The Effect of Television Station Ownership on Local News Ratings

Allen M. Parkman

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I. Introduction

This paper develops and applies a model which analyzes what kind of television stations draw the largest audiences for local news programs. This topic is of interest because the Federal Communications Commission has taken an active role in determining the number and location of stations that a party can own as it has endeavored to create a diversity of viewpoints and programming on television. In particular, the Commission has attempted to restrict the number of stations owned by groups, local newspapers, and local radio stations. If these classes of owners produce more popular programming than other classes of owners, the reduction in popular programming should be taken into consideration as a cost of the diversification policy. The focus of this paper is on local news programming because it is the major form of programming over whose content the owners exercise substantial control.1 Also, because of its local production, it presents an opportunity for testing for local ownership effects. This study concludes that group and local newspaper owned stations, in particular, generate more popular local news than do other classes of owners.

The Communications Act of 1934 gives the F.C.C. the mandate to regulate the electronic mass media in “the public convenience, interest, and necessity.” The Commission has adopted various regulations designed to promote media competition and diversity of programming viewpoints. These regulations are generally referred to as the multiple ownership rules. In 1953, the Commission adopted the “7-7-7 rule,” which restricts any party to seven AM, seven FM, and seven TV licenses. Only five of the seven TV licenses can be VHF. In 1964, the Commission established its “duopoly rule,” which prohibits the common ownership of stations operating in the same service where there is overlap of their signals at certain specified power levels. The Commission in 1970 created its “one-to-a-market rule,” which extended the duopoly concept cross-service as to future combinations. Exceptions were allowed, but the primary prohibition was against AM radio–VHF television combinations. In its most recent extension of the multiple ownership rules in 1975, the Commission decided to prohibit common ownership of broadcast stations with local daily newspapers. Again, the prohibition was generally only for future combinations.

The 1975 F.C.C. decision was challenged in the courts with it being sustained by the U.S. Supreme Court in F.C.C. v. National Citizens Committee for Broadcasting, et al., 436 U.S. 755 (1978). To reach the conclusion that collocated broadcast stations and newspapers were not in the “public convenience, interest, and necessity,” the F.C.C. relied on a large body of social science research. This research focused on media ownership and its effect on advertising rates, sale prices, and the variety of different types of programs. The studies that were submitted in its hearings on the effect of ownership on programming investigated the quantities of different types of programs that were produced. A special emphasis was given to “socially desirable” programs such as news and public affairs. These studies did not consider the popularity of the programs produced by different owners.

The influence of television station ownership on local news programming has been studied by economists in terms of the quantity produced (see, e.g., Students’ (1971), Levin (1971), and

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1 Although owners also control the content of the other locally produced programs such as public affairs and local sports, Owen et al. (1974) suggest that the most important role played by local stations is in the production of local news due to its popularity and profitability.
F.C.C. (1975)), the costs of production (see, e.g., Levin (1960)), and its effect on local awareness of public issues (see, e.g., American Institute (1971)). None of these studies focuses on the ability of the owners to present programming that is preferred by the individual viewers. Therefore, this study focuses on the effects of television station ownership on the popularity of local news programs.

The production of news programming involves an unquantifiable combination of breadth of coverage, depth of coverage, and method of presentation. Some firms will be more successful than others in producing news programming that has mass appeal. To determine if certain news gathering organizations are more successful than others in attracting viewers, we can look at the end results that these organizations produce as judged by the viewers, i.e., the ratings.

Television stations are owned by parties with a variety of other business interests. The three classes of owners under investigation here have been singled out by the F.C.C. for special restrictions. However, there are a number of reasons why these classes of owners might be able to produce more popular local TV news programming. Local newspapers and radio stations may possess joint economies in producing local television news, while group owned stations may possess joint economies in covering national events that are of local interest. Local newspapers, and sometimes radio stations, can be among the larger businesses in a community. Since the F.C.C. favors local ownership of TV stations, local newspapers and radio stations may have better managerial skills than the other local owners. Each group may be able to implement at one station lessons learned at its other stations. Since this study utilizes dummy variables to determine the effect of the different classes of owners, the particular reason for the impact of a given ownership variable cannot be identified.

II. The Model

The output produced by television stations is viewers per minute of commercial time. Programs are a means to that end. Advertisers demand viewers to whom their messages can be presented. A station’s supply curve for any given time period is the marginal cost of producing additional viewers. Although there are increasing returns to presenting a given body of information to the public, the marginal costs of attracting viewers eventually increase as higher priced anchor persons, advertising, expensive production sets, and more information are required to attract additional viewers. For ease of comparison across markets, the measure of audience size used in this study is the percentage of TV households in a market viewing a given program, i.e., its rating. If all stations operate under similar demand and supply conditions, they would attract equal shares of their markets, and our regression equation for firm \( i \) (\( i = 1, 2, \ldots, n \)) in market \( j \) (\( j = 1, 2, \ldots, k \)) would be

\[
\text{Rating}_{ij} = \alpha_0 + \alpha_1 \left( \frac{1}{N_j} \right)
\]

(1)

where \( N_j \) is the number of commercial and non-commercial stations in market \( j \) and \( \alpha_1 \) is expected to be positive. However, not all stations are equal. There are two major sources of differences among stations based on the competitive environment of the station and the characteristics of the owners of the station. First, looking at the environment of a station, network affiliated stations, especially those in the VHF spectrum have a competitive advantage. Therefore, of the four classes of commercial stations—network VHF (NV), network UHF (NU), independent VHF (IV), and independent UHF (IU)—the last three are handicap related to the first. A handicap can be viewed as causing these types of stations to lose some of their potential rating. Equation (1) would become, for a network affiliated UHF station, for example,

\[
\text{Rating}_{ij} = \alpha_0 + \alpha_1 \left( \frac{1}{N_j} \right) + \alpha_2 \left( \frac{1}{N_j} \right) (NU_i)
\]

(2)

3 Since the ratings are a percentage of TV households in a market, rather than just those households watching television at a given moment, the sum of the ratings in a market will be within the range 0–100.

4 Network affiliation can have a major effect on local TV news ratings for two reasons. First, the local station can use parts of the national news broadcasts to make its news programs more attractive to viewers. Second, network affiliation and its more attractive programming can generate important audience flows. In addition, VHF channels have more attractive technical characteristics than UHF.

5 The concepts of “handicap” and “capture” are discussed in Park (1972) and Besen (1976).
where $NU_j$ is a dummy variable equal to 1 if a station is a network affiliated UHF station, and zero otherwise, and $\alpha_2$ is expected to be negative. Therefore, the ratings of the programs of a network affiliated UHF station is reduced by $\alpha_2(1/N_j)$ relative to a station that does not possess that handicap.

If some stations are handicapped, then other stations benefit by being able to capture some of the viewers who decide not to watch the handicapped station. A station captures more of the diverted audience if it does not possess the same handicap as the competing station. So the "capture" variable due to the presence in a market of a network affiliated UHF station, for example, is

$$\alpha_3 \frac{(1/N_j)(NNU_j - NU_i)}{(N_j - 1)}$$

where $NNU_j$ is the number of network affiliated UHF stations in market $j$. The total amount to be captured is $\alpha_3(1/N_j)$ times the number of handicapped stations in the market. Since a handicapped station cannot capture its own handicap, for a handicapped station this amount is reduced by $\alpha_3(1/N_j)$, when the dummy variable $NU_i$ is equal to one. The denominator is $(N_j - 1)$ because the handicap is captured by the other stations in the market. The coefficient, $\alpha_3$, is expected to be positive. If a market consists of one network affiliated VHF station and two network affiliated UHF stations, the network VHF station would capture an increase in ratings equal to $\alpha_3(1/3)(2 - 0)/(3 - 1) = 1/3 \alpha_3$, while each of the network UHF stations would capture $\alpha_3(1/3)(2 - 1)/(3 - 1) = 1/6 \alpha_3$ from each other. Each of the three handicapped classes of stations generates two variables in the regression equations—a "handicap" variable and a "capture" variable.

In addition to the commercial stations in a market, the ratings of the commercial stations are influenced by the number of educational stations in the market. Since there are very few local news programs on educational TV, they are ignored in this study and there is no need for a "handicap" variable for educational stations. Educational stations are handicapped as reflected by their generally lower ratings, so it is appropriate to introduce another "capture" variable into our equation to reflect the increase in ratings of commercial stations due to their competing against educational stations. This new variable is $\alpha_6(1/N_j)(NE_j)/(N_j - 1)$, where $NE_j$ is the number of educational stations in market $j$. The amount captured by the other stations in the market due to each educational station is $\alpha_6(1/N_j)$ and it is captured by the $N_j - 1$ remaining stations. As with the other capture variables, $\alpha_6$ is expected to be positive.

Central to this study is the effect of the characteristics of the owners of a station on the ratings of the station's local news programs. The three characteristics under investigation are ownership in conjunction with a local daily newspaper, a local AM radio station, or other television stations. In contrast to the analysis above, all other stations are now viewed as handicapped relative to these types. Local newspaper owned stations, for example, add two variables to our regression equation: $\alpha_7(1/N_j)(NEWS_j)$, where $NEWS_j$ is a dummy variable equal to 1 if station $i$ is under the same ownership as a local daily newspaper, and zero otherwise, and $\alpha_7$ is expected to be positive; and $\alpha_{10}(1/N_j)(N(NEWS_j - NEWS_i))/(N_j - 1)$, where $N(NEWS_j$ is the number of newspaper owned stations in market $j$ and the interpretation is similar to the capture variables discussed above, except that $\alpha_{10}$ is expected to be negative. Ownership with a local AM radio station (AM) or group ownership (GROUP) each generates two additional variables.

The regression equation that is estimated in this study is completed with two more variables. The age of the station can be important for establishing viewer habits as well as creating a learning opportunity for the station's staff. Therefore, the variable $\alpha_{15}AGE_i$ is added, where $AGE_i$ is the number of years since station $i$ commenced operation and $\alpha_{15}$ is expected to be positive. The last variable, $\alpha_{16}EP_i$, reflects the time zone of station $i$. $EP_i$ is a dummy variable equal to one if station $i$ is in either the Eastern or Pacific time zones, and otherwise it is zero. Since late evening news pro-

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*Similarly, $NIV$ and $NIU$ are the number of IV and IU stations in the market, respectively.*

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*For a station to be viewed as newspaper owned it had to be owned by a daily newspaper in the dominant city in the designated market area used by Nielsen for its television ratings.*

*Similarly, $NGROUP$ and $NAM$ are the number of GROUP and AM stations in the market, respectively.*

*A station is viewed as group owned if at least 25% of it is owned by an individual or corporation that owns at least 50% of some other station.*
programs are presented an hour later in these time
zones, it is expected that $\alpha_{16}$ is negative since fewer people are awake. It is expected that $\alpha_{16}$
should be zero for early evening reports.
The equation estimated in this study is

$$
\text{Rating}_{ij} = \alpha_0 + \alpha_1 \frac{1}{N_j} + \alpha_2 \frac{1}{N_j} (NU_i) + \alpha_3 \frac{(1/N_j)(NNU_j - NU_i)}{(N_j - 1)} \\
+ \alpha_4 \frac{(1/N_j)(IV_i)}{(N_j - 1)} + \alpha_5 \frac{(1/N_j)(NV_j - IV_i)}{(N_j - 1)} + \alpha_6 \frac{(1/N_j)(IU_i)}{(N_j - 1)} \\
+ \alpha_7 \frac{(1/N_j)(NIU_j - IU_i)}{(N_j - 1)} + \alpha_8 (1/N_j)(NE_j) + \alpha_9 (1/N_j)(NEWS_i) \\
+ \alpha_{10} \frac{(1/N_j)(NNEWS_j - NEWS_i)}{(N_j - 1)} + \alpha_{11} (1/N_j)(GROUP_j) \\
+ \alpha_{12} \frac{(1/N_j)(NGROUP_j - GROUP_i)}{(N_j - 1)} + \alpha_{13} (1/N_j)(AM_j) \\
+ \alpha_{14} \frac{(1/N_j)(NAM_j - AM_i)}{(N_j - 1)} + \alpha_{15} AGE_i + \alpha_{16} EP_i.
$$

One variable that is not included in this equation is market size. Market size could be important if the popularity of television news programs varied with market size. This would be especially true if the pattern of ownership also varied with market size. By including the ownership classes, but not the market size, the ownership classes would appear to explain the variability of ratings, which actually reflected the impact of market size. To test for this possibility, the model presented here was estimated with interaction terms between NEWS, GROUP, and AM and the number of TV households in each market as well as the market size separately. For both 1965 and 1975, none of these variables was statistically significant, so market size is excluded from this study.

III. The Sample

The model was estimated using data\textsuperscript{10} from the early evening (5–7 pm) and late evening (9:30–11:30 pm) local television news programs from the top 100 markets for 1965 and 1975.\textsuperscript{11} These years were chosen because the restrictions on local newspaper and local AM radio station ownership of TV stations increased substantially dur-

\textsuperscript{10} The ratings were provided by the A. C. Nielsen Co., while the independent variables were taken from the Broadcasting Yearbook (1966 and 1976). The Nielsen sample consists of 1,500 housing units selected at random according to the population density across the United States. In larger markets the channel selections of sets that are on are collected directly even when no one is watching the set, while in the smaller markets a diary system is used (Nielsen, 1977). Both systems are vulnerable to sampling error. In addition, the number of houses in each sample varies with market size resulting in a variation in the sample errors. These potential problems appear to be minor, so they are ignored in this study.

\textsuperscript{11} Since two years are compared in this study, there was concern that the change in the value of a parameter during the intervening period might reflect a change in the composition of the sample rather than a change in the influence of the variable. For example, the effect of NEWS might be reduced either because the advantages of local newspaper ownership were weakened or because the stronger combinations elected to or were forced to divest, even though the advantages continued for some of the remaining combinations. To determine if the composition of the sample had a similar ownership pattern for both 1965 and 1975, a regression equation was estimated using a sample that consisted of only the stations which were under the same ownership for the entire period. If the results proved to be similar to those of the broader sample, we could be more confident that changes that occurred in the ownership variables’ parameters reflect changes in the influence of the ownership classes rather than a change in the composition of the sample. This second sample produced results that were very similar to those of the broader sample reported here. The only major change was AGE, which was significant using the broader sample and was not significant for one time period with the narrower sample. The requirement that a station had to be under the same ownership for the entire period removed all stations that were less than 10 years old from the sample and reduced the explanatory powers of AGE. The results using this sample would indicate that the broad sample represents a fairly consistent ownership pattern for the years chosen.
IV. The Empirical Results

The regression equation was estimated in the linear form presented above. The results are presented in Table 1. Estimates are presented for early evening and late evening local news programs for 1965 and 1975 for the top 100 markets. Only five of the parameters had signs that differed from the a priori predictions. The results confirmed the importance of the environmental of the station as well as its age and time zone on the ratings of its local TV news programs.

12 A visual analysis of the residuals indicated that heteroscedasticity was not a problem.
13 Since these variables were included only for control purposes, their results are not discussed in detail.

The focus of this study is on the ownership variables. The results of the estimates of the coefficients of the ownership characteristic variables provide valuable insights. The effect of newspaper ownership was statistically significant at least at the 0.025 levels for the two time periods in 1965. Its effect was larger than that of AM or GROUP, although the difference is not statistically significant. In 1975, although the effect of newspaper ownership was still positive, it was no longer significant. The coefficients were smaller for both newcasts, although the differences were not significant. The reason for the decline in the impact of local newspaper ownership is not clear. It could be due to the fact that

Table 1.—Regression Results of Local TV News Rating Equations

<table>
<thead>
<tr>
<th></th>
<th>1965</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early</td>
<td>Late</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.652</td>
<td>4.528</td>
</tr>
<tr>
<td>(1/N_j)</td>
<td>39.425a</td>
<td>12.065</td>
</tr>
<tr>
<td>(1/N_j(NU_j))</td>
<td>(8.175)</td>
<td>(7.871)</td>
</tr>
<tr>
<td>(1/N_j(NNU_j - NU_j))</td>
<td>(8.475)</td>
<td>(8.160)</td>
</tr>
<tr>
<td>(1/N_j(NIV_j - IV_j))</td>
<td>(11.598)</td>
<td>(11.166)</td>
</tr>
<tr>
<td>(1/N_j(NIV_j - IV_j))</td>
<td>(112.856)</td>
<td>(118.282)</td>
</tr>
<tr>
<td>(1/N_j(IU_j))</td>
<td>(12.357)</td>
<td>(10.896)</td>
</tr>
<tr>
<td>(1/N_j(NIU_j - IU_j))</td>
<td>(26.649)</td>
<td>(25.657)</td>
</tr>
<tr>
<td>(1/N_j(NEU_j))</td>
<td>(13.282)</td>
<td>(12.787)</td>
</tr>
<tr>
<td>(1/N_j(NEWS_j))</td>
<td>(4.466)</td>
<td>(4.300)</td>
</tr>
<tr>
<td>(1/N_j(NNEWS_j - NEWS_j))</td>
<td>(8.779)</td>
<td>(8.452)</td>
</tr>
<tr>
<td>(1/N_j(GROUP_j))</td>
<td>(3.765)</td>
<td>(3.625)</td>
</tr>
<tr>
<td>(1/N_j(GROUP_j - GROUP_j))</td>
<td>(6.992)</td>
<td>(6.731)</td>
</tr>
<tr>
<td>(1/N_j(AM_j))</td>
<td>(3.852)</td>
<td>(3.709)</td>
</tr>
<tr>
<td>(1/N_j(NAM_j - AM_j))</td>
<td>(6.913)</td>
<td>(6.655)</td>
</tr>
<tr>
<td>AGE,</td>
<td>0.399a</td>
<td>0.471a</td>
</tr>
<tr>
<td></td>
<td>(0.115)</td>
<td>(0.111)</td>
</tr>
<tr>
<td>EP,</td>
<td>-0.522</td>
<td>-4.278a</td>
</tr>
<tr>
<td></td>
<td>(0.846)</td>
<td>(0.814)</td>
</tr>
<tr>
<td>N</td>
<td>302</td>
<td>302</td>
</tr>
<tr>
<td>(R^2)</td>
<td>.34</td>
<td>.30</td>
</tr>
<tr>
<td>(F)</td>
<td>10.9a</td>
<td>8.89a</td>
</tr>
</tbody>
</table>

Note: The numbers in parentheses are the standard errors.
a Significant at the 0.01 level.

b Significant at the 0.025 level.

\(R^2\) Significant at the 0.05 level.
local newspaper ownership was no longer an advantage as the technology of local TV news production changed. Another possible influence may be that the animosity of the F.C.C. as reflected in the multiple ownership rules caused local newspaper owned stations to minimize the links between their newspaper and television operations.

In 1965, group ownership had a positive effect on local TV news ratings, but the effect was not significant. By 1975, the effect of group ownership had become significant and larger, although the difference from 1965 was not significant. In 1975, the coefficient of the group ownership variable was the largest of the ownership variables under investigation and the only one statistically significant.14 It was also the only type of ownership that had not been subjected to major new restrictions. These results would tend to support the contention that group owners were able to adapt to changes in the production techniques of local TV news programming better than other owners with a resulting higher audience.

The last ownership characteristic that was analyzed was ownership of a TV station in conjunction with a local AM radio station. Although AM was significant at the 0.01 level for one time period in 1965, by 1975 the results were not significant and in one case negative. These results could be interpreted as confirming that the increased sophistication and technology of local TV news programming tended to eliminate the limited advantages of AM radio-TV station combinations.

In summary, although all three classes of owners may have potential advantages in the production of local news, the only type still having a significant effect in 1975 was the class that had not been subjected to major new restrictions.

The variables that reflected the effects of the ownership classes under investigation on other stations are not reviewed in detail because their results are generally as predicted and their interpretation adds little to the results reported above. The ratings of stations tend to be reduced if they compete against stations owned by a local newspaper or local AM radio station or against group owned stations.

The impacts of the three ownership classes are shown in table 2, which uses the average number of stations in each market (N/100) and the regression coefficients to calculate average rating effects. The significance of the underlying coefficients is indicated as noted. Where the underlying coefficient is not significant, the results in table 2 must be treated with extreme caution. However, the coefficients do represent the best available estimates of the effects of the different ownership classes. In 1965, local newspaper ownership increased the ratings of a station by 2.93 and 3.67, respectively, for the two time periods, when the average ratings were 13.14 and 12.86. The impact of group ownership was 1.43 and 0.85, while the impact of local AM radio ownership was 0.78 and 3.18. Although the impact of local AM radio ownership was substantially reduced by 1975, the other two types continued to be fairly important, especially group ownership with rating increases of 2.65 and 1.99, when the average ratings were 12.02 and 9.97.

14 To test for the effect of network ownership of stations, the GROUP variable was bifurcated into network owned stations and those that were owned by other groups. Capture and handicap variables for both new variables were added to the regression equation in place of the handicap and capture variables associated with GROUP. Only one of the variables associated with non-network group owned stations was significant in 1965. In 1975, the non-network group operated stations variables were significant at least at the 0.025 level for both time periods. Network owned stations were not significant for the early news, while they were significant at the 0.01 level for the late news. This unusual result may reflect the influence of the large markets where the network owned stations are concentrated. In those markets, the workers have longer commutes and, therefore, they may not be watching television at the time of the early news. Also, by 1975 the larger markets had established longer local TV news programs that probably diluted the ratings of any given program. For the late news, the coefficient of the network owned stations variable was larger and more significant than that of the non-network owned group stations. These results confirm that group owners, both network and non-network, possess advantages in the production of local news.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>1965 Early</th>
<th>1965 Late</th>
<th>1975 Early</th>
<th>1975 Late</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newspaper</td>
<td>2.93*</td>
<td>3.67*</td>
<td>1.98</td>
<td>1.35</td>
</tr>
<tr>
<td>Group</td>
<td>1.43</td>
<td>0.85</td>
<td>2.65*</td>
<td>1.99*</td>
</tr>
<tr>
<td>AM-Radio</td>
<td>0.78</td>
<td>3.18*</td>
<td>0.43</td>
<td>-0.02</td>
</tr>
<tr>
<td>N/100</td>
<td>3.02</td>
<td>3.02</td>
<td>3.55</td>
<td>3.55</td>
</tr>
<tr>
<td>Average Rating</td>
<td>13.14</td>
<td>12.86</td>
<td>12.02</td>
<td>9.97</td>
</tr>
</tbody>
</table>

* Significant at the 0.01 level
* Significant at the 0.025 level
V. Conclusion

This study investigates the effects of station ownership on the ratings of local television news programs. It focuses on these programs because they are the major type of programs over whose content the owners have substantial control. The advantages that certain types of owners may possess are hypothesized as increasing the local news programs’ ratings of their stations. The regression results verify that local newspaper, group, or local AM radio station ownership of a television station increases the station’s ratings for local news programming. The influence of local newspapers and local AM radio stations declined during the period under investigation, while that of groups increased.

These results indicate that the three classes of owners of television stations which the F.C.C. has attempted to restrict have tended to produce very popular local TV news programs. Local newspaper and group owned stations, in particular, attract larger audiences than the other types of owners. Restricting access to ownership of TV stations by these classes of parties imposes costs on individual viewers by forcing them to choose programs considered by them as less desirable.

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