-\alpha)\pi^M$, which again depends upon α .

For values of α not much in excess of zero, we might conclude that ‘perfume’ is not an antitrust market, because the perfume manufacturer is unable to achieve high profits (i.e. exercise monopoly power), and place all of the responsibility for high perfume prices on the monopoly retailer. For values of α not much less than one we might conclude precisely the opposite, i.e. that the perfume ‘market’ is monopolised but that retailing is quite competitive.³⁹ Neither conclusion is, of course, correct. To see this note that introducing more competition at either level in the vertical supply chain would not change the price charged to final consumers in the retail market, nor reduce the dead-weight loss from monopoly pricing. All that it would likely achieve would be to alter the division of monopoly profit between the two vertical levels (i.e. more competition in perfume manufacture would likely reduce the value of α , and more competition in retailing would tend to increase the value of α).⁴⁰

We have carefully constructed this example so that it is ‘obvious’ that ‘perfume’ is a relevant antitrust market, at least in the sense that a vertically integrated monopolist manufacturer and retailer of perfume would charge a monopoly price P^M and earn (supranormal) monopoly profits π^M . Indeed, a monopoly *at any level in the vertical chain* always results in consumers being charged P^M and monopoly profits π^M being earned (at least given appropriate assumptions concerning contracting or ‘commitment’ possibilities, or the nature of downstream competition; see the footnote above). However it is *possible* that an investigation into market power at one or the other level in the vertical chain (i.e. upstream or downstream) would be misled into assigning *all* of the market power to one or another level depending upon whether α was close to 1 or close to 0, by following standard market definition techniques.

Such techniques are not easy to apply to situations where there is imperfect competition at more than one level in the vertical supply chain. For instance, asking whether the perfume manufacturer could profitably raise wholesale prices above marginal manufacturing costs

³⁹ These conclusions would likely be reached if we followed Werden’s (1992) suggestions on implementing market definition.

⁴⁰ Greater competition in retailing might result in some dissipation of the monopoly rents if the upstream manufacturer could not commit himself to supplying no more than the monopoly quantity (see Hart and Tirole, 1990 on this). To avoid overcomplicating the example, let us assume that the manufacturer has such commitment or contracting power. Alternatively we could assume that retail competition is ‘Bertrand-like’ so when the upstream manufacturer charges each downstream retailer a price equal to P^M per unit, monopoly pricing results, with all of the profits flowing upstream (i.e. $\alpha = 1$).

is asking a question about the solution to a two-person bargaining game. If we endowed the monopolist manufacturer with all of the bargaining power (i.e. the ability to make a take it or leave it offer) than the answer would be yes. However what is more likely to happen in practice is that we observe that: (i) the perfume manufacturer is a monopolist in perfume and (ii) the wholesale price does not significantly exceed marginal cost (i.e. for α near zero) so we conclude either that ‘perfume’ is not an antitrust market, or that the manufacturer has no monopoly power. Both conclusions are incorrect.

The approach which recommends itself for dealing with market definition in vertically related markets would be to ask whether a vertically integrated monopolist manufacturer and retailer of ‘perfume’ is able to profitably raise prices to final consumers significantly above competitive levels for a sustained period of time, given competitive prices for all potential substitute products. Carrying out this procedure for the above example would lead us to conclude that ‘perfume’ is a relevant antitrust market, and that it was being supplied through a chain of monopolies with the ‘wholesale’ price determining the division of the monopoly profit between them. This would presumably prevent a competition authority from attempting to resolve the competition problem by applying procompetitive measures to only one level of the vertical chain, whilst leaving the other as a monopoly.

This approach has further merits which we mention only briefly here. Suppose that perfume manufacture was actually very competitive (i.e. many brands which are viewed as close substitutes at competitive prices by consumers), but that there is still only a single monopoly retailer, who sells only ‘brand X’ perfume at a monopoly price. If we ask whether a vertically integrated monopolist manufacturer and retailer of ‘brand X’ perfume would be able to profitably raise prices to final consumers significantly above competitive levels for a sustained period of time, given competitive prices for all potential substitute products the answer would be no, since any increase in price would result in large-scale consumer substitution to other brands. Observing that ‘brand X’ is sold for a monopoly price would then lead us to correctly locate the source of monopoly power, i.e. the monopoly over distribution.

It might be argued that if we had simply asked the market definition question in the usual way (i.e. whether the ‘brand X’ perfume manufacturer would be able to profitably raise the ‘brand X’ wholesale price significantly above competitive levels) we would have reached the same conclusion, and this is likely true. However from our discussion above it should be clear that if we did so we would not know if this was because there were many close substitutes for ‘brand X’ perfume, or because the solution to the bilateral monopoly bargaining problem between the ‘brand X’ monopolist and the retailer resulted in a low value of α . Distinguishing these two situations is crucial however if appropriate remedial measures are to be taken.

A final, and important, advantage to adopting this approach is that it treats vertically integrated producers and distributors entirely symmetrically with vertically separated ones, so our market definition does not depend upon the vertical structure of production and distribution. This is a compelling general rationale for our approach, and one which

will become particularly important in the markets of concern in this report, where vertical integration of football clubs, for example, into broadcasting, has already begun.⁴¹

We therefore adopt the following approach to market definition in vertically related markets:

Version 3 (Vertically Related Markets)
 “ *Product X is relevant antitrust market if a hypothetical vertically integrated monopolist producer and retailer or distributor of X could profitably impose a small but significant and nontransitory increase in price over the competitive price of X, assuming that all other potential substitute products are sold at competitive market prices.*”

The following section applies this concept to auctions for sports broadcasting rights.

3.3 Market Definition in Auctions for Sports Broadcasting Rights

Sales of broadcasting rights for sports events typically occur in one or another form of auction. Auction markets are characterised by small numbers, or imperfect competition, on both sides of the market. It is therefore not appropriate to interpret observed prices as points on traders ‘demand’ or ‘supply’ curves. Rather we observe points on ‘offer curves’. The ‘offer curve’ of the seller is a reserve price for the rights being offered. The ‘offer curves’ of the buyers are their bids, and these are determined by (but not in general identical to) their ‘willingness to pay.’

In sports broadcasting, willingness to pay for rights will be determined by the relative profitability of broadcasting particular sports events downstream to television viewers, which in turn depends upon the size and composition of the expected audience, and the terms under which alternative programming can be purchased, if the broadcaster is capacity constrained. That is, the revenues generated from broadcasting a particular event depend upon the degree to which the event is uniquely popular or faces stiff competition from competing events, which at least some viewers treat as substitutes. However the relative profitability to broadcasters also depends upon the degree to which each individual broadcaster, and the broadcasting market as a whole, is ‘capacity constrained’. This is because capacity constraints force all types of broadcasts to compete with each other for scarce broadcasting ‘space’, *making them substitutes from the point of view of broadcasters whether or not they are substitutes for any viewer.*

When broadcasting is capacity constrained then, broadcasters valuations for the rights to any particular type of programming will be determined in part by the prices of all other types of programming available. In the absence of any capacity constraints whatsoever however, this is no longer the case. Then broadcasters valuations for rights are entirely determined by the absolute levels of revenues (or profit) they generate, independent of the price (or revenues generated by) by any other programs. In what follows we are going to assume that broadcaster valuations in particular sports rights auctions are independent of

⁴¹ Manchester United already has its own pay TV channel, which is part owned by BSkyB, and many UK Premier League clubs are considering following suit to exploit pay per view revenues. See Ashurst Morris Crisp and Case Associates (1997) *The Economics of League Football*.

the prices obtained (or expected) for any other types of programming. In Section 4 below we justify this assumption.

Given the maximum willingness to pay for rights by broadcasters, price determination can then be viewed as single seller/many buyer bargaining problem. What is being bargained over is the division of the flow of profits which results from downstream broadcasts to viewers between the broadcasters and the ultimate owners or suppliers of sports events. This division will be determined by a number of factors including the number of potential buyers, informational conditions, and the design of the selling procedure itself. Clearly when there are very few potential buyers we would expect any selling procedure to result in buyers retaining more of profits which accrue to the broadcasts. When there are numerous competing buyers however, sellers can expect to do better.

Figure 3.3.1

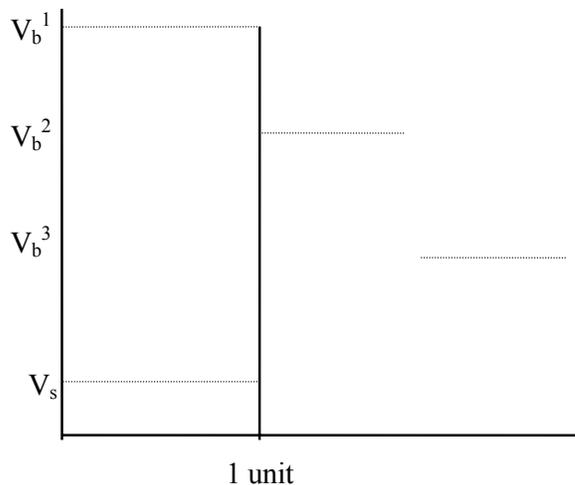


Figure 3.3.1 depicts a typical situation. The seller has a single unit of the good and his valuation is given by V_s which is the price at which he is indifferent between supplying the good or not. The buyers, 1,2,and 3 have different valuations or ‘willingness to pay’ given by V_b^i , $i = 1,2,3$ with buyer 1’s valuation being the highest etc. Any price P between V_s and V_b^1 in a selling procedure which awards the good to buyer 1 is feasible and represents a division of profit between the highest valuation buyer and the seller. Prediction of what this price will be in general is a complex matter. If the seller holds an auction, and the buyers don’t collude with each other, we can confidently predict that he will obtain at least V_b^2 , or a price equal to the valuation of the second highest valuation buyer. This is true no matter what auction form the seller uses by the well-known Revenue Equivalence Theorem in this simple setting. (In general of course the seller can do better than this if he sets an optimal reserve price exceeding his own valuation).⁴²

Applying Version 3 of our market definition (test to an auction market such as the one described is not different in principle to applying it any other situation. Here the seller has only a single unit of the good to supply and his own valuation may be determined by the

⁴² For expository purpose we are treating the auction as a ‘private values’ auction which is probably not an accurate assumption, however this is inessential; see Section 7 below.

cost of obtaining or producing the good, or the value to him of retaining it for personal use. Similarly each buyer only wishes to obtain a single unit. However the same notions of competition and substitutability apply directly. If the seller were, for example, auctioning off a tin of ordinary baked beans then he would find that his valuation and the valuation of each buyer were identical (since each could buy or sell baked beans on the market for the same price). He would realise a price of $V_s = V_b^i$ $i = 1,2,3$ from his auction therefore and achieve no surplus. In this case the value of the sellers' product to a vertically integrated buyer and seller is simply the common valuation. If, on the other hand, the seller is selling a unique product with no very close substitutes and for which there are many buyers with very high valuations, he can expect to make a considerable profit. The maximum such profit is the highest valuation of any buyer, less the seller's valuation, or the value which the vertically integrated seller and the highest valuation buyer would jointly place upon it. This leads us to set down the following definitions:

*A good or service for sale in an auction is a relevant antitrust market if the seller can potentially achieve a significant increase in price over his own valuation, assuming that all other potential substitute products are sold at competitive prices (i.e. the seller's valuations in auction markets).*⁴³

4. The Value of Rights

4.1 Competition, Capacity Constraints and Substitutability

We noted above that the broadcasters willingness to pay for broadcasting rights will depend both upon the absolute revenues or profits generated by showing a particular broadcast and, where only a single or limited number of units is desired, the prices of all other revenue-generating broadcasting rights. The revenues generated will of course be a function of the expected audience for the broadcast, and hence the degree to which it directly competes with other broadcasts for audience share. That is, competition between broadcasts for viewers (revenues) is clearly a fundamental determinant of broadcaster willingness to pay, which in turn is a fundamental determinant of both the degree of market power and market definition at the level of broadcasting rights.

However when broadcasting capacity is 'scarce' relative to the number of broadcasts or programs available, all broadcasts become potential substitutes for the broadcaster, i.e. all are alternative sources of revenue generation. It has indeed been argued that what is relevant for market definition in broadcasting rights is the degree to which different events are viewed as substitutes by broadcasters in their schedules. We agree that this is a relevant consideration in evaluating evidence for market definition, but how relevant depends upon the relative scarcity of broadcasting space. It is easiest to explain why in the context of a simple example.

⁴³ Equivalently, a good or service for sale in an auction is a relevant antitrust market if the highest valuation of any buyer exceeds the seller's valuation by a significant amount, given that all other potential substitute products are sold at competitive prices.

4.1.1 A Simple Model of Capacity and Competition in Broadcasting

Consider a number of ‘free to air’ broadcasters each of whom has 1 unit of broadcasting space to fill (the per period capacity constraint) and who earn revenues by selling advertising.⁴⁴ We interpret each broadcasting unit as a ‘channel’ in the sense that each period every unit competes for viewers with all other units. Broadcasters are solely concerned with maximising profits and do not care what programs are used to ‘fill up’ their unit, so long as they are the most profitable ones.⁴⁵ Suppose further that there are only two types of programming available which the broadcaster must purchase from their original producers: sports events and documentaries. We will assume that documentaries are produced by a competitive industry at a constant cost per broadcasting unit of C_d .⁴⁶ Sports events, on the other hand, are monopolised and in strictly fixed supply, but cost nothing to produce (i.e. they would occur whether or not they would be broadcast on TV). One unit of sports broadcasting is available per period.

We wish to construct the simplest possible example capable of illustrating the main points, so we assume that there are exactly $2V$ units of demand in total per period. If both types of programming is available in any period, the demand sports is V and the demand for documentaries is V (e.g. it is easiest to think of there being $2V$ “viewers” with unit demands each period, half of whom prefer sports to documentaries when both are available). We also assume that each unit of demand of either type is worth precisely one unit of advertising revenue to any broadcaster, so if an audience of V is attracted to a broadcast, broadcast revenues are just V .

We will allow for the possibility of viewer or demand-side substitutability between broadcast types in the following simple way. The case of **no viewer substitutability** means that no viewer likes to watch both types of programming, so each program type attracts precisely V units of demand when broadcast either separately or simultaneously. **Imperfect viewer substitutability** means that broadcast alone sport attracts $(1+\alpha)V$ units of demand (viewers), documentaries alone attract $(1+\beta)V$ units of demand, and when broadcast simultaneously each attracts V units of demand. We will assume that sport is more ‘popular’ in the sense that at least as many documentary viewers are willing to watch sport when it is all that is on, as there are sports viewers who will watch documentaries, i.e. $0 \leq \beta \leq \alpha \leq 1$. Note that $\alpha = \beta = 0$ corresponds to **no viewer substitutability**. On the other hand when $\alpha = \beta = 1$, all sports viewers will watch documentaries when this all that is available, and all documentary viewers will watch sports when this is all that is available. We will call this case **perfect viewer substitutability**.⁴⁷

⁴⁴ We could construct our example using subscriptions rather than advertising as the revenue source, however only at the expense of additional complications which would add nothing essential.

⁴⁵ For simplicity we will assume that marginal broadcasting costs are zero throughout this example.

⁴⁶ We could alternatively think of documentaries as ‘in house’ generic programming with a cost of C_d per unit.

⁴⁷ Perfect substitutability usually means that given a choice, consumers buy whichever product is cheapest. However since broadcasts in this example are ‘free to air’ this is meaningless in this context. Given free to air broadcasting it makes sense to assume that all consumers watch their preferred programs. Note that α and β tell us something about the cross price elasticities of demand

4.1.1.1 Monopoly Broadcaster

A monopoly broadcaster with one unit of programming capacity (i.e. a single ‘channel’) will wish to purchase whatever type of programming results in the largest net revenues, which of course depends upon the relative price of sport versus documentaries. Documentaries are supplied perfectly competitively, so sell for C_d per unit. Denote the price of sports events, or rights, by P_s per broadcast unit, and recall that only one unit is available.

The monopoly broadcaster will then purchase sport rights if and only if $(\alpha-\beta)V + C_d \geq P_s$, and will purchase documentaries otherwise. If $\alpha=\beta=1$ (perfect viewer substitutability), then P_s cannot exceed the cost of documentaries, so documentaries impose a significant competitive constraint on the price of sports broadcasting rights. But this is also true when $\alpha=\beta=0$ (no viewer substitutability) between sports and documentaries, or indeed whenever $\alpha=\beta$. That is even though no viewer will watch both sports and documentaries, the price of sports still cannot exceed the competitive price of documentaries *because from the point of view of the broadcaster they are perfect substitutes in revenue generation*.

Only when sports and documentaries are asymmetric viewer substitutes ($\alpha>\beta$) can the price of sports exceed that of documentaries by an amount equal to $(\alpha-\beta)V$, before the broadcaster’s demand for sports is choked off. This is because given that only one type of programming can be shown at any one time, sport attract a larger total audience than documentaries, and hence generates additional revenue for the monopoly broadcaster.

In this example, whenever $\alpha = \beta$, the competitive constraint on the price of rights to sports events comes entirely from their perfect substitutability at the broadcaster level,⁴⁸ and they are substitutes because the monopoly broadcaster faces a capacity constraint. When $\alpha \neq \beta$ the two types of programming become imperfect substitutes for the broadcaster because they are not equally efficient at generating revenue (i.e. sports attracts a larger audience).

4.1.1.2 Monopoly Broadcaster with Two Channels

We now assume that the monopoly broadcaster has introduced an additional channel so two concurrent units of broadcasting space are available. The monopoly broadcaster will now wish to show documentaries on one ‘channel’ and sports on the other if and only if $P_s \leq V(1-\beta) + C_d$. $V(1-\beta)$ is the incremental revenue obtained by showing sport on one channel and documentaries on the other, versus showing documentaries on both channels, and C_d is the cost savings associated with this decision. Hence $V(1-\beta) + C_d$ is the incremental profit obtained from purchasing sports broadcasting rights. If the two types of programming are not substitutable at the viewer level ($\beta=0$), then the broadcaster is willing to pay up to the full revenue stream obtained from sports broadcasting (i.e. V) for the broadcast rights, plus the cost savings (C_d). Alternatively, when $\beta=1$, and in particular when the programs are perfect substitutes ($\alpha=\beta=1$), the monopoly broadcaster is willing to pay only up to C_d for sports broadcasting rights, because no incremental revenues are

for each program for large (i.e. infinite) price changes. That is, when documentaries are unavailable, αV viewers switch to watching sports.

⁴⁸ In the usual sense that the broadcaster will purchase whichever is cheapest.

earned.⁴⁹ The broadcaster's willingness to pay decreases smoothly as the proportion of sports viewers who will watch documentaries increases from 0 to 1 (i.e. as sports face more competition from documentaries for viewers).

Note that when only one unit of broadcasting space was available, sports rights earned a premium over the price of the generic documentary programming only if sports attracted a larger audience share (i.e. only if $\alpha > \beta$). With no capacity constraint, sports rights earn a premium so long as $\beta < 1$, which includes all cases in which documentaries are not perfect viewer substitutes for sports programming in the preferences of viewers.

4.1.1.3 *Oligopoly Broadcasters*

Matters can change quite dramatically when we introduce a second broadcaster with another unit of programming instead of expanding the capacity of the monopoly broadcaster. We will now assume that if both broadcasters show the same type of programming at the same time then the audience (and hence revenues) are divided evenly between them (on average). If documentaries sell for C_d , and both broadcasters purchase only documentaries, then each earns $(1+\beta)V/2 - C_d$. If one buys sports programming instead, then it earns $V - P_s$. Hence the sports rights owner can earn up to $P_s = V(1-\beta)/2 + C_d$.⁵⁰

If $\beta = 0$ (no substitutability) then the sports rights owner can capture up to half the broadcasters' profits from one unit of sports programming, plus the cost saving C_d . If $\beta=1$ however then the two types of programme are perfect substitutes for both viewers and broadcasters, so P_s is constrained to be no more than the cost of documentaries, C_d . The higher β , i.e. the greater the degree of substitutability for viewers, the less market power the monopoly sports rights owner will have.

Duopolist broadcasters are willing to pay less for sports rights than a monopoly broadcaster with two 'channels' because their alternatives are different. When the two - channel monopolist broadcaster purchases sports rights he only gives up $\beta V - C_d$ in profit in exchange for $V - P_s$ (since he continues to earn $V - C_d$ in profits from showing documentaries on another channel). A duopolist broadcaster however gives up $V(1+\beta)/2 - C_d$ since he ceases to show documentaries. Hence the rights are worth more to the two-channel monopolist than they are to the duopolist.⁵¹ (Another way of seeing this is to note that when one duopolist purchases sports rights, he thereby confers a positive externality

⁴⁹ We are assuming that the broadcaster must broadcast on both channels, so documentaries will be shown on one of them.

⁵⁰ A sports rights monopolist could indeed achieve this price if he could charge a 'take or leave it' price (i.e. if we endow him with all of the bargaining power). It might be thought that one way to do this would be to hold an auction and set a reservation price of $V(1-\beta)/2 + C_d$. However this assumes that the seller is able to commit himself to not attempting to sell again if no broadcaster bids in the auction. As McMillan (1995) has argued in discussing auctions for the rights to the Olympic games, broadcasters should not make this assumption.

⁵¹ We repeat that we do not assume that the monopolist broadcaster will actually pay more for the rights. Since he is a monopolist, he has monopsony power when it comes to the purchase of rights. Alternatively, he faces a two person bargaining problem. Under duopoly, each faces a three person bargaining problem, with the balance of bargaining power shifted towards the rights owner.

on the other duopolist, by moving away from him in ‘product space’. The first duopolist ignores this effect, however the monopolist broadcaster takes account of both effects).

If we now add third broadcaster, three channels broadcasting documentaries earn $(1+\beta)V/3 - C_d$, and two channels showing documentaries each earn $V/2 - C_d$. The sports rights owner can therefore obtain a maximum price of $\text{MAX}\{V(2-\beta)/3, V/2\} + C_d$. As $\beta \rightarrow 0$, the valuations of the competing broadcasters for sports programming approach two-thirds of the revenue stream earned, as opposed to one half in the case of duopoly broadcasters.

As we increase channel capacity, the competitive constraint imposed by the perfectly competitive documentary industry is progressively weakened. If N new channels are introduced then sports broadcasting rights will sell for up to $\text{MAX}\{V(N-\beta)/(N+1), V(N-1)/N\} + C_d$ so long as this is less than V . At some point entry will no longer be profitable at which point sports rights will sell for a maximum of V , the revenue generated by them, so all broadcasters will be earning approximately zero profits.⁵² At this point all of the revenues from sports broadcasts will tend to accrue to the rights owner, and none to the broadcasters.⁵³ That is, the broadcasters’ valuations of sports rights approach the revenue obtained from them.

What drives these examples is the fact that as we introduce more transmission capacity the value of documentaries falls as more are shown in competition with each other, thus driving up the value of the limited amount of sports programming available. However this is not entirely essential. We could have assumed that a number of programming rights were available for T types of programming in limited supply. So long as broadcasting capacity is less than the number of units of programming available, each type will compete with the others for scarce programming space. As we expand broadcasting capacity however the value of each type rises until it is equal to the revenues accruing to it. Once total programming capacity exceeds the hours of programming available, the broadcasters valuations for each event will equal the net revenues they earn from each type of broadcast. This will depend only upon competition at the level of viewer demand, and not upon competition at the level of broadcasters.

4.1.1.4 Conclusions

This example is admittedly quite special in its construction but illustrates a number of important points. The first is that in a vertical chain of monopolies or oligopolies, with capacity constrained distribution, disentangling the effects of the capacity constraint from the market power which accrues to the products sold down the vertical chain, is not straightforward, making market definition a treacherous exercise. In our capacity constrained monopolist broadcaster example, there are literally *two potential monopoly profits to be earned*. First there is the potential ‘monopoly’ profits which accrue to sports

⁵² That is, when $V/(N+1) < C_d$ an entrant can only earn positive profits by acquiring sports broadcasting rights, and will be willing to pay up to V for them. We are assuming that C_d is ‘small’ relative to V in this example to avoid ‘integer’ problems.

⁵³ Recalling that we have said nothing so far concerning how rights are sold, or the competitiveness of these markets. However, at this point showing documentaries earns nonpositive profits, so it is natural to expect that the price of sports rights will be bid up the maximum profit obtainable from them, at least if N is not a small number and we rule out broadcaster collusion.

broadcasts when viewed in competition with other broadcasts, given by V . Second, there is the additional ‘monopoly’ profit deriving from the exclusion of all other broadcasts, αV . An absence of significant capacity constraints is necessary to undertake market definition, because capacity constraints mean that any program will earn supranormal profits when viewers are offered few or no substitutes (i.e. all potential substitute programs have infinite prices). When this is the case, we cannot safely define a program as an antitrust market because it is impossible to tell what part of the program’s profitability (i.e. its value V) is attributable to the properties of the program itself, and what part to the broadcasting capacity constraint.

In the absence of capacity constraints reliable market definition can proceed. Following Version 3 of the market definition test it might seem clear that we should define sports rights (or sports broadcasts) as a relevant antitrust market if V is significantly greater than zero - the costs of production of sports broadcasts - because sports broadcasts attract profits of V whenever sport is shown in competition with other broadcasts, at least at ‘free to air’ prices. That is, *a vertically integrated monopolist sports rights owner and broadcaster will always be able to earn at least V from broadcasting sport in competition with documentaries*, so in the absence of broadcasting capacity constraints, we might argue that sports broadcasts earn ‘monopoly profits’.⁵⁴

However this conclusion depends upon the peculiar pricing structure of ‘free to air’ broadcasting, which means that programs are either available ‘free’ to viewers, or not available at all (i.e. at infinite prices). We have not observed what would happen to the demand for sports broadcasts versus documentaries if the price of one of them was increased slightly, holding the price of the other fixed. Hence we haven’t directly observed evidence on the cross price elasticities of demand for ‘small’ price changes. We have observed evidence on substitutability for large (i.e. infinite) price changes however. That is, we know that when sports broadcasts are unavailable for viewing, documentaries achieve an ‘audience’ of $(1+\beta)V$. If β is not much greater than zero, then we can infer that for very large, i.e. infinite, increases in the ‘price’ of sports broadcasts, only a small proportion of sports viewers switch to watching documentaries. We may then conclude that documentaries do not impose a significant competitive constraint on the prices that could profitably be charged for sports broadcasts, and hence that ‘sports broadcasts’ are a ‘relevant antitrust’ market.⁵⁵

Similarly we may safely define ‘documentaries’ as a ‘relevant antitrust market’ if V is significantly greater than C_d , and α is not much greater than zero. A monopolist documentary producer vertically integrated into broadcasting would earn at least $V - C_d$

⁵⁴ It might be objected that the vertically integrated monopolist should value the rights relative to the most profitable alternative uses for the broadcasting space. This is correct. If the number of other channels or broadcasters is fixed at $N-1$, the vertically integrated rights owner could show documentaries instead of sports and earn $V/(N-1) - C_d$, while still selling one unit of sports broadcasting rights to another broadcaster for up to $\text{MAX}[V(N-1-\beta)/N, V(N-2)/(N-1)] + C_d$. The sum of these is at least V , as claimed in the text.

⁵⁵ We do not know if an increase in the price of sports broadcasts to viewers would be profitable however. This depends upon the *own price elasticity of demand* for sports broadcasts. What we observe is that sports broadcasts earn significant profits, and, if β is not too large, that sports broadcasts do not compete with documentaries for viewers.

from broadcasting documentaries in competition with sports broadcasts, even though competitive documentary producers receive no share of this profit. Further, a small increase in the price of documentaries results in fewer than αV viewers switching to sports broadcasts (since an infinite increase in the price of documentaries results in exactly αV viewers switching to sports broadcasts). Hence sports broadcasts do not impose a significant competitive constraint on the prices that could profitably be charged to viewers for documentaries.

These market definitions do not, and should not, depend upon the degree to which broadcasters view alternative programs as substitutes. As we have seen, when broadcasters are capacity constrained then *all types of programming are substitutes for broadcasters*, in the sense that they all compete with each other to occupy scarce broadcasting ‘space’. Competition between programs to occupy scarce broadcasting ‘space’ can impose a severe competitive restraint upon the prices achieved by the owners of broadcasting rights. However the value V of a particular type of programming ultimately depends only upon its ability to attract viewers in competition with the other types of programming available, and not upon how that value is distributed between broadcasters and producers (or rights owners). *Market definition is only concerned with that value, and hence substitution at the level of broadcasters is irrelevant for market definition.*⁵⁶

4.1.2 Alternative Formulation

Similar points have been made less formally elsewhere in the literature. Martin Cave (1989) for instance, considers a version of the following example.

Program	Broadcaster Revenue	Sellers’ Valuations	Maximum Payment for One Unit	Maximum Payment for Two Units	Maximum Payment for Three Units	Maximum Payment for Four Units
A	100	30	35	40	45	100
B	90	25	0	30	35	90
C	80	20	0	0	25	80
D	70	15	0	0	0	70

The revenues accruing to each unit of broadcasting for each type A, B,C, and D are shown in the table above, along with the sellers’ valuations (e.g. costs). When the broadcaster wishes to purchase only a single unit (i.e. capacity constraint = 1 unit) then the maximum payment will be not be more than the differential revenue accruing to the next most

⁵⁶ To establish this point beyond doubt, note that all programs which earn equal profits for broadcasters are *perfect substitutes for broadcasters*, because broadcasters are solely interested in purchasing those programs which yield the greatest profit. Hence taking substitution at the level of broadcasters as our criterion for market definition would simply involve finding the sets of equally profitable (or near equally profitable) programs. However we could not conclude from such an exercise that we had found the smallest set of programs for which a hypothetical monopolist producer of such a set of programs could profitably impose a sustained and significant increase in the price of the program above the competitive levels.

profitable unit plus the cost savings. That is, at any price exceeding 35 for Program A, Program B could achieve a small profit by offering a price just above the valuation of 25. When two units are demanded (capacity doubled) the prices of program A and program B cannot exceed the differential revenue plus cost savings from the next best choice, and so on. The point is that each unit competes with the ‘marginal’ unit for access to scarce broadcasting capacity. It will always be profitable for the owner of an excluded unit to offer a price infinitesimally above the valuation for that unit, placing competitive pressure on all of the inframarginal units.

When broadcasting capacity reaches the number of program units available however, program units no longer compete directly with each other for scarce broadcasting capacity (they will in general compete for viewers however, however in this example it is assumed that there is no reduction in the revenues accruing to each program as the number purchased increases).

A slightly more general representation of this example is the following. Assume T independent program providers with valuations C_1, C_2, \dots, C_T . The broadcaster’s revenues are given by $R_1 - r_1(n), R_2 - r_2(n), \dots, R_T - r_T(n)$, where n is the number of programs demanded. Revenues from each program fall as the number demanded and broadcast increases, so $r_j(1) = 0$, and $r_j(k+1) \geq r_j(k)$. We assume $R_1 - r_1(n) \geq R_2 - r_2(n) \geq \dots \geq R_T - r_T(n)$, and assume $R_1 - r_1(n) - C_1 \geq R_2 - r_2(n) - C_2 \geq \dots \geq R_T - r_T(n) - C_T$. Then when $k < T$ units are demanded, we must have: $P_i \leq \{(R_i - r_i(k)) - (R_{k+1} - r_{k+1}(k))\} + C_{k+1}$ for all $i \leq k$. When $k \geq T$ programs are demanded this reduces to $P_i \leq R_i - r_i(k)$.

4.1.3 Conclusions

These examples tell us the following. First, when broadcasting is capacity constrained the willingness to pay of broadcasters for programming rights depends upon the prices of all other programming rights, as they are all substitute sources of revenue generation. This does not imply that all program types are in the same antitrust market, however untangling the effects of broadcasting constraints from the market power which accrues to any particular type of programming is not straightforward. A monopoly broadcaster with limited capacity will typically be able to earn large profits from any type of programming when not in competition with other types. As the broadcasting capacity constraint is eased however, the willingness to pay of broadcasters for broadcasting rights approaches the actual value of the rights in competition with other broadcasts (i.e. gross revenues earned minus marginal broadcasting costs). In addition, as the number of competing broadcasters increases, we should expect the prices received by rights owners to approach these values. When the number of competing broadcasters becomes large, broadcasting should tend towards a zero profit industry, and any monopoly profits will increasingly accrue to the creators of valuable programming.

All of this means that for the purposes of the current market definition exercise we would be justified in taking the prices received for broadcasting rights by rights owners as reasonable estimates of the revenues they earn for downstream broadcasters if we are confident that broadcasting capacity is no longer a relevant constraint, and if broadcasting is becoming a competitive industry. With the advent of satellite, cable and digital technologies we are reasonably confident that capacity is no longer a constraint in this industry. We are less confident that broadcasting is a competitive industry anywhere in Europe. However in the absence of capacity constraints this simply means what

broadcasters pay for rights will be something less than their valuations, but that their valuations will be approximately equal to the net revenues which accrue to any broadcast.

It is probably an accurate characterisation of the preceding decades to say that prior to the advent of pay television and new broadcasting technologies, broadcasting in Europe was capacity constrained and largely monopolised. Thus owners of sports (and other) rights tended to realise only small part of the gross revenues that their rights earned for downstream broadcasters. The prices paid for rights have since risen dramatically as both capacity constraints have been eased and as competition between broadcasters has increased. However we can be sure that even when rights were sold relatively cheaply, rights owners received at least their own valuations, and it is clear that many rights owners now receive prices far in excess of this. This tells us that rights owners have market power according to our discussion above. We shall also be able to deduce that various rights should be defined as antitrust markets if we can show that the various sports events do not to compete with each other for viewers. This is the purpose of our empirical evidence presented in Section 5.4.

4.2 Exclusivity and Market Power

It is useful to extend our example to discuss the role of exclusivity in the sale of sports rights. We have so far assumed exclusivity above in the sense that we have assumed that there was only one unit of sports broadcasting available, so that sport could not be broadcast on more than one ‘channel’ in any period. However we might have equally well assumed that the sports rights owner could sell the rights to broadcast sports events to as many broadcasters (channels) as desired.

To see how this would change the above analysis we simplify by letting $\alpha=\beta=0$ (that is sports and documentaries do not compete for viewers when there is more than a single channel available). Consider the case of three broadcasters, who are willing to purchase the exclusive rights to broadcast sports programming for up to $P_s \leq 2V/3 + C_d$. The two documentary broadcasters earn profits of $V/2 - C_d$ and the sports broadcaster earns profits of $V - P_s$. In the absence of an exclusive contract, the sports rights owner could then sell his broadcasting rights to a second broadcaster for any price less than C_d , and will do so since $C_d > 0$. But the first broadcaster to purchase sports rights would have predicted that this would happen and that his profits will in fact be $V/2 - P_s$ instead of $V - P_s$, and hence his maximum price should have been no more than $V/6 + C_d$. However since either of the broadcasters purchasing sports rights has the option of showing documentaries instead and earning $V/2 - C_d$, in equilibrium P_s cannot exceed C_d and the sports rights owner earns at most $2C_d < 2/3V + C_d$. Hence an inability to sell sports rights exclusively reduces the potential value of the rights to the rights owner. (It is straightforward to show that as we increase N the price of sports rights remains bounded above by C_d , or the price of the alternative programming).

What nonexclusivity does not do however is to reduce the total value of sports broadcasts which is still V . Rather it effects the distribution of ‘bargaining power’ between the rights owner and the broadcasters and the relative profitability of the two type of programming. In the nonexclusive equilibrium, sports are broadcast on two channels and documentaries on one channel. This means that the documentary broadcaster earns profits of $V - C_d$ and sports broadcasters at least $V/2 - C_d$. Indeed this is a more efficient industry configuration compared to the case of exclusive sports broadcasting. Total value generated by the

broadcasting industry is still $2V$ but costs have been reduced by C_d . Hence the surplus is $2V - C_d$ rather than $2V - 2C_d$. Exclusivity allows the monopoly sports rights owner to achieve a greater share of the value of sports broadcasting V , but at the cost of inefficient duplication of the ‘generic’ documentary programming.⁵⁷

In this model exclusive selling of sports rights does not increase the total revenues which are earned by sports broadcasts, but it does increase the share of these revenues obtained by the rights owner, at the cost of inefficient duplication of total industry programming costs. It is clear however that the value of exclusivity is higher the larger is V relative to the cost of the alternative programming. That is, under exclusivity the sports rights owner can realise up to $\text{MAX} \{NV/N+1+C_d, V\}$ from the sales of sports broadcasting rights and only SC_d under nonexclusivity, where S is the number of channels broadcasting sport in equilibrium. But $S < N$ and $C_d < V/N - 1$ in any viable industry configuration, so profits under nonexclusivity never exceed profits under exclusivity.

4.2.1 Competition for Advertisers or Viewers

In order for exclusivity to increase the value of sports broadcasts to broadcasters and rights owners jointly we need to relax the assumption that advertising rates are fixed by a competitive advertising industry. We might then loosely follow Hart and Tirole (1990) in characterising exclusive contracting as a means of preventing downstream rent dissipation by broadcasters. That is, a broadcaster with the exclusive rights to broadcast sports to viewers will face a ‘one seller - many buyer’ bargaining problem with advertisers, and achieve a given level of (‘monopoly’) advertising revenues for sports broadcasts. If sports broadcasting rights are sold nonexclusively however, then two or more broadcasters will compete for advertising revenues for the same broadcasts. This is a ‘many seller- many buyer’ bargaining problem, and the typical result will be that the total amount of advertising revenue achieved for the sports broadcasts will be reduced. Exclusivity allows the ‘monopolist’ broadcaster to extract greater rents from advertisers.

If we consider competition between pay TV, instead of ‘free to air,’ broadcasters, an identical story can be told, now following even more closely the Hart and Tirole (1990) analysis. Now a broadcaster with exclusive sports broadcasting rights will be better able to extract monopoly rents from viewers rather than from advertisers. Exclusivity reduces consumer surplus while increasing the total broadcasting revenues available for division between the rights owner and the broadcaster.

4.2.2 Concluding Comment

In both of the cases considered above, exclusivity results in an unambiguous reduction in economic welfare and efficiency. Its sole purpose is to increase monopoly profits either

⁵⁷ This conclusion is quite general so long as sports broadcasts are less costly to produce than the alternative programming. Exclusivity will result in sports being broadcast on too few channels and hence industry costs will not be minimised. It might be thought that if the monopoly sports broadcaster could licence sports programming to other broadcasters then this effect will be mitigated. However this is not the case unless all other broadcasters are earning zero profits. Since the monopoly sports broadcaster realises all of the value of sports broadcasting (V), he will only licence to n other broadcasters for a price of V/n , meaning that the profits of the licensed broadcasters are zero. If positive profits can be earned on documentary programming (i.e. if $V/N > C_d$ when there are $N+1$ broadcasters in total) licensing will not occur.

for rights owners or broadcasters, or both. In our first example exclusivity increases profits to rights owners at the expense of inefficient duplication of ‘competitive’ programming costs. In the second example, exclusivity allows broadcasters and rights owners jointly to extract greater monopoly rents from advertisers or viewers.

That exclusivity has these potential effects is widely recognised by broadcasters, and we can do no better than to cite (the EBU?) on this:

“...There are many reasons why rights holders may sell rights exclusively to one broadcaster. Rights holders may realize a higher value from exclusive sale if competition between broadcasters on the basis of the same content reduces their aggregate willingness to pay. This will also explain why rights holders are willing to sell, and broadcasters are willing to buy, bundles of rights that also contain rights which broadcasters will neither exercise themselves nor sell on to other parties.... If for example, edited highlights shown on free to air TV undermine the willingness to pay of customers to pay for watching the event on pay TV, then pay TV providers may want to purchase the right to show edited highlights even if they do not intend to exercise these rights.”

5. Empirical Evidence of Market Power and Market Definition

5.1 The Evolution of the European Television Market since 1980

European broadcasting markets have changed radically over the past twenty years, and are due for even further radical change in the years to come, with the advent of digital technology. From a situation of monopoly or duopoly broadcasters each with a small number of channels in the early 1980s, most major European countries now have both significantly expanded television capacity, and competition between ‘public service’ broadcasters, free to air commercial channels and pay television. This subsection gives a brief empirical overview of the development of the television markets in Europe. This evidence is important in order to develop a clear picture of the price and comparative audience data which will be presented subsequently, and is particularly helpful in understanding why the prices paid for the rights for major sports events have risen so dramatically in recent years. While no European broadcasting market could yet be described as fully competitive, competition is clearly intensifying, and one result is that increasingly fierce bidding contests to obtain valuable sports broadcasting rights is having the effect of transferring profits away from downstream broadcasters and towards upstream rights owners.

5.1.1 The evolution of broadcasting capacity and competition

Before 1983 there were almost no commercial competitors for Public Service Broadcasters in Europe. The (minor) exceptions were the UK and Italy. By 1997 however the European television market had undergone a fundamental change. Competition between terrestrial broadcasters had increased everywhere, and cable and satellite companies have entered the broadcasting markets in every European country except Portugal and Italy. Table 5.1.1 immediately below provides a brief cross sectional view of the situation in 1982 versus 1997 in five major European countries.

The table does not include any Pay Per View or Digital Channels as these are still in their infancy and not enough data available. The list above covers the channels that bid for sports rights in each of these countries.

Table 5.1.1 Broadcasters in Five European Television Markets (Including Sports Channels)

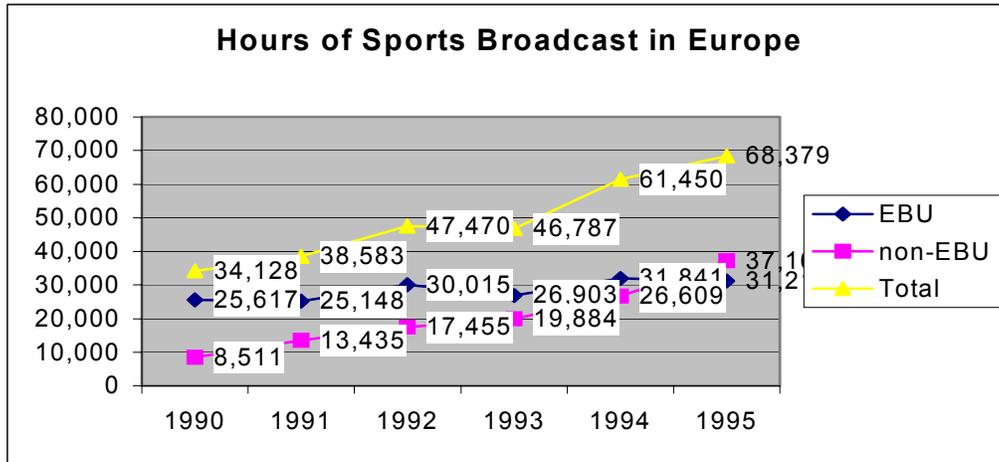
Country	National Broadcasting Channels in 1982	National Broadcasting Channels in 1997	National Broadcasting Companies in 1997
United Kingdom	BBC 1&2, ITV	BBC 1&2, ITV, Channel 4, Channel 5, BSkyB (45+ channels), Cable(45+ channels), Eurosport	BBC, BBC, ITV, Channel 4, Channel 5, BSkyB, Cable Companies,
Spain	TVE 1, La 2	TVE 1, La 2, Antena 3, Tele 5, Canal+ Espana, Sportmania, TV3, Eurosport	RTVE, Antena3, Tele5, Regional Broadcasting companies (associated in FORTA), Sogecable
Italy	RAI 1,2&3	RAI 1,2&3, Canale 5, Italia 1, Rete 4, Eurosport, TMC, TMC2	RAI, Mediaset, Cecchi Gori,
Germany	ARD, ZDF, ARD Regional channel (e.g. B3, WDR3, H3)	ARD, ZDF, RTL 1,2 Super RTL, Sat 1, Vox, DSF, Premiere, Eurosport, Cable 1, N-TV, Pro 7, Arte, 3Sat, Phoenix, MTV, Viva, Viva2	ARD, ZDF, CLT-UFA, HMR, Pro7, Vox, DSF, Premiere, Viacom
France	F1, F2, F3	F1, F2, TF-1, M6, Canal Plus, Paris Premiere, La Cinquieme, ARTE, Eurosport, Cable and Satellite	TF-1, F2/F3, M6, Canal Plus, Paris Premiere

Source: Zenith Media. *Eurosport is partly owned by the EBU members

As Table 5.1.1 illustrates, in four of these five television markets there were no private competitors to the public sector broadcasters before 1982. The exception is the UK market. There ITV was formed in 1955 and had a monopoly on advertising until 1990. The second private channel (Channel 4) was only set up in 1982. Thus the capacity constraint in all of the European markets was very strict in the early 1980's.

We have no data on the total number of hours of broadcasting time available in Europe between 1982 and the present. We do have data showing that the capacity devoted to sports broadcasts has doubled from just above 30,000 in 1990 to just under 70,000 in 1995 however, as shown in Figure 5.1.1 below.

Figure 5.1.1



Source: Kagan, 1996

Figure 5.1.1 clearly demonstrates that this growth has come principally from non-EBU broadcasters, i.e. private broadcasters. In comparison the capacity devoted to sport on the mainly public sector EBU broadcasters has grown only very slowly.

That this growth of sports broadcasting capacity is part of a much wider increase is demonstrated by the following data about the share of sports broadcasting in total broadcast hours.

Table 5.1.2. Sports Broadcasts as a Percentage of Total Hours Broadcast

Country	Percentage of Sports in total hours broadcast.			Comments
	1993	1994	1995	
United Kingdom	6.5	6.1	10.4	
Spain	6.7	3.8	3.6	Excludes Canal Plus and TV3
Italy	6.6	6.4	6.3	
Germany	5.3	2.8	7	
France	3.5	4.2	3.8	Excludes Canal Plus

Source: BCC – European Television Programming

Table 5.1.2 shows that the share of sports broadcasting in the five major European television markets has remained roughly stable or increased slightly, with only the UK an exception to this trend. At the same time total broadcast hours of sport have increased twofold. This suggests significantly higher overall broadcasting capacity in general.

Data collected by Zenith Media show that the degree of relaxation of broadcasting capacity constraints due to entry by cable and satellite channels varies widely in Europe. It is particularly prevalent in Germany where over half the population can receive such programs and view them. In Spain and Italy there is almost no audience for cable and satellite yet.

In **Spain** there are five channels with complete national coverage. There are also several large regional channels. Originally there were just the two national public sector channels. In 1989 and 1990 two national private free-to-air channels were set up. Finally there is Canal+ which is part free-to-air part encrypted. It had an audience share of 2.3% in 1995.

In **Italy** there are six national free-to-air channels, three belonging to Mediaset (a private company) and three operated by RAI the public sector broadcaster. There is a third near national group -Cechi Gori- which reaches only about 3% thus far. This duopoly situation has existed since the mid 1980's.

In **France** there are seven terrestrial channels with national reach or near national reach. Here the first private channel was a Pay-TV channel. It started as an encrypted terrestrial channel in 1984. Only in 1986 and 1987 did M6 and the privatised TF1 (France 1) break the state monopoly on commercial air-time. In 1994 a further terrestrial channel was added.

In the **UK** there are five major terrestrial channels. Of these two are public sector channels, and three are private free-to-air channels. There is a plethora of cable and satellite channels but these have only recently achieved more than 10% audience share taken together. Digital television is currently being introduced in the UK where it is estimated that each digital broadcaster type (satellite, terrestrial and cable) will have up to 200, 24 hour channels available.

In **Germany** there are three public broadcasting frequencies, two of which are shared by one channel. There are a further three private satellite channels with an audience share close to or above 10%. Germany is the only market of these five in which Satellite and Cable TV have more than 20% of audience share.

Figures 5.1.2 and 5.1.3 illustrate some of this. Figure 5.1.2 shows the reach of satellite and cable whereas the Figure 5.1.3 depicts the audience reach.

Figure 5.1.2

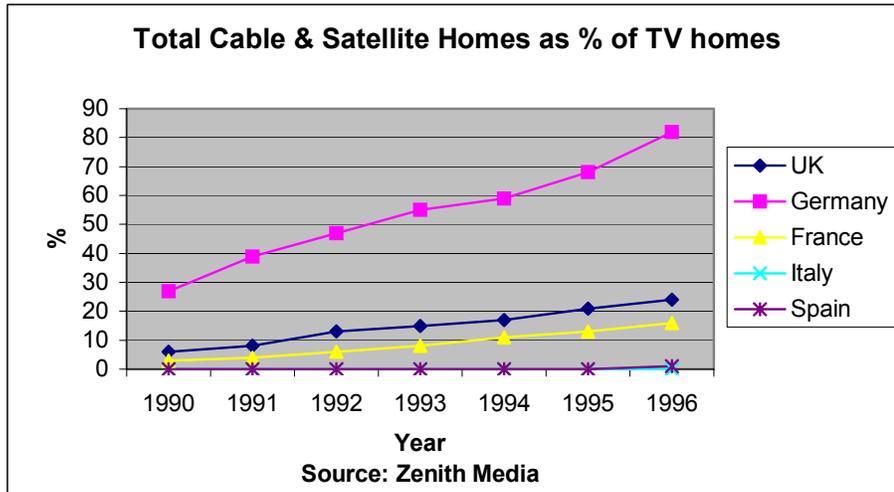
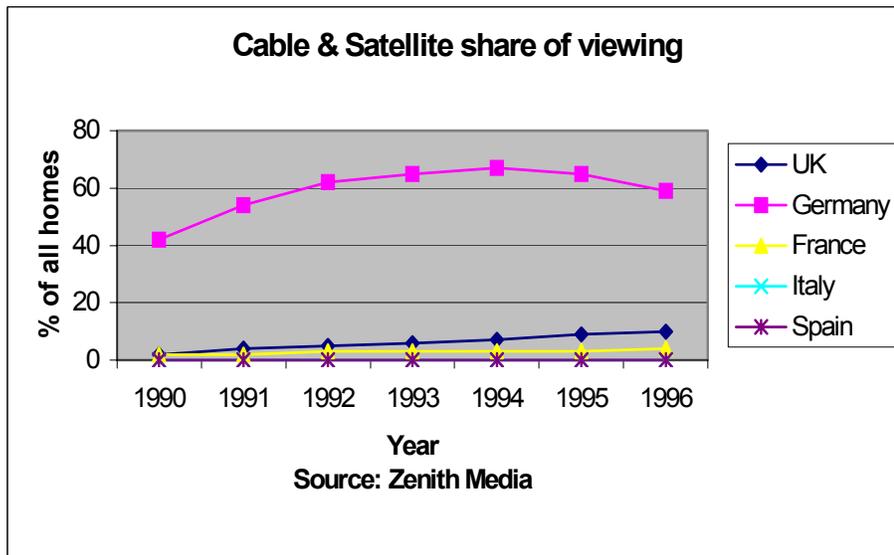


Figure 5.1.3



The result of all of this is that broadcasting capacity and broadcaster competition has increased dramatically in almost all major European countries since the early 1980s. The amount of broadcasting capacity devoted to televising sport has grown most rapidly of all. Although broadcasting markets in different European countries have evolved at different rates, the UK probably serves as a useful model for all. From a situation of virtual duopoly in the early 1980s (with only the BBC and ITV), and only three channels available broadcasting only part of the day,⁵⁸ there are currently five 24 hour terrestrial channels, and more than 50 satellite and cable channels.⁵⁹ Terrestrial digital (On Digital and BBC Digital) now offers an additional 20-25 channels, and as noted, digital capacity is expected to make available 100's of new channels in the months and years to come. The advent of digital technology, which requires neither a cable nor a satellite network, seems likely to change the situation in all of the European broadcasting markets radically in the very near future.

5.2 Prices of Sports Rights

This section provides data demonstrating the dramatic increase in the price of sports rights in Europe since the liberalization of the European television markets in the 1980's. Data on sports rights are not generally freely available and we have collected evidence only on the prices of sports rights that are in the public domain. We have obtained useful data on the rights to the following events or sports:

1. The Olympic Games
2. The Football World Cup
3. Premier League Football
4. Bundesliga Football
5. Five Nations Rugby

The data will be presented both in nominal prices and in real prices relative to a base year. The data clearly shows that the prices paid for sports rights have, in most cases, increased dramatically in real terms. We will also present viewing figures for these sports, where these have been available. This is in order to assure ourselves that increases in the prices paid for sports rights do not simply reflect a sudden increase in demand for these sport by viewers.

⁵⁸ The BBC and ITV broadcast until around midnight until the mid 1980s and morning television was only introduced in 1982.

⁵⁹ BSkyB currently offers a basic package of 36 channels and an additional 11 'premium' movie channels and 6 'premium' sports channels. Cable offerings are evolving, but similar.

5.2.1 The Olympic Games

The Costs of the European Rights to the Olympics for the EBU

Year	Cost of Summer Rights in US\$millions		Cost of Winter Rights in US\$ millions	
	<i>Nominal</i>	<i>Real*</i>	<i>Nominal</i>	<i>Real*</i>
1984	22	30.5	4.1	5.7
1988	30.2	31.3	5.8	6.0
1992	94.5	85.4	27	24.4
1994	-	-	24	19.9
1996	240	181.4	-	
1998	-	-	72	51.3
2000	350	238	-	
2002	-	-	120	81.6
2004	394	267.9	-	
2006	-	-	135	91.8
2008	443	301.2	-	

Source: BCC/IOC/Godard/Koranteng *In 1985 US\$. Real prices are calculated using the consumer price deflator provided in European Economy No. 66. and we assumed that contracts are made four years in advance of the event. Prices for the 2000-2008 games have been deflated using the 1996 deflator.

The table clearly illustrates that the cost of television rights to the Olympic Summer games have increased dramatically in real terms since 1988 after remaining almost constant before this date. The same is true for the Olympic Winter games with the exception of 1994 when, due to the change in timing of the Winter games, there was a temporary decrease in the cost of rights.

5.2.1.1 Olympic Games viewing patterns

There is some comparative data about viewing patterns for the 1988/1992/1994 Olympic winter games. This evidence comes from the submission of the British Olympic Committee to the House of Commons National Heritage Committee who were conducting an inquiry into Sports Sponsorship and Television Coverage (HC 1993-1994).

The data show that there has been some increase in viewing of the Olympic Winter Games between 1988 and 1994. They also suggest that the cost per viewer of the rights to the Olympic Winter games increased between 1988 and 1998 for the BBC. Thus it seems that even when adjusted for inflation and increased audiences the costs of broadcasting Olympic Winter games rose over this decade.

Year of the games	Cost of Winter Rights in million US\$ for EBU	UK audience in million viewers	EBU audience in million viewers	Real \$ spent per viewer	
				UK *	EBU
1988	6.0	130.1		a-0.04	
1992	24.4	140.5		a-0.17	
1994	19.9	184.8	1078.1	a-0.10	0.01
1998	51.3	55	566.9	a-0.93	0.09

Source: British Olympic Committee/ BCC. *Here we are dividing the cost of the rights to the EBU by the audience only in the UK. This is of course a false comparison. However if the share of EBU expenditure on Winter Olympics Sports Rights paid by the BBC (a) remained constant we can determine whether the cost per viewer of these rights increased/decreased for the BBC. The value of the numbers themselves remains meaningless however.

The high UK viewing figures in 1994 can be explained partially by the effect of Torvill and Dean (UK) who attracted an audience of 23 million . The Ice Dance Final in Lillehammer (1994) was the top sports program in UK in 1994 beating the Football World Cup final. In 1998 the Olympic Winter games do not figure in the top 40 Sports Programs for the UK at all. These games were held in Nagano/Japan and most of the live broadcasts were at night.

We also have some comparative data on the viewing patterns for the 1992/1996 Summer Olympic Games.

Year of the games	Cost of Summer Rights in million US\$ for EBU**	EBU audience in million viewers	Cost of the Rights Per Viewer to the EBU in million US\$.
1992	85.4	6000	0.014
1996	181.4	3918	0.046

Source: BCC

These data show that the cost of the Rights to the Summer Olympic Games per viewer rose between 1992 and 1996 for the EBU. The fall in the audience figures can be explained by the fact that the 1992 games were held in Barcelona, whilst the 1996 games took place in Atlanta. Nonetheless prices for the rights still increased. Thus there is some evidence to suggest that the cost of Olympic Sports Rights to the EBU has been rising even when the total audiences for these events have been constant or even falling.

5.2.1.2 Bidding for Olympic Rights

The Television Rights for the Olympic games in Europe have always been sold to the EBU. We know that in the latest round of bidding the EBU bought the rights to all games between 2000 and 2008 for a total of US\$1,44 billion. News Corporation had bid US\$2 billion for the same rights. This reflects a policy of the IOC to keep the most important events available on free TV⁶⁰.

5.2.2 World Cup Football

In 1987 the European Broadcasting Union paid £215 million to show the 1990, 1994 and 1998 football World Cups. In 1997 German pay-TV magnate Leo Kirch paid £1.37 billion for the world rights to the next three World Cups - a six-fold increase. (Guardian Archive).

It should be noted that Kirch has bought the rights for the whole world (excluding the US)– thus the prices are not comparable. It is interesting to note that he outbid the EBU for these world wide rights, the EBU bid was 78% of the winning bid.

5.2.3 The UK Premier League

Prior to 1998 the BBC and ITV had been the only contenders for the rights to UK football, and a buying cartel was operated, thereby keeping the costs of the rights to about £2 million per annum. In 1985 this meant that these two broadcasters could afford to boycott football for six months in a dispute with the sport’s governing body over costs.

In 1988 the terrestrial cartel was broken by the entry of British Satellite Broadcasting into the bidding. This induced ITV to break from the BBC and increase its bid. In 1992 BSkyB entered the bidding and has held the rights ever since. In the last round of bidding in 1996

⁶⁰ BCC

no ‘free to air’ channel was a contender. All three bidders at the time were planning to broadcast on a Pay-TV channel.⁶¹

UK Premier League Football

Year in which season(s) began	Cost of rights per season in million £		Owner of live game rights	Real cost per live game	Number of live games per season
	<i>Nominal</i>	<i>Real*</i>			
83,84	2.6	3.1	ITV/BBC	.310	10
85	1.3	1.4	ITV/BBC	.233	6
86,87	3.1	3.1	ITV/BBC	.221	14
88,89,90,91	11	10.38	ITV	.577	18
92	35.5	25.67	BSkyB	0.421	61
93	37.5	27.14	BSkyB	0.458	61
94	39.5	28.56	BSkyB	0.468	61
95	39.5	28.56	BSkyB	0.468	61
96	39.5	28.56	BSkyB	0.468	61
97	182.5	111.42	BSkyB	1.826	61
98	147.5	90.05	BSkyB	1.429	63
99	162.5	99.21	BSkyB	1.574	63
2000	177.5	108.06	BSkyB	1.715	63

Source: BCC/ Godard/ Guardian. Real figures in 1985 £’s using ONS RPI deflator. on assumption that the contracts were signed in the year before the first season of contract.

5.2.3.1 Premier League viewing figures

There is some data about the change of viewing patterns for the Premier League following the first acquisition by BSkyB of these rights in 1992. In 1991/92, ITV broadcast 18 live 90 minute games, with an average viewing audience of 7.7 million viewers, or 207.9 million viewing hours in total. In 1992/3 BSkyB broadcast 61 live 90 minute games with an average audience of 1.13 million viewers per game, or a total of 101.7 million viewing hours. Hence the move to pay television led to a decline in the number of viewers per

⁶¹ See Cowie and Williams (1996) and MMC (1999).

broadcast game in the first season of approximately 85%, while the total viewing audience (in viewing hours) was cut approximately in half.⁶²

On the other hand, in 1992/93 BBC Highlights achieved an average viewing audience of 5 million viewers. On the basis of this data the FA concluded that total viewing figures for the two seasons were virtually identical, however this treats live games as equivalent to post match highlights, from the viewers point of view, which they clearly are not. A more convincing interpretation is that approximately 85% of viewers substituted watching highlights on ‘free to air’ television for watching the live games. Despite this loss in audience however, BSkyB has found it profitable to continue charging for viewing live Premier League matches.

BSkyB viewing figures for subsequent years are reported in Section 5.3 below. We note here that the audiences for ‘highlights’ (i.e. BBC’s ‘Match of the Day’) have not changed significantly since 1992/92, while the average audience for a live Premiership game on BSkyB has increased from 815,139 viewers to 1,394,744 viewers between the 1992/1993 and 1997/1998.⁶³

This shows that the audience increases we observe cannot account for the increased value of the broadcasting rights for the Premier League shown in the tables above.

5.2.3.2 *Bidding behaviour*

1988

In this year ITV broke from the BBC and bid for the exclusive rights to the First League against BSB – this was an entirely new strategy at the time.

1992

BSkyB bought the exclusive rights to live Premier League live games in bidding contest with ITV. There were complaints that BSkyB was given an advantage by being allowed to increase its bid after learning the value of ITV’s final bid, whilst ITV was not given an equal opportunity (Harbord and Binmore, 1999; Horsman, 1997). Two weeks after signing the contract BSkyB introduced a charge on its previously been free-to-air channels.

⁶² Submission of the FA to the House of Commons National Heritage Committee Inquiry in to Sports Sponsorship and Television Coverage (HC 1993-1994). Note that this means that ITV paid on average £.05 per viewer hour for Premier League live matches in 1991/2 while BSkyB paid on average £.25 per viewer hour in 1992/3, or a five-fold increase in price per viewer hour.

⁶³ MMC (1999), Appendix 4.3. The MMC data excludes audiences in ‘Sky pubs’ and clubs, which may explain the discrepancies with the data provided by the FA in their submission. The audience for ‘Match of the Day’ was around 5 million as recently as 1998.

1996

In 1996 there were three contenders for the contract with the Premiership broadcasting rights who made the following bids:

MAI consortium: £1.2 Billion for 10 years

The Mirror Group: £650 million over 5 years (130 per annum)

BSkyB : £620 million over 4 years (155 per annum)

The three contenders had to submit sealed bids, before making a presentation to the club chairmen⁶⁴. However BSkyB had a 'meet the competition' clause in its 1992 contract which meant that it had a huge advantage in this contest (see Harbord and Binmore, 1999).

5.2.4 Bundesliga Football

Bundesliga Football is the German equivalent to the UK's Premier League. We do not have evidence on the audience figures for this league. In Germany the rights for the Bundesliga have so far always been sold concurrently to free-to-air channels and Pay-TV channels. The format in which football results are presented on television also differs from the presentation by BSkyB (e.g. there is far less live coverage of complete games). This probably reflects the preferences of the event owner, the DFB.

⁶⁴ Horsman (1997), and Daily Telegraph, June 10 1996

The Cost of Broadcasting Rights for the Bundesliga 1981-1999

Year in which season(s) began	Cost of Rights per season in million DM			Owner	Number of games per season
	<i>Nominal</i>	<i>Real*</i>	<i>Real**</i>		
81,82	6.7			ARD/ZDF	Highlights
83,84	8		9.5	ARD/ZDF	Highlights
85,86	12		13.1	ARD/ZDF	Highlights
87	18		18.9	ARD/ZDF	Highlights
88	40	44.3	43.2	Ufa/RTL	Highlights
89	45	49.2	48.3	Ufa/RTL	Highlights
90	50	53.2	52.9	Ufa/RTL	Highlights
91	55	57	56.5	Ufa/RTL	Highlights
92,93,94,95,96	140	140	140	ISPR/SAT1	5
97,98,99	180	154.5	151.8	ISPR/SAT1	

Source: BCC/Godard. * indicates figures in 1991 DM with the series is deflated using private consumption price deflator as supplied by the Bundesbank for West Germany (assuming that the contracts were signed in the year before the first season of a given contract). ** figures are calculated on the basis of a consumer price deflator provided in European Economy (no. 66).

These data are hard to compare with the UK Premier League data as we have no measure of viewing hours. Nevertheless a real increase of the cost of rights is clearly visible. We also lack information on the bidding process that could help us explain the development of the series, specifically why the increase with the last contract was relatively small.⁶⁵

⁶⁵ Possibly explained by the very keen interest of some German clubs in moving to PPV television for each game.

5.2.5 UK Five Nations Rugby

Country	Cost of Broadcasting Rights in million £					
	1994-1996			1997- 2001		
	Nominal	Real*	Owner	Nominal	Real*	Owner
England	6.75	4.6	BBC	87.5	54.9	BSkyB
Wales,Eire, Scotland	20.25	13.8	BBC	40	24.4	BBC

Source: BCC Real figures in 1985 £'s. The series is deflated using ONS RPI .

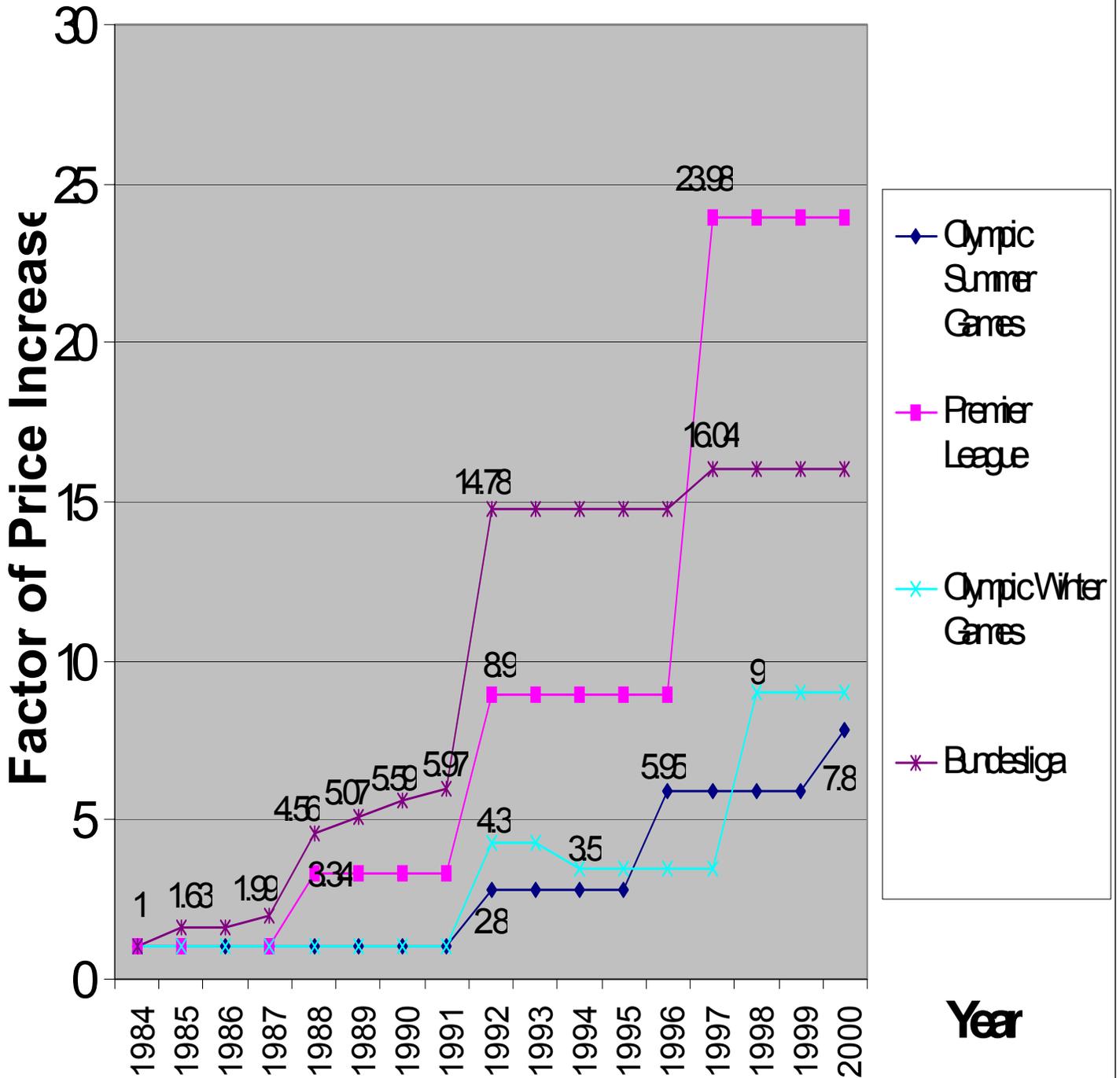
Here again the switch to pay TV has brought big increases in revenue for the owners of the event rights. It should be noted that BSkyB offered to pay Wales, Ireland and Scotland £40.5 , £20 and £18 million pounds respectively at the same time as they secured the deal for £87.5 million pounds with England. This would have meant that the total contract BSkyB were willing to offer in 1997 was worth £166 million. Thus their offer represented an increase in real terms of a factor of 5.65 over what the BBC paid in 1994.

5.3 Relative Price Changes in Rights

It is commonly suggested that market definition for differentiated products should concern itself with rates of change of prices, or price correlations, over time.⁶⁶ The figure below compares the price changes in the prices for rights for which we have sufficient data since 1984. It reveals an interesting pattern of increases since the mid 1980's which in our view is explained by the change in broadcasting capacity and competition in the European broadcasting markets. The data does not indicate a sufficient similarity in the rates of change in rights prices to allow any conclusions to be drawn however.

⁶⁶ C.f. NERA (1992) or Stigler and Sherwin (1985)

Sports Rights Price Increases Relative to 1984



5.4 Empirical Evidence of Substitutability

The standard methods used to define a market are based on price substitution, e.g. the SSNIP test, residual demand tests, cross price elasticities, etc. But these tests are not feasible in the case of sport events on TV because viewers do not pay any explicit price to view an individual program. This is quite clear in free-to-air TV, but it is also true for the pay-TV since pay-TV contracts usually involve monthly or annual payments for bundles of channels, but not individual prices for each program.⁶⁷ Therefore, the approach to be taken in this case must be different.

A program Y is said to be a gross substitute for program X if the cross price elasticity of demand for Y against X is positive (i.e. if more Y is viewed as the price of viewing program X increases). Our data in this section tests whether major sports broadcasts are gross substitutes for each other in this sense. Specifically we test whether audience figures are lower when an sport event is broadcast simultaneously with another one, than when it is broadcast when no other sport events are simultaneously available. (We refer to this phenomena as ‘overlapping’). When program X is unavailable for viewing it has an effective price of infinity. Hence if the audience for program Y does not increase when program X is unavailable we may deduce that the cross price elasticity of demand for Y against X is zero, and for very large price increases. Our data in this section tests these one-sided hypotheses.⁶⁸

We define overlapping events as events that are broadcast on the same day. We could have chosen a more restrictive approach, for instance, events that are broadcast at the same time, but there are very few simultaneous major events. Thus, a test based on this definition that accepts that these sport events are substitutes would give us little information about the degree of substitution of most of the major sport events.

We have chosen three sports to study how overlapping can affect the stream of viewers, Premier League football matches on BSkyB, Wimbledon Tennis Finals and British Grand Prix.⁶⁹ We test the null hypothesis that each of these major sport events constitute a different market. As stated above, if viewers saw all major sport events as close substitutes we would expect that the coincidence in time of two sport events would reduce the average number of viewers of each sport. Therefore, we compare the null hypothesis of equality of means of the sample with overlapping and the sample without overlapping versus the alternative hypothesis of different means.

⁶⁷ Pay per view is obviously an exception, the problem is that it is not sufficiently extended to make any inference from this source.

⁶⁸ Observing that for example, Premier League Football is not a *gross substitute* for the Winter Olympics in the preferences of viewers does not tell us that the Winter Olympics is not a gross substitute for Premier League Football however. That is, it is possible that a rise in the price of viewing Premier League Football would result in some viewers switching to the Winter Olympics.

⁶⁹ All the figures refer to number of viewers in the United Kingdom.

5.4.1 Premier League Football

The first sport event considered is the Premier League. This event has been broadcast by BSkyB through satellite from the 1992/93 season onwards. In order to check the degree of substitutability of this event with other major sport programs we use the series of audience of all the matches broadcast by BSkyB from season 1993/94 to season 1997/98.⁷⁰ We assume that a football match overlaps with another sport program if it is broadcast the same day as the other sport program, and we consider only sports programs which appear in the ranking of the annual top-30 (top-40 for 1997 and 1998) most viewed sport programs in free to air TV.⁷¹ We run two tests using this data base, the first one is a standard Student-t test of means equality and second is an econometric model.

The results of the Student-t test of equality of means of heterocedastic samples (i.e. we do not assume that each sample has the same variance) appears in Table 5.3.1 below.

Table 5.3.1

<i>General Analysis</i>	<i>Games with Overlapping Events in Top 30 (000's)</i>	<i>Games with No Overlapping Events in Top 30 (000's)</i>
Mean of Premier League Viewing Audience	1209.7	1188.01
Standard Error	458.37	460.37
Observations	20	286
<i>Student t Test Results</i>		
Degrees of Freedom	21	
t statistic	-0.1929	
One tail p-value	0.5746	
T critical (one tail, α=90%)	1.3232	
Two tails p-value	0.8489	
T critical (two tails, α=90%)	1.7207	

The results must be interpreted in the following way. First, the mean audience figure for matches with overlapping events in the UK top 30 is higher than the same mean with no overlapping events. This suggests that it cannot be true that overlapping events imply a smaller audience. The t-Test results also support this view. If we contrast the null hypothesis of equality of means versus the alternative hypothesis that the average with no overlapping events is higher (a 'one tail' test) than the average with overlapping events, we cannot reject the null hypothesis, equality of means, with a confidence value of 90% (the standard confidence value). Moreover, if we contrast the null hypothesis that the

⁷⁰ Source: MMC, 1999.

⁷¹ Source: BARB and Taris Rating Analyser

means are equal versus the alternative hypothesis that the means are not equal, we cannot reject the null hypothesis with a confidence value of 90%.⁷² Hence the test indicates that first, viewers of Premier League matches do not substitute to other major sports events when broadcast on the same day. Secondly, these events are evidently not gross substitutes for Premier League live broadcasts, i.e. when no overlapping top 30 event is available, Premier League audiences do not tend to increase.

We have also uses an econometric model to try to explain the audience figures with a dummy variable that captures the ‘overlapping’ dates. If the availability of an overlapping event tends to decrease the audience for a Premier League match, we would expect the coefficient of this dummy variable to be significantly different from zero, and negative. In our regressions we have also included other dummy variables to attempt to explain part of the huge variation of the number of viewers per match. These other dummy variables are proxies that indicate if the match was an ‘important’ one or not,⁷³ and dummies for each season less one.

We expect the seasonal dummy variables to explain part of the variation in audience figures because the number of subscribers to the satellite channel changes from year to year. Of course, there is no special reason to chose the annual variation to coincide with the football seasons, but the results do not change using natural years. The variable that selects important matches should reduce part of the variance due to the fact that popular big teams tend to attract highest viewing figures.

The improvement of this test over the student t-Test is that we can condition with respect variables that explain part of the changes in the audience figures, hence reducing the conditional variance of the original series. This allows to more accurate predictions about the influence of overlapping events on audience figures. Notice that if we did not include these additional variables we would be effectively repeating the student t-Test.

The result of the regression appears in the Tables 5.3.2 below.

⁷² In fact, in order to reject the null hypothesis of equality of means, we would need a confidence value as low as 1-0.5746 in the one tail test and 1-0.8489 in the two tail test. This suggests that the test of the null hypothesis of equality of means is very robust.

⁷³ This variable takes value 1 if and only if the two teams that play are on average in the top 10's of the final classification of the league in the seasons 93/94, 94/95, 95/96, 96/97 and 97/98. Source MMC (1999).

Tables 5.3.2 (figures in 000's)

<i>Regression statistics</i>	
R ²	0.4644
Adjusted R ²	0.4537
Standard error	341.9668
Observations	307

<i>Variables</i>	<i>Coefficients</i>	<i>Standard errors</i>	<i>T statistic</i>	<i>Confidence interval at 90%</i>	
				<i>Lower bound</i>	<i>Upper bound</i>
Constant	678.77	46.20	14.6922	602.5433	754.9961
Big Match	395.11	40.83	9.6775	327.7424	462.4683
Overlapping	6.28	79.29	0.0792	-124.5513	137.1078
Season 97-98	539.99	61.58	8.7694	438.3929	641.5895
Season 96-97	628.26	62.07	10.1216	525.8468	730.6750
Season 95-96	453.89	61.97	7.3238	351.6370	556.1480
Season 94-95	183.89	61.98	2.9670	81.6312	286.1531

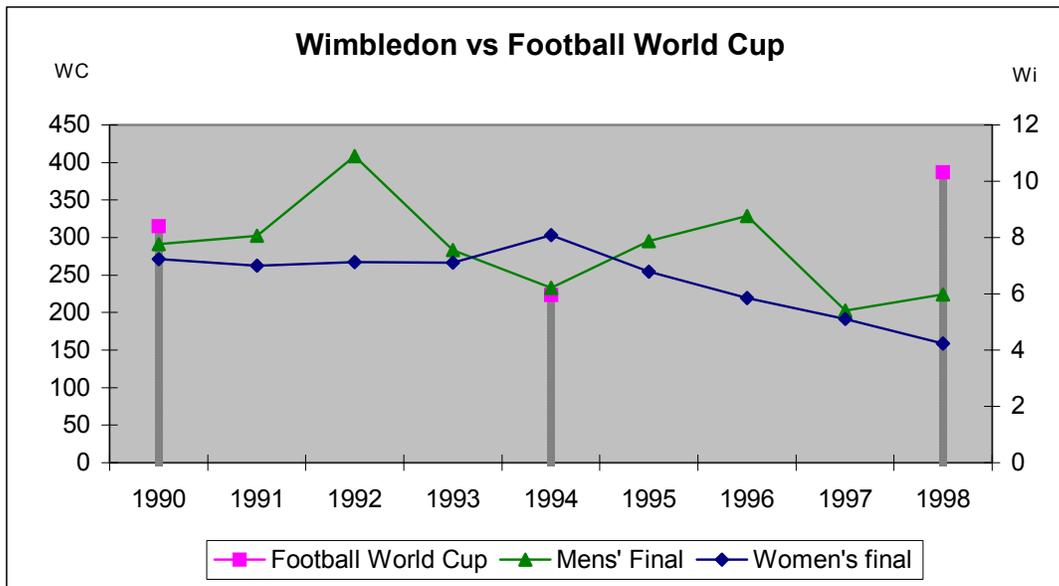
The results are consistent with the t-Test of equality of means. The coefficient of the ‘overlapping’ dummy variable is not significantly different from zero. Actually, its t-value is so close to zero that we expect that this result is quite robust.

The coefficient of the R² is not particularly high, i.e. R² = 0.4644. This is partly due to the huge amount of variance in the original data. This is normal in models where individual data is used, in contrast to models where aggregated data is used. But, the conclusion that the coefficient of the overlapping variable is equal to zero appears to be robust.

In our subsequent examples the data available do not allow for formal statistical tests.

5.4.2 Wimbledon Finals and World Cup Football

The Wimbledon Finals overlap with World Cup Football every four years, i.e. 1990, 1994 and 1998 in our sample. We check if this coincidence tends to reduce viewing figures for Wimbledon Finals. The figure below plots the evolution of the audience figures for the men’s and women’s Wimbledon finals. It also shows the World Cup audience figures.⁷⁴



A table with the data that correspond to the graph appears below.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
Mens' finals	7.76	8.07	10.89	7.56	6.21	7.88	8.76	5.4	5.98
Women's finals	7.23	6.99	7.13	7.1	8.09	6.79	5.85	5.1	4.24
Football World Cup	314.9				223.3				387.1

The graph and table above show that we likely cannot argue that the coincidence with the Football World Cup tends to reduce the number of viewers for Wimbledon finals. The 1990 Wimbledon figures are on the average. In 1994 and 1998 the Wimbledon audience was below the average, but the 1994 Football World Cup figure was also low, so it does not appear to be the case that Wimbledon viewers switched to the World Cup in that year. Moreover, the ladies’ finals figures increased in 1994, possibly explaining the men’s finals figure in the same year.

In 1998 we also observe very low Wimbledon figures for the men’s final. Nevertheless, the number of viewers is higher than for the preceding year, 1997. It appears that in both

⁷⁴ The Football World Cup figures are computed from the matches in the weekly top thirty programs per channel that it is a good proxy to the evolution of the total number of viewers.

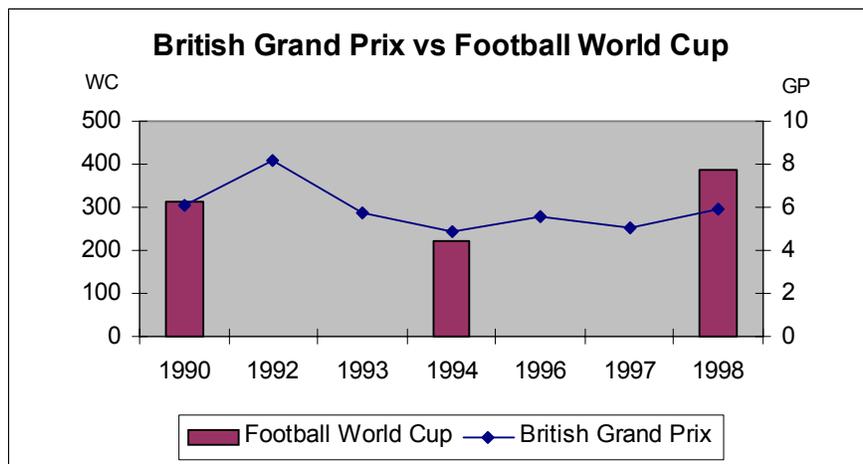
of these two years, the mens final’s figures were lower because, Henman, an English tennis player, was eliminated in the quarterfinals in 1997 and semifinals in 1998. Unusually, the top Wimbledon viewing figures for these years were not the finals, as in all the previous years, but the matches in which Henman played (for instance in 1997, Henman, vs. Krajicek, 6.59 million, and in 1998, Henman vs. Sampras, 6.45 million). It thus seems that the low 1998 figures are better explained by the Henman effect than by the Football World Cup effect.⁷⁵

The Wimbledon ladies’ final data are even more interesting. They are not below the average in the years where there is an overlap with the Football World Cup. The low figure in 1998, appears to be part of the decreasing trend from 1994.

These viewing figures indicate that the coincidence or absence of World Cup Football has little effect on the popularity of the Wimbledon finals. They also suggest that World Cup Football is not a gross substitute for the Wimbledon finals, i.e. when World Cup Football is not available for viewing, Wimbledon finals’ audiences do not, on average, increase.

5.4.3 British Grand Prix and World Cup Football

Our final example is the British Grand Prix. This usually takes place the second Sunday of each July and therefore coincides with the Football World Cup every four years. Our data therefore includes the years 1990, 1994 and 1998.



The table below complements the figure.

Year	1990	1992	1993	1994	1996	1997	1998
British Grand Prix	6.085	8.14	5.776	4.884	5.589	5.021	5.871
Football World	314.9			223.3			387.1

⁷⁵ There is also one year of extraordinarily high figures for men’s final, 1992. The cause seems that Andre Agassi, an extraordinarily popular player, reached the finals in that year after some years without participating in Wimbledon.

Cup							
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Notes: 1991 and 1995 omitted. In 1991 the British Grand Prix was not broadcast on these dates, and in 1995 only the highlights of the British Grand Prix were shown.

Again, if the World Cup were a substitute for Grand Prix viewers, we would expect decreases in the number of viewers of the Grand Prix those years. The figures do not seem to indicate an effect of this sort. The 1990 and 1998 figures are on the average. The 1994 figures are below the average, but only by as much as in 1997, a year where there was no World Cup. Moreover 1994 was also a very bad year for the Football World Cup. Therefore, there appears to be no discernible 'World Cup effect' reducing the number of viewers of the British Grand Prix.

These viewing figures again indicate that the coincidence or absence of World Cup Football has little effect on the popularity of the British Grand Prix. They also suggest that World Cup Football is not a gross substitute for the British Grand Prix, i.e. when World Cup Football is not available for viewing, British Grand Prix audiences do not, on average, increase.

Data Sources:

The Taris UK television and Video Yearbook, 1999. Edited by BARB/Taylor Nelson Sofres Ltd.

The Taris UK television Yearbook, 1999. Edited by BARB/Taylor Nelson AGB Ltd.

The AGB television yearbook, 1997. Edited by BARB/Taylor Nelson AGB Ltd.

The AGB television yearbook, 1996. Edited by BARB/Taylor Nelson AGB Ltd.

The AGB television yearbook, 1995. Edited by BARB/Taylor Nelson AGB Ltd.

The AGB television yearbook, 1994. Edited by BARB/Taylor Nelson AGB Ltd.

BARB, weekly reports on television audiences, several issues.

Appendix to Section 5.3

Sport programs that overlap with Premier League matches (date, audience in thousands).

Grand National (7/04/97, 12.017), Grandstand (same day than the Grand National, 8.493), Sport Review of the Year (14/12/97, 8.232), World Athletics Championship (3/08/97, 5.923), Spanish Grand Prix (26/10/97, 5.679), Snooker (5/05/97, 5.647), FA Cup Draw Live (7/12/97, 5.611), Monaco Grand Prix (11/05/97, 5.232), Darts Highlights (12/01/97, 4.396), Final Score (26/12/95, 7.342), Sport Review of the Year (15/12/97, 9.151), The European Match (10/05/95, 9.886), Sport Review of the Year (10/12/95, 8.964), Coca Cola Cup Final (2/04/95, 7.663), Grand Prix* (1/10/95, 6.124), Motor Racing (24/09/95, 5.774), International Snooker (2/05/94, 8.058), Sports Review of the Year (11/12/94, 7.197), Men's 100m Final (15/08/93, 11.491), Sport Review of the Year (12/12/93, 8.983).

6. The Markets for Sports Rights

On the basis of our analysis of the market definition issues, and the data available to us, we recommend adopting very narrow market definitions for all of the major sports events which we have studied. These are the Summer Olympics, the Winter Olympics, the Football World Cup, UK Premier League Football, German Bundesliga Football, English Five Nations Rugby, and possibly Wimbledon Tennis and British Grand Prix Racing. The evidence we have collected convinces us that each of these sports events earns significant ‘rents’ or supranormal profits. Equivalently, ownership of the rights to these events confers significant market power upon rights owners, broadcasters, or both. We also believe that each of these events can probably safely be defined as a relevant antitrust market, based upon rigorous market definition reasoning and available data.

7. Market Power and Collusion in Auctions

In the theoretical auctions literature, one of two types of auction are typically analysed: *the independent private values model* and *the pure common values model*. In the *independent private values model* it is assumed that each bidder’s valuation (i.e. maximum willingness to pay), for the object for sale depends only upon his or her preferences, and is independent of the valuations of any other bidder. Typical examples are auctions for rare paintings, fine China etc. In *the pure common values model* it is assumed that all the bidders place the same value on the object, but this value is uncertain to each bidders (and the seller). Each bidder is assumed instead to have an *estimate* of the item’s value, based on the bidder’s private information. Common examples are auctions for oil and timber leases, treasury bills, the radiospectrum, etc.

7.1 The Independent Private Values Model

Although it is clear that auctions for sports broadcasting rights are best described as approximating common value auctions, the intuition that collusion in auctions may be bad for competition, and therefore reduce the expected revenue of the seller, is largely based on analysis of the private values model. Theoretical papers by Graham and Marshall (1987), Mailath and Zemski (1991) or McAfee and McMillan (1992) demonstrate this effect. In these papers, collusion results in a lower expected price for the seller by removing active competitors from the auctions, whose bids could have pushed the price higher. The intuition can be easily explained with a simple example. In a second price auction, i.e. an auction in which the object is awarded to the highest bidder and the price paid is value of the second highest bid, if the bidder with highest valuation colludes with the bidder with second highest valuation, the bidder with second highest valuation does not bid, and the auction price is lowered. Graham and Marshall (1987) and Mailath and Zemski (1991) demonstrate this effect in second price auctions; McAfee and McMillan (1992) consider first price auctions (i.e. auctions in which the winner pays her own bid).⁷⁶

⁷⁶ McAfee and McMillan (1992) study only situations in which bidders collude symmetrically, i.e. where all the bidders take part in a cartel, and where all the cartels have the same number of bidders. This is needed to maintain the symmetry of the auction. First price auctions with asymmetric bidders are not easily solvable, and only partial results are available (see Maskin and

Another drawback of collusion in the independent private values model is that when the seller knows of the existence of a cartel (e.g. as in the case of the EBU), he will have an incentive to set a high reserve price in the auction in order to offset the existence of the cartel, which submits lower bids (c.f. Graham and Marshall, 1987). Higher reservation prices tend to distort market efficiency since they result in the seller keeping the object in cases where it is socially efficient to sell it. This occurs whenever the highest valuation of the bidders is higher than the valuation of the seller, but lower than the seller's (artificially high) reservation price.

7.2 The Common Values Model

Intuition from the independent private values models does not carry over directly to the common values model however. It remains true that in common value auctions a cartel removes active bidders, and this can reduce the revenue of the seller. Indeed, in extreme cases in which the seller adopts a first price or second price auction with no reservation price, if all of the bidders in the auction collude, they will submit a zero bid, and the expected revenue of the seller is zero, independently of the common value versus private values assumption. Similar intuitions also apply to the seller's incentives to set an artificially high reservation price.

However although bidder collusion may clearly have the effect of lowering the cartel's bids *ceteris paribus*, and hence reduce seller's revenues, this effect may be offset by procompetitive effects which have recently been much studied in the literature.

One reason why joint, or collusive, bidding may enhance competition in a common value auction is studied by DeBrook and Smith (1983) for first price auctions, and more recently by Krishna and Morgan (1997) for second price auctions. They argue that competition can increase with joint bidding because the members of a cartel share their private information, thus reducing the so called Winner's Curse, and this induces more aggressive bidding behaviour. The Winner's Curse in common value auctions refers to the fact that the event of winning the auction may impart 'bad news' to the winner. A bidder who bids his own estimate of the object's value will win the auction only in the event that he has the most optimistic assessment of the value of the object. He therefore learns, upon winning, that all the others bidders had lower assessments of the object's value. Conditional upon winning, the object is worth less than the winner's original estimate, so the winner learns that he should have bid less. Experienced bidders understand this effect and will shade their bids accordingly, by bidding their estimate conditional upon winning the object. In doing so they may avoid the Winner's Curse altogether.

Krishna and Morgan (1997) show that joint bidding may have two effects that alleviates the Winner's Curse for bidders. The first is due to the fact that since the cartel has more accurate information than a single bidder, the cartel gives more weight to its own information and less weight to the information that comes from the other bidders. The second results from the fact that the expected value of the good conditional on exceeding

Riley, 1999). For this reason almost all of the literature on collusion in auctions studies either second price auctions, or first price auctions with symmetric cartels.

the pooled signal of cartel is greater than the expected value of exceeding all the signals individually, and hence the Winner's Curse is less severe for all of the other bidders.⁷⁷

There are also informal arguments which suggest that joint bidding can be good for competition in common value auctions. One is that joint bidding induces more entry in the auction since small bidders may not have resources to participate in the auction on their own behalf.⁷⁸ This may occur for instance, if small bidders have 'capital constraints,' or if gathering information about the expected value of the object is costly. In these cases the entry of small firms through the cartel can be good for competition. See for instance deBrock and Smith (1983) and by Krishna and Morgan (1997).

Another informal argument in favour of cartels, quoted in both deBrock and Smith (1983) and Krishna and Morgan (1997), is that joint bidding may decrease the risk faced by the bidders through revenue and cost sharing.

There is also a small amount of empirical work which attempts to test the empirical relevance of these arguments. Hendricks and Porter (1992), for instance, study a sample of 2,510 auctions for Outer Continental Shelf leases on US federal lands off the coasts of Texas and Louisiana. They identify two types of bidders in these auctions: large firms and small, or fringe, firms. The large firms have a long experience on the bidding process and a deep knowledge of the area, since they have already purchased adjacent leases. Hendricks and Porter cite two observations: first, that the experience and knowledge of larger firms may preclude the entry of small firms; and second, that joint bidding is very common in these auctions.

They then test: (i) whether joint bidding among large firms and fringe bidders enhances competition by facilitating the entry of the fringe firms; and (ii) if joint bidding among large firms decreases competition. Their analysis indicates that joint ventures among large firms and fringe firms can increase entry and lead to fierce competition in the auction. On the other hand, the effects of joint ventures among large firms possibly lowers auction prices by reducing the amount of competition. The conclusion from this empirical work appears to be that joint bidding can have very different effects depending on the structure of the market, and in particular *which* firms form joint ventures, or cartels.

The conclusions from the study of collusion in common values auctions are thus deeply ambiguous. While collusion *might* have the effect of lowering sellers' revenues by reducing the number of active bidders in an auction, informational and other effects go in the opposite direction. In the absence of further theoretical work, and empirical studies of particular cases, it is not possible to say more than this at present.

8. Conclusions

8.1 Market Definitions

Most attempts to define relevant antitrust markets in sports broadcasting have to date been based upon little or no empirical evidence, and not infrequently upon only a limited

⁷⁷ It is important to note that these models are again dealing only with symmetric cartel examples.

⁷⁸ This is clearly an argument that could be applied to the EBU.

understanding of the economic issues involved. The latter is partly due to the fact that market definition and the analysis of market power in vertically related markets is complex, and frequently controversial, especially where there is imperfect competition at each level of the vertical supply chain. It is also due to some special economic features of upstream broadcasting rights auctions and downstream broadcasting markets which we have analysed in some detail in this report.

We have argued in this report that very careful application of market definition reasoning is required in analysing the imperfectly competitive, vertically related sports rights and broadcasting markets in Europe. Much of this report has been concerned with explaining our approach to these issues, which we view as laying the appropriate foundations for further applications in this area.

Following a trend in recent cases (see Section 2), and based on the data available to us, we recommend adopting very narrow market definitions for all of the major sports events which we have studied. These are the Summer Olympics, the Winter Olympics, the Football World Cup, UK Premier League Football, German Bundesliga Football, English Five Nations Rugby, and possibly Wimbledon Tennis and British Grand Prix Racing. The evidence we have collected convinces us that each of these sports events earns significant ‘rents’ or supranormal profits. Equivalently, ownership of the rights to these events confers significant market power upon rights owners, broadcasters, or both. We also believe that each of these events can probably safely be defined as a relevant antitrust market, based upon rigorous market definition reasoning and available data. In particular:

- data on the prices of rights since 1984 indicates that a vertically integrated monopoly rights owner and broadcaster would earn significant rents or supranormal profits from the broadcast of these events to viewers; and
- data on viewer behaviour indicates that for at least some of these events, the cross price elasticities of demand in particular directions appear to be near zero, and for extremely large (i.e. infinite) price increases. The data also tells us, more generally, that sports viewing behaviour does not appear to be influenced by the coincidence of other major sports events being broadcast simultaneously, or nearly simultaneously. That is, viewing figures for the major sports events we have studied appear to be largely independent of whatever other major sports are broadcast near in time to them.

Additional relevant data applied within the framework described in this report should help to refine, or support, the market definitions reached here.

8.2 Collusion in Rights Auctions

The Commission has for some time been considering whether the activities of the European Broadcasting Union, which acts as a ‘cartel’ in the purchase of sports broadcasting rights in Europe, either distort competition in the sports rights auctions in which it participates,⁷⁹ or otherwise result in a significant restriction of competition in European broadcasting markets. The answer to these questions depends at least in part on how ‘narrowly’ or ‘widely’ the antitrust market within which the EBU operates is defined.

⁷⁹ These are auctions for events such as the Football World Cup, the Olympic Games, the European Football Championships; the World and European Athletics Championships etc.

In this report we have suggested that it is probably safe to argue that each of the sports rights auctions that the EBU participates in as a bidder is an auction for 'monopoly' broadcasting rights.

In Section 7 however, we have noted that it is entirely unclear that buyer collusion in common value auctions, such as those for sports broadcasting rights, is detrimental either to the price received by the seller, or to economic efficiency. Collusion in common value auctions can lead to more aggressive bidding behaviour, and hence higher prices for sellers, because of the effects of information sharing and the Winners' Curse. This issue requires additional study, however it could certainly be argued on the basis of the theoretical literature, that the EBU's participation as a cartel in these auctions is as likely to result in higher, rather than lower, prices paid to rights sellers.

The implications of this are that the EBU should probably not be prohibited from participating as a cartel in major European sports rights auctions, and particularly those in which the individual EBU members would be unlikely to bid on their own behalf. However, since when successful, the the EBU will thereby acquire monopoly power over viewers and advertisers, an argument for regulating its behaviour in broadcasting markets can be made. This conclusion is buttressed by our arguments concerning the practice of the exclusive sales of rights in Section 4.2.

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