ECONOMIC ANALYSIS AND TELEVISION REGULATION: A REVIEW

PREPARED UNDER A GRANT FROM
THE JOHN AND MARY R. MARKLE FOUNDATION

STANLEY M. BESEN
BRIDGER M. MITCHELL

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PREFACE

This report is a review and critique of *Economic Aspects of Television Regulation* by Roger G. Noll, Merton J. Peck, and John J. McGowan. The book attempts a comprehensive evaluation of the regulation of the television broadcasting industry and includes analyses of over-the-air advertiser-supported television, subscription (pay) television, cable television, and public television. Its principal conclusion is that there should be less reliance on detailed regulation and more emphasis on the marketplace to allocate resources in broadcasting. While the reviewers have great sympathy for this position, they are less sanguine about the analysis that underlies it. The criticisms mainly involve the authors' tendency to draw conclusions beyond those that can be supported by available evidence. The reviewers point out a number of areas in which further research is needed before definitive policy judgments can be drawn.

This is one in a continuing series of Rand publications in the field of telecommunications and public policy. Others include:


Rand has also completed a set of reports on cable television that address decisions faced by local communities. The basic volume in that series is:


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SUMMARY

The television broadcasting industry is among the most tightly regulated in the United States. The Federal Communications Commission controls both the conditions of entry and the behavior of the industry's participants. It has also severely restricted both new technologies and financing methods and, as a result, the industry is still based largely on advertiser-supported over-the-air television. There is a widespread consensus among economists that regulation has protected the economic position of broadcasters at the expense of increased viewer satisfaction. Economic Aspects of Television Regulation by Roger G. Noll, Merton J. Peck, and John J. McGowan, which this report reviews, is thus welcome as a brief for greater reliance on the marketplace. Although the book provides the most comprehensive treatment of the issues involved in the regulation of television that is currently in print, the authors' plea for reduced regulation of the industry is not always supported by their analysis.

The report first considers the analysis of the demand for television programming and its empirical measurement as undertaken by Noll, Peck, and McGowan. Since social welfare judgments about broadcasting require an accurate assessment of viewer preferences, the reviewers consider the book's treatment of viewer choice in some detail. Subsequent sections of the report are devoted to the book's analysis of the central economic role played by the television networks, the requirements imposed by the Federal Communications Commission that the firms they regulate provide unremunerative services, and the behavior of the regulators themselves. The report discusses both the evidence provided by Noll, Peck, and McGowan and the reviewers' criticisms of it.

In addition to analyzing the behavior and performance of the television industry under regulation, Noll, Peck, and McGowan have advocated wide-ranging regulatory reforms. The interweaving of economic analysis and policy judgments throughout the book might suggest that the judgments follow closely from the analysis. However, this report finds the link a tenuous one; some of the major policy judgments can be provided with better analytical support, and many go beyond what can be substantiated by available research findings.
ACKNOWLEDGMENTS

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I. INTRODUCTION

In Economic Aspects of Television Regulation, Roger G. Noll, Merton J. Peck, and John J. McGowan essay a comprehensive analysis of the conduct, structure, and performance of the television broadcasting industry. The topics they cover range from the behavior of the television networks and the future of cable television to the employment patterns of FCC Commissioners and the determinants of television license awards. After analyzing the behavior of the industry, the authors assess its performance, and especially the effect of Federal regulation on that performance, with the yardstick of consumer welfare analysis. To increase the limited range of choice available to most viewers, the authors are led to consider an easing of the restrictions on cable and subscription (pay) television as well as an increase in the resources available to public television. In most instances, they conclude that consumer welfare would be increased if the barriers to the introduction of new technologies and financing methods were relaxed. Consequently, they are critical of many aspects of government policy toward television that restrict these developments. In their concluding chapter the authors provide a cogent summary of the major policy issues in regulating television and their own judgments on each. The reader who seeks a comprehensive introduction to the major issues concerning the regulation of television broadcasting can do no better than to read this book.

Although Economic Aspects of Television Regulation will be an outstanding primer for newcomers to the analysis of the broadcasting industry, it claims to be much more. The book is intended as a statement of the authors' views on the major policy questions in broadcasting, and here it is less successful. Many of the judgments obtain no support from the authors' research or from that of others. We say this with some disappointment because, although we are sympathetic with many of the authors' conclusions, an objective assessment would have to regard the cases for them as unproved. In defending this admittedly strong assertion, we will examine in detail the authors' treatment of what we believe to be the major issues in the regulation of television broadcasting: the demand for television, the economics of network behavior, the financing of unremunerative services, and the analysis of regulatory behavior. In the final section of the report we provide some speculations on the reasons for some of the book's shortcomings.

II. THE DEMAND FOR TELEVISION

Noll, Peck, and McGowan devote considerable attention to the demand for television. Since the answers to so many policy questions depend upon an understanding of viewer demand, this represents a sensible allocation of resources. Both the strengths and the weaknesses of the book are vividly revealed in its treatment of this subject.

THE ANALYSIS OF VIEWER CHOICE

A model of viewer behavior must describe how viewers value different programs. It must do so to determine which of a number of competing programs a viewer will watch and to compare viewer satisfaction produced under alternative market structures. Such a model should permit, for example, judgments about the effect of the introduction of pay television and about the effect of increasing the number of competing stations in a market.

In an early and influential analysis of radio broadcasting,² Peter Steiner assumed that individuals would listen only to their preferred program type, and if it were not available, they would not listen. When combined with the assumption that stations seek to maximize audience size and with the "welfare" criterion that as many persons as possible should receive programs that they are willing to listen to, the Steiner assumption about listener preferences implies that competition in broadcasting may lead to "duplication" in programming fare. A new station may find it more profitable to duplicate the programming of an existing station and share in its audience than to program for previously unserved potential listeners. Now because those who listen to the program of the new station were previously "satisfied" (since they were listeners before the new station came into existence), "welfare" is not increased when the second station duplicates the programming of the first.

Steiner's strong result stems principally from his assumption that people will listen only to programs of their first choice. When one allows listeners to have second choices, however, the analysis of listener (or viewer) behavior becomes much more difficult. One must now specify how choices are made among programs, none of which may be a viewer's first choice, as well as how different from his preferred

² See Steiner (1952).
program the available viewing alternatives must be for him to become a nonviewer. Moreover, the Steiner welfare criterion no longer suffices. People who are not receiving their first choice programs will often be viewers nevertheless, and one must therefore specify the value of the viewing alternatives available to them. A number of attempts have been made to improve on Steiner's approach. Wiles, for example, has developed a model in which he allows for differences in the value that viewers place on different programs.

Although major work will be needed to extend the theory of viewer choice, many of the principal remaining difficulties in improving our understanding of viewer behavior are empirical. One of the most formidable problems is that it is difficult to describe the characteristics of programs in terms of which viewing choices are made. One can use industry program categories such as Westerns, situation comedies, variety, and so on, but one cannot be sure that programs within these categories are closer substitutes for one another than they are for programs in other categories. Without information about the program characteristics that are important to viewers, judgments about viewer satisfaction that are made by comparing the availability of programs placed in industry categories may be seriously in error.

Even if we knew which characteristics viewers regarded as important, an equally vexing problem would remain. Since almost all of the evidence we have about viewing choices comes from situations in which television is provided "free" to viewers (the costs of programming being borne by advertisers), it is impossible to measure the intensity of viewer demand. Moreover, programs that might obtain sufficient revenues to pay for themselves out of receipts from viewers may not be able to attract large enough audiences to be shown over advertiser-supported television. Because of the tight restrictions on subscription television, market data on the demand for such programs are not available.

A number of strategies have emerged for obtaining some information about viewer preferences. One is to examine the demand for cable television, since cable offers, at a price, alternatives not available to viewers over the air. Another approach is to analyze the evidence from the limited number of experiments with pay or subscription television. A third is to analyze the choices among programs when all programs command a zero money price. Noll, Peck, and McGowan adopted each of these approaches at one point or another.

THE EVIDENCE FROM "FREE" TELEVISION

The authors make the distinction between viewing options, the number of programs simultaneously available to viewers whether or not they are of the same program type, and diversity, the number of categories in which programs are offered at a given time. A central theme is that viewers value more options, the number of

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3 Steiner's welfare criterion is not even appropriate given his assumption about listener preferences unless one also assumes that all viewers receive equal satisfaction from obtaining their preferred program type and that viewer satisfaction is additive.

4 See Wiles (1963).

5 For an interesting attempt to identify the factors underlying viewer choices, see Bowman and Farley (1972).
existing and utilized channels. Viewers apparently value more options for two reasons. First, the more channels there are, the larger the number of differing program types, and Noll, Peck, and McGowan cite evidence that diversity increases, although at a decreasing rate, as the number of stations in a market increases. Second, they recognize that programs within standard categories may not be perfect substitutes for one another and that this would cause viewers to value more options even if diversity, as conventionally measured, did not increase.

The authors summarize their basic position on viewer choice in these words:

Since the price of television watching is zero, . . . viewers seek to watch each program type until its marginal benefit to them is also zero. Similarly, because of the zero price the networks have no incentive to broadcast programs that provide benefits to the viewers more than incrementally above zero, since they will collect no greater fee from those who are satisfied beyond the level necessary to induce them to watch the program in the first place. This arrangement implies that a large number of viewers regard the benefits from an increment to viewing time in general as negligible, but regard the benefits of additional hours of certain types of programming as very great (p. 28).

Apart from the empirically unsupported references to "a large number" of viewers and "very great" benefits, the analysis does not produce the asserted conclusion. The most important flaw is in the assertion that the networks have no incentive to provide benefits to viewers more than incrementally above zero. But, of course, competition among the networks will mean that they will be forced to do so in order to attract audiences. Moreover, even if there were only a single station, there would be some viewers who would receive satisfaction in excess of zero so long as there are variations in tastes. The station would choose programs and expend resources on them to the point at which the cost of attracting an additional viewer would be just equal to the additional revenues that advertisers would pay for access to that viewer. Although there may be viewers who would watch the program and receive little satisfaction from doing so, there would be others who would have watched and been willing to pay a positive price to do so.

A second difficulty with the above analysis is that it does not lead to the conclusion that "the benefits from an increment to viewing time in general [is] negligible." And, elsewhere in the book, the authors advance evidence suggesting that total viewing will increase as the alternatives increase.

Despite the deficiencies in the analysis, the authors' basic conclusion, that viewers value additional viewing alternatives, is almost certainly correct. All that is required to reach that conclusion is that there be differences in preferences among viewers. Given any limited number of viewing alternatives, some viewers (although the number need not be "large") would switch to other programs if they were available because they place a lower value on the programs they are currently watching. The result depends neither on the "unwillingness" of the networks to provide programs valued only a little above zero nor on any constancy in total viewing. In fact, the conclusion could have been reached with some of the other models of viewer preferences that the authors discuss elsewhere in the book.

What evidence do the authors provide on the nature of viewer preferences? They cite a ten-year-old survey of New York City viewers as evidence that the "greatest unfilled demand is for just those types of programming that already domi-
nate the network schedule” (p. 9). In the survey, viewers were asked what types of programs they would like to have more of, and the first type mentioned was recorded. Aside from the obvious difficulty in ascertaining viewer preferences by means of such a question, the answers do not reveal whether viewers would substitute these programs for ones they are watching or whether they would expand total viewing. Nor do they tell us how much these additional viewing alternatives are valued. In short, the survey fails to provide precisely the kind of information that is required if one is to choose intelligently among alternative structures for the television industry.

Still another source of evidence that Noll, Peck, and McGowan advance to support their assertion that viewers want “more of the same” is a regression with the share of the audience received by a network affiliate as the dependent variable and the network with which it is affiliated, the number of competing affiliates, and the number of competing independent stations as independent variables (p. 51). The results of the regression imply that the total audience share obtained when there is only one affiliate in a market is about 45 percent of the potential audience, that two affiliates together will receive about 55 percent, and with three affiliates the figure rises to about 60 percent. Further, each affiliate receives a nearly equal share of the audience. This evidence conflicts with the earlier statement that the aggregate amount of viewing is independent of what is shown, and it does not support the authors' statement that “viewers value more options as well as diversity” (p. 51). Instead, the evidence indicates that competing stations divide equally an audience that grows as the number of competing stations increases. The expansion in total audience reveals that the program of the second station is somewhat different from that of the first because the new station succeeds in drawing its audience both from that of the existing station and from the ranks of nonviewers. But to argue that viewers value a larger number of options based on this evidence requires the belief that the increase in the audience would have occurred even if the second station had provided programming much like that of the first.

Noll, Peck, and McGowan use the same evidence to argue that “a two channel monopolist would probably not find it profitable to behave much differently from existing networks” (p. 52). But this argument is not supported by the evidence. Apparently what the authors had in mind was that the increase in total viewing as a result of the entry of the second station implies that it provides programming different from that of the first. But this does not mean that a single entity controlling more than one station would provide the same pair of programs. We would expect, instead, that it would select programs even more differentiated than those of two competing stations so that total audience would be larger under monopoly than under duopoly.

SUBSCRIPTION TELEVISION

The unsatisfactory treatment of viewer choice appears most starkly when Noll, Peck, and McGowan evaluate the prospects for subscription television. The success of subscription television depends on the extent to which viewers are willing to pay for programs different from those available on advertiser-supported television. The
authors begin their analysis by arguing, "the responsiveness of audience size to price variations—the price elasticity—is the critical factor that would permit the intensity of demand to be measured against mere number of viewers" and, further, "price elasticities may indeed differ among programs. But even if they do, the networks are unlikely to set prices accordingly" (p. 131). This leads them to conclude, "if all mass entertainment programming were offered at roughly the same price . . . networks would soon pick that mix of programs that maximized audience size" and "the only difference from the present system would be that the single price charged would be positive instead of zero" (p. 132).

The argument used to support the view that prices would not differ among programs is both dubious and inconsistent with evidence from the pay television experiments reported by Noll, Peck, and McGowan; but even if it were correct, programs that would maximize audience at any positive price are not necessarily the same as those that would maximize audience at a price of zero. So long as there are people who would become nonviewers as the price of television programs rises, the programming mix is likely to depend on the established price. Only under very special conditions will the programming mix be the same. The conclusion "the only difference from the present system would be that the single price would be positive instead of zero" is simply not correct.

The authors state that, if VHF channel capacity is limited, minority programs would be unlikely to outbid mass audience programs for time on VHF stations under pay television. Their argument is that a mass audience program attracting 15 million homes could, by charging a price of only 10 cents per program, outbid a minority audience program appealing to one million homes willing to pay $1.50 each for the time. Moreover, they argue that an audience of one million homes probably would not be attracted at a price of $1.50, and that if only half that audience were reached a charge of $3 would be necessary.

It is, of course, easy to turn their example on its head. If three million homes could be attracted to the minority program, then a charge of only $0.50 would be sufficient to permit the minority program to compete with the mass audience program. The point is not that these numbers are any better than theirs, but rather that without any evidence on that "critical factor," the price elasticity, neither they nor the reader can make any judgments about the ability of minority audience programs to bid for time against mass audience programs. The basic question is still: How many people value programming different from that available on free television and how much are they willing to pay for it? Without the answer to this question judgments about the future of pay television cannot be made. Comparing the actual audiences that free television programming attracts with hypothetical numbers of viewers and the prices that subscription television would obtain simply does not suffice.

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6 One of the most annoying features of the book is that it is not always clear what the authors' view is on a subject although it is discussed in a number of places. To take only one example, they argue (p. 132) that prices for subscription television programs would not reflect "the relative costs and popularity of programs." But on p. 139 we are told that the specific program charges in the various pay television experiments depend on "an estimate of the program appeal." The argument "the best strategy might be to avoid price premiums on the popular programs" (p. 131) is inconsistent with the observation that program charges ranged from $0.25 to $1.50 (p. 130) with the higher prices being charged for live sports events, one of the most popular of the program types in the subscription television experiments.

7 The (relatively) unlimited number of cable channels available implies that minority subscription programs need not obtain an audience large enough to be as profitable as mass audience ones, but only
In fairness to Noll, Peck, and McGowan, they have examined the results of a subscription television experiment authorized by the FCC for Hartford, Connecticut, and they merit credit for using these data for the first time. Unfortunately, their efforts are not carried out in a systematic and careful way. For example, they argue that the data indicate about 4 percent of all homes would pay $12 per month for subscription television when they already have available three network stations, at least four independent stations, and public broadcasting (pp. 147-148), whereas in Hartford 4 percent of households subscribed when there were no independent stations while the experiment was in progress. The reader is frequently provided with hypothetical numbers instead of real ones—"a more likely result would be that virtually all of the cable subscribers would pay $1 a month for the extra service" (p. 148). A more important shortcoming is that they use observations on the audiences for various program types to claim that "the strongest unfilled consumer demand is in categories similar to those that dominate network schedules" (p. 142). The observation itself is open to question. High school basketball and "concerts, opera, and ballet," both of which attracted over 10 percent of all pay television subscribers, are scarcely categories that "dominate current network schedules." Even if the observation were correct, however, it may reveal more about the limitations of the program categories used than about viewer preferences. After all, the category "movies," which has large audiences both on free television and in the Hartford experiment, contains both "Mary Poppins" and "Last Tango in Paris." To formulate conclusions regarding what the Hartford experiment tells us about viewer preferences, something more is needed than a count of the number of subscribers viewing programs by broad program categories. The authors are to be commended for focusing our attention on the Hartford experiment as a potentially important and unexploited body of data, but the data remain largely unexploited.

CABLE AND THE VALUE OF FREE TELEVISION

The most widely used evidence on the demand for television arises from experiences with cable television. Cable, carrying almost exclusively existing advertiser-supported programming and thus far available primarily in areas with few local signal or reception difficulties, is a natural data source for analyzing the value that consumers place on additional viewing alternatives. In addition to frequent references to measures of consumers' surplus from free television based on evidence from the demand for cable, Noll, Peck, and McGowan devote two chapters and an extensive appendix to an examination of cable television and its future.

The analysis in the first part of Appendix A sets a high standard of applied econometric work. The authors construct a model of cable television demand using a Cobb-Douglas utility function in "quality of television service" and expenditures on other goods. Variations in tastes among consumers is captured by an exponential distribution of the ratio of the elasticity parameters of the utility function. However, all consumers are required to have the same income, an assumption that is crucial

large enough to cover their costs. This fact and the lower hardware costs of denying access to non-paying viewers increase the likelihood that subscription television will develop in the cable rather than the broadcast mode.
to their derivation and limits the applicability of their results. From these premises, they derive the estimating equation (pp. 283-284):

$$\frac{\ln (1 - P/Y)}{\ln \text{PEN}} = \alpha + \sum \beta_i \ln X_i + \sum \gamma_j D_j,$$

where $P$ is the annual subscription price; $Y$ is household income; and PEN is penetration, the fraction of households who subscribe to cable in a mature system. The proxies for quality of service are $X_i$ (comparative service variables for network, duplicate network, and independent stations that measure the number of cable signals compared with signals available off the air) and $D_j$ (dummy variables indicating the presence of time-weather, local origination, and educational channels).

The equation is estimated using data from a 1969 sample of 31 cable systems of 10,000 or more subscribers. The authors justify deflating all variables by the square root of the age of the system on the grounds that younger systems in the sample may not yet have reached equilibrium and that age is a proxy for the quality of over-the-air service.

The results of estimating the model are broadly consistent with earlier studies of cable demand.* In areas where homes are unable to receive all three networks, over half the homes will pay $5 per month to receive network fare alone. Importing independent stations induces additional, but much smaller, gains in subscribers. Noll, Peck, and McGowan argue convincingly that this sample provides a direct measure of the value to viewers of "free" television, and strong evidence that the public desires an expanded number of network and independent station alternatives. Their numerical estimates of this surplus, which they caution are subject to some uncertainty, are surprisingly large and suggest that the average household would be willing to pay more than 5 percent of its income rather than do without three-network television service.

Because the major potential for cable television lies in the large urban areas of the country, which are, as yet, almost entirely unwired, predictions of the demand for cable service in major markets is central to an analysis of the national prospects for cable but not readily extrapolated from the demand observed to date. The authors appropriately observe that both their own estimates and those of two earlier studies are not representative of conditions in the large urban markets, almost all of which have available at least three network stations of good technical quality. They therefore obtain a second sample of 40 cable systems located in areas that enjoy good quality broadcast reception of all three networks. The authors consider these data are "highly representative," despite a response rate of only 10 percent to their mail questionnaire. When fitted to these data, the consumer decision model yielded unsatisfactory results. There is a negative effect of additional independent signals, a much smaller effect of more network signals than in the other sample, and little explanatory power. In particular, the value of free television implied by the results using the major market data is strikingly smaller than implied by the results using the first sample.

At this point the authors remark that "other factors such as price, income, and alternative available entertainment options" (p. 296) may explain differences in penetration rates. They therefore discard their initial analysis along with their

* See for example, Comanor and Mitchell (1971), and Park (1972).
model of viewer behavior in favor of what we may call Model II, a linear regression of the penetration rate on price, income, a single comparative service variable, a dummy variable for a "top 100 market," and the age of the system. According to the authors, the principal results of Model II are that the profit-maximizing price is not significantly different from the typical $5 per month and that cable systems approach an equilibrium penetration quite rapidly (p. 156).

Can there be a reconciliation of the two models? The reader searches the text in vain. Model I implies price and income elasticities equal in absolute value and of the order of 0.75 to 0.9 for a system that imports four distant signals. In contrast, Model II has a price elasticity of –1.95 at the mean and implies an income elasticity of about 1.0. The role of the age variable is also unclear. In Model I, age causes system disturbances to have unequal variances but no effect on the number of subscribers, whereas in Model II it has a positive effect on expected penetration. Indeed, Model II is nothing more or less than another of the "ad hoc linear relationships between cable penetration on the one hand and price, income, and quality variables on the other" (p. 290) for which the authors have criticized other researchers. If these variables are valid determinants of penetration, an appropriate methodology would have been to incorporate them into a more fully specified Model I. Instead, Noll, Peck, and McGowan ignore the inconsistencies of their two models and proceed to use only selected results from each.

Having acknowledged the need for data on systems operating under conditions similar to those in large cities and then having estimated Model II, the authors use the results of their first model to predict the demand for cable in large cities. According to them, penetration will reach 50 to 70 percent in major markets if cable carries four independent signals. Under these conditions, cable will have "enormously large potential profits" (p. 159). Not only is this forecast based on data that are not typical of large city conditions, the predictions are substantially at variance with those of the one previous study using data for systems operating in environments like those in the major markets. R.E. Park analyzed data from a sample of 63 cable systems, all of which are in markets having at least three high-quality signals available off the air. For each system, data were verified in telephone interviews. Park's specification takes into account two important factors neglected by Noll, Peck, and McGowan—the variation in technical quality of off-the-air signals, and what has come to be called the "handicap" that UHF stations face in competing with VHF stations for off-the-air audiences. The resulting model is estimated by nonlinear methods. Park's work implies that penetration for urban systems will range from 20 to 45 percent.

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9 Noll, Peck, and McGowan report only that penetration increases by 0.05 per $1000 of income in 1972 prices. Means of 0.50 for penetration and $10,000 for family income would yield unitary elasticity.

10 This is not the only case in which the authors' specification leaves something to be desired. Other instances are in their treatment of the demand for advertising (p. 41), in their analysis of the prices of television programs (pp. 78-79), and in their examination of the factors underlying a television license award (pp. 112-115). In the last case, for example, to measure the criteria actually used by the FCC to award licenses, they carry out a statistical analysis of 45 applicants for 16 licenses awarded in the 1967-1970 period. The dependent variable took on the value one if a license was granted, and zero if it was not. Although the authors are concerned in several other regressions about the presence of heteroscedasticity, it goes unnoticed here. A more serious error is the failure to note that 16 observations are necessarily dependent, reducing the degrees of freedom available, and raising questions about the bias of the estimated coefficients.

11 Park (1972).
Cable, according to Noll, Peck, and McGowan, would achieve 66 percent penetration of all homes offered service and would actually wire 54 percent of all U.S. homes if free to import four high-quality independent signals. Such systems would be highly profitable, generating an above normal profit of $500 million and a consumers' surplus of $1.7 billion annually.

But that development will not be permitted. The FCC has severely restricted the number and types of signals that may be imported and has imposed numerous requirements that cable systems provide unremunerative services. The combined effect of these restrictions "will probably foreclose cable development in most large cities" (p. 204). Thus, although their estimates of the losses to consumers caused by these policies is greater, Noll, Peck, and McGowan foresee much the same limited prospects for cable under the FCC rules that were predicted by Comanor and Mitchell (1971).

12 Because of low housing density, low incomes, or high construction costs, some areas may never be wired.
III. THE ECONOMICS OF NETWORKS

The three national television networks occupy a central position in the American television industry. Through their affiliated stations they serve almost all homes in the United States and are the initial purchaser of most programming produced for television. Although most network affiliates are profitable, most independent stations are not. Noll, Peck, and McGowan have devoted a good deal of attention to the economics of the networks.

A MODEL OF NETWORK BEHAVIOR

Television networks operate as intermediaries between their affiliated stations and the suppliers of programs. The networks bear the costs of program acquisition and of system interconnection. In return, they receive a share of the advertising revenues generated. The remainder of the revenues are paid to the stations for the use of their time.

In Appendix B, the results of which are employed in various chapters in the book, Noll, Peck, and McGowan develop a formal model of the relationships among a network, its affiliated stations, and program suppliers. The authors observe,

the share of revenue that must be given up to affiliates [to induce them to clear the full network lineup] will be minimized . . . if networks monopolize broadcast rights for the most popular programs. . . . Thus, the major means by which a network can hold down the share of revenues that it must yield to affiliates is the superior audience appeal of its programming relative to that available from nonnetwork sources (p. 304).

Further, “the maximum share a network would have to offer a program supplier increases as audience size increases but decreases with the share of program revenues that networks give to affiliates” (p. 305). Thus, the two elements in the network’s decisionmaking are “the need to provide an economic incentive to carry network programming establishes a lower limit on the share of revenue that networks must yield to affiliates” and

a network must be willing to pay program producers at least the opportunity cost of resources used in program production. Consequently, it would be fruitless for the networks to set [the maximum share paid to affiliates] so
high as to make it impossible for a program producer to recover these costs (p. 305).

The problem that a network faces is to set the share of revenues paid to its affiliates on various programs high enough to get them to accept the programs and to pay program suppliers enough to induce them to supply their programs to the network. The two payments clearly interact. The higher the payment to program suppliers, the better the programs attracted to the network and the smaller the share paid to affiliated stations; but the higher the payment to affiliates the smaller the necessary payment to suppliers because they will face a more difficult time in dealing directly with the stations. The analysis of the interaction between these two decisions represents an important insight.

Having established the linkage of these two decisions, Noll, Peck, and McGowan proceed to ignore their interaction. They assert "the networks would like . . . to set [the program owner's share in broadcast revenue] so that . . . program costs would . . . be minimized and profits maximized" (p. 307). And they state "in view of the role of [the maximum sharing ratio for affiliates] in determining the share of broadcast revenues that established programs can extract . . . one would expect [the maximum sharing ratio] to be set quite closely to" the value that would minimize the necessary payment to program suppliers (p. 309). But the networks do not wish to minimize the payment to program suppliers any more than they "have a preference for a high value of the maximum sharing ratio for affiliates" (p. 309). They simply wish to maximize their own profits, and this requires neither a maximization of the payment to their affiliates nor a minimization of their payment to program suppliers. In fact, the authors find that payments to program suppliers exceed their resource costs.

THE ECONOMICS OF PROGRAM SUPPLY

Noll, Peck and McGowan use the observation that, on the average, program suppliers earn returns in excess of normal profits to argue throughout the book that additional resources available to television will have little or no effect on programming volume. But that conclusion results from a confusion between the marginal and the average supplier. They argue, "further increases in the expected rate of return are unlikely to draw additional resources into the [program production] industry" (p. 84). But so long as there are variations in ability among program suppliers it is not surprising that some suppliers earn differential rents, leading to average earnings for the industry that exceed returns expected at the margin. One does not need the contrived argument that there is "a scarcity of ideas and talent for developing more pilots that have a chance of becoming successful network series" (p. 84) to explain above-normal profits. Conventional economic theory will suffice. The observation that existing program suppliers earn rents is fully consist-

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13 The authors argue that it will be difficult for the networks to implement a compensation structure for affiliates that provides differential compensation according to the popularity of network programming relative to nonnetwork alternatives. But existing compensation arrangements have precisely that character. See Besen and Soligo (1973) for a fuller discussion of the network-affiliate relationship, dealing explicitly with this question and with the regulatory environment in which the relationship exists.
ent with the view that additional resources devoted to television will call forth an additional supply of programming.

THE PROSPECTS FOR NEW NETWORKS

One of the most widely heralded of the authors’ policy conclusions is that, if channel allocations were changed to permit it, the nation could support six over-the-air television networks (pp. 117-118). Given the extensive treatment of the behavior of the existing broadcast networks and their relationships with program suppliers and affiliated stations, one might expect that this important conclusion follows directly from that analysis. On the contrary, the conclusion is obtained from a simple extrapolation of costs and revenues based on data for the three existing networks. The thrust of the argument is that the programs being produced for the independent stations in the major markets could be widely distributed at little additional cost and that the costs of the new networks based on the programming of these stations would be covered by the new revenues generated.

But no data are ever presented on the profitability of the three new networks. Instead, we are provided with estimates of the aggregate profits in a six-network system. None of the analysis of the relationship between the networks and program supplier is used except to argue that, since industry revenues decline because of the elimination of local advertising, program suppliers’ rents will fall. Since programming costs are approximately one-half of total revenues for the three existing networks, that proportion is used for the six-network system. Aggregate audience measures are derived solely from audience data for New York City. Revenues are obtained by extrapolating revenues per viewer from the three-network system. The model of the relationship between networks and their affiliates is never used to examine what would happen when the number of stations in each market is equal to the number of networks, nor is there any analysis of how the three existing networks might change their programming policies in response to the entry of the three new networks. In short, there is no analysis of the behavior of the participants in the industry at all. An important opportunity has been missed: An analytical model is developed to explain behavior, but when an important problem to which the model can be applied is addressed, the analysis is jettisoned in favor of an ad hoc analysis. As a result, one does not know very much more about the prospects for new networks after the reading the book than one did before.
IV. FINANCING UNREMUNERATIVE SERVICES

Regulated industries abound in hidden subsidies, and the television industry is no exception. Noll, Peck, and McGowan identify a number of such subsidies, attempt to measure their costs and benefits, and seek more efficient means of achieving the same ends.

LOCALISM

The authors are at their best in illuminating the long-standing and perpetually ineffective FCC policy of localism, the promotion of "local service" broadcasting by establishing stations in as many localities as possible. This goal, which was first articulated in the early days of radio, became an important consideration in developing the Commission's master plan for allocating television broadcast frequencies. In promoting localism, the FCC explicitly rejected the Dumont proposal for a television system based on powerful regional VHF stations so that "as many communities as possible should have the opportunity of enjoying the advantages that derive from having local outlets that will be responsive to local needs."14

The Commission has sought to expand the range of viewing alternatives by allocating a large portion of the frequency spectrum in the Ultra High Frequency band to television. But even though almost all television receivers currently can receive UHF television, UHF stations without network affiliations are almost all unprofitable, as are many network-affiliated UHF stations. The limitation on VHF channels in many markets has restricted the number of viable networks to three. Thus the policy of localism combined with the handicaps that UHF stations face has produced a situation in which many viewers have fewer viewing alternatives than are technically and economically feasible.

Given the well-known costs of the policy of localism, what are its benefits? The authors' survey of Commission hearings and investigations concludes that, aside from local news and sports, which are generally self-supporting, "local service is a myth" (p. 110). The judgment is plausible, both because local programming is costly to produce and because it is of limited interest to viewers who have the alternative of watching network or nationally syndicated programming. Nevertheless, the au-

thors themselves might have investigated the local service programming of various stations to give more support to their own conclusion.

THE CABLE SURPLUS

Noll, Peck, and McGowan pointed out that the notion of a cable television "surplus"—the above-normal profits that would be generated by unregulated cable development and can be applied to other uses—is a difficult one to resist, and this remark characterizes their own pronouncements on the regulation of cable television as well as the FCC's. In an earlier paper that they prepared for the Sloan Commission on Cable Communications, the authors entertained three categories of "realistic proposals." It might be necessary to pay part of the surplus in the form of "bribes" to various interest groups to persuade them to permit cable to develop. The proposed recipients, not necessarily preferred by the authors, included the FCC (establishment of a UHF station development fund), network affiliates (compensation for reduction in profits), local governments (cable franchise fees), and program producers (copyright payments from cable systems). A second category of proposed uses of the surplus is reiterated in the book. The authors consider a host of unremunerative services to be "worthy claimants," including the FCC's earlier proposal of a "public dividend" tax on cable revenues for support of public broadcasting, free public broadcasting and free instructional cable channels, reduced subscriber rates in poverty areas, and mandatory live origination in major markets. And following this list of special interests, Noll, Peck, and McGowan identify a third category for the "final claimant"—the consumer.

The reader senses the authors' recurring ambivalence in discussing proposals for cross-subsidization. How strong is the case for requiring the production of any of these special services? Posner has proposed that the burden of proof should be on those who advocate such "taxation by regulation."15 The efficiency losses of permitting cable systems to earn excess profits to subsidize the regulator's planning objectives can be large,16 particularly if cable subscription demand is price elastic, and the authors appear to believe that it is (p. 298), although this conflicts with both their first model of cable demand and the assumption used in their earlier Sloan Commission paper.

In concluding their discussion, Noll, Peck, and McGowan do criticize the FCC for imposing, through its cable regulations, "a high indirect tax on cable television viewers, partly in the form of higher subscription prices to cover the costs of unnecessary services and partly by limiting the access to viewers to services they value" (p. 205). Yet rather than resisting the temptation to use the surplus, they have themselves entertained a wide spectrum of special subsidies and in doing so have perhaps encouraged regulators to engage in this device of "planning by regulation."

17 For an analysis of this issue, see Comanor and Mitchell (1972).
PUBLIC TELEVISION

Noll, Peck, and McGowan devote an entire chapter to the financing and organization of public broadcasting. They conclude a discussion of the rationale for public television by arguing that, given growth in cable and subscription television, only a very limited case can be made for it (pp. 216-217). Further, since the principal beneficiaries of public television are its viewers, “a method of financing that relates the available funds to viewer satisfaction is preferable to automatic, periodic payments from a widely levied tax” (p. 219). Given the above, the reader is surprised to read several pages later that the authors’ policy recommendation is that public television be provided with “automatic general revenue funds by formula with virtually automatic appropriations” (p. 234).

Little has intervened between p. 219 and p. 234 to prepare the reader for this startling reversal, and he is not told why it has occurred. Is it that the authors believe the developments in cable and subscription television that would render public television superfluous will not be permitted to occur? And, if so, why do they not then favor a financing method linking funding to viewer satisfaction? It is not until ten more pages have passed that the mystery is resolved. The authors propose (p. 244) that public television should be financed largely by means of federal matching grants based on the amounts of funds it receives in the form of individual contributions. But the rationale for this proposal, both in the amount of funding it envisions and in the financing method, is not clear. The matching feature does provide for a reflection of viewer preferences, but the authors have argued previously that benefits to nonviewers are meager. The funding mechanism would place substantial costs on nonviewers and, more important, would make permanent a public television system for which the evidence, the authors conclude, consists only of “lonely shreds” (p. 217). Although not an isolated instance, this may well be the most striking case of the book’s separation of analysis and policy recommendations.

The authors consider an especially novel approach to financing public broadcasting—that public television offer some programs on a subscription basis, with the profits being used to subsidize the costs of free public television (pp. 232-234). They argue that it is likely that public subscription television would be subject to fewer restrictions than commercial subscription television because there would be a smaller fear, presumably on the part of commercial broadcasters, that it would siphon programs from free television. But they never discuss the motivations of the public television operator.

Whatever the case for public television it surely must rest on an analysis of what public television stations would provide under alternative regulatory environments and financing methods. If subscription television were permitted on public broadcasting, one would like to know, for example, what programs a public television operator would show when he is charging for television, what prices he would charge, and which programs he would subsidize. The authors have attempted to explain the behavior of FCC Commissioners (see Section V) in terms of underlying economic motivations. One can apply to public broadcasting, with appropriate modifications, a statement made by Noll, Peck, and McGowan in that context: “What is needed is at least the beginnings of a formal theory of the [public broadcasting station] so that the positions taken by [public broadcasters] can be better understood and perhaps even predicted” (p. 120). But no such analysis appears in their
consideration of public broadcasting, and without knowing what it is that public broadcasters wish to "maximize," an evaluation of public broadcasting and of alternative methods of financing it cannot be complete.
V. REGULATORY BEHAVIOR AND POLICY CHANGE

Since Noll, Peck, and McGowan have written a normative book and hold strong views for modifying the present regulation of television, it is of particular interest to examine their analysis of FCC behavior in conjunction with their own policy recommendations. Their view of the Commission is built on the premise that the Commission’s decisions result from rational, optimizing behavior and that potential for economic gain motivates political as well as economic activity (pp. 120-121). Other things equal, several characteristics of the regulatory environment lead regulators to prefer to minimize visibility and change. The authors predict that the Commission will be most receptive to groups with a high per capita interest in a decision; that it will tend to seek compromises, parceling out some gains to all interests in the name of fairness; and, when faced with an unavoidable appeal to outside judgment, it will delay a decision and attempt to shift responsibility to some other authority (the Congress, the courts, and so on) (pp. 124-126).

How do the authors see change occurring? As advocates of consumer sovereignty they are acutely aware that consumers, with a small per capita interest, have not been well represented before the Commission. And they have observed that “reforms in the structure of broadcasting are far more likely if some protection can be afforded to existing interests and if some other existing, powerful special interest can be made to regard its own welfare as coincident with the public interest in the change” (p. 128).

The authors’ own position is that “a new legislative mandate for broadcast regulation is necessary” (p. 275). In its principal features this mandate would divest the FCC of control of program quality and content, establish competition as the primary mechanism for reflecting viewer preferences, downgrade localism, and limit the license renewal process to consideration of engineering questions. They would also rely on expanded access to the airwaves to replace consideration of “fairness doctrine” and “equal time” questions.

The difficulty with this prescription is that legislative reform is no easier to bring about than it would be to get the Commission to change its behavior. The same special interests who have influence with the Commission are at home, as well, in the halls of Congress. The Commission can make few important decisions without Congressional approval, and criticism of the Commission is, therefore, criticism of the Congress. The recent case of the cable television “consensus,” in which criticism from the Congress, in response to anticipated pressure from broadcasters, led the
Commission to limit cable development more severely in February 1972 than it had proposed the previous August, is an outstanding example of this phenomenon, and one cited by the authors (p. 206).\textsuperscript{18}

\textsuperscript{18} These developments are also analyzed in Besen (forthcoming).
VI. CONCLUSION

In the final chapter of Economic Aspects of Television Regulation, the reader is treated to an intelligent assessment of many of the major issues in the regulation of the television industry. The chapter represents the kind of mature statement about public policy that one would expect from its authors, and we suspect that many of the judgments they reach are correct. Our attention is once again focused on the frustration of the public interest accomplished by a regulatory agency. It is no matter that consumers prefer more television programming and are willing to pay for its delivery by cable or scrambled signal; the Federal Communications Commission is determined to separate the viewer from any real measure of consumer sovereignty in order to protect the wealth of broadcast station owners. Not content to establish fair "rules of the game" and to leave the outcome to competitive forces, the Commission finds itself regulating the behavior of the participants in the industry in ever increasing detail. The authors’ call for substantial deregulation of television, for unfettered competition from new communications technologies, for the abandonment of the policy of localism to expand the range of viewing choice, and for divesting the Commission from control over program content is, therefore, welcome.

But many, if not most, of the conclusions reached could have been obtained independently of the analysis carried out in the other 325 pages. Perhaps the authors have recognized that policy judgments do not wait for definitive answers from the research community and decided to advocate their position even though its analytic foundation is not yet sound. And here it is difficult to fault the authors. In their emphasis on greater reliance on the market and in the wide attention their conclusions will attract, the publication of this book will have a salutary effect.

Yet the authors have sought to give the impression that their conclusions are derived from a comprehensive analysis of the television industry. But no such analysis existed before they began their work and they have failed to provide one. Study of the broadcasting industry has, until quite recently, attracted only a minimal fraction of the economics profession’s resources, and progress on both theoretical and empirical questions has been proportionately slow. Given the level of understanding at the time the authors began their work, it would be surprising if a definitive analysis of the industry emerged from their book.

Modest and qualified assessments are the best the economist can offer at this time. In an attempt to buttress their position in the advocacy process, however, the authors have exaggerated the conclusiveness of their analysis and claimed far more
support for their policy judgments than is warranted. Contrary to its appearances, *Economic Aspects of Television Regulation* leaves many, if not most, of the important questions concerning the television industry still unanswered.
REFERENCES


