

Washington University Law Review

Volume 1967
Issue 4 *Communications & the Future—Part I*

1967

Competition, Regulation, and Performance in Television Broadcasting

John J. McGowan
Yale University

Follow this and additional works at: https://openscholarship.wustl.edu/law_lawreview



Part of the [Communications Law Commons](#)

Recommended Citation

John J. McGowan, *Competition, Regulation, and Performance in Television Broadcasting*, 1967 WASH. U. L. Q. 499 (1967).

Available at: https://openscholarship.wustl.edu/law_lawreview/vol1967/iss4/3

This Symposium is brought to you for free and open access by the Law School at Washington University Open Scholarship. It has been accepted for inclusion in Washington University Law Review by an authorized administrator of Washington University Open Scholarship. For more information, please contact digital@wumail.wustl.edu.

COMPETITION, REGULATION, AND PERFORMANCE IN TELEVISION BROADCASTING*

JOHN J. McGOWAN**

Commercial television, like the weather, is one of those institutions about which there is much talk and little action. As with all such institutions, opinions as to what should be done about television are as diverse as the population itself. However, television at least has the advantage of being the product of human endeavor and should, therefore, be tractable to human efforts to induce change if a change is in fact desired. But the reader should be forewarned that he will find no panacea in these pages.

The more limited aim of this paper is attempting to portray the relationships between industry structure and regulatory policy on the one hand, and industry performance on the other. We begin with a brief description of the salient features of the present structure of the commercial television industry. This is followed by an economic analysis of the determinants of broadcasters' program policies. Finally, we discuss some of the problems with alternative policies to improve the quality and diversity of television broadcasting. This paper concentrates throughout on privately owned and operated television broadcast facilities and does not deal with issues surrounding public television.

I. INDUSTRY STRUCTURE

While falling under the regulatory purview of the Federal Communications Commission, the commercial television industry resembles the unregulated industries more than it does the traditional regulated industries, such as transportation.¹ Entry into the industry is controlled by the FCC, which

* This article is an extensive revision of a paper commissioned jointly by Resources for the Future, Inc. and The Brookings Institution, both of Washington, D.C. The original paper served as the basis for discussion at a symposium held September 11 and 12, 1967, at Airlie House, Warrenton, Virginia. The views expressed by the author do not necessarily represent those of the trustees, officers, or staff of either sponsoring organization.

The author is grateful to those institutions for supporting the preparation of the paper and to several participants in the conference whose comments led to significant modifications of the earlier analysis. The present version was written during the author's tenure of a Social Science Research Council faculty research grant.

** Assistant Professor of Economics, Yale University.

1. For more detailed discussions of industry structure, its development and the development of regulatory policy, see SENATE COMM. ON INTERSTATE AND FOREIGN

also has authority to impose restraints on broadcasters' behavior to insure that competition between them is not impaired. But broadcasters have, *de facto*, wide latitude to operate their stations in order to maximize their rate of return on investment in broadcast facilities.

More than six hundred commercial television stations have been licensed by the FCC and are currently in operation. Over ninety percent of these stations are affiliated, either by contract or by ownership, with one or more of the three national television networks.² The commercial television system is supported through the sale of time to advertisers for the broadcast of commercial messages. Indeed, since the operation of local stations and the networks is undertaken by profit-motivated individuals and organizations, and since time sales to advertisers constitute almost their only source of revenue, it does little injustice to reality and aids considerably in understanding the functioning of the system to recognize that broadcasters conceive themselves to be in the business of providing an attractive advertising medium.

Individual stations sell time to local advertisers as well as to national or regional advertisers. Sales of the latter type take place in the national spot market. The buyers in this market are national advertisers who use national spot time as a supplement to, or as a substitute for, network time. Time sales take place at a price known as the station rate which tends broadly to reflect differences in the size of the potential audience for a station and the share of this audience which the station normally attracts.

Network time sales are made to national advertisers, except that the networks may act as sales agents in the national spot market for the stations which they own.³ Time sales by a network are, in fact, sales of broadcast time over their affiliated stations.⁴ The advertiser may specify which of a

COMMERCE, TELEVISION INQUIRY, 8 volumes, 84th Cong., 2d Sess. (1956); HOUSE COMM. ON THE JUDICIARY, THE TELEVISION BROADCASTING INDUSTRY, H. R. REP. NO. 607, 85th Cong., 1st Sess. (1957); HOUSE COMM. ON THE JUDICIARY, HEARINGS ON MONOPOLY PROBLEMS IN REGULATED INDUSTRIES, PART 2, TELEVISION, 4 volumes, 84th Cong., 2d Sess. (1956); F.C.C. OFFICE OF NETWORK STUDY, SECOND INTERIM REPORT: TELEVISION NETWORK PROGRAM PROCUREMENT, PART 2, 88th Cong., 1st Sess. (1965).

2. Each network owns five VHF stations, the maximum under an FCC regulation which limits multiple ownership of stations to a total of seven, no more than five of which may be VHF stations.

3. Networks are prohibited from acting as national spot representatives for stations which they do not own.

4. At one time networks sold primarily time for the broadcast of programs provided by sponsors. Presently, however, most network sales are sales of spots for the broadcast of commercial messages within programs supplied by the network. This practice allows advertisers to spread their messages throughout the program schedule and reduce risks.

network's affiliates he wishes to utilize and the network, in turn, attempts to gain agreement from the stations ordered to carry the network originated program and associated commercial messages.⁵ Such an agreement constitutes clearance of the network program by the affiliate. Affiliates which the advertiser has ordered and which clear the network program are compensated by the network at a percentage of their station rates.⁶

Sales to national advertisers thus constitute the sole outlet for network time sales and, after deducting compensation to affiliates, such sales currently account for slightly more than 21 percent of total time sales by television broadcasters. Local stations, on the other hand, have three sources of revenue from time sales. As Table 1 shows, the predominant source of revenue both for the network-owned stations and the other stations is from time sales to national spot advertisers. Such sales account for well over half the total revenue from time sales by broadcasters. Sales to local advertisers are also an important source of revenue. Compensation from the networks constitutes a relatively minor source of revenue for broadcasters.

TABLE 1
SOURCES OF BROADCAST REVENUE OF COMMERCIAL TELEVISION STATIONS⁷

	<i>15 Network Owned Stations</i>	<i>Affiliates and Others</i>	<i>Total</i>
National Spot	66.0%	56.0%	58.2%
Local	19.9%	26.0%	24.6%
Network Compensation	14.1%	18.0%	17.2%
	100.0%	100.0%	100.0%

It would be quite incorrect, however, to infer that network affiliation is a minor factor in the operation of television stations. The value of network affiliation lies not in the direct compensation received from the network but in the access which an affiliate has to network originated programming. The station rate which a broadcaster commands and the demand for time on his station are functions of the size of the audiences attracted to his station. Audience size is in turn a function of programming.

5. This is the procedure which currently prevails. Until recently, network affiliation contracts granted to networks the right to option time over the facilities of affiliates on relatively short notice and with limited objection rights by the affiliate. In addition, networks used to require all national advertisers to order time on a group of affiliates which constituted the network's "must-buy" list. This practice has been replaced by a minimum dollar amount that the advertiser must order. For further details, see HOUSE COMM. ON THE JUDICIARY, *THE TELEVISION BROADCASTING INDUSTRY*, H.R. REP. NO. 607, 85th Cong., 1st Sess. Chapters II and III (1957).

6. The percentage varies among networks and among the affiliates of a given network but is generally between 30 and 35 percent.

7. F.C.C. ANNUAL REPORT, 1966, at 125.

There are essentially four sources or types of programming available to broadcasters but by far the most important single source for network affiliates is the network. Programs can be obtained from the network on two bases. First, the affiliate can clear a network program during which the network will originate commercial messages, the time for which it has sold to national advertisers. As noted above, for such clearances the station will be compensated at some percentage of its station rate. In addition, it will have the opportunity to sell national spot or local time during the station breaks adjacent to the network program. Secondly, if the national advertiser to whom the network has sold time does not select a particular affiliate, that affiliate may nevertheless clear the program. The affiliate will then receive no compensation from the network but will be free to sell time within, as well as adjacent to, the program to local or national spot advertisers. Overall, clearance of network programs accounts for well over 50 percent of total programming by affiliates as the data in Table 2 demonstrate. In the prime evening hours (6:00-11:00 P.M.) network clearances account for over 90 percent of programming.⁸ Feature films, syndications, and locally produced programs share more or less equally as alternatives to network originated programming for local stations.⁹

TABLE 2
SOURCES OF PROGRAMMING BY LOCAL STATIONS, 1964-66¹⁰

<i>Program Source</i>	<i>Percent of Total Program Hours</i>		
	<i>1964</i>	<i>1965</i>	<i>1966</i>
Network	54.3	58.0	58.0
Syndications	13.4	12.4	12.1
Feature Films	13.7	12.9	14.2
Locally Produced	15.5	14.7	15.6

Network programming itself is procured predominantly from independent producing companies known as program packagers. In recent years networks have procured about 73 percent of their prime time program hours directly from packagers. Programs produced by the networks have accounted for another 20 percent with the balance supplied by advertisers who have themselves purchased programs from the packagers. Thus, the

8. F.C.C., OFFICE OF NETWORK STUDY, SECOND INTERIM REPORT: TELEVISION NETWORK PROGRAM PROCUREMENT, PART 2, 88th Cong., 1st Sess. 43 (1965).

9. Syndications are primarily programs, purchased from distributors, which have been broadcast by the networks in previous seasons (second-run syndications), but also include programs which have not previously had a network run (first-run syndications).

10. TELEVISION MAGAZINE, August 1966, at 104. Figures are based on analysis of a sample of over 200 stations and cover more than 25,000 hours of programming.

program packagers supply a total of 80 percent of prime-time program hours.¹¹

Local stations and the networks with which they are affiliated thus complement each other and each is largely dependent upon the other. Networks supply the bulk of programming to the local stations and enable the latter to attract viewers which creates a demand for time for commercial messages on these stations by local and national spot advertisers. Affiliates of the network provide the facilities which enable them to broadcast programs and gain access to wide audiences which creates a demand by national advertisers for network time sales.

II. COMPETITION AND PERFORMANCE IN TELEVISION BROADCASTING

Low quality and lack of diversity are the chief points upon which television programming has been criticized and there is no need to reiterate here the charges of the critics. Our objective is to develop a relationship between industry structure and the behavior of broadcasters on the one hand and industry performance, as measured by program diversity, on the other. In developing this relationship, we shall assume that profit maximization is the goal which broadcasters seek, and analyze first the determinants of optimal, *i.e.*, profit maximizing, program policy for a monopolist broadcaster.¹² This is followed by an analysis of the effect of competition on optimal program policies and hence on industry performance.

A. *The Economics of Monopoly in Broadcasting*

The product which broadcasters sell to advertisers is known as commercial minutes, that is, small blocks of time within or adjacent to programs, during which the advertiser's commercial message is broadcast. For our purposes, the most important determinant of demand for commercial minutes, and hence of broadcasters' revenue, is the cost of reaching prospective

11. Kroeger, *A Long Hard Look At the Genealogy of Network TV*, TELEVISION MAGAZINE, April 1966, at 37. That article is a review of a report prepared by Arthur D. Little, Inc., on behalf of the television networks.

12. Although public service programming, such as coverage of important local, national, or international events; provision of emergency communications services; and network expenditures for regular news coverage may not conform well with profit maximizing behavior, an analysis of industry behavior based on the profit maximization hypothesis is, nevertheless useful. But these deviations from profit maximization imply that a certain degree of internal subsidization is prevalent in the broadcasting industry. Therefore, in evaluating the effects of proposed changes in industry structure or regulatory policy, it is important to be aware of the possible effects of the changes on broadcasters' willingness and ability to engage in internal subsidization of public interest programming.

buyers through television. This cost, which we shall refer to as cost per viewer (CPV), is simply the price of commercial minutes divided by the number of viewers or audience size at the time a commercial message is broadcast. The first step in our analysis is to state more explicitly the relationship between audience size and broadcasters' revenue, that is, the total revenue function for a television broadcaster.

To demonstrate the nature of the total revenue function, we introduce the concept of a *programming period*. Such a period is defined as a segment of time during which advertisers are indifferent as to the clock or calendar time at which their commercial messages are broadcast, provided that audience size is expected to be equal for all commercial minutes within the programming period. For example, it seems plausible that if audience size were constant throughout all the prime-time broadcast hours of every evening in any week, advertisers would have but slight preference as to the particular evening or particular hour in the evening at which their messages were broadcast. The fact that the audience is likely to vary from hour to hour and from evening to evening does not destroy the value of the concept of a programming period. Rather, audience variation coupled with advertisers' absence of preference for particular times within the period means that the prices of commercial minutes sold in the period must adjust so that the cost per viewer is the same for all commercial minutes offered during the program period.

Equalization of CPV for all commercial minutes within a programming period is simply demonstrated by noting what would happen if a broadcaster attempted to charge equal prices for all commercial minutes within a period when the audience size was not equal for all commercial minutes. Then the CPV of commercial minutes in and around some programs would be lower than in others. Since advertisers are indifferent as to the clock time at which their commercial messages are broadcast, they will attempt to acquire those commercial minutes with the largest audience and hence lowest CPV. This will create an excess demand for the high audience commercial minutes, thereby bidding up their price. At the same time, the broadcaster will find that buyers for the low audience commercial minutes can only be found by offering them at lower prices. This process of bidding up prices for high audience commercial minutes and bidding down prices for low audience commercial minutes will only terminate when prices have adjusted so that the CPV of all commercial minutes within a programming block are equalized, because only then will it not pay an advertiser to shift his demands for commercial minutes from low audience programs to high audience programs.

Because prices tend to adjust to equalize the CPV of all commercial minutes within a programming period, a broadcaster will face a different revenue function for each such period, but each total revenue function will depend solely upon the number of commercial minutes offered and the broadcaster's total audience during the program period. Figure 1 illustrates the typical form of a revenue function. For given audience size, total revenue first increases, reaches a maximum, and then declines as the number of commercial minutes offered increases. As audience size increases, the total revenue function is shifted upward as illustrated in Figure 1. Both of these properties reflect the fact that demand for commercial minutes is inversely related to cost per viewer.

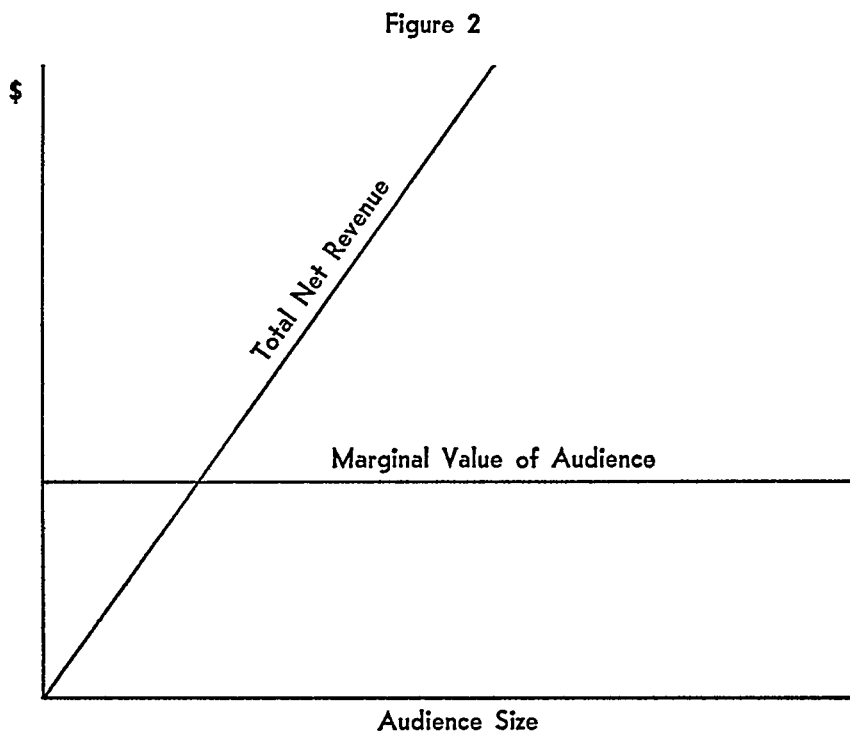
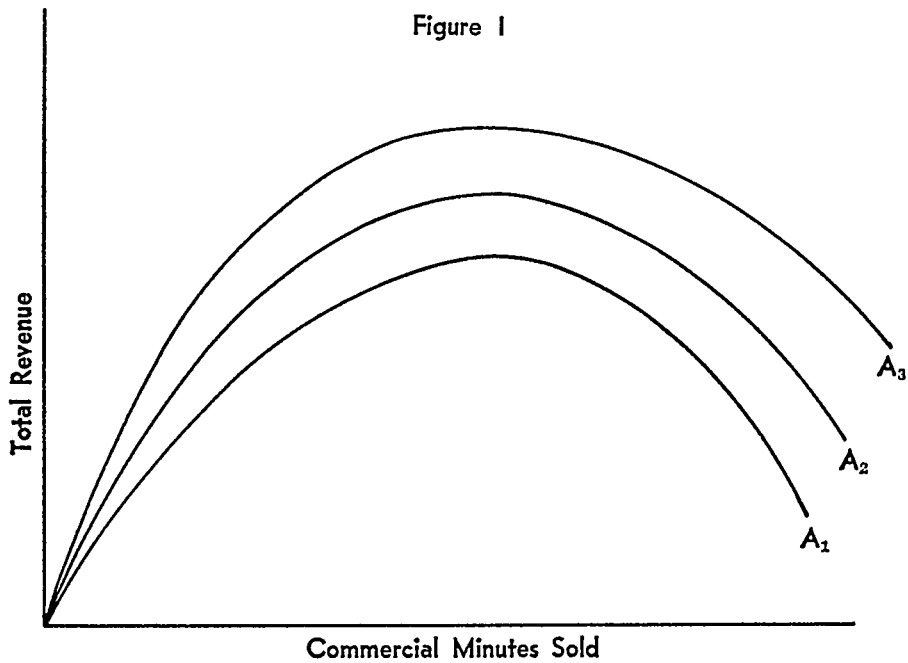
Given audience size, the broadcaster will offer that number of commercial minutes which maximizes net revenue from their sale. Thus, corresponding to each audience size there is a unique profit maximizing number of commercial minutes to offer and a corresponding maximum revenue that will be earned by the broadcaster.¹³ It is therefore possible to specify a direct relationship between net revenue and audience size as illustrated in Figure 2. From this relationship, we can derive the *marginal value of audience*, that is, the addition to net revenue which is generated by expanding total audience by a given amount. In Figure 2, the marginal value of audience is represented by the horizontal line labelled MVA.¹⁴

The final concept which we need to complete our analysis of the determination of optimal program policy is the *marginal profitability of a program type*. We assume that programs can be classified as to types, for example, situation comedy, adventure, westerns, etc. Furthermore, we assume that the program preferences of potential viewers during a programming period can be expressed in terms of program types.¹⁵ More specifically, we

13. The profit maximizing number of commercial minutes for given audience size is of course determined by the requirement that marginal revenue from sale of commercial minutes equal the marginal cost of broadcasting them. If marginal cost is zero, then, of course, the maximum point on the total revenue function defines maximum revenue and the optimal number of commercial minutes to offer.

14. Portrayal of the total net revenue function and marginal value of audience as linear relationships is only an expositional convenience. No conclusion of the subsequent analysis depends upon this linearity assumption.

15. The reader may balk at this assumption, particularly if we were to maintain that the program typology currently used in the industry is a valid basis for characterizing viewers' preferences and measuring the extent of diversity. A group of programs nominally called "westerns" may have nothing more in common than the attire of the performers and the Rocky Mountains in the background. Yet it is clear that we all have some idea as to what we mean by program types and that we do have preferences as to how much of certain types we would like to consume (view). It is also clear that broadcasters must have some perception, however dim, of such a preference ordering,



assume that repeated broadcast of programs of a given type will attract smaller and smaller *additions* to total audience for the program period. Thus, if seven hours of westerns were to be broadcast during a given programming period, we believe it reasonable to expect that the total audience for these seven hours of westerns will be less than seven times the audience which would be attracted to a single hour of westerns.¹⁶ It is important to recognize that the foregoing assumption of decreasing additions to total audience for additional hours of broadcast of the same program type does not imply that the audience for the seventh hour broadcast will be smaller than that for any of the earlier hours broadcast. It may in fact be equal to, greater than, or less than the audience attracted to any of the previous six hours. It is implied that the average hourly audience for westerns will be decreased below what it was when six hours were broadcast by the broadcast of that seventh hour.

Now the addition to net revenue from the broadcast of an additional hour of a given program type is the addition to total audience thereby generated, multiplied by the marginal value of audience. But costs are incurred in the course of producing or purchasing and broadcasting the additional hour of programming. Subtracting these costs from the addition to net revenue gives the marginal profitability of an hour of programming of the given type. The marginal profitability of programs of given types is not constant but declines as additional hours of that program type are broadcast. Declining marginal profitability is a consequence of the fact that broadcast of additional hours of programs of a given type attract ever decreasing additions to total audience.¹⁷

We are now in a position to state the properties of an optimal program policy. For a given number of total hours of programming, the program types must be combined in such a way that the marginal profitabilities of all program types broadcast are equal. To demonstrate this, let us assume that a broadcaster chose a program policy for which the marginal profitabilities of two program types were unequal. Such a policy would not be

otherwise they would have no basis whatsoever on which to make their programming decisions. While it would be necessary to come to grips with the problem of defining an acceptable program typology if we were attempting to measure the extent of diversity in television broadcasting, this is not necessary for the present purposes. All that we are really asking is, given viewers' preferences for some goods which television broadcasters are capable of supplying, and given broadcasters' perception of these preferences, how will broadcasters allocate their resources?

16. The use of hours as the unit of programming is also of course arbitrary, but of no consequence to our analysis.

17. If the unit costs of programs increases as additional hours are demanded by the broadcaster, this will contribute further to the decline of marginal profitability of a program type.

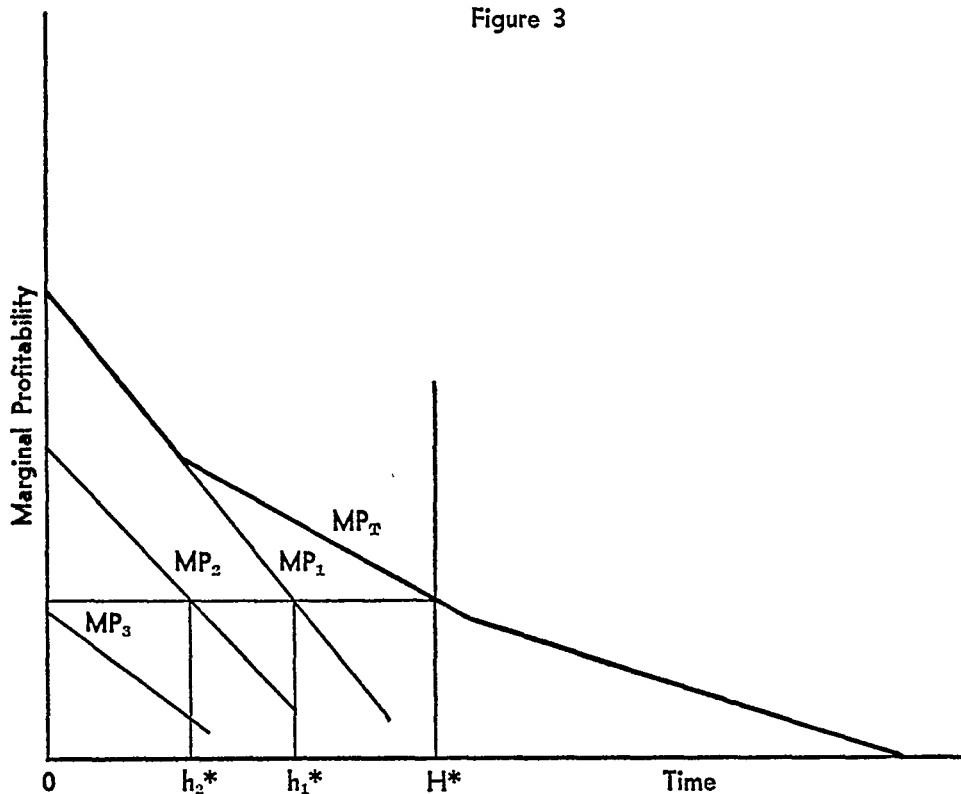
optimal because profits could be increased by increasing the hours broadcast of the program type with the higher marginal profitability and reducing the hours broadcast of the program type with lower marginal profitability. This switching process would increase profits because the addition to profit from increasing output of the high marginal profitability program type would outweigh the decrease in profits from reduced output of the low marginal profitability program type. However, because marginal profitability decreases as output of a given program type increases, the successive additions to output of the one program type will add decreasing amounts to total profits while successive reductions in output of the other program type will subtract increasing amounts from total profits. When the net change in total profits from switching an additional hour is zero, no further switching will take place and an optimal program policy will have been determined. Obviously, the net change in profits from switching between program types is zero only when the marginal profitabilities of the program types are equal.

It remains to determine the optimal total number of hours to broadcast during a programming period. Here two solutions are possible: either the broadcaster will broadcast that number of hours for which the marginal profitability of all programs is zero, or he will broadcast as many hours as the programming period contains. Which it will be depends on which comes first. That is, if he has filled the programming period before the marginal profitability of all programs is zero, then he obviously can broadcast no more in that period and it would be non-optimal to broadcast fewer hours. But if all marginal profitabilities become zero before he has filled the programming period, it is optimal to stop at that point.

Before turning to the evaluation of competition in broadcasting, it may be helpful to restate the foregoing argument in graphical terms. Suppose there are only three types of programs. We represent the marginal profitability functions of these program types by the curves MP_1 , MP_2 , MP_3 in Figure 3. The curve labelled MP_T is obtained by adding the three marginal profitability functions horizontally and represents the marginal profitability of broadcasting when any given number of broadcast hours are allocated optimally over the available program type. Assuming there are H^* hours in the relevant programming period, the way the figure is drawn, the broadcaster will broadcast for the entire period and his program policy will contain h_1^* hours of type one programs, h_2^* hours of type two and zero hours of type three.

From this graphical analysis, it is clear that the diversity of the program policy which a broadcaster adopts for a given programming period, that is,

Figure 3



the number of program types which he uses and the proportion of total hours devoted to each depends upon two things: (1) the relative profitability of a single hour of the various program types, and (2) the relative rates at which the contribution to profitability of additional hours of the program types declines. In other words, diversity is determined by the relative values of the intercepts and slopes of the marginal profitability functions for the various program types. Diversity will tend to increase as the intercepts of these functions approach equality and as the functions become more steeply sloped.

An important consequence of these propositions concerning the factors influencing diversity is that diversity is not determined by the level of demand for commercial minutes or by the level of costs of broadcast operations which are insensitive to the type of program broadcast. These statements need to be modified slightly. First they are only true within the range of costs and demand for which the broadcaster finds it optimal to broadcast for the entire program period. In terms of Figure 3, a fall in demand or a

rise in costs unrelated to program types would cause a parallel downward shift in the MP_T curve. If, as a result of this shift, the new MP_T curve were to cut the horizontal axis to the left of H^* , total hours broadcast would decrease and the proportions of the two program types used would change. However, so long as we remain within the range of cost and demand changes which do not affect the optimal number of total hours to broadcast, then such changes will not bring about changes in program diversity.¹⁸

So much for the monopolist broadcaster. The reader may indeed be puzzled why we have spent so long on his behavior when our real interest is in the effect of competition on industry performance. The answer is of course that the criteria of optimal program policy are the same whether the broadcaster be a monopolist or not. Competition affects program policy not by changing the rules upon which an optimal policy is decided, but by influencing broadcasters' perception of the marginal profitability functions for the various types of programming.

B. *Competition and Industry Performance*

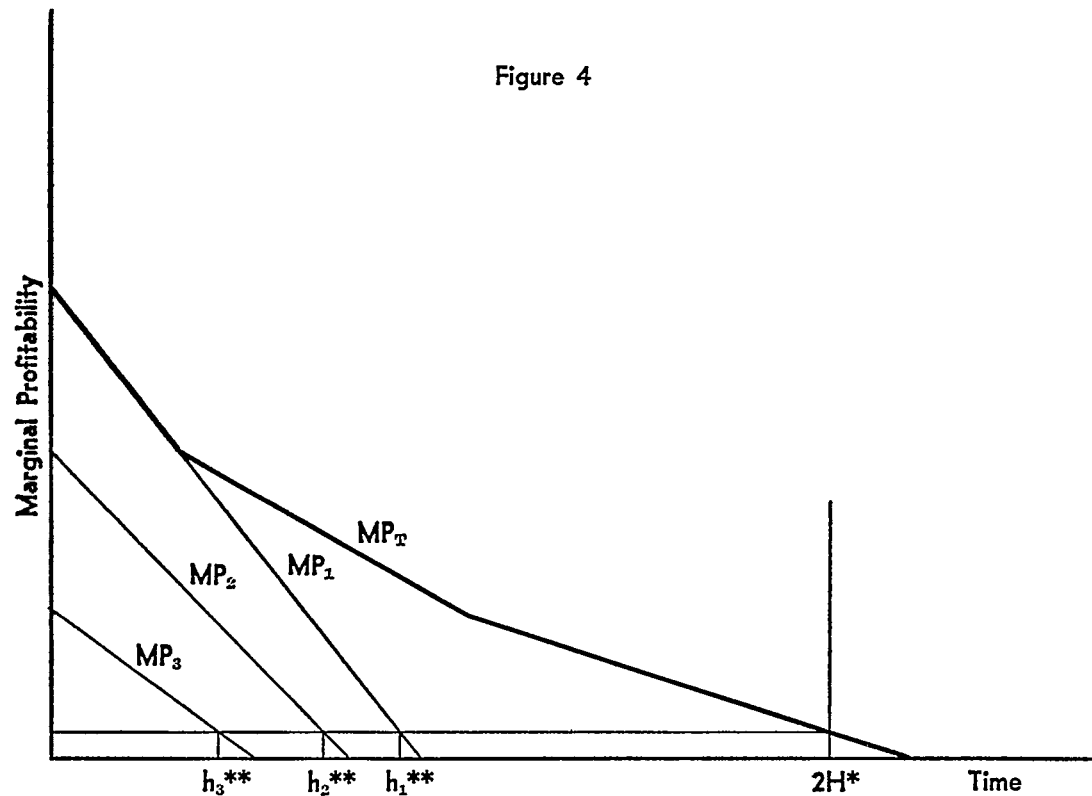
One effect of competition among broadcasters arises from the likelihood that competition will reduce prices for commercial minutes. Thus, given advertisers' demand curves for television time, the representative commercial broadcaster will face a lower net revenue function and will have a lower marginal value of audience than a monopolist. But it is not this aspect of competition which has important implications for industry performance as judged by program diversity. Rather, diversity is affected because with competition there is an expansion of resources devoted to the industry.

These effects of competition on broadcasting can be seen by first examining the effect which a doubling of available broadcast hours within a given programming period would have on a monopolist's optimal program policy. Reproducing the marginal profitability curves of Figure 3 in Figure 4 and assuming an expansion of available broadcast hours from H^* to $2H^*$, the optimal program policy is then represented by h_1^{**} , h_2^{**} , h_3^{**} . This policy is obviously more diverse than in our earlier example because now programs of the third type are broadcast. We achieved this increase in diversity by doubling the monopolist's available broadcast hours essentially by allowing him to operate two broadcast stations instead of one.

Now let us ask whether the same allocation of time over the available program types will occur if we allow the second station to be operated by a

18. The reader should be reminded at this point that we are assuming broadcasters to be strict profit maximizers. If this assumption is not valid, cost and demand changes of the type mentioned may indeed have effects on program policy.

Figure 4



broadcaster other than our original monopolist. It is clear that if the two broadcasters behave in the same fashion as a two-station monopolist, that is, their individual program policies when added together give the same aggregate allocation of time over the available program types as does the two-station monopolist's optimal policy, then they will have chosen that program policy which maximizes total industry profit.¹⁹ Thus, we can call the optimal program policy for the two station monopolist the joint maximum program policy for an industry consisting of two broadcasters. If it were possible for the broadcasters to get together and agree to maximize industry profits and arrange for a sharing of these profits, then the joint maximum program policy is the one they would adopt.

But let us suppose that neither joint determination of program policies, nor side payments from one broadcaster to the other, are allowed. Then each broadcaster is solely interested in his own profit and not at all interested in total industry profits. Our question then becomes, will program

19. The industry consists of the two broadcasters.

diversity be the same as it would under the assumption that the broadcasters behaved to maximize industry profits? The answer is "yes," provided: (1) that the constraint on total broadcast hours is binding, that is, both broadcasters find it profitable to broadcast for the whole programming period, and (2) each broadcaster makes his program decisions in full knowledge of the other's decisions. If the first condition is not satisfied, the hours broadcast of all program types will exceed those which would be broadcast by a two station monopolist.²⁰ If the second condition is not satisfied, then industry program policy will only eventually correspond to the joint maximum policy as the broadcasters revise their program policies from period to period. Since this second condition will in general not be satisfied when there is no collusion, whether tacit or explicit, between broadcasters, industry performance under competition may at times be characterized by less diversity than would occur under conditions where all broadcasters were under unified management. However, so long as broadcast markets are highly oligopolistic, some degree of cooperative behavior among broadcasters is likely to arise.

The foregoing considerations lead us to conclude that, on the average, competition among broadcasters is an efficient means of promoting diversity in programming. By this we mean that industry performance given the number of broadcast stations will, on the average, be the same when the several broadcast facilities are independently operated as it would be if they were operated under unified management.

One final comment on the efficiency of competition in broadcasting is in order. Reasoning from different models of broadcasters' behavior, other authors have concluded that competition is likely to lead to duplication, that is, the simultaneous broadcast of the same program type by two or more broadcasters.²¹ In contrast, we conclude that duplication is unlikely to be so serious a problem as other writers have implied. The essential

20. These propositions do not seem demonstrable without recourse to a mathematical argument. Readers familiar with Cournot models of oligopoly may find the proposition that in the duopoly case described in the text, the duopolists acting independently nevertheless arrive at the joint maximum program policy. The reason for this perhaps startling result lies in the assumption that the constraint on total broadcast hours is binding upon both broadcasters. Because of this, the reaction functions of both broadcasters for each program type coincide and the sum of the hours broadcast for each type is the same as the total hours of that type which a two-station monopolist would broadcast.

21. See Steiner, *Program Patterns and Preferences and the Workability of Competition in Radio Broadcasting*, Q.J. ECON., May 1952, at 194-223; Rothenberg, *Consumer Sovereignty and the Economics of TV Programming*, STUDIES IN PUBLIC COMMUNICATION, Autumn 1962, at 45-54.

difference between the model presented here and those used by Steiner and Rothenberg is that they both assume the relevant decision-making period to be the time it takes to broadcast a single program of a given type. In contrast, we have argued that the relevant period, *i.e.*, the programming period, is likely to be longer, and as a consequence, optimal program policy is likely to require the use of more than one program type for a given programming period. So long as this is so, it will pay broadcasters to avoid duplication whenever possible.²² Thus, duplication is likely to arise only when optimal program policy dictates the exclusive or almost exclusive use of a single program type.²³ For under such circumstances, it will be impossible for competing broadcasters to completely avoid duplication.

III. REGULATORY POLICY AND INDUSTRY PERFORMANCE

Broadly speaking, there are two classes of policies which can be followed in attempting to improve performance in television broadcasting. On the one hand, we may attempt, through public regulation, to guide the behavior of existing broadcasters in such a way as to lead to increased program diversity. In other words, we change the regulatory environment of the industry but do not take specific action to change the structure of the industry, that is, increase the number of competing broadcasters. On the other hand, we may in fact attempt to promote greater competition in broadcasting by encouraging new entry. While these policies are not mutually exclusive in practice, it will be convenient to discuss them separately.

A. *Changes in the Regulatory Environment*

If the performance of the commercial television industry fails to evoke pride in, and respect for, the wonders of the market place in guiding private behavior to serve the public interest, the fault does not lie in the perversity of broadcasters. For they seem only too well to have grasped and implemented the essential principles of efficient resource allocation. Disenchantment with market-generated results is, however, not uncommon. Indeed,

22. It does not pay to duplicate because the broadcaster is interested in total audience for the program period and because for a given program policy, total audience must be larger when there is no duplication.

23. An examination of network weekly program schedules in prime-time for 1966-67 with programs classified into broad categories used in the industry showed no instance of three-way duplication and ten instances where two networks were broadcasting the same program type in the same half-hour periods, accounting for 13.7 percent of total prime-time broadcasting. Duplication is much more prevalent during the daytime hours when audiences are likely to be small no matter what type of program is broadcast and there are few program types whose unit cost is low enough, given potential audience, to justify broadcasting at all.

the very foundation of industrial regulation is dissatisfaction with the results generated by profit maximization unhindered by externally imposed constraints. This is only to say that the failure of broadcast industry performance to measure up to expectations is due to the failure of regulatory policy to provide and enforce the proper constraints on broadcasters' behavior. But what scope is there for broader regulation of the industry?

Clearly, the problems posed by broadcast regulation are rather different from those posed by regulation of the classical public utility or natural monopoly. In transportation, electricity supply, banking, insurance, etc., regulatory determination of the classes of service to be provided and the setting of quality and safety standards is tolerable. Specific regulation or program content in broadcasting is not. Likewise, transference of the principles of rate of return regulation to commercial broadcasting is not a feasible method of influencing program policy. While rates of return do tend to be high in broadcasting, this is a reflection of the relative scarcity of the products purchased by advertisers, *i.e.*, commercial minutes. Regulating the rate of return by forcing reductions in the rate structure of television advertising would simply bring about an increase in broadcasters' output of commercial minutes which is, of course, not a result we want to promote.

What critics of industry performance are really asking is that broadcasters engage, to a greater degree than they do at present, in the broadcast of programs which are not in their own self interest to broadcast. The regulatory problem is to achieve this and at the same time refrain from an explicit specification of what is to be broadcast. In effect, current regulatory policy attempts to do this by requiring broadcasters to include a minimum number of hours of public interest programming in their weekly schedules and by interpreting liberally the concept of public interest programming. Predictably, the way in which most broadcasters fulfill this requirement accords with the principles of profit maximizing behavior. Public interest programming tends to be presented when potential audiences are small, so that foregone advertising revenues are minimized, and tends to consist of low cost programs. This behavior serves to minimize the cost of compliance with the regulatory requirement.

There is, however, an alternative formulation of the public interest programming concept which would limit broadcasters' ability to minimize the cost of compliance. Broadcasters might, for example, be required to broadcast a fixed number of hours of unsponsored programming during prime time. During these hours, no commercial minutes could be sold, but the broadcaster would have complete freedom to choose what types of programming to provide. Such a policy would do away with the need for regulators to evaluate programs to determine whether they qualify as public

interest programming and would constrain broadcasters' ability to minimize the cost of foregone advertising revenue. But because of these features of the policy, the incentive to economize on program costs would be even greater than under the present form of the public interest programming requirement.

For the networks, the cost minimizing adjustment to such a policy would be to go off the air during required public interest programming time; that is, they would advise their affiliates that no network programming would be provided at such times. Doing so would not only save them the costs of program production, but also avoid expenditures for network interconnection. For the affiliates, cost minimization would involve obtaining the lowest cost programs to broadcast during the public interest programming periods. In addition, they would attempt to economize further by reducing their voluntary broadcast of public interest programming in other time periods.

Yet it might be argued that such effective frustration of regulatory objectives could be prevented. For one thing, networks could easily be forced to provide programming during the public interest programming periods by requiring that no station licensee be permitted to be owned by or affiliated with a network which failed to do so. Then the networks would bear the major burden of responding to regulatory policy—they would be in the same position and have the same alternatives for cost minimization open to them as would be presented to station licensees if networks were not required to supply public interest programming.

It might be argued further, that public pressure on the networks exercised through the FCC and Congress would lead the networks to absorb most of the costs of such a policy. If this is true, then a significant improvement in industry performance might be gained. For it is probable under such circumstances that the choice of programs to comply with the public interest programming requirement would be made primarily on the grounds of artistic merit and appeal to those who are most strongly critical of present industry performance. On the other hand, there is no assurance that public sentiment would be so effective in inducing the networks to avoid making the cost minimizing response to such a regulatory policy. Certainly, the response of the broadcasting industry to the present public interest programming requirement and to criticism of its performance does not provide much ground for an optimistic view of industry response to a strengthened public interest programming requirement.

It is thus difficult to see how regulatory policy which would have a strong likelihood of effectively improving industry performance and which

would also avoid the explicit involvement of regulators in the determination of program content can be formulated. Not surprisingly, therefore, increased competition and other changes in the structure of the broadcasting industry have been looked upon as offering the greatest prospect for improved performance. It is to an evaluation of such policy which we now turn.

B. *Performance and Structural Change*

Scarcity of spectrum space constrains the use of competition in broadcasting to insure acceptable industry performance. Nevertheless, attempts to alter industry structure through the promotion of increased competition among commercial broadcasters and through promotion of alternative forms of television broadcasting have advanced on two fronts. On the one hand, the FCC has reserved part of the UHF spectrum for use by television broadcasters. At the same time, the Commission and Congress have sought to foster the economic development of UHF broadcasting by such means as the All Channel Receiver Act²⁴ and by constraining the development of Community Antenna Television Systems (CATV) which might impair profitability and retard development of UHF broadcasting.²⁵ On the other hand, regulatory policy has encouraged the growth of educational television by reserving television broadcast assignments for this service. Recent Congressional action on a bill to establish a Public Television Corporation is further evidence of a growing commitment to this alternative to commercial television.²⁶

In sharp contrast, public policy has reflected little enthusiasm for pay television. Arguments by economists and others, that pay television would lead to vastly improved performance over that of commercial television, rest upon the superior ability of a price system to reflect viewer preferences and therefore to guide broadcasters toward maximization of viewers' satisfactions. Official resistance to pay television appears to be based upon doubts about the ability of commercial television to withstand competition from pay television. Since public policy appears already committed to increased competition in broadcasting, and since pay television would seem to be a desirable complement to the existing system, it is worth examining the probable impact of competition from pay television on commercial broadcasting.

24. 47 U.S.C. § 303(s) (1964).

25. See CATV: Second Report and Order, 2 F.C.C.2d 725, 6 P. & F. RADIO REG. 2d 1717 (1966); CATV: Memorandum Opinion and Order, 1 F.C.C.2d 524, 5 P. & F. RADIO REG. 2d 1655 (1965).

26. 47 U.S.C. § 396 (1968).

Before proceeding, it will be well to make clear what we mean by "pay television," since that term is subject to numerous interpretations. We use the term "pay television" to refer to a system in which viewers are charged on an individual program basis, for it is only such a system which clearly provides a superior mechanism for reflecting viewer preferences and guiding resource allocation. We further require that program fees paid by viewers be the sole source of income for the pay television broadcaster. This concept of pay television thus rules out such variants as those in which viewers pay a flat subscription fee or those in which the broadcaster sells commercial minutes and also collects nominal program fees or a flat subscription fee from viewers.

The introduction of a system of pay television of the type described would obviously not confront existing commercial broadcasters with increased competition in the sale of commercial minutes. Therefore, its sole impact would be upon competition for viewers.

To the extent that pay television offered programs of the same types as competing commercial broadcasters, viewers would have some programming of these types available at a zero price (from commercial broadcasters) and some for which a positive price must be paid (from pay television). Only those viewers who wished to view more hours of programming of these types than are available at a zero price, or who estimate that the quality of pay television programs of these types justify it, would be willing to pay the price charged. Therefore, except to the extent that pay television provides higher quality programs of the same type than are available from commercial broadcasters, pay television audiences for these program types must represent additions to total viewing and not shifts from commercial to pay television. Furthermore, loss of viewers due to quality differences can be combatted by commercial broadcasters by improving the quality of their own programs. Indeed, this quality competition among broadcasters would in itself be desirable.

Likewise, the broadcast by pay television of program types unavailable from commercial broadcasters is likely to have little long run impact on the latter. Simply because these program types are not now available, the potential pay television audience for them must also represent an addition to total viewing rather than an erosion of commercial television audiences. There are two conditions under which audience erosion is a possibility, at least in the short run. First, commercial broadcasters may have inaccurately assessed viewer preferences. But to the extent that competition with pay television reveals this, commercial broadcasters can revise their own program policies in light of this new information. Second, part of the com-

mercial broadcasting audience for its programs may represent viewers who would really like to be seeing something else and would be willing to pay enough for the something else to make it profitable for the pay television broadcaster to provide it, but who, in the absence of this alternative, watch existing commercial television fare rather than watch nothing. Once again, it would seem that commercial broadcasters could adjust their program schedules to counteract audience loss from this phenomenon. The effect, of course, would be further to improve the performance of the commercial television industry.

On the basis of these considerations, it would be too much to say that competition from pay television will have no impact on commercial television audiences. But, both because commercial broadcasters have a price advantage in competing for viewers and because they can adapt their program policies when profitability considerations indicate that such changes are desirable, the bulk of the pay television audience in the long run must reflect additions to total viewing rather than erosion of commercial television audiences. There is, however, one major qualification to this argument.

A substantial portion of programming currently consists of television coverage of major productions in other fields of entertainment. The most notable example of this is the broadcast of major sports events. Another closely related example is first television runs of motion pictures which have generated wide interest among viewers as a result of their regular movie-house runs. Since large audiences seem virtually assured for this type of programming, competition among broadcasters for the television rights for major sports events and popular movies is extremely intense.

Because the profitability of a given program of this type may be quite different for a pay television broadcaster than it is for a commercial broadcaster, there exists the possibility that commercial broadcasters would be at a disadvantage relative to pay television in competing for broadcast rights. If commercial broadcasters were so disadvantaged, pay television might consistently win out in the competition for television rights. This would lead to large audience losses and, hence, to reduced profitability of commercial broadcasting.

Even though it might be doubtful that these losses would be large enough to jeopardize the viability of commercial television, there is a further consequence of the shifting of programs from commercial to pay television. This is that viewers would then have to pay to see certain events which were previously available free of charge. Therefore, to the extent that pay television successfully would bid away broadcast rights from commercial broadcasters, viewers would suffer a welfare loss.

The *possibility* of incurring such a welfare loss is, of course, not sufficient justification for resisting the development of a pay television system. A rational and omniscient policy-maker attempting to decide whether a given expansion in the resources devoted to private television broadcasting, *i.e.*, spectrum space, should be allocated to commercial or pay television, would choose in favor of that form which made the greatest contribution to viewer welfare. Thus, in determining the potential benefit from choosing pay television he would add together the increase in viewer welfare arising from the broadcast by pay television which is unavailable on commercial television at present and the improved quality of commercial television programs stemming from competition with a pay television system. From this, he would subtract the loss in viewer welfare arising from the switching of the broadcast of unique events from commercial to pay television. Finally, he would weigh the benefit so determined against the benefit generated by devoting the same increase in resources to commercial television and opt for the alternative with higher benefits.

While no one can relish the thought of attempting the estimation of benefits along the lines outlined above, looking only at the possibility of incurring some welfare loss by promoting pay television is surely a poor substitute for such an analysis and an inadequate basis for formulating public policy toward pay television. At the same time, the possibility of incurring a welfare loss should lead us to consider more carefully the advisability of promoting pay television as a complement to the existing system.

CONCLUSION

Unfortunately, no clear cut and simple policies for improving the performance of the commercial television broadcasting industry emerge from our analysis. Both the form of organization which the privately owned television broadcasting system in the United States has taken and the understandable desire to avoid a direct regulatory role in the determination of program policies impose severe constraints upon the scope for improvement in industry performance which regulatory policy can offer. In the face of these difficulties, public policy has perforce had to look primarily toward expansion in the alternatives available to viewers as the only feasible means of improving performance. Yet scarcity of spectrum space once again imposes limitations on the extent to which increased competition in broadcasting can be relied upon to bring about improved performance. Because of this limitation, it is important to ensure that whatever additional resources are devoted to private television broadcasting be used so that they

will make the greatest possible contribution to the performance of the industry.

To those schooled in the subtle workings of price systems and aware of their effectiveness in guiding resource allocation, it may seem clear that the public interest would be best served if any expansion of private television broadcasting were to take the form of pay television. But the reticence of policy makers to accept with alacrity the concept of pay television as a desirable complement to the present system of commercial television should not be lightly dismissed. So long as we fail to provide reasonably convincing evidence that their fears are misplaced, policy makers will continue to resist the development of pay television.