

Market Structure, Station Ownership, and Local Public Affairs Programming on  
Local Broadcast Television

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Abstract

This study analyzes a two-week constructed sample of broadcast television programming in 2003 from a random sample of 285 full power television stations. Half of the stations in the sample did not air any local public affairs programming during the two-week sample period. That figure for commercial stations is 59%. In contrast, less than 10% of the sampled public stations failed to air any local public affairs programming. In addition, the commercial stations aired an average of 45 minutes of local public affairs programming during the two-week sample period, significantly less than what the public stations did.

The results from the regression analyses showed that ownership by one of the big four broadcast networks (ABC, CBS, FOX and NBC) significantly decreased the amount of local public affairs programming on television. In addition, among other findings, stations in larger television markets were less likely to air any local affairs programming, contrary to popular assumption.

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### Introduction

In the United States' system of broadcast regulation, the provision of locally produced "informational programming" traditionally has been considered an important component of a station's fulfillment of its obligation to serve the public interest (Federal Communications Commission, 1999b), with informational programming generally defined as news and public affairs programming. It is through the provision of such programming that stations are able to serve the informational needs and interests of their local communities.<sup>1</sup>

This manifestation of the localism principle at one point took the form of specific FCC-imposed requirements for minimum levels of news and public affairs programming (Federal Communications Commission, 1976).<sup>2</sup> However, these explicit requirements were eliminated in the 1980s under the presumption that unregulated markets would effectively produce a broad range of program types and serve a broad range of audience interests and concerns (Federal Communications Commission, 1984). However, the fact that the FCC no longer has explicit news and public affairs programming requirements does not mean the Commission no longer is concerned with the extent to which stations provide such informational programming. The Commission's current position is that stations must provide some programming that serves the informational needs of their communities in order to fulfill their public interest obligations (Federal Communications Commission, 1999a), though the Commission no longer explicitly states how much of such programming is required. Moreover, the provision of local news and public affairs traditionally has been central to the FCC's definition of the number of "voices" in a media market (see Singleton & Rockwell, 2003) – a perspective that recently was reinforced in the decision by the Third Circuit Court of Appeals' to remand much of the FCC's 2003 decision to relax a number of different media ownership regulations (Prometheus Radio Project v. Federal Communications Commission, 2004).<sup>3</sup>

Consequently, concerns about whether broadcast stations adequately serve the needs and interests of their local communities via the provision of local news and public affairs programming have arisen in a variety of recent policy contexts. For instance, in connection with the Commission's ongoing inquiry into whether the transition to digital broadcasting merits rethinking broadcasters' public interest obligations (see Federal Communications Commission, 1999a), the issue of the provision of public affairs programming was quite prominent. Specifically, the Commission asked, "Are there sufficient marketplace incentives to ensure the provision of programming responsive to community needs, obviating the need for additional requirements?" (Federal Communications Commission 1999a, p. 29).

The issue of the provision of news and public affairs arose again a few years later in connection with the Commission's biennial review of media ownership regulations (see Federal Communications Commission, 2002, 2003). One key line of inquiry in the ownership proceeding involved whether or not levels of diversity or local orientation in media content bore any systematic relationship to the characteristics of the owners of media outlets or to the competitive conditions in media markets. Thus, for instance, the Commission asked, "Has consolidation in local markets led to less or greater diversity?" (Federal Communications Commission, 2002, p. 17), as well as whether "ownership limits are in fact necessary to promote diversity in the media?" (Federal Communications Commission, 2002, p. 18). More directly relevant to this paper, the Commission also asked, "do ownership limits tend to ensure an adequate supply of local information intended to meet local needs and interests?" (Federal Communications Commission, 2002, p. 25). The Commission sought data addressing these questions to inform their decision-making in the media ownership proceeding (e.g., Einstein, 2002; Pritchard, 2002), and conducted their own internal study examining the relationship between ownership and the provision of local information (Spavins, Denison, Roberts, & Frenette, 2002), the results of which contributed to the decision to relax cross-ownership and national broadcast cap regulations (Federal Communications Commission, 2003).

The most recent appearance of the news and public affairs programming issue involved the Commission's recent issuance of a notice of inquiry on broadcast localism (Federal Communications

Commission, 2004). In this notice, the Commission returned to the questions raised in the digital television proceeding, seeking information as to “How effectively have market forces fulfilled the goal of ensuring that broadcasters air programming responsive to the needs and interests of their communities” (Federal Communications Commission, 2004, p. 5). This notice also sought to focus on possible policy remedies other than ownership regulations (e.g., a possible return to explicit behavioral requirements), on the premise that the relationship between ownership and sensitivity to community needs and interests had been thoroughly dealt with in the ownership proceeding (Federal Communications Commission, 2004).

FCC Commissioner Michael Copps, however, disputed any effort to separate the issue of localism from the issue of ownership. According to Commissioner Copps, “Localism is one of the fundamental goals of our ownership rules and of the public interest. I believe that it is impossible to divorce localism from ownership. What if we get to the end of this new proceeding and determine that localism is not served by ever greater media consolidation?” (Federal Communications Commission, 2004, p. 25).

Commissioner Copps’ question gains greater significance in light of the recent decision by the U.S. Court of Appeals for the Third Circuit to remand the bulk of the ownership regulation relaxations contained within the FCC’s 2003 media ownership report and order (see Prometheus Radio Project v. Federal Communications Commission, 2004). The nature of this decision suggests that excluding ownership issues from any analysis of localism in broadcasting would be somewhat premature at this point, given that the FCC will likely need to re-examine the factual basis for its initial decision and develop a stronger evidentiary basis for any decision to relax existing media ownership regulations.

In sum, the question of the relationship between market conditions, station characteristics, and news and public affairs programming provision is central to the FCC’s ongoing work in the areas of public interest obligations, media ownership, and broadcast localism. Unfortunately, prior studies of these relationships have suffered from a variety of methodological shortcomings (see below) that make it difficult to draw firm conclusions about the relationship between market and station characteristics and the provision of informational programming. Focusing on local public affairs programming, this study is

an effort to improve upon the weaknesses of this earlier work and provide a thorough and representative analysis of the relationship between market conditions, station characteristics, and the provision of informational programming. The next section of this paper reviews the literature on the relationship between market and ownership characteristics and the provision of news and public affairs programming. This section is followed by a description of the methodology employed for this study, which is followed by a presentation of the results. The concluding section discusses some policy implications.

### Literature Review

Previous research suggests that station provision of local news and public affairs programming may be a function of a wide range of factors. These factors can be organized into two broad categories: (a) market factors; and (b) station factors.

#### Market Factors

Local media markets in the U.S. differ dramatically across a number of characteristics, including the size of the market (in terms of population and advertising dollars), the number of commercial and non-commercial stations in the market, the penetration levels of alternative program delivery systems such as cable television, and the viewing behavior and demographic make-up of the potential audience. These market characteristics may impact the extent to which individual broadcast stations offer news and public affairs programming, as stations seek to provide the optimal programming mix that effectively differentiates them from their competition for both audience attention and advertising dollars and attempt to navigate the distinctive economic and structural conditions of the market in which they operate (see Napoli, 2004). These market variables are included in this study to determine if, or to what extent, market forces effectively encourage the production of informational programming such as local public affairs (See Table 3 for a complete list of independent variables).

Previous research suggests that the intensity of competition from competing program sources may be reflected in a station's news and public affairs programming output as stations respond to the program offerings of their competitors (Napoli, 2001a, 2004; Powers, 2001). Napoli (2001a), for instance, found a weak, though statistically significant, positive relationship between the number of commercial broadcast

stations in a market and the provision of local public affairs programming. This relationship proved somewhat stronger when local and non-local public affairs were analyzed together (Napoli, 2001a). These results suggest greater competition (in terms of the number of television outlets) may be able to encourage the production of public affairs programming. Previous research also has found that market size was positively related to station provision of local news and public affairs programming, when these types of programming were considered in combination (Federal Communications Commission, 1984; Napoli, 2004), suggesting that stations in larger markets face stronger economic incentives to produce informational programming. However, research that focused exclusively on local public affairs programming found no relationship between market size and the quantity of local public affairs programming (Napoli, 2001a, 2004), suggesting that news and public affairs programming are very different in terms of the structural and economic factors that impact their production.

#### Station Characteristics

The characteristics of individual television stations also may affect the quantity of informational programming they provide. A station's financial resources may be one such factor, with stations with greater financial resources perhaps more inclined to provide such informational programming. Research that has examined news and public affairs programming in combination has supported this assumption (Federal Communications Commission, 1984). Research that examined news and public affairs programming independently, however, only found a significant relationship between station revenues and news programming (Wirth & Wollert, 1979). More recent studies have produced inconsistent results, in some cases finding a significant positive relationship between station revenues and the provision of local public affairs programming (Napoli, 2004), while in other cases finding no such relationship (Napoli, 2001a).

The characteristics of individual station owners also may bear some relationship to station programming output. A number of ownership factors are included in this study to examine this ownership pattern-programming output relationship, including whether a station is owned by a broadcast network or

a station group, whether a station owner is located in the station's market area and whether a station owner also owns another station in the market.

Station group owners, for example, may be able to convert their economies of scale into greater amounts of news and public affairs programming. A study by Wirth and Wollert (1979) found no relationship between group ownership and the provision of news or public affairs programming, while Napoli (2002) found a significant positive relationship between local ownership and the provision of public affairs programming (though only when local and non-local public affairs programming were included in the analysis).

In terms of network ownership, some stakeholders have argued that network owners are particularly insensitive to community needs and are negligent in serving the public interest (Network Affiliated Stations Alliance, 2001). This insensitivity and negligence may be reflected in these stations' commitment to local news and public affairs programming. However, it also is possible that stations that are owned by a national broadcast network could be better-equipped to provide local news and public affairs programming if the national news and public affairs programming experience and infrastructure that these networks already possess could also facilitate the production of local news and public affairs programming. This latter perspective receives support in the Commission's study (Spavins, et al., 2002), though subsequent reanalysis suggests that this relationship holds true only for news and not for public affairs (Napoli, 2004).

Duopoly, in which case a company owns two stations in a local television market, is another ownership issue of central concern. For decades, the government had prohibited a company from owning more than one television station in a single market. In 1999, the FCC relaxed this limit and allowed duopoly ownership (FCC, 1999c). In June 2003, as part of its comprehensive review of the broadcast ownership rules, the FCC further relaxed the local TV multiple ownership rules (FCC, 2003).<sup>4</sup> In relaxing the multiple ownership restrictions, the FCC assumed that the new rules would allow the commonly owned stations to operate more efficiently by taking advantage of their combined resources, which would lead to increased local and public affairs programming in the local market. However, there is no systematic evidence that this

assumption is true. As the FCC acknowledged, much of the evidence regarding the benefits of TV joint ownership is anecdotal and is provided by broadcasters drawing upon their own experience (Federal Communications Commission, 1999c). An econometric analysis prepared for Sinclair Broadcasting by Robert Crandall found that entering into a common ownership led to a small increase in the probability that a station will cover news at all, but there was no statistically significant difference in terms of the amount of news provided (cited in Cooper, 2003). The study, however, was based on only one geographical area. Beyond this work, there appears to be little additional research examining the effects of local common TV station ownership on the quantity and quality of local and public affairs programming.<sup>5</sup>

#### Methodological Issues

It is important to recognize that much of the research on the factors affecting informational programming provision is quite dated (e.g., Chamberlin, 1979; Federal Communications Commission, 1984; Wirth & Wollert, 1978, 1979). The question of the quantity of informational programming that a station provides was a much more prominent research issue in the era when the FCC applied explicit performance standards. The extent to which the typical television market has changed over the past two decades suggests that renewed analysis of the relationships between market and ownership characteristics and informational programming provision is necessary to help guide decision-making in the many policy areas (see above) in which these relationships are of relevance. Another shortcoming of much of this early work is that it relied primarily upon station self-reports for their programming practices - a research strategy that can be called into question by documented tendencies by stations to misrepresent their programming practices when reporting to regulators or researchers operating on their behalf (Kunkel, 1998).<sup>6</sup>

Much of the more recent research forming the basis of the above review has employed alternative methods (such as content analysis of station program schedules/descriptions [Napoli, 2001a, 2002] or reliance on commercial scheduling data sources [Napoli, 2004; Spavins, et al., 2002]) that may be more reliable than station self-reports, but still suffers from a number of important shortcomings. For instance,

Napoli's (2001a) study of the relationship between market conditions and public affairs programming employed a sample drawn from a two-week time period in January of 2000. Ideally, when constructing a program sample for analysis, it is preferable to construct a composite sample from days of the week throughout the year (e.g., Bishop & Hakanen, 2002) in order to control for possible effects from idiosyncrasies associated with particular months or weeks within the year (e.g., sweeps period, election periods, or particularly active news weeks). Napoli's (2001a) study also failed to account for station ownership characteristics – a shortcoming corrected in a follow-up study (Napoli, 2002), though this study still suffers from the programming sample shortcoming.

The FCC's recent study (Spavins, et al., 2002) examined all programming in November, 2000 for affiliates of the Big Four (ABC, NBC, CBS, FOX) network affiliates in those markets in which at least one "owned and operated" station existed. From a sampling standpoint, there are a number of fairly clear shortcomings in this dataset. First, the reliance on data for November is somewhat problematic in that November is a "sweeps" month, when station programming practices frequently deviate from the norm (Ehrlich, 1995; Moonves, 1998).<sup>7</sup> Second, the rather unusual decision to focus only on Big Four network affiliates, and only on those affiliates in markets in which one owned and operated station is present, limits the generalizability of the results to the broader population of broadcast stations.<sup>8</sup> This study also failed to account for a variety of station and market characteristics that previous studies have found to be related to the provision of news and public affairs programming, and also failed to differentiate between news and public affairs programming in its analyses. These latter two shortcomings were addressed in Napoli's (2004) reanalysis of the Commission's data; however, this reanalysis still suffered from the programming and station sample shortcomings of the Commission's original dataset.

As should be clear, research on the relationship between market and station characteristics and the provision of news and public affairs programming has yet to yield a consistent set of findings. This may very well be due to the methodological issues described above – particularly in terms of the failure to employ rigorous sampling procedures and to incorporate the full range of potentially relevant explanatory factors. This study attempts to address these weaknesses by: a) utilizing a randomly selected sample of

stations; b) employing a constructed two-week sample of station programming; and c) simultaneously accounting for station ownership and market characteristics.

#### Method

This study analyzes a two-week constructed sample of broadcast television programming in 2003 from a sample of 289 full-power U.S. television stations. The sample frame is a list of 1,447 full power, English-language television stations published in the *Nielsen Station Index Directory of Television Stations 2003-2004*. The stations were ordered first by the rank of their television market (from the highest to the lowest rank) and then alphabetically within each market. Every fifth station was drawn, with the starting point randomly determined. Four stations had to be excluded for various reasons.<sup>9</sup> Table 1 shows the frequency distribution of the remaining 285 stations by their network affiliation status. Data for station and market variables (see Table 3) were obtained from the *2003 Investing in Television Market Report* (4<sup>th</sup> ed.) and the *2003 Investing in Television Ownership File* (3<sup>rd</sup> ed.), both published four times a year by BIA Research.

For each of these stations, a constructed two-week sample of programming schedules was obtained from Tribune Media Services (operator of the zip2it.com online television program schedule database).<sup>10</sup> In addition to operating the on-line schedule database (which only provides scheduling information for the current two-week period), Tribune provides detailed television program schedule data to commercial and non-commercial clients. For this study, 18 fields of data were obtained, ranging from station call letters to the date, time, title, and duration of program broadcasts. The data set also contained a number of useful descriptive fields for identifying public affairs programming. The Program Type field classified each program according to a wide range of programming types, including Public Affairs. This Program Type field also included some very broad classification categories such as Syndicated and Network programming. More detailed gradations were contained in the Category field, which included a wide range of program type categories – again including Public Affairs. Thus, it was possible for a program to be described as Network or Syndicated in the Program Type field, and as Public Affairs in the Category field. Similarly, a program might be described as Public Affairs in the Program Type field, but

then described as Community or Documentary in the Category field. The data set also included three Description fields that included descriptions of the individual programs as well as descriptions of the individual episodes. Examination of these Description fields made it clear that it was appropriate to include programs described as Public Affairs in either the Program Type or Category field in the analysis. Finally, the data set also included a Program Origination field, which identified each program as Local, Syndicated, or Network (along with identifying the originating network). This data field facilitated classifying each public affairs program as local or non-local.

Rather than relying completely on the labels assigned to each program by Tribune Media Services, a verification process was conducted as follows: For each program identified as a public affairs program in either the Program Type or Category data fields, the program titles and descriptions were checked to determine whether they adhered to the FCC's definition of a public affairs program. The FCC defines public affairs programs as: "Programs dealing with local, state, regional, national or international issues or problems, documentaries, mini-documentaries, panels, roundtables and vignettes, and extended coverage (whether live or recorded) of public events or proceedings, such as local council meetings, congressional hearings and the like." (Federal Communications Commission, 1984, p. 172).

In cases of uncertainty, television station web sites were consulted and/or the stations were called directly in order to ascertain the nature of the program. The same procedure was employed to verify whether a program was a local program, when there was reason to suspect that a program was misclassified as a local program (for instance, when the same program appeared in the schedules of different stations in different markets across the country, or when the program description offered no indication of a local orientation).

As a result of this verification process, a number of misclassifications in the program schedule database were identified and the dataset was modified accordingly. Specifically, 74 of the 3118 programs categorized as public affairs programs were wrongly classified as such (2.37 percent). In these instances, programs that were in fact restaurant review programs, sports programs, infomercials, or news programs were labeled as public affairs and were thus removed from the data set. Also, 167 of the 1092 public

affairs programs identified as local public affairs programs were misclassified and were in fact non-local public affairs programs (15.29 percent), and 134 of the 2026 programs categorized as non-local public affairs programs were in fact local public affairs programs (6.61 percent). The data sets were altered accordingly to reflect these corrections.

## Results

### Local Public Affairs Programming on Television

Only 143 stations (50% of 285) aired any local public affairs programs during the two-week sample period in 2003. In addition, 29 stations (10%) did not air any type of public affairs programs, local or national. Among the 233 commercial stations, 137 stations (or 59%) did not air any local public affairs programming during the sample period, while 26 (or 11%) failed to broadcast any local or national public affairs programs. In contrast, only 5 of the 52 public stations did not air any local public affairs programming during the sample period.

As shown in Table 2, the sample stations averaged one hour and 44 minutes of local public affairs programming during the two-week sample period. However, public service stations aired significantly more such programming than commercial stations. While the public stations broadcast over 6 hours of local public affairs programming, the commercial stations aired only about 45 minutes of the said programming, on average. The difference is statistically significant ( $F=155.7, p<.0001$ ).

Napoli (2001a), using the 1999 data of 112 commercial stations, found that a typical station aired 1.06 hours (or 64 minutes) of local public affairs programming (see the last column of Table 2). This is about 30% more than what is found in this study, a difference that may be attributable to the January, 2000 programming sample utilized in Napoli (2001a), which may have contained an excess of public affairs programming dedicated to the presidential primaries.

Finally, for the 143 stations that aired any local public affairs programming at all during the sample period in 2003, the average commercial station put on close to an hour of the said programming per week. The number for an average public station is 3 hours and 24 minutes (see Table 2.1).

### Regression Results

To examine the relationship between the provision of local public affairs programming and market conditions and station ownership characteristics, regression analysis was conducted, using the 233 commercial stations in the sample. Twelve stations did not have station revenue data and had to be excluded from the regression analyses. All of the dependent and independent variables used in the statistical analysis are summarized in Table 3, their summary statistics in Table 4.

As mentioned before, nearly 60% of the commercial stations did not air any local public affairs programming during the sample period. The excessive number of zeros observed in the dependent variable PA\_LOCAL (or PA\_TOTAL) makes the use of the Ordinary Least Squares (OLS) regression model inappropriate. Several statistical models designed to deal with count outcomes were then considered, including the zero-inflated count model and the hurdle model.

The count models are appealing because the values assumed by the dependent variables in the current dataset are indeed non-negative, discrete numbers. More importantly, count models provide ways to model excess zeros in the dependent variable (Scott, 1997). Specifically, the count models deal with the excess zeros by assuming that the zeros of the dependent variable may come from two different data generating processes. For example, a zero value on PA\_LOCAL may mean that a television station would never air any local public affairs programming regardless of the factors that are included in the statistical model, due to the lack of production facility or some other unobserved reasons (the “always zero” scenario). It may also mean that the station would air some local public affairs programs but happens to have aired none during the sample period (the “zero by chance” scenario).

Cameron and Trivedi (1998) proposed two zero modified count models to deal with the excess zeros, namely, the zero-inflated model and the hurdle.<sup>11</sup> The zero inflated model assumes that both zero and positive counts are generated by the same process, but accounts for the probability that a zero value comes from one of the two different scenarios described in the above section. A zero inflated negative binomial (ZINB) regression model is used in this study to control for over-dispersion and unobserved heterogeneity in the data.<sup>12</sup>

The hurdle model, on the other hand, posits that a binary probability governs whether the count dependent variable takes on a zero or a positive realization. If the realization is positive, then a hurdle is said to be crossed and the conditional distribution of the positives is governed by a truncated-at-zero count data generating process. In practice, the hurdle model is estimated in two parts, the first involving a binary outcome model estimating the probability of crossing the hurdle and the second a zero-truncated model. The analysis here uses the probit model for the first part and the zero-truncated negative binomial model for the second.

Table 5 present the results of these regression models with local public affairs programming (PA\_LOCAL) as the dependent variable. The results from the OLS regression model also are included for comparison.

The results in the “zero” part of the hurdle model, estimated by a probit model, show how the various station, ownership and market variables affected a television station’s decision whether to carry any local public affairs programming at all in 2003. As shown in the table, such variables as VHFUHF, LOCAL, PENE\_O and COMTV\_M had statistically significant, positive effect on that decision.<sup>13</sup> All other things being equal, being a VHF station, local ownership, ownership by a larger company (in terms of the number of television households reached) and the existence of more commercial television stations in the market increased a station’s likelihood to carry any local public affairs programming. On the other hand, ownership by one of the BIG FOUR commercial broadcast networks (TOP4) and television market size (TVHH\_M) significantly decreased a station’s probability to offer any local public affairs programming. Other market and station ownership variables had no statistically significant effect on the station’s decision whether to air local public affairs programming.

The results in the “positive” part of the hurdle model, estimated by a zero-truncated negative binomial model, show that, once the zero-hurdle was crossed, how the amount of local public affairs programming was affected. Again, ownership by a BIG FOUR network significantly decreased the local public affairs hours. Indeed, it is the only variable showing statistically significant effect in this model.

The results of the ZINB model are consistent with those of the zero-truncated negative model. The effect of big four network ownership (TOP4) was significantly negative. So was that of another variable, COMTV\_M (number of commercial television stations in a station's market), although the latter effect is only significant at the .10 level.

Regression analyses were also conducted using as the dependent variable PA\_TOTAL, defined to include both local and non-local public affairs programming. The results, using the same estimation models, are presented in Table 6.

The results for PA\_TOTAL are consistent with those for PA\_LOCAL with one major difference in all of the models reported. That is, BIG4, a variable indicating whether a television station is affiliated with one of the BIG FOUR broadcast networks, had a significantly positive relationship on a) a station's likelihood to carry any public affairs programming (local or national) (see the probit model in the hurdle model) and b) the amount of public affairs programming aired by a station (see other models in Table 6). The positive effect of BIG4 on total public affairs programming may be because BIG FOUR affiliated stations aired more network-produced (i.e., non-local) public affairs programming. The opposite effects of BIG4 (major network affiliation) and TOP4 (major network ownership) on PA\_TOTAL underscore the strong negative effect of TOP4 on PA\_LOCAL.

### Conclusion

Adequate provision of local and public affairs programming has always been an important part of the local television broadcasters' public interest obligations. It is essential to localism, one of the most cherished media policy goals in the U.S. However, this study shows that half of the stations in the sample did not air any local public affairs programming during the two-week sample period in 2003. For commercial stations, that figure is 59%. On average, a commercial station aired about 45 minutes of local public affairs programming during the two weeks, or less than half an hour per week. While there exists no *a priori* standard for the adequacy of local public affairs programming on television, the meager amount of time that the commercial stations devoted to this type of programming does not seem sufficient. In a way, the condition of the programming data used in this study, with symptoms of excess

zeros and over dispersion, is itself an indication that the behavior of broadcasters in this area of programming is erratic.

Not surprisingly, the vast majority of the public stations in the sample (about 90%) aired some local public affairs programming during the sample period. On average, they broadcast about three and one half hours of said programming per week. Clearly, commercial imperatives of ad-supported broadcast television inhibit the production of local public affairs programming.

The study also examined the relationship between the market and station ownership characteristics and the provision of local public affairs programming through regression analyses. The results indicate that the provision of local public affairs programming on television is related to market conditions and station ownership patterns in ways that are sometimes surprising.

First, the study found that stations in bigger television markets (measured by the number of television households in a market) were less likely to air any local affairs programming, contrary to popular assumption. These results suggest that the size of a station's potential audience does not compel a station to pursue that audience via a strategy that involves providing more public affairs programming. In addition, while the existence of a larger number of commercial stations in a market increased a station's probability in the market to air some local affairs programming, that factor did not make the station air more such programming than stations in markets with fewer number of commercial stations. The other market-related variables included in the analyses, including the penetration of cable television in the market and the viewing behavior and ethnicity of a station's potential audience, bore no significant relationship with the availability and amount of local public affairs programming on television. In combination, these results address FCC's open question regarding whether competitive conditions in a station's market provide incentives for programming addressing local interests and concerns. The results of this study indicate no meaningful linkage between competitive conditions and the provision of local public affairs programming. Consequently, market incentives do not appear to promote the production of such programming.

Perhaps more interesting are the findings regarding the effects of the station ownership characteristics. First, if there is any result that has been consistent throughout the models, it is the negative effects of TOP4, the ownership by one of the big four broadcast networks. Coupled with the marginally significant, positive effect of local ownership, these findings suggest that (big four) network ownership has hampered the provision of local public affairs programming.

Equally interesting is the lack of significant effect of duopoly ownership found in the study. In relaxing the multiple ownership rules in 1999, the FCC argued that the new rules would lead to increased local news and public affairs programming in the local market by emphasizing the economic efficiencies and public service benefits to be gained from combined resources under common ownership of stations. However, these programming benefits have not materialized, according to the finding presented here. More damaging to the FCC's reasoning, the study also found that a station's public affairs programming decision was not affected by its financial resources (as measured by a station's 2002 revenues).

Together, the findings regarding local ownership, network ownership and duopoly ownership call into question the underlying rationale of the FCC's current policies toward more relaxed national and multiple ownership rules (particularly in terms of economies of scale contributing to greater production of such programming). As far the provision of public affair programming is concerned, the relaxation of these ownership rules would not appear to encourage the production of such programming. At the very least, the results presented in this study suggest that it would be premature for the Commission to ignore the question of ownership in its ongoing localism inquiry.

The chronically low level of local public affairs programming on television, despite drastic changes in local media market in recent years, should serve as a hint that any policy purporting to promote the provision of such programming is unlikely to work if based on market incentives. Policymakers who view the levels of public affairs programming indicated in this study as insufficient may want to reconsider explicit behavioral obligations as a mechanism for promoting the production of such programming.

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Table 1 Sample Stations by Network Affiliations

	N
Network Affiliated Stations (NET)	209
ABC	34
CBS	32
FOX	39
NBC	54
PAX	11
UPN	17
WB	13
Multiple Affiliation	9
Independent Stations (IND)	24
Commercial Stations (COM)	233
Public Service Stations (PUB)	52
Sample Total	285

Table 2 Mean Public Affairs Programming on Television (Minutes)

	NET	IND	COM	PUB	Overall	COM (Napoli, 2001a)
Local PA	37.35	110.00	44.83	368.46	103.88	1.06 hr
Non-local PA	154.63	143.75	153.51	940.21	297.05	
Total	191.97	253.75	198.33	1308.67	400.92	3.66 hr
N	209	24	233	52	285	112

Table 2.1 Mean Public Affairs Programming on Television (Minutes)  
(For stations that aired some local public affairs programming)

	NET	IND	COM	PUB	Overall
Local PA	92.92	220.00	108.80	407.66	207.03
Non-local PA	180.13	230.00	186.36	1018.53	459.87
Total	273.05	450.00	295.17	1426.19	666.90
N	84	12	96	47	143

Table 3 Variable Names and Descriptions

Dependent Variables:

PA_LOCAL	Amount of local public affairs programming broadcast by a commercial station during the two week sample period (in minutes)
PA_TOTAL	Amount of local and non-local public affairs programming broadcast by a commercial station during the two week sample period (in minutes)

Independent variables:

## Station and ownership variables:

VHFUHF	Whether a station is a VHF or UHF station (1=VHF, 0=UHF)
REV_S	Station annual revenues in 2002 (mil)
DUO_S	Whether a station is a local duopoly station (1=yes, 0=no)
LOCAL	Whether a station is owned by a local media company (1=yes, 0=no)
BIG4	Whether a station is a Big Four (ABC, CBS, FOX, NBC) affiliate (1=yes, 0=no)
TOP4	Whether a station is owned by the Big Four (ABC, CBS, FOX, NBC) (1=yes, 0=no)
PENE_O	Percentage of national television households reached by a station's parent company

Market variables:

TVHH_M	Number of television households in a station's market (mil)
COMTV_M	Number of commercial television stations in a station's market
PTV_M	Number of public television stations in a station's market
CABLE_M	Percentage of households in a station's market subscribing to cable television (%)
PTVVIEW	Percentage of public television viewing in a station's market (%)
OTHVIEW	Percentage of non-broadcast television viewing in a station's market (%)
WHITE	Percentage of white population in a station's market (%)

Note: Data are of 2003, unless otherwise indicated.

Table 4 Summary Statistics  
 (Based on 221 commercial stations included in the regression analysis)

	<u>Mean</u>	<u>Std Dev.</u>	<u>Min.</u>	<u>Max.</u>
PA_LOCAL	42.7828	87.6836	0	720
PA_TOTAL	191.9910	170.1708	0	1290
VHFUHF	0.4570	0.4993	0	1
REV_S	20.2152	31.0864	0.079	204
DUO_S	0.1719	0.3782	0	1
LOCAL	0.1810	0.3859	0	1
BIG4	0.7149	0.4525	0	1
TOP4	0.1131	0.3175	0	1
PENE_O	0.1338	0.1760	0.000	0.6199
TVHH_M	0.7999	1.0296	0.016	7.376
COMTV_M	8.0045	4.2185	1	21
PTV_M	2.1674	1.4504	0	8
CABLE_M	68.5068	9.5525	44	91
PTVVIEW	1.8452	1.3699	0	6.3
OTHVIEW	50.7878	9.4292	30.9	81.7
WHITE	78.1326	12.8592	24	96.9

Table 5 Results of Regression Analysis (Dep. Var.=PA\_LOCAL, N = 221)

	Hurdle Model			
	<u>OLS</u>	<u>Zeros</u> <u>(Probit)</u>	<u>Positives</u> <u>(Truncated</u> <u>NB)</u>	<u>ZINB</u>
Intercept	-33.912 (-0.385)	-2.829** (-2.009)	5.620*** (4.070)	5.693*** (4.216)
VHFUHF	21.073 (1.456)	0.502** (2.175)	0.305 (0.872)	0.279 (0.840)
REV_S	0.409 (1.408)	0.008 (1.512)	0.001 (0.179)	0.001 (0.149)
DUO_S	-17.566 (-1.021)	0.238 (0.868)	-0.281 (-1.255)	-0.287 (-1.299)
LOCAL	5.133 (0.310)	0.427* (1.684)	-0.283 (-1.006)	-0.304 (-1.102)
BIG4	-17.030 (-1.045)	-0.096 (-0.371)	-0.375 (-1.096)	-0.366 (-1.113)
TOP4	-94.967*** (-3.697)	-1.376*** (-3.176)	-0.968*** (-2.732)	-0.938*** (-2.635)
PENE_O	92.117* (1.952)	1.884** (2.551)	0.051 (0.090)	-0.013 (-0.023)
TVHH_M	-11.524 (-1.077)	-0.530** (-2.561)	0.262 (1.202)	0.279 (1.324)
COMTV_M	3.475 (1.168)	0.164*** (3.205)	-0.074 (-1.530)	-0.078* (-1.666)
PTV_M	3.441 (0.702)	-0.038 (-0.474)	0.121 (1.357)	0.122 (1.393)
CABLE_M	0.138 (0.214)	0.002 (0.164)	0.001 (0.136)	0.001 (0.093)
PTVVIEW	9.881* (1.647)	0.114 (1.199)	0.038 (0.425)	0.036 (0.410)
OTHVIEW	0.970 (0.961)	0.022 (1.333)	-0.007 (-0.410)	-0.008 (-0.433)
WHITE	-0.404 (-0.798)	-0.002 (-0.283)	-0.006 (-0.802)	-0.005 (-0.788)
Log Likelihood	-1288.625	-128.969	-503.926	-654.337

\*\*\* Significant at the .01 level

\*\* Significant at the .05 level

\* Significant at the .10 level

Table 6 Results of Regression Analysis (Dep. Var.=PA\_TOTAL, N = 221)

	Hurdle Model			
	OLS	Zeros (Probit)	Positives (Truncated NB)	ZINB
Intercept	-65.104 (-0.394)	-6.580** (-2.148)	4.415*** (5.360)	4.123*** (4.967)
VHFUHF	47.356* (1.742)	1.280* (1.779)	0.196 (1.539)	0.203 (1.567)
REV_S	0.658 (1.206)	-0.002 (-0.171)	0.001 (0.478)	0.002 (0.565)
DUO_S	-21.051 (-0.651)	0.159 (0.292)	-0.185 (-1.115)	-0.188 (-1.129)
LOCAL	-3.499 (-0.122)	0.137 (0.278)	0.032 (0.209)	0.047 (0.309)
BIG4	81.329*** (2.657)	2.350*** (4.077)	0.325** (2.230)	0.415*** (2.876)
TOP4	-130.875*** (-2.714)	-1.651** (-2.029)	-0.581** (-2.265)	-0.667*** (-2.702)
PENE_O	65.288 (0.737)	3.339** (2.336)	0.095 (.223)	0.262 (0.625)
TVHH_M	-16.629 (-0.828)	-0.623 (-1.623)	-0.010 (-.063)	0.059 (0.397)
COMTV_M	7.285 (1.304)	0.346*** (2.823)	0.020 (0.668)	0.031 (1.069)
PTV_M	-5.914 (-0.642)	-0.239 (-1.354)	-0.028 (-0.604)	-0.030 (-0.634)
CABLE_M	0.141 (0.116)	0.006 (0.289)	0.004 (0.808)	0.005 (0.848)
PTVVIEW	0.372 (0.033)	-0.218 (-1.068)	-0.010 (-0.206)	-0.011 (-0.206)
OTHVIEW	2.901 (1.530)	0.066** (2.006)	0.005 (0.661)	0.007 (0.867)
WHITE	-0.199 (-0.210)	0.019 (1.040)	-0.001 (-0.116)	0.000 (0.027)
Log Likelihood	-1427.875	-31.982	-1237.194	-1300.472

\*\*\* Significant at the .01 level

\*\* Significant at the .05 level

\* Significant at the .10 level

## Endnotes

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<sup>1</sup> For a discussion of the theoretical underpinnings of the localism principle in communications policy, see Napoli (2000).

<sup>2</sup> For an historical overview of the localism principle in communications policy, see Napoli (2001c).

<sup>3</sup> In its decision, the court concluded that the Commission had erred in including the Internet as a distinct information source for the purposes of calculating its Diversity Index because the Internet does not yet represent a significant source of local news and information. According to the court, “Search engine sponsored pages such as Yahoo! Local and about.com, which were suggested by commenters as sources of local news and information, may be useful for finding restaurant reviews and concert schedules, but this is not the type of ‘news and public affairs programming’ that the Commission said was ‘the clearest example of programming that can provide viewpoint diversity’” (Prometheus Radio Project v. Federal Communications Commission, 2004, p. 64, citations omitted).

<sup>4</sup> For example, in markets with 18 or more TV stations, a company can own three stations provided that only one of these stations is among the top four in ratings (FCC, 2003).

<sup>5</sup> Other significant ownership variables include newspaper ownership and minority ownership (Bachen, Hammond, Mason, & Craft, 1999; Spavins, et al., 2002). However, data on stations’ newspaper holdings were not collected for the current study. In addition, the sample of the study contained only three minority-owned stations. For these reasons, this study did not examine the effects of network and minority ownership on programming output.

<sup>6</sup> For more recent research examining broadcast station provision of news and public affairs programming that relies upon station self-reports, see Mason, Bachen, & Craft (2001). This is the published version of a study commissioned by the FCC two years earlier (Bachen, Hammond, Mason, & Craft, 1999).

<sup>7</sup> “Sweeps” months (November, February, May, July) are months when all 210 television markets in the U.S. are measured by Nielsen Media Research. During these measurement periods, stations often will employ particularly aggressive or sensationalistic programming strategies in order to maximize their ratings – strategies they often will not employ to the same degree during the other months throughout the year when their audiences are not being measured (see Ehrlich, 1995).

<sup>8</sup> The Commission’s study (Spavins, et al., 2002) was subject to much criticism from various parties participating in the media ownership proceeding (see, for example, National Association of Broadcasters and Network Affiliated Stations Alliance, 2002).

<sup>9</sup> Of the four deleted stations, two have incomplete programming data, one being a Spanish language station and one a religious station.

<sup>10</sup> The sample dates are: Jan. 11 (Sat.), Jan. 22 (Wed.), Feb. 17 (Mon.), Feb. 27 (Thu), Mar. 23 (Sun.), Mar. 28 (Fri.), Apr. 22 (Tue.), Aug. 11 (Mon.), Sep. 30 (Tue.), Oct. 18 (Sat.), Nov. 5 (Wed.), Nov. 6 (Thu.), Nov. 9 (Sun.) and Nov. 28 (Fri.), all of 2003.

<sup>11</sup> For a detailed discussion of the zero-modified models and examples, see Cameron and Trivedi (1998, Chapter 4).

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<sup>12</sup> The basic count model is the Poisson regression model (PRM). However, the PRM assumes that the mean and variance of the dependent variable are equal, a property called *equi-dispersion*. This assumption is more often than not violated as counts are often over-dispersed in real situation. In the current example, PA\_LOCAL has a mean of 42.783 and standard deviation 87.684, clearly indicating over-dispersion (see Table 4). The negative binomial model allows the conditional variance of the dependent variable to exceed the conditional mean (Scott, 1997).

<sup>13</sup> Note that the effect of LOCAL was only significant at the .10 level.