THE EFFECTS OF CROSSMEDIA OWNERSHIP ON TELEVISION AND NEWSPAPER "PRICES"

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ABSTRACT

THE EFFECTS OF CROSSMEDIA OWNERSHIP ON TELEVISION AND NEWSPAPER "PRICES"

By

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The Federal Communications Commission took five years to determine that it was not in the "public interest" to dissolve same-city newspaper-television combinations. However, the U.S. Court of Appeals for the District of Columbia overturned the Commission's "grandfathering" approach by ordering the dissolution of all crossmedia combinations. Since the FCC intends to appeal this decision to the Supreme Court, a more definitive determination of the actual effects of crossmedia ownership on newspaper and television station performance is needed.

This study is concerned with the economic effects of crossmedia ownership. Previous studies have produced contradictory results. Owen found that crossmedia firms charge higher media advertising prices. Lago did not. The difference was traceable to the inclusion of circulation in Lago's estimating equations. This study utilizes a functional form similar to the ones used by Owen

and Lago. However, it attempts to correct the following problems: (1) Owen and Lago's dependent variable was not consistent with the most important "transaction price" used in media advertising markets since it did not reflect how much firms charged per thousand audience units sold. (2) Using a prime time hourly rate dependent variable failed to measure the effects of crossmedia ownership on "transaction prices." (3) Previous analyses failed to look for heteroskedasticity. Finally, this study represents the first attempt to examine station pricing at various times of day and for adult audiences.

When compared with all other 1973 television stations, crossmedia-owned stations and their same market competitors charge lower "prices." This finding suggests that crossmedia firms both possess and exercise market power. Since market power is normally employed to charge higher prices, this finding bears explanation.

First, the dependent variable studied by Owen and Lago and the ones used in this analysis might yield different crossmedia results. Second, crossowners may have begun to set their advertising rates jointly. Third, there might be some economies of joint operation which existed in 1973 but not in 1966 or 1970. Finally, some external variable, such as increased regulatory scrutiny, might be causing the lower prices discovered.

This study empirically refutes the first two explanations. However, it is not possible to empirically test the economies of scale or regulatory scrutiny theories.

If crossmedia firms enjoyed economies in 1973 which were not present in 1966 or 1970, the price effects of such ownership would constitute a long-run social benefit. However, the FCC is primarily concerned with media diversity. Consequently, allowing continued operation of crossmedia firms, which possess media information market power, constitutes a potentially large long-run social cost. The long-run costs of potential information control are probably larger than the benefits resulting from lower advertising rates.

Although an economies explanation is possible a more likely hypothesis is that FCC and Justice Department scrutiny have given crossmedia firms a short-run incentive to lower "prices." If scrutiny has influenced station behavior, its continued effect depends on sustained FCC interest in the issue. Should the Commission lose interest, joint owners might exercise their market power to charge monopoly prices and to interfere with the expression of competing ideas.

In sum, the choice between an economies and a scrutiny explanation is not clear. However, the policy implications are similar in both instances. Since effective media information conduct remedies would probably violate First Amendment principles, a structural solution is preferred. Consequently, the findings of this study suggest that the FCC should dissolve all crossmedia combinations unless they result in demonstrable and substantial economies of scale. Moreover, the sacrifice of some scale economies may be desirable either to achieve prices closer to marginal cost or to promote diversity of speakers.

This study also indicates that television stations, which own a same-market AM radio station with 5,000 or more watts of power, charge higher prices than all other stations. Since this finding demonstrates that such television-radio firms exercise their market power to charge monopoly prices, the FCC should dissolve these combinations.

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CHAPTER I

INTRODUCTION

This dissertation reports the results of an empirical study of mass media firm "pricing." It specifically focuses on "pricing" by same-city newspaper-television combinations. This analysis attempts to determine whether continued operation of such crossmedia combinations is in the "public interest."

The Federal Communications Commission took from March 1970 to January 1975 to complete its rulemaking on single-firm ownership of newspapers and television stations serving the same market. At the completion of this deliberation, the Commission ordered the dissolution of sixteen small-market newspaper-television and newspaper-radio combinations and banned all mergers leading to such combinations in the future.[1] In 1977, however, the U.S. Court of Appeals for the District of Columbia overturned the Commission's limited divestiture approach by ordering that divestiture be "required except in those cases where the evidence clearly discloses that crossownership is in the public interest."[2]

The FCC's limited divestiture order was based on the theory that the public must prove crossmedia ownership is harmful to the "public interest, convenience, and necessity." However, the FCC's decision to ban further newspaper-broadcast combinations was based on the theory that promotion of diversity was of primary importance. The inconsistency of these two positions was highly criticized by the Court of Appeals. Consequently, the Court placed the burden of proof on existing crossmedia combinations to demonstrate that their continued existence is in the "public interest." At this writing, the FCC plans to appeal to the Supreme Court of the United States.

Since most of the empirical evidence submitted to the Commission was inconclusive, the FCC's decision was based on policy, rather than factual considerations.[3] The Court of Appeals suggested that "an antitrust rather than a First Amendment focus might have facilitated compilation of a [more] useful record."[4] Such a focus would probably have elicited filings alleging specific instances of undesirable business conduct practiced by crossmedia combinations. This information would correspond to the typical evidence gathered in any court of law. An antitrust focus might also have placed additional emphasis on economic studies of mass media market structure and performance. This study takes the latter approach by examining the effect of crossmedia ownership on television and newspaper "prices."

Standard industrial-organization analysis suggests that competitive market structures result in more economically efficient firm behavior than monopolistic structures. This structure-conduct-performance linkage suggests that social welfare criteria are best met when competition is maximized within a given market.*[5] This suggests that when a newspaper owns a broadcasting station in the same market, there is one fewer competitor for the advertiser's dollar. Since such a combination theoretically possesses more market power than its competitors, this can lead to higher prices, i.e. higher advertising rates.

Scherer suggests that such decreases in competition can lead to prices which exceed costs for three reasons. First, as the number of sellers decreases, the market shares of individual producers will increase. These increases in market share will cause producers to estimate the effect of their price and output decisions on rival firms and the overall level of prices. Second, as sellers become fewer in number, it is less likely that at least one firm will pursue an independent, aggressive pricing policy. And third, as the number of sellers

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*Competitive markets are characterized by many sellers, none of which possess any market power. Price is thus determined through the operation of impersonal market processes, and resources are allocated so that each factor of production (or resource) receives only its "fair" return.

decreases, firms will find it easier to arrive at a mutually advantageous price which comes close to maximizing joint profits.[6]

Stigler suggests further that a decrease in the number of sellers will make it easier to police collusive price agreements.[7] Such an increase in enforcement efficiency will tend to reduce price-cutting behavior on the part of sellers. Consequently, this will enhance the likelihood that prices significantly exceed marginal costs. Since economic efficiency criteria require that price be set equal to marginal cost, it would seem desirable to maximize the number of sellers competing for buyer dollars in most market situations.

In media advertising markets, this requirement would translate into eliminating ownership of more than one major mass media outlet in the same market.* This study will attempt to determine whether crossmedia ownership leads to significantly higher advertising "prices" in two sub-sections of the mass media advertising market--the television sub-market and the newspaper sub-market. The results should prove useful to media economists, public interest groups, commercial broadcasters, the FCC,

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*Major media outlets are defined to be: commercial television stations, newspapers with a daily circulation of at least 10,000 in a market, AM radio stations with 5,000 or more watts of power, and cable television firms.

the Justice Department, and the Courts in determining, once and for all, whether crossmedia ownership affects "pricing" in media markets.

Rationale for Study

Previous studies in this area have produced contradictory results. Each of these studies will be discussed in the next chapter. Most of the disagreement between a major study by Owen and one by Lago centered on the use of station or newspaper circulation as an independent variable.[8] Owen did not include actual audience as a predictor variable. His results indicate that crossmedia-owned combinations charge significantly higher "prices" than all other media firms. When Lago included actual audience as an explanatory variable, this significant relationship disappeared. Though important, this issue does not seem as crucial as the selection of the dependent variable. Both Owen and Lago utilized each television station's highest hourly rate as listed in Standard Rate and Data Service: Spot Television Rates and Data. Utilization of this dependent variable creates a three-fold problem.

First, television rates are ultimately negotiated prices. Officially filed prices such as those used in previous studies are an estimate of what a television advertiser can be expected to pay--based on such factors as time of day, expected quality of program, and audience size. What the sponsor actually pays is a negotiated price based more closely on actual (i.e., experienced) audience size. This "list price" versus "transaction price" problem suggests that some variable such as each station's actual advertising revenue might be better suited for answering policy questions concerning cross-media ownership.[9]

Secondly, the rate-card price selected by Owen and Lago no longer pertains to an important commodity. Most television time is now sold in 30-second pieces; a full hour is rarely bought. The television industry used to sell considerably more hour-long blocks of time to advertisers. The purchasing advertiser would then present all of the spots within that hour. This practice has been largely replaced by the selling of 30-second spots to individual advertisers. Consequently, the hourly rate variable used by Owen (1966) and Lago (1970) may have been proportional to "listed" spot prices. Peterman suggests that analyzing both hourly rates and spot rates as listed in 1966 yields similar results.[10] However, a limited comparison between "listed" hourly rates and spot rates conducted by the author suggests that this would no longer be true in 1973.

And lastly, Baer, et al., propose that since advertisers look at advertising rates in terms of their cost-per-viewer, some kind of cost-per-thousand viewers variable would be a more appropriate dependent variable.[11] Peterman lends credence to this theory by reporting that "most discussions in the trade journals and testimony before government committees . . . have stressed the common measure of cost-per-thousand homes, and the Nielsen ratings upon which many decisions appear to be based."[12] Owen, Beebe, and Manning also suggest that the prices quoted for spot commercials "vary with the size of the audience, and are often spoken of in the trade as 'price-per-thousand viewers' (or households)."[13] Since advertisers are purchasing audiences in one thousand unit increments, the most relevant price is the cost-per-thousand viewers being charged for a particular 30-second spot not the total cost of such a spot.

Baer, et al., also suggest that additional specification problems may have been caused by heteroskedasticity.

> The precise specification in this case is closely related to the existence of heteroskedasticity in the error terms. Depending on the presence or absence of the heteroskedasticity, price per viewer may suffice without audience appearing as an independent variable; or price per viewer may have to be used as the dependent variable in addition to having audience appear as an independent variable.[14]

The present study, therefore, attempts to correct for the following problems associated with previous studies: (1) the dependent variable used by Owen and Lago did not reflect how much stations (newspapers) charge per audience unit sold and was, therefore, not consistent with the most important "transaction price" used in media advertising markets. (2) Utilization of a station's highest prime time hourly rate as the dependent variable is no longer meaningful. Hourly rates are seldom used since most time is sold in 30-second pieces. Moreover, hourly rates at best correspond to "list prices." Utilization of a dependent variable such as actual total advertising revenue should come closer to measuring "transaction prices." (3) Previous analyses failed to look for heteroskedasticity.

In addition, the literature leaves three gaps. No attempt to examine station pricing at various times of day or pricing differences related to various demographic categories has been attempted. Finally, the sample used to look for crossmedia price effects in newspaper markets was unnecessarily restrictive in both the Owen and Lago studies.

The next chapter will discuss the relevant research literature in greater detail. The third chapter provides a formal statement of the problem, discussion of hypotheses, and specification of the regression models. The fourth chapter presents the results of these analyses and the fifth chapter discusses the policy implications of the study and suggests directions for further research.

CHAPTER I--NOTES

[1]Commission Ruling: Same-City Newspaper-TV Crossownership Ruling, D. 18110 (January 28, 1975). (Hereinafter cited as Crossownership Ruling.)

[2]Ibid.; Reversed, National Citizens Committee for Broadcasting v. Federal Communications Commission, et al., __________F.2d.__________(March 2, 1977): 60 (slip opinion).

[3]Crossownership Ruling, supra note 1, pp. 37-38.

[4]Ibid., p. 48.

[5]F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: 1970), pp. 469-78; G. J. Stigler, "Monopoly and Oligopoly by Merger," American Economic Review 40 (1950 Proceedings): 23-34.

[6]Scherer, supra note 5, p. 183.

[7]G. J. Stigler, "A Theory of Oligopoly," The Organization of Industry (Homewood, Ill.: 1968), pp. 39-45.

[8]B. M. Owen, J. N. Rosse, and D. L. Grey, Empirical Results on the Price Effects of Joint Ownership in the Mass Media (Memorandum No. 93, Stanford University Center for Economic Growth), November 1969; Owen, "Newspaper and Television Station Joint Ownership," Antitrust Bulletin 18 (1973): 787-807; A. M. Lago, "The Price Effects of Joint Mass Communication Media Ownership," Antitrust Bulletin 16 (1971): 789-813.

[9]Differences between official and transactions prices are an old issue in industrial-organization analysis. See, e.g., G. J. Stigler and J. K. Kindahl, The Behavior of Industrial Prices (New York: 1970), and J. M. Blair, Economic Concentration (New York: 1972), pp. 461-66. Strictly speaking, our suspicion is that there is more discounting from official rate cards in the less competitive (i.e., the crossmedia) markets than elsewhere. No independent evidence suggests that this is the case; if it is, it should show up in the results of this analysis.

[10]J. L. Peterman, "Concentration of Control and the Price of Television Time," American Economic Review 61 (1971 Proceedings): 74-80.

[11]W. S. Baer, H. Geller, J. A. Grundfest, and K. B. Possner, Concentration of Mass Media Ownership: Assessing the State of Current Knowledge, R-1584-NSF (Santa Monica, Calif.: 1974), p. 92. (Hereinafter cited as Baer).

[12]J. L. Peterman, "The Clorox Case," The Journal of Law and Economics 11 (1968): 321-422, 380.

[13]B. M. Owen, J. H. Beebe, and W. G. Manning, Television Economics (Lexington, Mass.: 1974), p. 93.

[14]Baer, supra note 11, p. 92.

CHAPTER II

REVIEW OF THE RELEVANT LITERATURE

Only six studies have been conducted to determine whether crossmedia ownership leads to higher media advertising "prices." Five were conducted at the television station level and one at the market level. Two of the station level studies also examined the newspaper side of the market. Only one of these studies found the expected higher prices. However, most of these research efforts had methodological problems.

Station Level Studies

The Owen-Rosse-Grey,[1] Lago,[2] and NAB Staff[3] studies all employed similar research techniques but with differing results. The findings will be summarized before their conflicting results are reconciled and criticized.

Since the two studies conducted by Owen are similar, only his latest work will be discussed here. The individual television station was the unit of observation and the log of the station's highest prime time hourly rate in 1966 served as the dependent variable. Crossmedia ownership was recognized by a dummy variable.

Additional independent variables included: (1) the square of the log of the SMSA population, (2) a measure of the market's income, and (3) dummy variables which equaled one (a) if a station broadcast a VHF signal, (b) was affiliated with a network, or (c) competed with a crossmedia-owned station. Application of Ordinary Least Squares (OLS) procedures resulted in a significantly positive crossmedia dummy (t=2.5) and a very acceptable R^2 (.71). All of the other independent variables used by Owen were also found to be positively significant except the crossmedia-owned competitor dummy which was strongly positive but insignificant (t=1.6).

Lago conducted a similar study using 1970 price data, but added to the independent variables a measure of the station's circulation--the log of its highest prime time quarter-hour audience. Lago's dependent variable was identical to Owen's. Other independent variables differed as follows: (1) the log of SMSA population was used instead of the square of its log, (2) household income was in log form, and (3) four new dummy variables were added to represent--same-city TV-radio combinations, VHF monopolies, network-owned and operated stations (O & O's), and stations which compete with network O & O's.

Lago achieved a higher R^2 with this specification (.85), but found the relationship between the crossmedia dummy and the dependent variable to be insignificant. Significant positive relationships were found to exist between Lago's price variable and quarter hour audience, population, income, and the VHF and network affiliation dummies. Positive but insignificant relationships were found between the crossmedia-owned, TV-radio combination, and competes with crossmedia-owned dummies and the dependent variable. The VHF monopoly dummy, on the other hand, had an insignificant negative sign.

In addition to the OLS estimates, Lago attempted to remove any doubt that the circulation variable was exogenous by utilization of two-stage least squares (2SLS). However, subsequent criticism by Rosse[4] pointed to a number of methodological flaws in Lago's 2SLS analysis.

> The structural form has the advantage of permitting maximum application of known economic principles in the development and evaluation of its equations. At the same time, by its nature, it must be developed by means of such principles and in ways consistent with them. It is apparent that no discernible economic principles were used in the development of the RMC-2SLS-TV model. . . . Finally, it is ludicrous to suppose that any two equation structural form model, no matter how carefully specified, could possibly describe an economic phenomenon as complex as that found in television markets with sufficient accuracy to permit inference relevant to the issues of Docket 18110.[5]

Rosse's analysis suggests that further discussion of Lago's two-stage least squares results would be pointless.

The basic difference between Lago's and Owen's studies was Lago's inclusion of quarter-hour audience as an explanatory variable. Owen excluded this variable on the assumption that it was endogenous to the system. The NAB staff, therefore, re-analyzed Lago's data by replacing the current values of the quarter-hour audience variable with its value lagged one year.

Although this still resulted in an insignificant crossmedia ownership dummy, it also caused the network affiliation dummy to go from highly positively significant to almost negatively significant. The NAB Staff made no attempt to discuss this discrepancy. Such a radical shift in variable signs suggests that the use of lagged audience caused a misspecification of the model or that some other error was made in conducting the analysis. At the very least, such a shift reduces the credibility of the NAB's findings.

Thus, the two major results were that Owen's crossmedia ownership dummy variable was significantly positive and Lago's was not. Owen argues that audience size is a result of the characteristics depicted in the other independent variables. If true, Lago's study was susceptible to simultaneous-equation bias. <u>If</u> higher rates enable stations to contract for better programming, <u>and</u> <u>if</u> the better programming leads to a larger audience size, then the regression equation will not lead to an unbiased estimate of the influence or significance of the independent variables (including the ownership dummy) on the dependent variable (price of advertising).

However, Owen's theory cannot be accepted for the dependent variable he studied. This is because most prime time programs are selected at the network (rather than the station) level. This means that actual audience size is unquestionably exogenous when analyzing the price charged by individual stations for all programs originating from a commercial television network. Owen's theory might be acceptable for local programs originated at the station level. However, the average station produces only 1.3 hours of such local fare per day.[6] Since actual audience is unquestionably exogenous for 93 percent of the broadcast day, stations probably use audience to determine price for the remainder (7 percent) of the broadcast day. Consequently, Lago's theory would seem to more closely approximate reality.

An additional criticism of Lago's analysis suggests that multicollinearity problems are partially responsible for the difference between his findings and those of Owen. However, inspection of Lago's correlation matrix casts serious doubt on this criticism.

Consequently, Lago's form is preferred to Owen's if heteroskedasticity is absent. However, the problems raised in the introduction to this study remain.

Other station level studies have also been conducted by Peterman[7] and Anderson-Coe-Saunders.[8] However, both of these studies were methodologically flawed.

Peterman's station level analysis used the average price of a 20-second prime time spot in 1966 as the dependent variable and (1) each station's average quarter-hour audience during prime time, (2) SMSA household income, and (3) a crossmedia dummy (which equaled one if the station was, or competed with, a crossmedia-owned station, and zero otherwise) as independent variables. Since the crossmedia dummy was not significant (t=-.92), Peterman concluded that "market prices per unit of audience do not increase as a result of newspaper ownership."[9]

Peterman's analysis suffers from the following problems: (1) the decision to use the same dummy variable for crossmedia-owned stations and for those stations competing with crossmedia-owned stations limits interpretation of the results to the market level; (2) utilization of a linear specification form (rather than log-linear) probably increased heteroskedasticity problems; (3) no attempt was made to control for each station's network affiliation, signal type, or market size; and (4) Peterman's conclusion is incorrectly stated since his dependent variable is a measure of price-per-unit of advertising rather than a measure of price-per-unit of audience.

Peterman's most valuable contribution to the present study was his utilization of three different rate variables--the average 20-second spot rate, the station's network hourly rate, and the national spot hour rates.

His finding that these three variables gave consistent results in 1966 makes it possible to compare the results of the present analysis to those of Owen and Lago.

The final station level study was conducted by Anderson, Coe, and Saunders. It compared the revenue-per-home delivered for crossmedia-owned stations to non-crossmedia-owned stations. On the basis of a one-way analysis of variance, they concluded that crossmedia ownership had no significant effect on the total revenue obtained per home delivered.

Since Anderson, et al., were granted access to the FCC's 1965 station-by-station revenue data for conducting this analysis, they could have been very helpful in resolving the "list price" vs. "transaction price" controversy. However, their study was methodologically inadequate. Attempts were made to use a set of polynomial regressions. However, Anderson, et al., suggest that these regressions had limited usefulness and send the reader to Appendix A of their report to prove their point. Unfortunately the regression results found in Appendix A are beyond interpretation. R^2's, t-statistics, standard errors, and coefficient labels have all been omitted.

Baer, Geller, Grundfest, and Possner suggest that abandonment of multiple regression techniques in favor of one-way analysis of variance was a questionable decision.[10] The decision to use such an analytic approach left such factors as signal type, network affiliation, market size, and audience uncontrolled. The Anderson-Coe-Saunders results are therefore not meaningful.

This review of station level crossmedia studies reveals that the research of Owen and Lago is most relevant to the present study. However, it is suggested that adoption of a cost-per-thousand form for all dependent variables and utilization of both station advertising revenue-per-thousand viewers and average list prices-per-thousand viewers as dependent variables will lead to more definitive results than any previous study.

Daily Newspaper Studies

In addition to their television station studies, Owen and Lago also examined the effects of crossmedia ownership on newspaper advertising rates during 1966 and 1968 respectively.[11]

Owen's cross-sectional sample consisted of all daily newspapers published in U.S. cities having populations of more than 100,000 persons (N=156). His dependent variable was the log of the per-line price of national advertising. Independent variables included: (1) the log of each city's population and (2) dummy variables equal to unity when the newspaper firm: (a) published a morning and evening edition, (b) published a Sunday edition, (c) owned a television station in the same city, (d) was owned by a newspaper chain, or (e) was in competition with another local daily in its city of publication. Positively significant relationships were found between the "price" variable and all the independent variables except the chain-ownership dummy, which was positive but insignificant (t=1.81) and the competition dummy was negatively significant.

The major difference between Owen's newspaper study and the one conducted by Lago is the latter's inclusion of the log of each newspaper's average daily circulation as an independent variable. Lago's dependent variable was apparently identical to Owen's (although their definitions were slightly different). Other differences were: (1) the cross-sectional sample used by Lago consisted of most daily newspapers published in U.S. cities having populations of more than 50,000 persons (N=357), and (2) the log of each city's average income was added to the list of the independent variables, as were dummy variables having values of one: (a) if the newspaper enjoyed a city monopoly, (b) if the newspaper operated under a joint operating agreement, or (c) if the newspaper owned a radio station in the same city.

Lago found that circulation and population were significant and positively related to newspaper advertising "price"; that the city monopoly, city competition, and agency agreement dummy variables were significant and negatively related to "price"; and that all other variables were totally insignificant.

Thus, Owen and Lago both achieved high R^2's (.88 and .89 respectively). However, Owen's crossmedia dummy was significantly positive and Lago's was not. The difference is once again traceable to Owen's failure to include circulation as an explanatory variable. Inasmuch as the circulation figures used by Lago were unquestionably lagged values, it is difficult to accept Owen's argument that circulation is a jointly dependent endogenous variable. Lago's estimating form, therefore, appears to be better recommended than Owen's. Conversely, it is difficult to understand why Lago included a dummy variable for both city monopoly and city duopoly (competition). These two variables would seem to be redundant since they should test the same hypothesis. Since the zero-order correlation between these two variables was not 1.0 (it was actually .694), some other variable was coded as zero in both instances or a number of cities contain three or more dailies. If neither one of these occurred, Lago's data matrix would have been singular since the monopoly and duopoly dummies would have been perfectly collinear. No analysis is possible in the presence of perfect collinearity.

Based on prior expectations the monopoly dummy should have had a positive sign and the duopoly dummy a negative one with respect to newspaper flat line rates. Both were negatively significant. Lago attributes this unexpected occurrence to multicollinearity. However, this argument is not convincing since multicollinearity explodes the standard errors of affected coefficients rendering hypothesis testing more conservative, but leaving the coefficients unaffected.

A more plausible explanation for this finding would focus on market size-prosperity comparisons. All small markets have monopoly daily newspapers. If these markets are relatively less prosperous than larger markets with competitive dailies, a negative relationship between price and the monopoly dummy could occur. The problem might also stem from the definitions used for the dummy variables in question. The solution probably lies in dropping one of the dummies and redefining any other dummy variable which impacts on the remaining "competition" dummy.

It would appear that some modification of both models would facilitate further analysis. In refining Owen's model, circulation and household income might be used; in the Lago model, dummy variables should be more carefully defined.

The Market Study

Levin's examination of the effect of crossmedia ownership on income, revenue, and time sales for 1967 was limited to the television market since individual station revenue data are not available from the FCC.[12] Three dependent variables were analyzed: total market revenue-per-station, net broadcast before tax market income-per-station, and total market time sales revenue-per-station. Each was regressed separately on: (1) the number of prime time quarter-hour units broadcast over all commercial stations in the market, (2) the number of TV households in each market, (3) the proportion of market stations with network affiliations, (4) the proportion of VHF stations, (5) the proportion of market stations affiliated with groups, and (6) the proportion of market stations owned by local daily newspapers. No significant newspaper ownership effects were found.

Since this was a market study, the crossmedia hypothesis being tested was that markets with crossmedia combinations charge higher "prices" or make higher profits, *ceteris paribus*, than other television markets. Unfortunately, it is not easy to interpret Levin's results. His decision to utilize proportional variables to represent the presence of group ownership and crossmedia ownership in each market instead of dummy variables was highly questionable. When this procedure is used markets containing no group-owned or crossmedia-owned stations receive codes of zero (as would be the case for normal dummy variables). However, markets with varying degrees of such ownership and with differing numbers of television stations receive different values.

Using such proportional variables suggests that crossmedia ownership and group ownership can be represented as ratio level variables. However, these variables can only be measured at the nominal level until firm size is incorporated in the calculation. Consequently, the scale resulting from this "proportional" procedure and the results of subsequent analyses are arbitrary. Utilization of binary dummy variables would provide more interpretable results.

Additional problems may also have resulted from the exclusion of an actual market audience variable and from the utilization of the linear instead of the log-linear form. The latter may have increased heteroskedasticity problems.

By now it is apparent that crossownership research is characterized by significant deficiencies. Even the two best studies (those of Owen and Lago) leave important questions. The study which follows will attempt to resolve some of the remaining issues.

CHAPTER II--NOTES

[1]B. M. Owen, J. N. Rosse, and D. L. Grey, Empirical Results on the Price Effects of Joint Ownership in the Mass Media (Memorandum No. 93, Stanford University Center for Economic Growth), November 1969; Owen, "Newspaper and Television Station Joint Ownership," Antitrust Bulletin 18 (1973): 787-807.

[2]A. M. Lago, "The Price Effects of Joint Mass Communication Media Ownership," Antitrust Bulletin 16 (1971): 789-813.

[3]Comments of the National Association of Broadcasters, Docket 18110 (August 1971): Appendix D.

[4]James Rosse, Credible and Incredible Economic Evidence, Docket 18110 (April 1971).

[5]Ibid., pp. A-40-41.

[6]M. O. Wirth and J. A. Wollert, "Public Interest Program Performance of Multimedia-Owned TV Stations," Journalism Quarterly 53 (Summer 1976): 223-30.

[7]J. L. Peterman, "Concentration of Control and the Price of Television Time," American Economic Review 61 (1971 Proceedings): 74-80.

[8]J. Anderson, R. L. Coe, and J. G. Saunders, An Investigation of the Economic Issues Relating to the FCC's Proposed "One to a Customer" Rule and Related Comments by the Department of Justice, Docket 18110, Filed by the National Association of Broadcasters (February 1969).

[9]Peterman, supra note 7, p. 78.

[10]W. S. Baer, H. Geller, J. A. Grundfest, and K. Possner, Concentration of Mass Media Ownership: Assessing the State of Current Knowledge, R-1584-NSF (Santa Monica, Calif.: 1974), p. 96.

[11]Owen, supra note 1, pp. 787-804; Lago, supra note 2, pp. 803-10.

[12]H. Levin, Research Memorandum on the Economic and Programming Effects of Newspaper Ownership of Television Stations, Supplementary Comments, Docket 18110 (May 1974).

CHAPTER III

EMPIRICAL ANALYSIS OF THE RELATIONSHIP BETWEEN CROSSMEDIA OWNERSHIP AND MASS MEDIA MARKET PRICING

The discussion which follows first states the research questions of most concern to this analysis. Definitions necessary to a full understanding of the research questions and their implied hypotheses are then provided. Next, formal hypotheses are presented and discussed.* Finally, estimating models are specified, possible methodological problems considered, and data sources presented.

The Problem

This study addresses the following research questions:

1. Does crossmedia ownership affect the average cost-per-thousand viewers charged by television stations, *ceteris paribus*?

*Two types of hypotheses are forwarded: those relevant to the research questions posed and those relating to control variables. Research hypotheses are generally discussed before control hypotheses in the discussion which follows.

2. Does crossmedia ownership affect the advertising revenue-per-thousand viewers earned by television stations, *ceteris paribus*?

3. Does crossmedia ownership affect the flat line rate-per-thousand subscribers charged by daily newspapers, *ceteris paribus*?

The following definitions are relevant to the research questions and their implied hypotheses.

Crossmedia ownership is an arrangement where the owner of a daily newspaper owns a television station in the same market (Designated Market Area).

The *relevant newspaper market* for purposes of this study is each daily's city of publication.

The *relevant television market* for purposes of this study is the Designated Market Area (DMA) as defined by A. C. Nielsen Company.[1]

The *average cost* of a 30-second television spot is the average price per half-hour for a fixed, one time only spot during a given segment of the broadcast day.

A *television station* is any commercial entity which transmitted both visual and aural signals via the electromagnetic spectrum for home reception on television receivers as of 1973.

Television station revenue is the total advertising revenue received by each station from national/regional and local sources as estimated from FCC financial data.

A daily newspaper is any source of printed news which is disseminated five days per week to an average of at least 10,000 households and which is published in the city in which it is circulated.

The cost or price of advertising space in a newspaper is the flat rate per line in cents in 1973. This variable is multiplied by 100 to make it metrically comparable with the independent variables used in the analysis.

A newspaper's audience is its average Monday through Friday household circulation (in thousands) as reported by Editor & Publisher Yearbook 1974.

Early fringe time is from 4:30 P.M. to 7:30 P.M., EST, Monday through Friday.

Late fringe time is from 11:00 P.M. to 11:30 P.M., EST, Monday through Friday.

Prime time is from 7:30 P.M. to 11:00 P.M., EST, Sunday through Saturday.

Income per household is defined as consumer spendable income per city household for the newspaper analysis; for the television analysis, it is defined as consumer spendable income per DMA household.

A market's potential audience is its DMA TV households for television stations and its city population for newspapers.

A two-edition newspaper is one which publishes both a morning and an evening edition.

A chain-owned newspaper is one owned by a group of newspapers. Such a group or chain owner must possess more than one daily newspaper.

Agency newspapers participate in joint operating agreements for printing and distribution with another local daily newspaper.

A local newspaper is one which is published in the city being studied. A national or regional newspaper is one which has achieved a circulation of 10,000 per day or more in the DMA of the local paper's city of publication.

A radio station is a commercial entity which transmits aural signals via the electromagnetic spectrum for mass consumption on home radio receivers. In the television study, only SMSA AM stations with 5,000 watts or more of power are included when a market has more than one television station. When a market has only one television station, SMSA AM radio stations with 1,000 watts or more of power are counted. In the newspaper study, all stations (AM and FM) in each paper's city of publication are counted.

A radio-TV combination exists when a television station owns a radio station whose city of license is in the same DMA.

A television station's audience is its average quarter-hour DMA viewership at various times of day. The audience is classified according to various demographic groups such as Men 18-49, Women 18-49, etc.

A newspaper-radio combination exists when a newspaper owns a radio station whose city of license is in the same SMSA.

Hypotheses

Discussion of Hypotheses for Television CPM and R/H Analyses

One of the major questions left unanswered by previous research is whether the results from analyzing television station "list prices" yield different outcomes than an analysis of "transaction prices." This study employs the average cost-per-thousand viewers (CPM) for a 30-second spot (during four different day parts) to represent each station's "list price." Conversely, an estimate of actual advertising revenue-per-thousand viewers (R/H) from 9 A.M. to Midnight represents each station's "transaction price."* Comparing the results from using each variable should determine whether using a "transaction price" alters the crossmedia results obtained when a "list price" is used. Consequently, the hypotheses and discussion which follow apply to both the CPM and R/H analyses.

> <u>Hypothesis 1</u>:
>
> Crossmedia-owned television stations have significantly higher CPM's (R/H's) than noncrossmedia-owned stations.

A firm's market power depends on its size relative to the market. Same market ownership of two major media should result in an increase in that firm's market power. Possession of such market power reduces the potential for competition in that market.[2] It is expected that the market power possessed by crossmedia firms is being exercised to raise prices.

This expectation agrees with Owen's finding that crossmedia-owned television stations charge on average

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*The discussion provided in the first chapter of this analysis provides the rationale for reducing each price variable by actual viewing audience. In general, cost-per-thousands are computed by dividing average spot cost by average "expected" viewing audience. Conversely, the R/H variable is obtained by multiplying the average price for which each spot is sold, by the total number of spots sold; this product is then divided by average actual viewers. If the actual number of spots sold by each station were known, the R/H figures could be transformed into "transaction CPM's." However, such information is unavailable.

15 percent higher rates than other stations.[3] However, Lago[4] and the NAB[5] found no significant relationship between crossmedia ownership and individual station rates. Conversely, recent findings in a yet to be completed study of television market revenues by Wirth and Allen[6] suggest that this relationship might be negative. Such a negative relationship would suggest that (1) scale economies are present, (2) newspaper-television combinations have begun to set their prices jointly, (3) crossmedia-owned stations have held the line on prices, or (4) using a different specification and dependent variable than Owen and Lago modifies the outcome.

Hypothesis 2:

Crossmedia price effects are more pronounced for Adult 18 to 49 CPM's than for total audience CPM's (R/H's).

The most valued demographic audience sold by television stations is adults 18 to 49. Since purchasers of broadcast audiences have a greater demand for this audience, ceteris paribus, it is expected that their demand function is less elastic for the 18 to 49 audience than for the non-18 to 49 audience. When two markets have different price elasticities, ceteris paribus, the less elastic market will be charged a higher price if any firm(s) possesses sufficient market power.[7] It is, therefore, expected that crossmedia-owned firms are using their greater than normal market power to price discriminate against demanders of adult audiences.

Since this aspect of station pricing has never before been examined, no empirical support for this expectation exists.

Hypothesis 3:

Television stations competing with crossmedia combinations have significantly higher CPM's (R/H's) than stations not competing with such combinations.

Owen has suggested that "a competing station in a city which has a newspaper-owned station will be under a high price umbrella and might be able to charge higher prices itself."[8] Although no station level study found a significant "umbrella effect," they all found the umbrella to be in the predicted direction.

Wirth and Allen, on the other hand, found a negative relationship between market advertising revenue per DMA viewing household and a dummy variable equal to unity if a television market had a crossmedia-owned firm and 0 otherwise.[9] This suggests that crossmedia-owned firms may have changed their "pricing" behavior between 1970 and 1973 which in turn affected their competitors. If such a change in behavior has taken place, it would be anticipated that a "negative price umbrella" would be operating.

Hypothesis 4:

Stations have significantly higher CPM's (R/H's) as their market's average household income increases.

Advertisers are expected to value richer audiences more than poorer audiences. Stations in richer markets can, therefore, be expected to charge higher "prices" than stations in poorer markets.[10] This agrees with the findings of Owen, Lago, the NAB, and Park-Johnson-Fishman.

Hypothesis 5:

An increase in a market's potential audience results in a significant decrease in station CPM's (R/H's).

This hypothesis contradicts the findings of the three crossmedia studies but agrees with the market studies conducted by Park-Johnson-Fishman[11] and Wirth-Allen.[12] The major reason for the expected change in sign of the potential audience variable is that the dependent variable being studied is the cost-per-thousand viewers (revenue-per-thousand viewers) instead of a station's highest hourly rate.

In the latter case, a positive sign would be expected since stations operating in markets with more potential viewers would be expected to charge higher rates (unreduced by actual viewing audience) for the audiences they sell. In the former case, a negative sign is expected because advertisers should value marginal viewers at a lower rate as the total number of viewers increases.[13] To put the matter in more familiar terms, it assumes that the advertiser's demand curve for audience is negatively sloped. Since the marginal cost per extra viewer is nearly zero as the market audience increases--i.e., with respect to city size and urbanization--the marginal price can fall to very low levels, making the marginal viewer attractive to advertisers and still covering relevant costs.

Hypothesis 6:

VHF stations have significantly higher CPM's (R/H's) than UHF stations.

VHF television stations have traditionally held a technical advantage over their UHF counterparts.[14] It is, therefore, anticipated that this technical advantage allows VHF stations to have higher CPM's (R/H's) than UHF's. This finding is supported by all previous studies.

Hypothesis 7:

Network affiliates have significantly higher CPM's (R/H's) than independent stations.

Network affiliated stations are more successful and earn higher profits than independent television stations. The competitive advantage held by affiliates should be reflected in higher CPM's (R/H) received from advertisers. This expectation is consistent with all previous studies except the NAB's.[15]

Hypothesis 8:

As market rank increases (towards the "top 10") stations have significantly higher CPM's (R/H's).

The dummy variables used to test this hypothesis will control for membership in various market rank categories. The sign of each market rank coefficient should be positive since they are being compared relative to markets 101+. Inasmuch as advertisers tend to favor markets with higher ranks,[16] one expects stations in higher ranked markets (after market population and station audience are controlled) to charge relatively higher "prices." Park, Johnson, and Fishman are the only researchers to have used such market rank dummies and this expectation is generally consistent with their results.

Hypothesis 9:

An increase in a station's average quarter-hour audience results in a significant decrease in station CPM's (R/H's).

When Lago's basic specification form is utilized, average quarter-hour audience is included as an explanatory variable. A negative coefficient is expected for the same reasons forwarded concerning the number of television households in a market. The interested reader should see the discussion which follows the fifth hypothesis.

Hypothesis 10:

An increase in the number of radio stations in a particular SMSA results in a significant decrease in station CPM's (R/H's).

Hypothesis 11:

An increase in the number of daily newspapers published in each market results in a significant decrease in station CPM's (R/H's).

Each of these hypotheses suggests that an increase in the number of competitors in a market, *ceteris paribus*, will lead to lower "prices." This expectation is not supported by previous station studies (since the variables were not included in the analysis). However, it is fully consistent with standard industrial-organization theory.[17]

These variables are being used to control for the intensity of competition in mass media markets. However, a mere count of potential competitors may fail to correctly account for the impact of firm size differences on market competition. Consequently, such "competitor counts" may be explaining market size and/or market prosperity differences to a greater extent than they explain competitive effects. These regression coefficients may therefore exhibit unexpected positive signs.

Hypothesis 12:

Television stations which own radio stations in their market of operation have significantly higher CPM's (R/H's) than television firms not owning same market radio stations.

It is expected that television station ownership of a radio station in its market of operation will increase the firm's market power and that this market power will be exercised to charge higher "prices." Past research on the "price" effects of same market television-radio joint ownership has found no significant influence. However, both Lago[18] and the NAB[19] found the expected positive relationship.

Discussion of Hypotheses for Newspaper MIL Analysis

No study concerned with determining the economic effects of crossmedia ownership is complete without also examining the newspaper advertising sub-market. If a significant crossmedia "price" effect is not found in the television analysis, the results of the newspaper analysis will become more important.

The dependent variable being used for this analysis is each newspaper's average Monday through Friday milline advertising rate (MIL).* The milline rate is the newspaper equivalent of television cost-per-thousands.

Hypothesis 1:

Crossmedia-owned newspapers have significantly higher MIL's than noncrossmedia-owned newspapers.

Owen found that crossmedia-owned newspapers charge 10 percent higher rates than noncrossmedia-owned newspapers.[20] Lago found no significant relationship.[21] It is expected that Owen's findings will be supported and that crossmedia ownership will have a positive effect on newspaper rates. The basic economic reasoning is the same in both cases.

Such a positive effect would be even stronger if crossmedia combinations set their newspaper and television rates jointly to maximize total profits. If rates are set jointly, higher prices will result in the advertising sub-market which has the least price-elastic demand curve. Since competition appears to be more vigorous in the television section of the media market, joint pricing would result in even higher newspaper rates than would otherwise be the case.

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*Recall that the milline rate is obtained by dividing each daily's flat line rate by its circulation (in thousands). The milline rate is multiplied by 100 to make it metrically comparable with the other variables used in the analysis.

Hypothesis 2:

An increase in a newspaper's average daily circulation results in a significant decrease in newspaper MIL's.

Lago's inclusion of circulation in his newspaper pricing model resulted in a significant positive relationship.[22] However, it is expected that the change in dependent variables from flat-line rate to flat-line rate-per-thousand subscribers (or the milline rate) will reverse this relationship.

Higher circulation newspapers will certainly charge higher flat-line rates than papers with lower circulation. However, the milline rate reduces the flat-line rate by a newspaper's circulation (in thousands) and yields a "price" per thousand subscribers. Advertisers, beyond some point, are expected to value the marginal subscribing household at a decreasing rate which would result in lower MIL's for higher circulation newspapers.

Hypothesis 3:

An increase in market population results in a significant increase in newspaper MIL's.

Both Lago and Owen found that a market's population was significant and positively related to the "price" newspapers charged advertisers. It is expected that such a positive relationship will continue to hold whenever circulation is utilized as an explanatory variable, but that its sign will become negative when circulation is not present. Since no market rank dummy variables are being utilized in the newspaper study, each market's population must take full account of market size effects on milline rates. When circulation is simultaneously utilized as an independent variable, the population variable essentially accounts for this effect alone. When circulation is dropped as a predictor variable, population must also account for the economies of scale which exist for newspapers as they distribute more copies of the same issue and for the decrease in value of the marginal subscriber to advertisers as circulation increases. Since these two effects (market size and economies of scale) are in opposite directions, the sign of the population coefficient when circulation is not included cannot be predicted *a priori*. However, when circulation is present, population should have a positive effect on "price."

Hypothesis 4:

Chain-owned newspapers have significantly higher MIL's than nonchain-owned newspapers.

Somewhat more than 50 percent of all daily newspapers are owned by newspaper chains. Such ownership could result in some degree of market power and possibly in some cost economies. Since market power would be expected to be positively related to "price" and cost economies to exercise a negative influence, an expectation that the market power hypothesis will be controlling is a strong hypothesis.

Owen found that chain-owned newspapers charge 7 percent higher rates. Lago found no significant effect. It is expected that even if the chain-ownership dummy is not significant, it should exercise a positive influence on newspaper "prices."

Hypothesis 5:

Newspapers have significantly higher MIL's as their market's average household income increases.

This hypothesis simply suggests that richer markets are worth more to advertisers, *ceteris paribus*. Lago's findings agree with this position (although its effect was not significant) while Owen failed to include such a variable in his analysis.

Hypothesis 6:

Newspapers which are the sole newspaper published in their city of publication have significantly higher MIL's than newspapers facing same-market newspaper competition.

Owen found that competition from one or more local daily newspapers leads to a 15 percent decrease in newspaper "prices."[23] Lago found that the presence of one more local newspaper also leads to such a price decrease. But he also found that newspaper monopolies charge significantly lower "prices." This confusing result has already been discussed (see Chapter II, p. 20). As noted previously, an increase in competitors, *ceteris paribus*, is always expected to lead to lower prices.

Hypothesis 7:

Newspapers which own radio stations in their market of operation have significantly higher MIL's than newspapers not owning radio stations.

Hypothesis 8:

An increase in the number of radio stations in a market results in a significant decrease in newspaper MIL's.

Hypothesis 9:

An increase in the number of TV stations in a market results in a significant decrease in newspaper MIL's.

Since newspapers compete with television and radio stations for advertising revenues, full recognition of the possible effects of such competition are necessary. Owen failed to examine any of these effects. Lago only studied the effect of newspaper-radio ownership. The theory that a reduction in the number of competitors in a market leads to higher prices, *ceteris paribus*, is expected to hold for all three of these hypotheses. This expectation was, however, not supported by Lago, who found no relationship between newspaper-radio ownership and newspaper "prices."

Utilization of such "number of competitors" variables to measure the effects of competition may not be successful. In particular, the number of radio station and number of television station variables may better explain market size or market prosperity effects. Consequently, the sign of these variables will depend on the magnitude of market size or prosperity effects left unexplained by market population and income per household.*

Methodology and Model Specification

The data necessary to the CPM, R/H, and MIL 1973 cross-sectional analyses were collected from various sources of published industry data. Multiple regression, ordinary least squares (OLS), techniques were used to analyze the data. This section will specify each of the models which were studied, define all variables, discuss potential methodological problems, and identify the relevant data sources.

The Models

Three general models are used in this study to determine the effects of crossmedia ownership: a CPM

*Recall that newspapers operating in larger markets are expected to have larger MIL's, *ceteris paribus*, than newspapers in smaller markets.

model, a R/H model, and a MIL model. The general format can be expressed as:

(1) $Y_i = f(X_1, \ldots, X_k)$,

where the Y_i are the CPM, R/H, and MIL variables, and the X_k are exogenous variables. Eight different CPM variables and six different R/H variables were analyzed in addition to one MIL variable.

The functional form utilized in this instance depends on the degree of heteroskedasticity found to be present and the form's ability to account for variance in the dependent variables. In this instance, there is no _a priori_ expectation against the utilization of a strictly linear functional form. Consequently, the linear and log-linear functional forms were used in the early stages of this project. The log-linear form was ultimately selected because it accounted for more of the variance of the dependent variables and was much less susceptible to heteroskedasticity problems. The general functional form for both the CPM and R/H analyses is as follows:

$$(2)\quad Y_i = (I_i^{b_{i1}} TVHH_i^{b_{i2}} AUD_i^{b_{13}}) \exp(a_i + b_{i4}XD_i + b_{i5}VHF_i + b_{i6}NET_i + b_{i7}XDC_i + b_{i8}R1_i + b_{i9}R2_i + b_{i10}R3_i + b_{i11}R4_i + b_{i12}RAD_i + b_{i13}NP_i + b_{i14}TVRAD_i + u_i).$$

The estimating form can be written as:

$$(3) \quad \ln(Y_i) = a_i + b_{i1}\ln(I_i) + b_{i2}\ln(TVHH_i) + b_{i3}\ln(AUD_i) + b_{i4}XD_i + b_{i5}VHF_i + b_{i6}NET_i + b_{i7}XDC_i + b_{i8}R1_i + b_{i9}R2_i + b_{i10}R3_i + b_{i11}R4_i + b_{i12}RAD_i + b_{i13}NP_i + b_{i14}TVRAD_i + u_i.$$

The general functional form for the MIL analysis is:

$$(4) \quad Y_i = (I_i^{b_1} POP_i^{b_2} CIRC_i^{b_3}) \exp(a_i + b_4XD_i + b_5TWOED_i + b_6CHAIN_i + b_7MON_i + b_8NPRAD_i + b_9RAD_i + b_{10}NOTV_i + u_i).$$

The estimating form can then be written as:

$$(5) \quad \ln(Y_i) = a_i + b_1\ln(I_i) + b_2\ln(POP_i) + b_3\ln(CIRC_i) + b_4XD_i + b_5TWOED_i + b_6CHAIN_i + b_7MON_i + b_8NPRAD_i + b_9RAD_i + b_{10}NOTV_i + u_i.$$

Specification of CPM and R/H Variables

The independent variables to be used in estimating equation (3) are defined as follows:

I = Total consumer spendable income in the ith DMA per DMA household.

XD = A dummy variable with a value of 1 if a TV station is owned by a newspaper which is published in the same DMA, 0 otherwise.

TVHH = The total number of DMA TV households (in thousands) in a station's market.

VHF = A dummy variable with a value of 1 if a TV station is a VHF station, 0 otherwise.

NET = A dummy variable with a value of 1 if a TV station is a network affiliate, 0 otherwise.

XDC = A dummy variable with a value of 1 if a TV station competes with a crossmedia combination, 0 otherwise.

R1 = A dummy variable with a value of 1 if a TV station is in the "top 10" television markets, 0 otherwise.

R2 = A dummy variable with a value of 1 if a TV station is in markets 11-25, 0 otherwise.

R3 = A dummy variable with a value of 1 if a TV station is in markets 26-50, 0 otherwise.

R4 = A dummy variable with a value of 1 if a TV station is in markets 51-100, 0 otherwise.

AUD = The average quarter-hour DMA audience of the <u>i</u>th station during the day part specified by the dependent variable (in thousands).

RAD = The number of AM radio stations operating in the <u>i</u>th station's SMSA. In television markets with more than one television station, only radio stations with 5,000 watts or more of power are counted as radio stations. In one station markets, AM radio stations with 1,000 or more watts of power are counted as radio stations.

NP = Two separate newspaper variables were used throughout the analysis: one for local newspaper competition and one for regional newspaper competition. A local newspaper is one which is published in any city of the market being studied. Its value was obtained by checking to see if another local newspaper achieved circulation of 10,000 or more in its city of publication (e.g., if a DMA market consists of three major cities and each city has one local newspaper, the market itself is considered to have only one local newspaper). A regional newspaper is one which has achieved a circulation of 10,000 or more daily in a given DMA regardless of where it is published.

TVRAD = A dummy variable with a value of 1 if a television station owns a radio station whose city of license is in the same DMA, 0 otherwise.

u_i is a random error term, assumed to be distributed normally with a mean of zero.

The number of television stations in each market is not used as an explanatory variable. Park, Johnson, and Fishman suggest that the number of television stations in each market is not truly exogenous.[24] In those markets which still have unused television channels, the number of operating market television stations is determined by market forces. The "prices" charged advertisers and the number of television stations in each market are therefore determined simultaneously. Consequently, the number of television stations is excluded as a variable in the television analysis.*

The dependent variables, Y_i, for the general regression equation (3) when conducting the CPM analysis are:

$CPMHH_1$ = The cost-per-thousand households, Sunday-Saturday, 7:30 P.M.-11 P.M.

$CPMHH_2$ = The cost-per-thousand households, Monday-Saturday, 11 P.M.-11:30 P.M.

$CPMHH_3$ = The cost-per-thousand households, Sunday-Saturday, 9 A.M.-Midnight.

$CPMHH_4$ = The cost-per-thousand households, Monday-Friday, 4:30 P.M.-7:30 P.M.

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*The same line of reasoning was employed when the decision was made to exclude the number of market newspapers as an explanatory variable in the MIL analysis.

$CPM18_5$ = The cost-per-thousand adults 18-49, Sunday-Saturday, 7:30-11 P.M.

$CPM18_6$ = The cost-per-thousand adults 18-49, Monday-Friday, 11-11:30 P.M.

$CPM18_7$ = The cost-per-thousand adults 18-49, Sunday-Saturday, 9-Midnight.

$CPM18_8$ = The cost-per-thousand adults 18-49, Monday-Friday, 4:30-7:30 P.M.

These eight dependent variables were chosen to look for crossmedia price effects at various times of day for two separate audiences. The times of day were selected to differentiate among pricing performance in prime time, late fringe time, early fringe time, and throughout the broadcast day. This should provide a complete picture of station "pricing." The price selected for each day part is the average price for a 30-second spot in that time period. It is expected that this average price when divided by actual viewing audience will more nearly reflect the "true price" of an average 1973 transaction than would be the case if each station's 1973 highest hourly rate were used. All commercial, nonsatellite television stations, for which usable data were available, were included in the analysis (N=534).

The dependent variables, Y_i, for the general regression equation (3) when conducting the R/H analysis are:

R/HHH_1 = Total station advertising revenue-(national/regional and local) per-thousand DMA viewing households, 9 A.M. to Midnight.

R/HHH_2 = Station national/regional advertising revenue-per-thousand DMA viewing households, 9 A.M.-Midnight.

R/HHH_3 = Station local advertising revenue-per-thousand DMA viewing households, 9 A.M.-Midnight.

$R/H18_4$ = Total station advertising revenue-per-thousand DMA viewing adults 18-49, 9 A.M.-Midnight.

$R/H18_5$ = Station national/regional advertising revenue-per-thousand DMA viewing adults 18-49, 9 A.M.-Midnight.

$R/H18_6$ = Station local advertising revenue-per-thousand DMA viewing adults 18-49, 9 A.M.-Midnight.

As discussed previously, the R/H analysis is being used to check the accuracy of the results obtained from the CPM analysis.* If similar results are found from both analyses, greater confidence could be placed in the results.

The major disadvantages of using revenue estimates as dependent variables are that: (1) individual station revenues must be estimated from FCC provided market revenue data for markets with three or more television stations (this limits the sample size to 439 stations and eliminates all small market stations) and (2) revenue-per-thousand viewing households cannot be converted into a cost-per-thousand. This reduces the comparability of the two approaches.

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*Recall that the CPM analysis focuses on "list prices" while the R/H analysis centers on "transaction prices."

The major advantage of the R/H approach is that the market revenue data being analyzed are derived from individual station reports submitted to the FCC under oath. To the extent that the individual station estimates made from this market data correspond to true revenue values, they are more likely to reflect actual transactions prices than are published rate cards, the source of the CPM variables.

Park, Johnson, and Fishman have estimated an econometric model, with reasonable explanatory power (R^2=.71), for determining a station's share of market revenue.[25]

$$\begin{aligned}
\text{SHARE} = \exp(&-.225 + (-.565)(\text{NU}) - (1.639)(\text{IV}) \\
&- (2.546)(\text{IU}))\ ((1 + \text{NV}\cdot\text{NCNV})^{-.809} \\
&(1 + \text{NV}\cdot\text{NCNU})^{-.179}\ (1 + \text{NV}\cdot\text{NCIV})^{-.205} \\
&(1 + \text{NV}\cdot\text{NCIU})^{-.122}\ (1 + \text{NU}\cdot\text{NCNV})^{-1.11} \\
&(1 + \text{NU}\cdot\text{NCNU})^{-.25}\ (1 + \text{IV}\cdot\text{NCIV})^{-.495} \\
&(1 + \text{IU}\cdot\text{NCNU})^{-.445}\ (1 + \text{IU}\cdot\text{NCIV})^{-1.332} \\
&(1 + \text{IU}\cdot\text{NCIU})^{-.168}).
\end{aligned}$$

NU, IV, IU, and NV stand for dummy variables equalling one if the station is a network U, Independent V, Independent U, or network V respectfully. NCNU, etc., stand for the number of competing stations of the designated signal and affiliation type in the market being studied.

The major problem with utilizing the market shares estimated from the Park-Johnson-Fishman model is that all stations in the same affiliation and signal type class are given equal market revenue shares. No previous study has attempted to solve this problem. Each station's average daily circulation (ADC) indicates the average daily reach of each station. Consequently, average daily circulation provides an indication of the relative profitability of competitive television firms.* ADC was, therefore, used to differentiate between a small sample of stations to see if it would provide a reasonable estimate of their relative profitability. The results of this analysis suggested that the difference between station ADC's was less than the difference between station profits. To partially solve this problem, each station's share of average daily circulation squared (within its affiliation and signal type group) was used to weight the total group revenue as determined by application of the Park-Johnson-Fishman share model. This yields individual station revenue estimates for further study. This procedure was used to apportion three classes of

*If some measure of the frequency of viewership could be combined with this reach figure, a more precise weight could have been constructed.

market revenue: total market advertising revenue, national/regional spot revenue, and local spot revenue.

Since it is not possible to designate revenues to the time of day from which they are earned, the viewing audience from 9 A.M. to Midnight is used in all estimating equations. Additionally, the revenue analysis is necessarily limited to three station television markets since FCC revenue data are unavailable for markets with fewer stations.

Theoretically, the CPM and R/H analyses should yield similar results. It is, therefore, expected that the same relationships will hold for both analyses.

Specification of MIL Variables

In theory, crossmedia ownership should result in both the newspaper and television parts of the combination charging higher "prices." This, however, would not necessarily be the case if the crossmedia combination sets its newspaper and television advertising rates jointly. It is, therefore, necessary to examine the television and newspaper sub-markets separately to determine whether the market power which results from crossmedia ownership is being exercised. The independent variables used to estimate the general regression equation (5) are defined as follows.

I = Total consumer spendable income in the _i_th city per household.

POP = The population of a newspaper's city of publication (in thousands).

CIRC = The average Monday-Friday circulation of a newspaper. In the case of two edition or jointly operated papers, this figure is the sum of morning and evening circulation.

XD = Dummy variable with a value of 1 if a daily newspaper owns a TV station which operates in the same DMA in which the newspaper is published, 0 otherwise.

TWOED = Dummy variable with a value of 1 if a daily newspaper publishes two editions daily or if it is part of a joint operating agreement, 0 otherwise.

CHAIN = Dummy variable with a value of 1 if a daily newspaper is owned by a group which owns more than one daily newspaper, 0 otherwise.

MON = Dummy variable with a value of 1 if a daily newspaper operates as a monopoly in its city of publication, 0 otherwise. Cities with two edition newspapers or papers with joint operating agreements are excluded.

NPRAD = Dummy variable with a value of 1 if a daily newspaper owns a radio station in its SMSA of publication, 0 otherwise.

RAD = The number of radio stations operating in the _i_th newspaper's SMSA of publication. Both AM and FM stations are included regardless of their operating power.

NOTV = The number of TV stations operating in the _i_th newspaper's DMA of publication.

u_i is a random error term, assumed to be distributed normally with a mean of zero.

The dependent variable, Y_i, for general regression equation (5) is:

MIL = A newspaper's flat line advertising rate-per-thousand circulation.

> If a newspaper published both a morning and an evening edition or if it is part of a joint operating agreement, the joint morning-evening rate and circulation are used to calculate the dependent variable. Each newspaper's milline rate was rescaled by multiplying it by 100 to provide more understandable numbers.

The daily newspaper sample was drawn from Editor and Publisher Yearbook 1974. It utilized a random start systematic sampling technique with a skip interval of two. This yielded a sample of 429 daily newspapers for analysis. Such a procedure eliminated approximately 50 percent of the crossmedia-owned daily newspapers. However, the reduction in the volume of data handled seemed worth the loss of these cases.

The principal problem encountered in the MIL analysis is that there is no perfect way to dispose of the problems created by two-edition and jointly operated or "agency" newspapers. Since advertising rates would be expected to be set jointly in both cases, the two situations are treated identically in this analysis. The rates in both instances are typically set to encourage advertisers to buy both the morning and evening editions of the combination.[26] Such "tying sales" are not uncommon and are found in many other product markets (e.g., razors and razor blades). The rate and circulation selected in both cases is, therefore, the combination buy "price" and circulation.

Methodological Problems

The principal analysis problem is expected to be heteroskedasticity. If it is present, OLS estimates of regression coefficients will be unbiased and consistent but inefficient and asymptotically inefficient. Additionally, the estimated variances of the OLS estimators will be biased, making it impossible to conduct valid hypothesis tests or to construct valid confidence intervals. If the bias is positive, the incorrect variances and intervals will be larger than the correct ones (this would be an error on the conservative side); if the bias is negative, they will be smaller (this would be an error on the liberal side). Elimination of heteroskedasticity is, therefore, essential if it is present in any magnitude.

The Goldfeld-Quandt Test was used to look for heteroskedasticity.[27] In the event that enough were present to cause significant problems, Park's method of eliminating heteroskedasticity will be utilized.[28]

Multicollinearity might also cause some analysis problems. Any such problems will be discussed when and where they develop.

Data Sources

All of the Designated Market Area estimates of actual audience viewing were found in A. C. Nielsen's DMA Audience Distribution by Day-Parts, February-March 1973. Consumer spendable income per household, the

number of DMA TV households, the market rank dummies, and the average cost of a 30-second spot during various day parts were all found in Standard Rate and Data Service: Spot Television Rates and Data, June 15, 1974. The VHF, network affiliation, and same market television-radio ownership dummies plus the number of television stations in each market were found in the Television Factbook, 1973-74. The crossmedia dummy, competes with crossmedia dummy, and same-market newspaper-radio combination dummy were determined from the FCC Annual Report/ Fiscal 1972, Broadcasting Yearbook 1974, Editor and Publisher Yearbook 1974, and Concentration of Mass Media Ownership: Assessing the State of Current Knowledge.[29] The number of 5,000 watt AM radio stations was obtained from SRDS: Spot Radio Rates and Data, June 1, 1975. The number of daily newspapers (both local and national/ regional) published in a station's market was found in Circulation 1973-74. The individual station revenue data were estimated from the FCC's Television Broadcast Financial Data 1973. Data for the advertising flat-line rate, newspaper circulation, city population, and the two-edition, chain-ownership, and market monopoly dummies were obtained from Editor and Publisher Yearbook 1974. The total number of radio stations operating in each newspaper's market of publication was found in Broadcasting Yearbook 1974.

The statistical results of applying the models discussed in this section will be presented and analyzed in the next chapter.

CHAPTER III--NOTES

[1]A. C. Nielsen, DMA Audience Distribution by Day-Parts (February-March 1973), p. 1.

[2]F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: 1970), pp. 469-78; G. J. Stigler, "Monopoly and Oligopoly by Merger," American Economic Review 40 (1950 Proceedings): 23-34.

[3]B. M. Owen, "Newspaper and Television Station Joint Ownership," Antitrust Bulletin 18 (1973): 807.

[4]A. M. Lago, "The Price Effects of Joint Mass Communication Media Ownership," Antitrust Bulletin 16 (1971): 802.

[5]Comments of the National Association of Broadcasters, Docket 18110 (August 1971): Appendix D-5. (Hereinafter cited as NAB.)

[6]M. O. Wirth and B. T. Allen, "Another Look at Crossmedia Ownership," unpublished manuscript (April 1977).

[7]Walter Nicholson, Microeconomic Theory (Hinsdale, Ill.: 1972), p. 296.

[8]Owen, supra note 3, p. 805.

[9]Wirth and Allen, supra note 6.

[10]R. E. Park, L. L. Johnson, and B. Fishman, Projecting the Growth of Television Broadcasting: Implications for Spectrum Use, R-1841-FCC (Santa Monica, Calif.: February 1976), p. 214.

[11] Ibid., p. 216.

[12] Wirth and Allen, supra note 6.

[13] Ibid.

[14] Park, Johnson, and Fishman, supra note 10, p. 3.

[15] _NAB_, supra note 5, Appendix D-5.

[16] Park, Johnson, and Fishman, supra note 10, p. 214.

[17] Scherer and Stigler, supra note 2.

[18] Lago, supra note 4, p. 802.

[19] _NAB_, supra note 5, Appendix D-6.

[20] Owen, supra note 3, p. 795.

[21] Lago, supra note 4, p. 805.

[22] Ibid.

[23] Owen, supra note 3, p. 795.

[24] Park, Johnson, and Fishman, supra note 10, p. 230.

[25] Ibid., p. 251.

[26] Owen, supra note 3, p. 798; see also Times-Picayune Publishing Co. v. United States, 345 U.S. 594 (1953).

[27] S. M. Goldfeld and R. E. Quandt, "Some Tests of Homoskedasticity," _Journal of the American Statistical Association_ 60 (September 1965): 539-47.

[28] R. E. Park, "Estimation with Heteroskedastic Error Terms," _Econometrica_ 34 (October 1966): 888.

[29] W. S. Baer, H. Geller, J. A. Grundfest, and K. B. Possner, _Concentration of Mass Media Ownership: Assessing the State of Current Knowledge_, R-1584-NSF (Santa Monica, Calif.: September 1974).

CHAPTER IV

RESULTS OF ANALYSIS OF THE EFFECTS OF CROSSMEDIA OWNERSHIP ON MASS MEDIA "PRICES"

The hypothesized effects of crossmedia ownership on mass media advertising "prices" were analyzed with three different dependent variable sets. This chapter discusses the outcome of the television cost-per-thousand, television revenue-per-thousand, and newspaper milline cost analyses.

The results of the Goldfeld-Quandt heteroskedasticity tests indicate that a log-linear functional form is less susceptible to heteroskedasticity problems than is a linear form. Consequently, all reported results utilize the log-linear form. These tests also indicate that the choice between the functional forms used by Owen, Lago, and the present study cannot be based on the presence of heteroskedasticity. Further discussion of the Goldfeld-Quandt results are, therefore, deferred until the outcome of the three cost analyses have been presented.

The reasons for selecting CPM, R/H, and MIL as dependent variables instead of each station's highest hourly rate, each station's advertising revenue, and each newspaper's flat-line rate have already been presented. It has also been argued that audience should appear as a predictor variable in the selected models. However, since Owen's results differed so markedly from Lago's when audience was not used as an explanatory variable, the log-linear CPM, R/H, and MIL analyses alternately include and exclude audience as a predictor variable.

Results of Television CPM and R/H Analyses

Four different day parts (9 A.M. to Midnight, prime time, early fringe time, and late fringe time) and two different audiences (total viewing households and total viewing adults 18 to 49) were studied. The arithmetic means and 95 percent confidence intervals for each CPM and R/H dependent variable are presented in Table 1. Examination of this table indicates that the average "list price" or cost-per-thousand viewers charged by each station varies considerably (as indicated by the wide 95 percent confidence intervals) and that "prices" are highest during prime time.* The confidence intervals

*Comparisons between CPMHH and CPM18 averages for a given day part are not really valid. Each television

TABLE 1

ARITHMETIC MEANS AND 95 PERCENT CONFIDENCE INTERVALS FOR TELEVISION ANALYSIS DEPENDENT VARIABLES

Dependent Variable	Day Part	$\overline{X}$	95 Percent Confidence Interval
Cost-per-thousand households	9 A.M.-Midnight	\$ 3.45	.34 to \$ 6.56
Cost-per-thousand households	Prime time	\$ 4.25	\$ 1.26 to \$ 7.24
Cost-per-thousand households	Early fringe time	\$ 2.58	\$ 0.00 to \$ 5.16
Cost-per-thousand households	Late fringe time	\$ 3.57	\$ 0.22 to \$ 6.92
Cost-per-thousand adults 18-49	9 A.M.-Midnight	\$ 4.68	\$ 1.52 to \$ 7.84
Cost-per-thousand adults 18-49	Prime time	\$ 4.76	\$ 1.74 to \$ 7.78
Cost-per-thousand adults 18-49	Early fringe time	\$ 4.25	\$ 0.76 to \$ 7.74
Cost-per-thousand adults 18-49	Late fringe time	\$ 4.18	\$ 0.69 to \$ 7.67
Total ad revenue-per-thousand HH's	9 A.M.-Midnight	\$ 82.63[a]	\$ 79.52 to \$ 85.74
National/regional ad revenue-per-thousand HH's	9 A.M.-Midnight	\$ 40.26	\$ 36.90 to \$ 43.62
Local ad revenue-per-thousand HH's	9 A.M.-Midnight	\$ 39.86	\$ 36.61 to \$ 43.11

TABLE 1--Continued

Dependent Variable	Day Part	$\overline{X}$	95 Percent Confidence Interval
Total ad revenue-per-thousand adults 18-49	9 A.M.-Midnight	$110.45[a]	$107.27 to $113.63
National/regional ad revenue-per-thousand adults	9 A.M.-Midnight	$ 53.82	$ 50.33 to $ 57.31
Local ad revenue-per-thousand adults	9 A.M.-Midnight	$ 53.28	$ 50.02 to $ 56.54

[a]Average national/regional and local figures do not equal this figure due to rounding error.

of the revenue-per-thousand viewers or "transaction price" variables, on the other hand, are small relative to their means.

The results from analyzing the average "pricing" performance of individual commercial television stations are presented in Tables 2 through 8. The twenty-eight estimating equations, in which each station's actual viewing audience appeared as an explanatory variable, exhibited higher coefficients of determination and generally produced fewer conflicts between observed and hypothesized station behavior than those equations from which audience was omitted.

Most notably, when audience is deleted from the estimating equations, the VHF and network affiliation dummies usually move in a negative direction and sometimes become significant and negatively related to the dependent CPM and R/H variables. Since past empirical research suggests that VHF and network affiliated stations both possess and employ significant market power relative to their UHF and independent counterparts, the coefficients of these two dummies should definitely be positive. The results of the regressions including audience will, therefore, be discussed exclusively (unless otherwise specified) throughout the remainder of this study.

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household contains a number of viewing persons. Adults 18 to 49 are a subset of viewing persons, not viewing households.

TABLE 2

TELEVISION CPM ANALYSIS: 9A.M. TO MIDNIGHT LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
CPMHH	-4.69235*	-.50861*	.00494	.06914	.49728*	.72585*	-.07129	-.01544	.69060*	.51379*	.24039*	.04291	.01340*	.04014	.00588	.5368
	(-4.451)	(-14.259)	(.109)	(1.671)	(7.858)	(6.351)	(-1.659)	(-.441)	(5.485)	(6.552)	(3.822)	(.946)	(2.831)	(1.271)	(1.208)	
CPMHH	-3.70313*	---	-.42781*	-.23852*	.07124	.77304*	-.11090*	-.00222	.54793*	.47237*	.21342*	.03071	.01858*	-.02549	.00639	.3518
	(-2.979)		(-10.740)	(-5.716)	(1.081)	(5.726)	(-2.189)	(-.054)	(3.694)	(5.101)	(2.872)	(.573)	(3.332)	(-.690)	(1.112)	
CPMHH (LOCNP)	-4.41386*	-.51493*	.00654	.06873	.50579*	.68867*	-.08685*	-.03422	.77149*	.53919*	.27813*	.06858	.01122*	.04515	.07772*	.5404
	(-4.179)	(-14.455)	(.148)	(1.668)	(8.020)	(6.017)	(-2.030)	(-.975)	(6.795)	(6.826)	(4.298)	(1.471)	(2.327)	(1.433)	(2.335)	
CPMHH (LOCNP)	-3.53608*	---	-.42290*	-.24190*	.07409	.74923*	-.12268*	-.01536	.62653*	.48472*	.23414*	.04424	.01816*	-.02299	.04305	.3517
	(-2.826)		(-10.935)	(-5.800)	(1.124)	(5.521)	(-2.421)	(-.369)	(4.669)	(5.177)	(3.053)	(.801)	(3.191)	(-.622)	(1.093)	
CPM18	-4.51854*	-.55444*	.03966	.12618*	.46010*	.71545*	-.04756	-.01530	.66008*	.51759*	.22119*	.03133	.00834	.06408*	.01012*	.5362
	(-4.148)	(-15.103)	(.844)	(3.043)	(6.725)	(6.067)	(-1.075)	(-.423)	(5.068)	(6.397)	(3.404)	(.669)	(1.713)	(1.978)	(2.010)	
CPM18	-3.11299*	---	-.43740*	-.43740*	-.09834	.75925*	-.06565	.00077	.45057*	.47251*	.16486*	.00224	.00827	.01496	.01602*	.3283
	(-2.386)		(-10.461)	(-3.943)	(-1.421)	(5.358)	(-1.234)	(.018)	(2.894)	(4.861)	(2.114)	(.0398)	(1.413)	(.386)	(2.656)	
CPM18 (LOCNP)	-4.14595*	-.56199*	.04607	.12389*	.47276*	.66359*	-.07075	-.04233	.79292*	.55035*	.27181*	.06530	.00605	.07046*	.10358*	.5408
	(-3.801)	(-15.430)	(1.018)	(3.002)	(6.959)	(5.627)	(-1.606)	(-1.169)	(6.779)	(6.761)	(4.073)	(1.359)	(1.223)	(2.183)	(3.026)	
CPM18 (LOCNP)	-2.74123*	---	-.42225*	-.18081*	-.09140	.70460*	-.09339	-.02993	.64523*	.49884*	.21052*	.03167	.00782	.02058	.09484*	.3260
	(-2.084)		(-10.384)	(-4.123)	(-1.319)	(4.938)	(-1.753)	(-.684)	(4.573)	(5.068)	(2.611)	(.545)	(1.306)	(.529)	(2.290)	

[a] 524 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 3

TELEVISION CPM ANALYSIS: PRIME TIME LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
CPMHH	-5.05091*	-.34819*	-.00191	.04641	.65300*	.74726*	-.10610*	-.03209	.59052*	.46250*	.22996*	.05558	.01097*	.06357	.00227	.2914
	(-4.258)	(-7.709)	(-.036)	(1.000)	(7.498)	(5.838)	(-2.204)	(-.821)	(4.247)	(5.265)	(3.274)	(1.097)	(2.109)	(1.809)	(.419)	
CPMHH	-3.98202*	---	-.29429*	-.14119*	.17891*	.73272*	-.13011*	-.01593	.52209*	.43382*	.21344*	.05230	.01147*	.03477	.00227	.2098
	(-3.204)		(-7.386)	(-3.386)	(2.750)	(5.427)	(-2.567)	(-.387)	(3.566)	(4.685)	(2.882)	(.979)	(2.090)	(.943)	(.398)	
CPMHH (LOCNP)	-4.72769*	-.35836*	-.01130	.04760	.67435*	.70733*	-.12150*	-.05153	.64146*	.49989*	.27976*	.09027	.00708	.06956*	.10297*	.3020
	(-3.997)	(-7.969)	(.218)	(1.034)	(7.777)	(5.545)	(-2.544)	(-1.324)	(5.103)	(5.668)	(3.890)	(1.744)	(1.351)	(1.991)	(2.830)	
CPMHH (LOCNP)	-3.70640*	---	-.30702*	-.14466*	.18492*	.70086*	-.14307*	-.03113	.56550*	.46188*	.25161*	.07900	.00859	.03878	.07980*	.2161
	(-2.978)		(-7.981)	(-3.484)	(2.853)	(5.190)	(-2.834)	(-.757)	(4.261)	(4.954)	(3.309)	(1.442)	(1.548)	(1.055)	(2.079)	
CPM18	-4.93447*	-.39964*	.04155	.10275*	.60728*	.73396*	-.07995	-.03303	.52888*	.43892*	.21044*	.04292	.00805	.10025*	.00843	.2955
	(-4.078)	(-8.985)	(.775)	(2.243)	(6.501)	(5.629)	(-1.633)	(-.829)	(3.724)	(4.900)	(2.939)	(.832)	(1.518)	(2.815)	(1.520)	
CPM18	-3.52499*	---	-.29386*	-.09353*	-.01393	.70699*	-.09247	-.01353	.40257*	.38749*	.17686*	.03041	.00672	.08878*	.01252*	.1853
	(-2.734)		(-7.110)	(-2.163)	(-.206)	(5.049)	(-1.759)	(-.317)	(2.651)	(4.035)	(2.302)	(.301)	(1.180)	(2.322)	(2.110)	
CPM18 (LOCNP)	-4.54533*	-.41170*	.04314	.10200*	.63722*	.68031*	-.10390*	-.06158	.65088*	.48101*	.26958*	.08322	.00481	.10698*	.12246*	.3071
	(-3.769)	(-9.356)	(.841)	(2.246)	(6.892)	(5.239)	(-2.140)	(-1.556)	(5.088)	(5.353)	(3.681)	(1.579)	(.903)	(3.025)	(3.315)	
CPM18 (LOCNP)	-3.13805*	---	-.28928*	-.10083*	-.00200	.65329*	-.11860*	-.04305	.56231*	.42017*	.22718*	.06416	.00511	.09461*	.10706*	.1896
	(-2.427)		(-7.241)	(-2.338)	(-.030)	(4.658)	(-2.262)	(-1.008)	(4.080)	(4.339)	(2.876)	(1.128)	(.888)	(2.478)	(2.685)	

[a]531 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 4

TELEVISION CPM ANALYSIS: EARLY FRINGE LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
CPMHH	-2.73998*	-.55867*	-.03457	.06255	.25915*	.55565*	-.09533	.00029	.68326*	.53374*	.23655*	.02945	.01962*	.02822	.01112*	.5752
	(-2.194)	(-17.050)	(-.719)	(1.291)	(3.966)	(4.084)	(-1.893)	(.007)	(4.701)	(5.788)	(3.199)	(.547)	(3.509)	(.757)	(1.983)	
CPMHH	-2.72616	---	-.49290*	-.33881*	.21352*	.66461*	-.11620	.04486	.49764*	.46237*	.19567*	-.03312	.02584*	-.06882	.01374	.3312
	(-1.741)		(-9.868)	(-6.380)	(2.609)	(3.901)	(-1.842)	(.872)	(2.739)	(4.004)	(2.112)	(-.492)	(3.696)	(-1.491)	(1.955)	
CPMHH (LOCNP)	-2.41723	-.56224*	-.02384	.05929	.26639*	.50952*	-.11704*	-.02510	.81730*	.55765*	.27487*	.05515	.01864*	.03391	.08126*	.5756
	(-1.921)	(-17.166)	(-.510)	(1.224)	(4.079)	(3.720)	(-2.327)	(-.610)	(6.138)	(5.983)	(3.599)	(.995)	(3.267)	(.909)	(2.076)	
CPMHH (LOCNP)	-2.47436	---	-.47526*	-.34470*	.22064*	.62433*	-.13832*	.01969	.65428*	.47829*	.22468*	-.01428	.02639*	-.06443	.06356	.3284
	(-1.565)		(-9.783)	(-6.478)	(2.691)	(3.632)	(-2.189)	(.382_	(3.920)	(4.089)	(2.343)	(-.206)	(3.693)	(-1.391)	(1.292)	
CPM18	-2.77698*	-.59857*	.00616	.11581*	.20770*	.57269*	-.07090	.00829	.68458*	.53576*	.20430*	.01999	.01555*	.05542	.01246*	.5956
	(-2.218)	(-19.898)	(.132)	(2.472)	(3.158)	(4.197)	(-1.405)	(.201)	(4.699)	(5.796)	(2.752)	(.370)	(2.780)	(1.494)	(2.213)	
CPM18	-2.81587	---	-.47298*	-.27757*	.07723	.72646*	-.05905	.07269	.46790*	.45469*	.10806	-.06781	.01681*	-.01833	.01753*	.2792
	(-1.687)		(-8.878)	(-4.901)	(.885)	(3.998)	(-.877)	(1.325)	(2.415)	(3.692)	(1.094)	(-.944)	(2.254)	(-.372)	(2.338)	
CPM18 (LOCNP)	-2.37968	-.60087*	.01481	.11047*	.21634*	.51737*	-.09658	-.02151	.83605*	.56549*	.25165*	.05167	.01408*	.06183	.09993*	.5969
	(-1.889)	(-20.025)	(.327)	(2.361)	(3.295)	(3.772)	(-1.919)	(-.522)	(6.275)	(6.062)	(3.288)	(.930)	(2.472)	(1.667)	(2.550)	
CPM18 (LOCNP)	-2.39011	---	-.45614*	-.28602*	.08735	.66378*	-.09073	.03641	.67318*	.48428*	.15787	-.03495	.01630*	-.01139	.10727*	.2774
	(-1.419)		(-8.811)	(-5.044)	(.999)	(3.624)	(-1.348)	(.662)	(3.785)	(3.885)	(1.545)	(-.472)	(2.140)	(-.231)	(2.047)	

[a]521 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 5

TELEVISION CPM ANALYSIS: LATE FRINGE LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
CPMHH	-5.34925* (-4.175)	-.45005* (-16.624)	.04059 (.808)	.08721 (1.790)	.32655* (4.464)	.78400* (5.637)	-.10297* (-1.982)	.03839 (.905)	.61145* (3.974)	.42982* (4.405)	.12725 (1.636)	.03180 (.573)	.01169* (2.003)	.04464 (1.167)	-.00186 (-.312)	.5090
CPMHH	-2.34201 (-1.485)	---	-.33794* (-6.070)	-.29204* (-5.455)	-.14048 (-1.673)	.61015* (3.538)	-.19488* (-3.034)	.04032 (.764)	.44978* (2.356)	.41213* (3.397)	.08899 (.920)	.02611 (.378)	.01983* (2.742)	-.03840 (-.814)	-.00065 (-.088)	.2393
CPMHH (LOCNP)	-5.20766* (-4.057)	-.45406* (-16.692)	.02734 (.569)	.08969 (1.843)	.33405* (4.560)	.76933* (5.526)	-.10796* (-2.084)	.03118 (.733)	.60503* (4.274)	.45254* (4.596)	.15465 (1.929)	.05138 (.899)	.00863 (1.436)	.04847 (1.265)	.05366 (1.329)	.5107
CPMHH (LOCNP)	-2.41687 (-1.525)	---	-.33461* (-6.268)	-.29135* (-5.444)	-.14232 (-1.694)	.61899* (3.578)	-.19101* (-2.975)	.04481 (.846)	.43847* (2.494)	.40400* (3.296)	.07814 (.784)	.01840 (.259)	.02077* (2.798)	-.03988 (-.844)	-.02287 (-.458)	.2396
CPM18	-5.23584* (-3.784)	-.52030* (-18.379)	.08505 (1.571)	.17561* (3.419)	.43831* (5.649)	.75716* (5.049)	-.05522 (-.991)	.03606 (.789)	.60005* (3.620)	.43162* (4.110)	.10822 (1.291)	.02769 (.463)	.00932 (1.484)	.07770 (1.894)	.00153 (.238)	.5094
CPM18	-1.12709 (-.639)	---	-.36842* (-5.918)	-.23117* (-3.862)	-.05946 (-.633)	.49763* (2.581)	-.12524 (-1.744)	.03609 (.612)	.37340 (1.749)	.41012* (3.023)	.03686 (.341)	.01570 (.203)	.01752* (4.696)	.00350 (.004)	.00680 (.821)	.1800
CPM18 (LOCNP)	-5.03030* (-3.633)	-.52537* (-18.544)	.07674 (1.490)	.17744* (3.464)	.44906* (5.793)	.73138* (4.878)	-.06667 (-1.200)	.02192 (.480)	.63278* (4.159)	.45934* (4.339)	.14503 (1.682)	.05352 (.871)	.00596 (.924)	.08322* (2.029)	.07546 (1.742)	.5123
CPM18 (LOCNP)	-1.11965 (-.631)	---	-.35030* (-5.864)	-.23257* (-3.884)	-.05765 (-.613)	.48929* (2.527)	-.13149 (-1.830)	.02982 (.503)	.44181* (2.245)	.40227* (2.933)	.03256 (.292)	.01202 (.151)	.01918* (2.308)	.00411 (.078)	-.00224 (-.040)	.1789

[a]518 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 6

TELEVISION R/H ANALYSIS: TOTAL ADVERTISING REVENUE LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
R/HHH	-7.90862* (-5.349)	-.22056* (-4.361)	.13059 (1.400)	.21005* (3.837)	.05999 (.737)	1.30259* (8.289)	-.10023 (-1.718)	-.16118* (-3.568)	.37924* (2.060)	.26985* (2.182)	.17053 (1.785)	.01430 (.225)	.01244* (2.060)	.03616 (.842)	-.02292* (-3.624)	.2982
R/HHH	-7.15602 (-4.773)	---	-.09246 (-1.161)	.08492 (1.784)	-.13455 (-1.935)	1.30717* (8.148)	-.11385 (-1.914)	-.15578* (-3.379)	.37620* (2.001)	.29215* (2.316)	.18414 (1.889)	.01649 (.254)	.01639* (2.689)	.01078 (.248)	-.02220* (-3.439)	.2668
R/HHH (LOCNP)	-7.66436* (-5.068)	-.21576* (-4.196)	.00174 (.019)	.22158* (3.991)	.04227 (.512)	1.33802* (8.370)	-.06426 (-1.095)	-.12455* (-2.758)	.26923 (1.419)	.36185* (2.833)	.22638* (2.218)	.03844 (.567)	.01002 (1.602)	.03421 (.784)	-.00032 (-.007)	.2765
R/HHH (LOCNP)	-6.98248* (-4.556)	---	-.20687* (-2.694)	.09866* (2.052)	-.14784* (-2.100)	1.34468* (8.252)	-.07719 (-1.292)	-.11891* (-2.584)	.25926 (1.341)	.37268* (2.863)	.22973* (2.208)	.03481 (.504)	.01428* (2.269)	.00909 (.206)	-.01060 (-.236)	.2464
R/H18	-7.50097* (-4.807)	-.27596* (-5.042)	.21637* (2.216)	.28550* (5.072)	-.01169 (-.127)	1.25142* (7.577)	-.05842 (-.954)	-.15069* (-3.172)	.27996 (1.446)	.23673 (1.822)	.11567 (1.153)	-.00142 (-.021)	.00309 (.491)	.07894 (1.760)	-.01760* (-2.639)	.2989
R/H18	-6.33196* (-3.990)	---	-.05136 (-.609)	.14571* (2.892)	-.30105* (-4.089)	1.23809* (7.291)	-.06084 (-.967)	-.13942* (-2.857)	.23803 (1.196)	.25415 (1.903)	.11309 (1.096)	-.00446 (-.065)	.00485 (.751)	.06106 (1.328)	-.01461* (-2.138)	.2569
R/H18 (LOCNP)	-7.17823* (-4.532)	-.26375* (-4.798)	.09807 (1.057)	.29032* (5.118)	-.03436 (-.373)	1.27110* (7.621)	-.03398 (-.556)	-.12538* (-2.661)	.21553 (1.089)	.32408* (2.433)	.17490 (1.642)	.02716 (.384)	.00061 (.094)	.07777 (1.719)	.02088 (.453)	.2878
R/H18 (LOCNP)	-6.11623* (-3.803)	---	-.13904 (-1.725)	.15490* (3.069)	-.30935* (-4.186)	1.25579* (7.343)	-.03997 (-.637)	-.11833* (-2.450)	.18332 (.903)	.32466* (2.376)	.16081 (1.473)	.01839 (.254)	.00278 (.421)	.06067 (1.312)	.01509 (.102)	.2491

[a] 439 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 7

TELEVISION R/H ANALYSIS: NATIONAL/REGIONAL REVENUE LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
R/HHH	-8.54976*	-.25713*	.45313*	.16238*	.12328	1.10750*	-.09074	-.14449*	.17978	.26212*	.15921	.00178	-.00283	.08238	-.01527*	.4172
	(-5.373)	(-4.724)	(4.515)	(2.756)	(1.407)	(6.549)	(-1.446)	(-2.973)	(.907)	(1.970)	(1.549)	(.026)	(-.436)	(1.782)	(-2.244)	
R/HHH	-7.67237*	---	.19309*	.01649	-.10353	1.11285*	-.10663	-.13819*	.17623	.28812	.17508	.00434	.00178	.05280	-.01444*	.3865
	(-4.738)		(2.245)	(.321)	(-1.378)	(6.422)	(-1.660)	(-2.775)	(.868)	(2.114)	(1.663)	(.062)	(.269)	(1.266)	(-2.070)	
R/HHH (LOCNP)	-8.49600*	-.25234*	.37966*	.16899*	.10956	1.13900*	-.06322	-.11648*	.08143	.30382*	.17654	.00571	-.00366	.08009	-.02507	.4107
	(-5.272)	(-4.605)	(3.947)	(2.856)	(1.245)	(6.685)	(-1.010)	(-2.420)	(.403)	(2.232)	(1.623)	(.0791)	(-.549)	(1.722)	(-.532)	
R/HHH (LOCNP)	-7.69853*	---	.13568	.02524	-.11277	1.14678*	-.07834	-.10988*	.06978	.31649*	.18045	.00146	.00132	.05071	-.03709	.3812
	(-4.694)		(1.651)	(.491)	(-1.497)	(6.576)	(-1.225)	(-2.231)	(.337)	(2.272)	(1.621)	(.019)	(.196)	(1.075)	(-.770)	
R/H18	-8.33035*	-.34985*	.57361*	.25451*	.09682	1.06066*	-.05055	-.13612*	.09122	.22804	.10729	-.01276	-.01201	.12574*	-.01064	.4329
	(-4.921)	(-5.892)	(5.415)	(4.168)	(.973)	(5.921)	(-.761)	(-2.642)	(.434)	(1.618)	(.986)	(-.176)	(-1.760)	(2.584)	(-1.470)	
R/H18	-6.84830*	---	.23419*	.07729	-.27002*	1.04376*	-.05362	-.12183*	.03806	.25012	.10403	-.01661	-.00978	.10308*	-.00684	.3865
	(-3.938)		(2.536)	(1.400)	(-3.347)	(5.609)	(-.777)	(-2.278)	(.175)	(1.709)	(.920)	(-.221)	(-1.382)	(2.045)	(-.914)	
R/H18 (LOCNP)	-8.20919*	-.34196*	.51094*	.25705*	.08225	1.07774*	-.03336	-.11844*	.03559	.26771	.12980	-.00358	-.01299	.12446*	-.00390	.4301
	(-4.804)	(-5.766)	(5.102)	(4.200)	(.828)	(5.989)	(-.505)	(-2.330)	(.167)	(1.863)	(1.129)	(-.047)	(-1.866)	(2.550)	(-.078)	
R/H18 (LOCNP)	-6.83228*	---	.20352*	.08148	-.27428*	1.05789*	-.04112	-.10929*	-.00616	.26847	.11153	-.01495	-.01018	.10229*	-.01140	.3854
	(-3.893)		(2.314)	(1.480)	(-3.401)	(5.669)	(-.601)	(-2.074)	(-.028)	(1.801)	(.936)	(-.189)	(-1.412)	(2.027)	(-.221)	

[a]439 individual television stations were included in this analysis.

*Significant at .05 level

TABLE 8

TELEVISION R/H ANALYSIS: LOCAL REVENUE LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	AUD	TVHH	VHF	NET	I	XD	XDC	R1	R2	R3	R4	NRAD	TVRAD	NATNP or LOCNP	R^2
R/HHH	-7.49157*	-.17907*	-.10399	.23678*	.00637	1.31868*	-.12550	-.19680*	.55688*	.27085*	.18801	.03979	.02160*	-.01524	-.03664*	.3005
	(-4.588)	(-3.206)	(-1.010)	(3.917)	(.071)	(7.599)	(-1.948)	(-3.945)	(2.739)	(1.983)	(1.782)	(.567)	(3.237)	(-.321)	(-5.245)	
R/HHH	-6.88053	----	-.28509*	.13518*	-.15158*	1.32240*	-.13656*	-.19241*	.55441*	.28896*	.19906	.04157	.02481*	-.03584	-.03606*	.2835
	(-4.197)		(-3.275)	(2.598)	(-1.993)	(7.539)	(-2.100)	(-3.817)	(2.697)	(2.095)	(1.868)	(.586)	(3.720)	(-.755)	(-5.108)	
R/HHH	-7.23069*	-.16950*	-.29524*	.25393*	-.02423	1.38470*	-.06378	-.13396*	.35126	.39461*	.25364*	.06393	.01866*	-.01954	-.03006	.2557
(LOCNP)	(-4.262)	(-2.939)	(-2.916)	(4.078)	(-.262)	(7.721)	(-.968)	(-2.644)	(1.650)	(2.754)	(2.216)	(.841)	(2.659)	(-.399)	(-.606)	
R/HHH	-6.69501*	----	-.45912*	.15737*	-.17358*	1.38992*	-.07394	-.12952*	.34343	.40312*	.25627*	.06107	.02201*	-.03927	-.03814	.2406
(LOCNP)	(-3.934)		(-5.385)	(2.948)	(-2.220)	(7.682)	(-1.114)	(-2.535)	(1.600)	(2.789)	(2.219)	(.797)	(3.149)	(-.803)	(-.763)	
R/H18	-6.91793*	-.20335*	-.04669	.29900*	-.10485	1.26314*	-.08177	-.18436*	.44714*	.23812	.12991	.02286	.01195	.02761	-.03067*	.2641
	(-4.103)	(-3.439)	(-.443)	(4.916)	(-1.058)	(7.079)	(-1.236)	(-3.592)	(2.137)	(1.697)	(1.198)	(.317)	(1.760)	(.570)	(-4.255)	
R/H18	-6.05647*	----	-.24399*	.19598*	-.31808*	1.25332*	-.08355	-.17605*	.41624*	.25096	.12801	.02062	.01325	.01444	-.02846*	.2436
	(-3.587)		(-2.721)	(3.656)	(-4.061)	(6.937)	(-1.248)	(-3.391)	(1.966)	(1.766)	(1.166)	(.282)	(1.930)	(.295)	(-3.915)	
R/H18	-6.55630*	-.18069*	-.22885*	.30638*	-.14670	1.31153*	-.03262	-.13377*	.28955	.35470*	.19701	.05067	.00902	.02402	-.00848	.2328
(LOCNP)	(-3.782)	(-3.003)	(-2.253)	(4.935)	(-1.456)	(7.184)	(-.487)	(-2.594)	(1.336)	(2.433)	(1.690)	(.655)	(1.628)	(.485)	(-.168)	
R/H18	-5.82876*	----	-.39129*	.21361*	-.33509*	1.30103*	-.03672	-.12894*	.26748	.35509*	.18735	.04466	.01050	.01231	-.01245	.2164
(LOCNP)	(-3.364)		(-4.507)	(3.929)	(-4.209)	(7.062)	(-.543)	(-2.479)	(1.224)	(2.413)	(1.593)	(.572)	(1.476)	(.247)	(-.245)	

[a]439 individual television stations were included in this analysis.

*Significant at .05

Observed vs. Hypothesized Variable Relationships

Crossmedia-owned stations (XD) apparently charge their advertisers lower costs-per-thousand and make less revenue-per-thousand households than all other stations, *ceteris paribus*. This is true whether audience is included or excluded from the equations. The negative effect is more pronounced when households rather than adults 18 to 49 are sold to advertisers and is actually significant in eight of the twenty-eight "audience" equations estimated. This suggests that crossmedia-owned stations are presently charging lower "prices."

The competes with crossmedia dummy (XDC) also performed contrary to expectations in most instances. It was never significant in the CPM analyses, but its sign was negative in ten of sixteen regressions. When the R/H variables were regressed on the set of independent variables, the XDC dummy was significantly negative in all twelve equations.

Since our models suggest that crossmedia-owned stations are behaving in a direction opposite to the one hypothesized, finding a "negative price umbrella" is not surprising. Inasmuch as crossmedia-owned firms tend to be the most powerful media firms in their markets of operation their decision to "hold the line on" or reduce "prices" should elicit similar behavior from their competitors. A close comparison of the CPM and R/H results also suggests that stations which compete with crossmedia combinations tend to cut their "list" or rate card CPM's during actual transactions while crossmedia-owned stations do not engage in obvious price cutting. This is suggested by the fact that same-market crossmedia competitors have an average of only 2.68 percent lower CPM's from 9 A.M. to Midnight, but receive 14 percent less revenue-per-thousand viewing households from 9 A.M. to Midnight. Conversely, crossmedia-owned stations have 6.9 percent lower CPM's and make 6.4 percent less revenue-per-thousand viewing households from 9 A.M. to Midnight.

Finding a negative relationship between television "prices" and dummy variables representing crossmedia ownership and competitors of crossmedia-owned stations is in sharp contrast to the findings of Owen and Lago. Four explanations for this result are possible: (1) the dependent variable studied by Owen and Lago and the ones used in this study might give different crossmedia results; (2) crossowners may have begun to set their newspaper and television advertising rates jointly; (3) there might be some economies of joint ownership which existed in 1973 but not in 1966 or 1970; or (4) some new external variable, such as increased regulatory scrutiny, might be forcing crossmedia-owned stations to keep their "prices" lower than would otherwise be the case.

The first proposition can be tested by regressing the average price of a prime time 30-second spot onto the set of independent variables used by Owen and then the set used by Lago.* The results, displayed in Table 9, strongly suggest that utilization of the average prime time spot cost (or highest prime time hourly rate) instead of the prime time cost-per-thousand does not alter the negative crossmedia effects discovered by this study. The first proposition is, therefore, rejected.

Close examination of Table 9 suggests that either proposition two, three, or four must explain the negative findings. The choice between these theories depends on the results of the yet to be discussed newspaper "price" analysis. Further discussion of the negative crossmedia effect is, therefore, deferred until the newspaper results have been analyzed. The rest of the television "price" results will be presented prior to discussion of the newspaper results.

Most other explanatory variables behave as expected. The observed relationship between the audience (AUD), VHF dummy, and the income (I) variables with each

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*Peterman's television "price" analysis suggested that the results obtained from analyzing average prime time spot "prices" and their highest hourly rates were consistent in 1966. If these two variables were no longer comparable in 1973, it is still valid to compare 1973 spot "price" results with 1966 highest hourly rate results as long as the two variables yielded similar results in 1966.

TABLE 9

TELEVISION "PRICE" ANALYSIS: OWEN'S AND LAGO'S PRIME TIME LOG-LINEAR MODELS REGRESSION COEFFICIENTS (t-RATIO'S IN PARENTHESES)

Dependent variables	Constant	AUD	TVHH[a]	XD	I[a]	VHF	NET	XDC	TVRAD	R^2
1973 Spot Cost	.40073* (2.586)	---	.06986* (35.253)	-.02280 (-.424)	.00007* (5.222)	.41769* (9.321)	1.56453* (22.420)	-.07027 (-1.578)	---	.8231
1966 Hour Rate[c]	7.790* (43.2)	---	.0539* (23.7)	.151* (2.5)	.00006* (2.5)	.540* (9.1)	.420* (4.8)	.0741 (1.6)	---	.71
1970 Hour Rate[b]	-2.2794* (-2.509)	---	.3879* (28.950)	.1098* (2.524)	.6907* (6.053)	.5776* (13.885)	.5747* (9.691)	.0577 (1.507)	---	.762
1973 Spot Cost	-7.20687* (-6.112)	.67390* (14.319)	.15914* (3.507)	-.13696* (-2.797)	.91248* (7.020)	.08258 (1.741)	.49343* (5.635)	-.06389 (-1.618)	.10323* (2.867)	.8637
1970 Hour Rate[b]	-.8324 (-1.144)	.3178* (17.558)	.2263* (16.050)	.0162 (.451)	.5697* (6.260)	.2247* (5.836)	.1832* (3.503)	.0230 (.754)	.0169 (.599)	.8502

[a]Owen used the square of the natural log of TVHH instead of just its natural log; Owen also chose to enter I in its linear form.

[b]A. M. Lago, "The Price Effects of Joint Mass Communication Media Ownership," Antitrust Bulletin 16 (1971): 802.

[c]B. M. Owen, "Newspaper and Television Station Joint Ownership," Antitrust Bulletin 16 (1973): 806.

dependent variable always conforms to prior expectations. Actual viewing audience is always significant and negatively related to "price" while income-per-household is always significant and positively related to the set of dependent variables. Likewise, the VHF dummy has a positive effect on "price" and is significant in twenty of twenty-eight regressions.

Other variables which generally perform as expected are: the number of television households in each market (TVHH), and the network affiliation (NET), market rank (R1, R2, R3, and R4), and same-market TV-radio combination (TVRAD) dummies.

The number of television households term is usually positive but never significant when actual viewing audience is included in the CPM regressions. This suggests that the number of market television households accounts for market size "price" effects when audience serves as a predictor variable. Inspection of TVHH's performance in the R/H analyses, however, produces conflicting results. Its effect on total and national/regional advertising revenue-per-thousand viewers is always positive but its effect on local revenue is always negative.

If TVHH is explaining market size "price" effects, this result indicates that an increase in market size leads to an increase in the national/regional ad revenue-per-thousand viewers received by television stations; and that an increase in market size leads to a decrease in the local ad revenue-per-thousand viewers received by stations. This is consistent with the expectation that national/regional advertisers tend to purchase most of their advertising in larger markets. Since each station has a limited amount of inventory (advertising time), this means that large market stations sell a larger percentage of their inventory to national/regional advertisers while smaller market stations sell a larger percentage of theirs to local buyers. Our R/H results support such a proposition.

The results found in Tables 2 through 8 also generally support the theory that network-affiliated stations charge higher advertising "prices." The <u>network affiliation</u> dummy (NET) is significant and positive in all sixteen CPM regressions but is negative in five of twelve R/H equations. No plausible theory can be forwarded to explain such a negative relationship. However, since the affiliation dummy does not have a significant effect (either positive or negative) on R/H, <u>ceteris paribus</u>, the incorrect signs can be largely ignored.

The <u>market rank</u> dummies (R1, R2, R3, and R4) are very well behaved in all of the CPM regressions. They usually support the expectation that stations which operate in higher ranked markets charge higher "prices."

Examination of Tables 2 through 5 suggests that "top 50" stations charge higher "list prices" than stations operating outside of the "top 100" television markets. Stations in markets 51 to 100, on the other hand, apparently do not charge significantly higher "list prices" than stations in lower markets. The R/H analysis reveals a similar trend. However, the market rank dummies perform erratically in these regressions and are seldom significant. These dummies apparently fail to operate as proficiently in the R/H analysis because market size effects are better explained by the number of television households variable in these regressions. The dummies outperform television households in accounting for market size effects in the CPM analysis.

Same-market ownership of an AM radio station with 5,000 watts or more of power by a TV station (TVRAD) also leads to higher "prices" as expected, particularly when adult audiences are sold. A positive influence on price was found in twenty-six of the twenty-eight "audience" regressions. This TVRAD-"price" relationship was significant in eight of these equations. Since some economies of scale exist for television-radio combinations, the strength of the positive relationship found is unexpected. These findings suggest that same-market TV-radio combinations possess and exercise a significant amount of market power.

Lago found no such significant relationship in 1970. However, inspection of Table 9 reveals that an application of Lago's model to 1973 data also produces a significantly positive result. The change in outcomes is probably traceable to a difference in variable definitions. Lago's radio station definition encompassed all AM and FM radio stations. The present study only counted AM stations with 5,000 or more watts of power. The implications of this result will be discussed in the last chapter.

In addition to the crossmedia owned and competes with crossmedia-owned dummies, three other variables generally failed to conform to hypothesized expectations. These were the number of SMSA radio stations (NRAD) and the two number of newspaper variables (NATNP and LOCNP). It was expected that an increase in the number of competitors would result in a decrease in station "prices." However, with one exception, all such relationships were found to be positive in the CPM regressions. Conversely, the number of newspaper variables conformed to theoretical expectations in eleven of twelve R/H equations and the number of radio stations conformed in four of the R/H regressions.

The number of newspaper results suggest that stations with more newspaper competitors tend to have higher "list CPM's," but that these stations receive less actual advertising revenue-per-thousand viewers. This suggests that stations operating in markets with higher levels of newspaper competition "list" higher prices, but that they receive less R/H. The "true" effect of newspaper competition is, therefore, to reduce the "transaction price" received by stations. This is the expected result.

The number of market radio station results are harder to explain. Past experience suggests that the positive outcome largely occurs because a mere count of the number of market radio stations constitutes a poor measure of market competition. Consequently, NRAD is explaining portions of the variance in station "price" which do not correspond to competitive effects. In particular, NRAD is probably accounting for market prosperity or market size effects left unexplained by TVHH, R1, R2, R3, R4, or I.

The twenty-eight equations studied, generally explain a reasonably large amount of the variation in television "prices." The late fringe, early fringe, and 9 A.M. to Midnight CPM analyses all have coefficients of determination which exceed .50 while the prime time CPM analysis and the R/H analyses have R^2's ranging from .23 to .43.

The most important findings of the television "price" analysis are that crossmedia-owned stations and their same-market competitors charge lower "prices" and that same-market TV-radio combinations charge higher "prices" than all other stations, <u>ceteris paribus</u>. The policy implications of these two results will be discussed after the results of the newspaper "price" study have been discussed.

Results of the Newspaper MIL Analysis

The newspaper MIL analysis should help determine if crossmedia combinations set their newspaper and television rates jointly to maximize total profits. Since competition is probably more vigorous in the television section of the media market, crossmedia owners may be loading the monopoly surcharge (made possible through crossmedia ownership) onto their newspaper rates where the demand is probably less price-elastic. This of course follows the well-known inverse-elasticity rule for multiple product pricing. But it has a curious implication. For the inverse-elasticity rule to hold strictly, the demands for the two products must be independent, or at least viewed independently by the seller. That, of course, would vitiate the economic case against joint ownership. Unfortunately, it is impossible to determine <u>a priori</u> the modification one should make to the inverse-elasticity rule in the case where the goods are substitutes; the mathematics show that it depends on the relations of prices and quantities that are not strictly comparable and on the magnitudes of the (positive) cross-elasticities of demand--none of which are known. However, if the newspaper results indicate that crossmedia-owned daily newspapers charge significantly higher "prices" than all other newspapers, the "joint pricing theory" would be supported. Any other finding will suggest that economies of joint operation or regulatory scrutiny have caused crossmedia firms to charge lower prices than all other stations, *ceteris paribus*.

Only one dependent variable was utilized to examine newspaper "pricing"--the *milline cost* (MIL) of newspaper advertising. The average milline rate charged by newspapers in 1973 was .95 cents-per-thousand subscribers with a 95 percent confidence interval of .05 to 1.85 cents-per-thousand subscribers.

The results from analyzing this dependent variable are provided in Table 10. Two regressions were analyzed. One included *circulation* as a predictor variable, the other did not. Since the equation which includes circulation explains a much larger portion of the variation in milline rates and generally conforms to the expected relationships between the explanatory

TABLE 10

NEWSPAPER MIL ANALYSIS: LOG-LINEAR MODEL[a]
REGRESSION COEFFICIENTS (t-RATIOS IN PARENTHESES)

Dependent Variable	Constant	CIRC	POP	XD	NPRAD	TWOED	CHAIN	MON	NRAD	I	NTV	R^2
MIL·100	.59047 (1.180)	-.49593* (-29.481)	.08092* (4.853)	-.01029 (-.296)	-.00455 (-.1872)	-.01063 (-.287)	.00492 (.275)	.01435 (.363)	.01554* (5.630)	.05455 (1.002)	.02157* (4.489)	.8062
MIL·100	-.94288 (-1.081)	---	-.16882* (-6.706)	-.21181* (-3.541)	-.07001 (-1.650)	-.28416* (-4.521)	-.00583 (-.186)	.02341 (.337)	.01032* (2.138)	.15380 (1.615)	.01685* (2.002)	.4033

[a]Four hundred and twenty-nine daily newspapers were included in this analysis.

*Significant at .05 level.

variables and "price" as well as or better than the "non-circulation" regression, only the former results will be discussed.

Examination of Table 10 yields the conclusion that none of the dummy variables which account for newspaper structural characteristics exercise a significant influence on newspaper milline rates. The crossmedia dummy (XD) was totally insignificant but had an unexpected negative sign. The same held true for the same-market newspaper-radio combination dummy (NPRAD). These two results are similar to Lago's and suggest that same-market combinations are not presently exercising the market power they possess to obtain higher newspaper advertising "prices." The crossmedia findings also indicate that same-city newspaper-television combinations are not setting their prices jointly. This leaves the economies of joint operation and/or the regulatory scrutiny theory as the most plausible explanations for the finding that crossmedia-owned television stations and stations which compete with such combinations charge lower "prices" than all other stations, *ceteris paribus*. The implications of this determination are deferred until the next chapter.

Most other explanatory variables in the newspaper analysis conform to hypothesized expectations. In particular, circulation (CIRC) is strongly negative and significant. City population (POP) is positively significant. Income-per-household (I) and the dummy variables representing chain ownership (CHAIN) and same-city monopoly (MON) were positive but insignificant. And lastly, newspapers which publish two editions daily (TWOED) charge slightly lower "prices," *ceteris paribus*.

The two variables which failed to satisfy *a priori* expectations were the number of market radio (NRAD) and television stations (NTV). Both of these variables exercise a significantly positive (but quite small) influence on milline rates. Like problems were encountered when similar "number of competitor" variables were utilized in the television "price" analysis. The reasons for such positive outcomes parallel those provided in the television analysis. In particular, the number of radio station and the number of television station terms probably reflect some market characteristic(s) in this equation for which the model used does not adequately control.

This brief look at newspaper "pricing" suggests that a newspaper's circulation and the size of the market in which it operates are the primary determinants of milline rates. Such structural variables as crossmedia ownership, on the other hand, fail to significantly influence "listed" rates.

Heteroskedasticity

Goldfeld-Quandt tests were run to determine the impact of heteroskedasticity on the television and newspaper regressions. The results in Tables 11 and 12 argue against the use of a linear estimating form. Table 11 suggests that the television analysis contains significant negative (or liberal) heteroskedasticity when a log-linear functional form is utilized. Table 12 reveals that significant positive (or conservative) heteroskedasticity exists in the newspaper analysis when the log-linear form is used. However, in both instances the effects are small enough that corrections for heteroskedasticity would probably be counter-productive. This is because the sample was so large that an F-statistic as small as 1.0 was still significant and because all corrections for heteroskedasticity are necessarily arbitrary. Since most heteroskedasticity was eliminated by utilization of a log-linear form, no further modification to correct for such problems was employed.*

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*The only continuous variables left in linear form were the number of newspaper, number of radio station, and number of television station variables. Similar results and lower R^2's were obtained when these variables were entered in log-linear form. They were, therefore, entered linearly in all estimating equations.

TABLE 11

GOLDFELD-QUANDT TESTS FOR HETEROSKEDASTICITY IN TELEVISION "LIST PRICE" REGRESSIONS

Functional Form[a]	Rank Ordered Variable	Goldfeld-Quandt Ratio[b]
Linear		
Lago's	Prime Time Audience	$\frac{12{,}630{,}253}{440{,}581} = 28.67$[c]
Owen's	Prime Time Audience	$\frac{41{,}761{,}599}{570{,}336} = 73.22$
Wirth's (with audience)	Prime Time Audience	$\frac{534}{2814} = 5.26^{-1}$
Wirth's (without audience)	Prime Time Audience	$\frac{534}{3{,}202} = 5.99^{-1}$
Log-linear		
Lago's	Prime Time Audience	$\frac{17.37}{33.26} = 1.92^{-1}$
Owen's	Prime Time Audience	$\frac{26.41}{45.96} = 1.74^{-1}$
Wirth's (with audience)	Prime Time Audience	$\frac{16.46}{33.17} = 2.02^{-1}$
Wirth's (without audience)	Prime Time Audience	$\frac{16.71}{40.80} = 2.44^{-1}$

[a]The split sample contained 260 cases in its upper half and 269 cases in its lower portion.

[b]The tests presented above are all for positive heteroskedasticity. To check for negative heteroskedasticity simply invert the ratio presented.

[c]The G-ratio has an F-distribution. The critical value of F at infinity and at a significance level of .05 equals 1.0.

TABLE 12

GOLDFELD-QUANDT TESTS FOR HETEROSKEDASTICITY: NEWSPAPER "LIST PRICE" REGRESSIONS

Functional Form[a]	Rank Ordered Variable	Goldfeld-Quandt Ratio[b]
Linear		
Lago's	Monday-Friday Circulation	$\frac{36,978}{2,262} = 16.35$[c]
Owen's	Monday-Friday Circulation	$\frac{135,710}{3,530} = 38.44$
Wirth's (with circulation)	Monday-Friday Circulation	$\frac{26.05}{10.37} = 2.51$
Wirth's (without circulation)	Monday-Friday Circulation	$\frac{37.35}{15.75} = 2.37$
Log-linear		
Lago's	Monday-Friday Circulation	$\frac{6.63}{5.37} = 1.23$
Owen's	Monday-Friday Circulation	$\frac{16.10}{8.42} = 1.91$
Wirth's (with circulation)	Monday-Friday Circulation	$\frac{6.63}{5.37} = 1.23$
Wirth's (without circulation)	Monday-Friday Circulation	$\frac{16.01}{9.69} = 1.65$

[a]The split sample contained 213 cases in its upper half and 211 cases in its lower portion.

[b]The tests presented above are all for positive heteroskedasticity. To check for negative heteroskedasticity, simply invert the ratio presented.

[c]The G-ratio has an F-distribution. The critical value of F at infinity and at a significance level of .05 equals 1.0.

CHAPTER V

POLICY IMPLICATIONS AND FUTURE RESEARCH

Analysis of television station "list prices" and "transaction prices" yields the conclusion that cross-media-owned television stations and their same market competitors charge lower "prices" than all other stations, *ceteris paribus*. Conversely, analysis of these same data suggests that same-market ownership of an AM radio station with 5,000 or more watts of power by a television station leads to higher "prices," *ceteris paribus*. The policy implications of these results and recommendations for further research constitute the remainder of this report.

Policy Implications and Recommendations

Crossmedia Ownership

Owen and Lago both found a positive crossmedia-price relationship. This study found this relationship to be negative (and often significant). If this study had shown that no relationship exists between crossmedia ownership and television "prices," those who favor continued operation of such combinations could still contend that crossmedia combinations do not possess significant market power. However, the results clearly suggest that crossmedia combinations possess and exercise significant market power. This market power is presently being exercised to hold "prices" down in media advertising markets. This has, in turn, forced stations competing with crossmedia combinations to lower (or hold) "transaction prices" below the "price" established by such combinations.

Two explanations for the negative results found remain to be discussed. Some intervening variable and/or a change in market conditions must have caused the result. Previous discussion has suggested that the negative relationship resulted from regulatory scrutiny (intervening variable) and/or from an increase in economies of joint operation from 1966 to 1973 (market conditions). Since no definitive empirical evidence exists to support or refute either of these theories, this study cannot make a definite choice between them. The discussion which follows analyzes each proposition and reconciles the policy implications of the crossmedia results.

Economies of scale. If any economies exist for jointly owned combinations, this would lead to lower costs and lower profit-maximizing rates for jointly owned stations and via competition, to lower rates in the entire market. To say a crossmedia combination enjoys economies of joint operation is to say that larger firms produce units of output at a lower cost than the smaller firms with which they compete. To determine if economies of joint newspaper-TV station operation are significant, cost data would have to be obtained from crossmedia owners regarding possible: (1) joint management economies, (2) joint production and personnel economies, (3) joint marketing economies, (4) joint promotional economies, and (5) joint investment economies.

Levin attempted to determine whether same-market newspaper-radio combinations possess significant joint operating economies by surveying sixty of these combinations in 1950.[1] He concluded that no significant economies were found to result from such mergers.[2] No additional research has attempted to uncover joint economies between newspaper-broadcast combinations. Although crossmedia combinations might enjoy some operational economies in management, marketing, promotion, and investment, there is no formal evidence that this is the case.

The findings of this study neither confirm nor refute the existence of joint economies for crossmedia combinations. If the change in the crossmedia-price relationship from 1966 to 1973 was caused by scale economies, crossmedia combinations must have discovered some economies of scale which they had not exhausted prior to the studies of Owen and Lago.* Although this possibility does not seem likely, it has not been refuted empirically. Consequently, the implications of accepting an economies of scale explanation must be discussed.

If the lower "prices" discovered result from scale economies, crossmedia combinations could be expected to charge lower advertising prices in the long run. If regulators were most concerned with media advertising markets, such a pricing result would argue for continued operation of crossmedia combinations since a lower long-run price is economically beneficial. However, the FCC contends that they are most concerned with the effects of crossmedia ownership on media information markets.[3] Since this study indicates that crossmedia combinations possess significant market power, the potential social costs of allowing crossmedia combinations to continue to operate in media information markets could be quite large. Consequently, accepting an economies of scale explanation for the findings of this study would require regulators to compare the expected price benefits of crossmedia ownership to the potential information

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*Technological innovation could also cause such a result. However, crossmedia firms would have to employ the innovation(s) more efficiently or sooner than all other newspaper and television firms, *ceteris paribus*.

control costs of allowing such operations to continue. Since diversity of information control is of greater importance to the FCC than efficient media advertising prices, the implied costs of crossmedia ownership--even in the presence of significant economies of joint operation--are probably greater than the benefits. The policy implications of this expectation are deferred until the regulatory scrutiny theory has been discussed.

Regulatory scrutiny. Though economies of scale may have caused the negative relationship between cross-media ownership and "price," a more likely explanation is that regulatory scrutiny provided combinations with a short-run incentive to lower "price." Moreover, the following occurrences might explain how such scrutiny affected television pricing.*

On March 25, 1970, the FCC adopted a set of rules prohibiting future same-market broadcast combinations. No divestiture was ordered. During the course of the rule-making, the Justice Department urged the Commission to consider the anti-competitive effects of newspaper-broadcast combinations.[4]

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*The Appendix provides a detailed listing of pre-1973 Justice Department and FCC case-by-case actions which may have affected the behavior of crossmedia combinations. Some industry reaction to such scrutiny is also provided.

When the FCC closed its broadcast combination rule-making, it also announced a set of prospective rules which would (if promulgated) force the dissolution of all same-market newspaper-broadcast and television-radio combinations. However, the discussion which accompanies the proposed rules suggests that the Commission was most concerned with same-market newspaper-TV combinations. "It has now become clear that the most significant aspect of the problem is the common control of television stations and newspapers of general circulation."[5] Consequently, the FCC's statement of Proposed Rule Making (and the proceedings which followed in 1971) made it clear that a divestiture remedy was most likely to be employed against newspaper-television combinations.

Exactly how regulatory scrutiny might have worked is necessarily conjectural. One plausible scenario probably began when it became evident that the Commission's Proposed Rule Making would complement and reinforce Justice's case-by-case activity. Prompted by the disturbing news from Washington, crossmedia owners made urgent requests for advice from their Washington counsel. Since "power over price" is a criterion for the presumption of unlawful market power under Section 2 of the Sherman Act,[6] the quickest advice counsel could give was to avoid any price increases, even those warranted by market conditions or general inflation. (While price increases and static monopoly power are analytically unrelated, a common public-relations defense of large companies is to show that their prices have increased less than, say, the Bureau of Labor Statistics Consumer Price Index.) A consequent reluctance to raise prices under otherwise inflationary conditions would of course leave crossmedia prices below those of other stations in a relatively short period of time.

Acceptance of this explanation suggests that if the FCC were permitted to consider the cross-ownership issue settled and lost interest, joint owners might simply revert to their pre-1970 behavior. Moreover, if left alone, joint owners might be able to insulate themselves from the competition of better services and the expression of competing ideas.[7] If regulation has influenced station behavior, its continued effect depends on sustained FCC interest in the issue.

The choice between the economies of scale and the regulatory scrutiny explanations is not clear cut. However, the policy implications are similar in both instances. If crossmedia combinations possess and exercise significant market power, a long-run solution must be formulated to insure that this power is not exercised in either media advertising or media information markets.

A satisfactory long-run conduct remedy could probably be developed to prevent crossmedia combinations from exercising their market power in media advertising markets. However, developing a conduct remedy capable of preventing the exercise of such market power in media information markets is problematic. Effective conduct regulations, in the media information market, would require the government to regulate program content. This raises grave First Amendment questions. Moreover, such regulations would require continued and costly reporting and surveilance.

Conversely, a structural remedy to the crossmedia ownership problem seems more reasonable. Structural solutions typically involve some divestiture to reshape a particular market structure "along competitive lines . . . to increase the likelihood that desirable conduct and performance will emerge more or less automatically."[8] A structural solution will reduce the government's perceived need to regulate program content and could be expected to more permanently and predictably lower prices. Dissolving crossmedia combinations would, therefore, seem preferable to promulgating and enforcing conduct remedies.

Same-Market Television-Radio Combinations

Since the FCC has banned future same-market television-radio combinations,* it apparently feels that

*In this case radio refers to all AM and FM radio stations.

the existence of such combinations is not in the "public interest." A similar ban on prospective newspaper-broadcast combinations led a U.S. Court of Appeals to order the FCC to dissolve existing combinations unless it is demonstrated that their continued existence is in the "public interest."[9] Applying this same logic to existing television-radio combinations would force the FCC to dissolve all of these combinations as well.

The results of this study indicate that same-market television-radio combinations* utilize their market power to charge higher prices to advertisers purchasing adult 18 to 49 audiences. Such combinations charge 10 percent more in prime time and receive 12 percent more from national/regional advertisers for these audiences than all other stations.

These results are surprising for two reasons. First of all, same-market television-radio combinations unquestionably enjoy some joint economies of operation. These economies should counter the market power tendency to increase "prices." Besides scale economies, the FCC's scrutiny might also have been expected to lower "prices."

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*Recall that the definition of a radio station for purposes of this study is a 5,000 watt or more AM station in markets with two or more television stations and a 1,000 watt or more AM station in markets with only one television station.

Scale economies. When market combinations produce long-run undesirable price effects but desirable efficiency effects, policy makers should measure the relative size of each effect. Past court decisions have generally preferred the competitive side of this equation. The Supreme Court's decision in the _Clorox Case_ typifies the feeling of most courts. In delivering the Court's decision, Justice Douglas stated that "economies cannot be used as a defense to illegality. Congress was aware that some mergers which lessen competition may also result in economies but it struck the balance in favor of protecting competition."[10]

Conversely, Williamson has contended that an efficiency (economies) defense deserves consideration if the long-run benefits resulting from joint economies exceed the long-run costs of inefficient (i.e., above-marginal-cost) prices. Even Williamson's arithmetic reveals that there are cases where inefficient production (i.e., higher average costs resulting from smaller firm size) is more than offset by the lower profit markups resulting from a more competitive situation.[11] An additional factor which must enter these calculations is the social cost of decreased information diversity. Consequently, economies of scale would have to be substantial to offset the "price" and "diversity" inefficiencies which result from same-market television-radio combinations.

Regulatory scrutiny. Newspaper-television combinations evidently reacted to FCC scrutiny by lowering their prices. Television-radio combinations exercised their market power to charge higher prices in 1973 in spite of such scrutiny. These two situations need to be reconciled.

No comparable television-radio combination results exist for any year prior to 1973. It is, therefore, impossible (without further study) to determine whether such combinations ever lowered their prices in response to scrutiny. When the FCC proposed rules which (if promulgated) would dissolve all same-market television-radio combinations, it stated that radio was much less influential than either television or newspapers. In this same Notice of Proposed Rule Making, the Commission indicated that no evidence was presented, during the proceedings which led to the adoption of rules prohibiting future television-radio combinations, which demonstrated the need to force the dissolution of existing combinations. They, therefore, requested that parties of interest submit evidence pertinent to divestiture.

Little or no television-radio evidence (empirical or otherwise) can be found in the crossmedia record. Such a demonstrated lack of interest by all parties to the proceedings suggests that television-radio combinations believed that the FCC would not force divestiture.*

The discussion provided suggests that the television-radio combinations examined by this study both possess and exercise significant amounts of market power. Absent some strong "public interest" rationale, the implication of this "monopoly pricing" result is straightforward--all such television-radio combinations should be dissolved.

Discussion of Policy Recommendations

Implementation of the policy recommendations forwarded in this study will simultaneously increase both the number of competitors and the number of speakers in each media market. The FCC's Second Report and Order[12] indicates that diversity of speakers takes precedence over competitive considerations. However, this does not alter the policy recommendations since a ban on cross-ownership advances both diversity and competition.

The same theory which suggests that an increase in the number of media advertising competitors is socially desirable also suggests that media information markets characterized by increased diversity of ownership

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*Another plausible explanation for the observed reaction to scrutiny is that TV-radio combinations felt that a short-run change in their behavior could not affect the outcome.

will better serve the "public interest." Moreover, Judge Hand's pronouncement in Associated Press[13] indicates that a strict adherance to competitive theory is even more important when dealing with business entities characterized by both economic and information concentration.

> The First Amendment, far from providing an argument against application of the Sherman Act, here provides powerful reasons to the contrary. That Amendment rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public.[14]

Judge Hand's statement suggests that adoption of the structural remedies recommended by this study will increase social benefits in both the media information and media advertising markets. Unless the social costs of implementing the recommended divestitures are larger than expected, implementation of the proposed remedies would appear to be in the "public interest."

Future Research

Further research might help substantiate the findings of this study. In particular, it would be desirable to replicate this study using "actual" revenue data for all television stations from both 1966 and 1973.*

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*Recall that the R/H analysis was limited to television stations operating in markets with three or more stations. Inclusion of revenue data from stations in smaller markets might effect the findings of this study since competition is more limited in smaller markets.

Unfortunately, the FCC does not publish revenue statistics from individual stations. The rationale for this policy is that releasing data on individual stations constitutes unwarranted disclosure of individual firm operations. If these data could be released to academic researchers under suitable safeguards, any doubts stemming from the use of an estimated "transactions price" dependent variable could be subjected to empirical test. Only the regression results of such studies would be published, and they cannot be regarded as confidential. Failing this release, it is certainly appropriate for professional FCC staff to use the confidential data in research of this type and to make at least the regression results available.

The findings of this study also leave unanswered questions dealing with radio "pricing." Should the FCC choose to fully implement the recent Court of Appeals decision,[15] all same-market newspaper-radio combinations would be dissolved. No attempt has been made to test whether such newspaper-radio combinations utilize the market power they supposedly possess in radio advertising or information markets. Consequently, the policies recommended by both the FCC (to grandfather existing combinations) and the Court of Appeals (to force divestiture) are without empirical support.

The objective in any case should be to maximize the net social benefits associated with the final resolution of the problem. Commissioning some research group to conduct a study of radio "pricing" using 1966 and 1973 data (similar to the television study conducted here) would provide the basic information needed for an informed "public interest" decision.*

Absent such an empirical study, one suspects that complete divestiture of all same-market newspaper-radio combinations will fail to maximize the net social benefits connected with divestiture. Radio advertising and information markets are much more competitive than any other mass media sub-market. Consequently, restricting divestiture to those cases where radio competition is limited (only three or four other radio stations in that market) and to where newspapers operate same-market AM radio stations with 5,000 watts or more of power would seem appropriate. These recommendations could be "fine-tuned" by applying the results of the proposed study.

Conclusion

Most of the questions raised in this paper about previous studies are resolved. More definitive results could only be obtained by utilization of "actual" individual television station revenue data. However, these data were not available for the present study.

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*The FCC's staff could also conduct such a study. There is some climate developing for FCC internal studies.

The Court's decision in NCCB vs. FCC places the burden of proof on crossmedia combinations to demonstrate that their continued existence is clearly in the "public interest."[16] Whether present crossmedia combinations have actually committed specific abuses is not the question. The real issue is whether such combinations possess enough market power to potentially exert excessive influence in their markets of operation.

The findings of this study are consistent with the notion that crossmedia combinations possess such market power. If crossmedia combinations charge lower prices because they enjoyed economies of scale in 1973 which were not present in 1966 or 1970, the long-run social costs of continued crossmedia operation are limited to the media information market. If lower prices are the result of regulatory scrutiny (or some other temporary intervening variable), the long-run social costs of continued combination operation would come from both media advertising and media information markets.*

In both cases, the long-run social costs of allowing crossmedia combinations to continue operation would appear to be greater than the corresponding social

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*If lower prices result from a long-run change in economies of scale, the long-run price effect should be negative. Conversely, if lower prices result from short-run regulatory scrutiny, the incentive to behave in the "public interest" is a short-run incentive, to be lost when regulation turns its attention elsewhere.

benefits. Adoption of the structural remedies recommended by this study will reduce the ability of media monopolists--benevolent or otherwise--to use their market power in media information and media advertising markets.

CHAPTER V--NOTES

[1]H. J. Levin, Broadcast Regulation and Joint Ownership of Media (New York: 1960).

[2]Ibid., p. 91.

[3]Second Report and Order, Same-City Newspaper-TV Crossownership Ruling, Docket 18110 (January 28, 1975). Evidence that crossmedia firms enjoyed scale economies between 1970 and 1973, compared to noncross-owned stations, is properly the subject for another investigation. Probably the most suitable technique occurs in the studies by Edwin Mansfield concerning the spread of innovations. One should determine which techniques were available in this period and which--because of "high-overhead" elements were most likely to be used first by crossmedia firms. If in fact such techniques were adopted preponderantly by crossmedia firms in 1970-73, a case could be made for the scale economies hypothesis. See E. Mansfield, The Economics of Technological Change (New York: 1968), pp. 99-133, for the basic research design.

[4]Notice of Proposed Rule Making, 35 Fed. Reg. 5963 (1970).

[5]Ibid., p. 565. The rule-making which followed was congruous with this focus. Almost all of the evidence filed and discussion provided focused on same-market television-newspaper combinations.

[6]U.S. v. Grinnell Corp., 384 U.S. 563 (1966).

[7]National Citizens Committee for Broadcasting v. Federal Communications Commission, et al., ________ F.2d. ________ (March 2, 1977): 23, 43-46 (slip opinion). These considerations were evidently in Judge Bazelon's

mind in the 1977 decision. The Court clearly considered promoting a "diversity of speakers" (i.e., independently owned competing media), a superior way of promoting the "public interest" than Commission supervision of broadcast content.

[8]F. M. Scherer, Industrial Market Structure and Economic Performance (Chicago: 1970), p. 422.

[9]NCCB v. FCC, supra note 3, p. 60.

[10]Federal Trade Commission v. Proctor & Gamble Co., 875 S.Ct. 1224 (1967): 1230-31.

[11]O. E. Williamson, "Economics as an Antitrust Defense: The Welfare Tradeoffs," American Economic Review 58 (1968): 33-34.

[12]Second Report and Order, supra note 3.

[13]Associated Press v. United States, 326 U.S. 1 (1945).

[14]Ibid., p. 20.

[15]NCCB v. FCC, supra note 3, p. 60.

[16]Ibid.

APPENDIX

APPENDIX

PRE-1973 JUSTICE DEPARTMENT AND FCC ACTIONS

The following events represent a listing of actions taken by the Justice Department and the FCC which lend credence to a regulatory scrutiny explanation for the negative relationship found to exist between crossmedia ownership and television "prices." Some industry reaction to regulatory actions is also provided.

(1) The Beaumont Enterprise--the only daily newspaper in Beaumont, Texas--attempted to purchase one of Beaumont's three TV stations (KFDM-TV). However, Justice Department intervention alleging antitrust questions caused the sale to be cancelled [Broadcasting, (May 13, 1968): 46; Broadcasting, (August 12, 1968): 61].

(2) The Justice Department urged the FCC to consider the anti-competitive effects of same-market newspaper-broadcast combinations [Broadcasting, (August 5, 1968): 32-4]. Justice's proposal, which included dissolution of such crossmedia combinations, was subsequently incorporated into the FCC's divestiture proposal.

(3) On Thursday August 22, 1968, ten Washington communications lawyers representing major multiple broadcast and newspaper-broadcast interests met to determine methods for turning back Justice Department and FCC proposals which threatened the broadcasting status quo. The only solution proposed was to gather factual material to rebut such regulatory proposals. It was "anticipated that another meeting of this group, plus many others," would take place [Broadcasting, (August 26, 1968): 46].

(4) Justice's first suit opposing the merger of TV and newspaper interests was filed against the Gannett Co., which attempted to acquire Rockford, Illinois's only daily newspaper. The Justice Department challenged this merger since Gannett already owned WREX-TV--one of Rockford's television stations. In a consent judgment, Gannett was ordered to sell either the station or the newspaper [Broadcasting, (December 9, 1968): 28].

(5) In January of 1969, the FCC decided to award WHDH-TV's license to Boston Broadcasters, Inc. At the time of this decision WHDH-TV was owned and operated by the Boston Herald-Traveler. The FCC's decision therefore forced the Herald-Traveler to forfeit their same-market television station [16 F.C.C. 2d 1 (January 1969)].

(6) The Justice Department "asked the FCC to hold a hearing on whether Frontier Broadcasting Co. should be required to sell KFBC-TV Cheyenne, Wyo., the only VHF in that city." Justice called this situation a "mass media communications monopoly." [Broadcasting, (January 6, 1969): 21-2]. The FCC subsequently ordered Frontier to divest its newspaper or its TV station in Cheyenne [Broadcasting, (February 15, 1971): 58].

(7) The FCC ordered that hearings be held on the renewals of WCCO-AM-TV (Minneapolis-St. Paul) and KRON-FM-TV (San Francisco) [Broadcasting, (March 24, 1969): 64]. The WCCO hearing resulted from charges advanced by Garfield Clark, manager of KSTP AM-FM-TV in St. Paul, at the 1968 Senate Antitrust and Monopoly Subcommittee Hearings. In those hearings, Clark suggested that ownership of WCCO by Northwest Publications (publisher of the only daily newspaper in ST. Paul) and by the Minneapolis Star and Tribune (the only daily in Minneapolis) was anticompetitive [Broadcasting, (April 28, 1969): 49-50]. The KRON hearings resulted from charges forwarded by J. Hart Clinton, editor and publisher of the San Mateo (Calif.) Times, at these same Senate Hearings. Clinton charged that the San Francisco Chronicle, owner of KRON-FM-TV, was using its television profits to monopolize newspaper ownership and control [Broadcasting, (April 28, 1969): 49-50].

(8) The American Newspaper Association's (ANPA) Federal Laws Committee warned members who attended the ANPA's 1970 National Convention that "an antitrust cloud hangs over hundreds of newspaper publishers." It cited "the antitrust threat implicit in recent Department of Justice pronouncements and proposals by the FCC" [Broadcasting, (April 27, 1970): 28].

(9) The Justice Department decided to concentrate its efforts on same-market newspaper-TV combinations. It contended that newspaper-TV crossownerships should be dissolved but suggested that there was no need to force existing TV-radio and newspaper-radio combinations to divest any of their properties [Broadcasting, (May 24, 1971): 32]. The "green light" given to such combinations could well be reflected in the generally positive and sometimes significant radio-TV combination dummy variable.

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