

Media Ownership Study Two

Ownership Structure and Robustness of Media

By

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Executive Summary

In September 2002, the Commission released a study of media ownership that examined media ownership of various types (cable, satellite, newspaper, radio, and television) for 10 radio markets in 1960, 1980, and 2000.¹ This study updates and expands upon the previous report by examining media ownership for the same categories, but also adds the availability and penetration of Internet access. We further expand upon the previous study by examining all Designated Market Areas (DMAs) in the country, rather than a select number of radio markets.²

This study tracks the availability and ownership of media in the U.S over the four-year period from 2002 to 2005. The data are divided by medium for each year, and are then combined into summary tables for each DMA and for each year 2002 to 2005. See <http://www.fcc.gov/ownership> for the tables available for download.

Based on our review of the data, we find the following:

- Media ownership was fairly stable over the period studied. This contrasts with the previous study, which revealed substantial consolidation across most forms of media, especially following the 1996 Telecommunications Act.
- Multichannel video (cable and satellite) penetration has continued to grow since the previous report, and in 2005, cable and satellite operators combined served 83.5% of television households, up from 80.3% in 2002, according to the FCC's Annual Video Competition Report.
- In the TV industry, the data reveal a slight increase in the number of stations and a slight decrease in the number of owners. The number of locally owned stations remained fairly constant. The number of co-owned TV and radio stations increased by more than 20%. Minority-owned TV stations fell by three stations, from 20 in 2002 to 17 in 2005. Female-owned TV stations fluctuated slightly but ended in 2005 with the same number, 26, as in 2002.
- For the radio industry, the number of stations increased moderately. The number of owners decreased about 5%, and the number of locally owned stations fell

¹ Roberts, Scott, Jane Frenette, and Dione Stearns, *A Comparison of Media Outlets and Owners for Ten Selected Markets (1960, 1980, 2000)*, Media Bureau Staff Research Paper 2002-1. The 2002 study used Arbitron Radio Markets as its common geographic unit.

² A DMA is a television media market as designated by Nielsen Media Research. Each DMA typically is centered on a metropolitan area but includes surrounding counties. In a few cases, such as Salt Lake City, the DMA covers an entire state. There are 210 Nielsen TV DMAs in the U.S. covering the entire contiguous 48 states, Hawaii and portions of Alaska. Puerto Rico is not in a Nielsen TV DMA; nevertheless, we include TV station data for Puerto Rico. Although the 2002 report was based on Arbitron Radio Markets, we used DMAs in the current report because DMAs cover a larger percentage of the country and thus are better suited to a comprehensive study.

3.7%. Co-owned radio/TV combinations were up 19%. Minority-owned stations increased less than 1%, while female-owned stations dropped 6.9%.

- The number of daily newspapers decreased slightly, the number of newspaper owners decreased by about 8%, and locally owned newspapers decreased by about 5%. The number of same-city newspaper-broadcast combinations stayed the same.

Below, we detail our data-collection methods and our data sources. Given the large size of the dataset, we are unable to know with certainty the accuracy of every observation. This is especially true since multiple datasets were combined, and then these “metadatasets” were consolidated to the DMA level. We have made every effort to use the most accurate data possible, and then we have exhaustively cross checked the data for accuracy. Of course, our final results are only as accurate as the data that were used. Given this general caveat, we believe that this is one of the largest datasets ever assembled concerning ownership and the media and that it gives an accurate description of various media for the years studied. We collected data on over 1,700 television stations, over 13,500 radio stations, over 7,800 cable systems, and over 1,400 newspapers across four years, for a total of over 100,000 observations, and over 13 million points of data. We then aggregated this massive amount of data to the DMA level.³

This report merely introduces the main purpose of the study, which is to assemble the most comprehensive dataset concerning media ownership possible. Within this document, there are summary tables for each form of media, and a master summary table at the end. Available for download, however (at <http://www.fcc.gov/ownership>), are much larger summary tables which show, for each DMA in the country and for each year covered by the study, the level of and changes in ownership for the various media studied. These larger tables are the main contribution of this study.

Data Collection

The aim of the study is to update the previous study in as accurate and comprehensive a manner as possible. We used TV, radio and newspaper data from BIA Financial Network and cable, satellite, and Internet data from CentrisBRIDGE. We also performed checks on ownership and supplemented the cable data based on information in the FCC cable registration database.

We audited and corrected some data in order to have consistent data from year to year with which to generate a time series snapshot of the markets. Some ownership data fields contained inconsistent spelling of the same owner or had separate unique identifying codes for the same owner. For those entities that we could reasonably identify as the same owner or parent corporation or, for which the data appeared to have been miscoded or incorrect, we adjusted the data as necessary. What follows is an overview of each media industry and a description of the data fields divided by media type.

³ Due to licensing restrictions on some of the data, we will make available a smaller set of data at both the DMA and station, system, and newspaper levels.

Universal Definitions

Please see Appendix B for a full list of collected variables. For each of the media types below, the following definitions apply. The TV DMA is listed for each media, as is its rank based on population, and a market identification number that is constant for each DMA over the period from 2002 to 2005, allowing for data matching. We list the local owner and/or the parent corporation.⁴ Zipcode is the zip code of parent corporation, and parentdma is the DMA where the parent corporation is located.

For each type of media, we created a “locally owned” variable. If the zip code of the physical location of the parent corporation is a match with any zip code located within in the geographic boundary of the DMA in which the media unit is located, a “1” was placed in the “local-owned” data field; non-locally owned station is designated by a “0” in this field.⁵ We also identified Local Marketing Agreements, in which one station takes over the management of another station within the market. If a station is party to an LMA, the number in this column will match the number for the other station in the LMA.⁶ We created variables for all television, radio, and newspaper cross-ownership combinations of which we are aware. TV and radio stations co-ownership is determined by physical location within the same TV DMA. Television and radio station co-ownership with newspapers is determined by physical location within the newspaper’s city of publication. All cross-owned properties show a “1” in the relevant data field, which otherwise contains a “0.”⁷ Finally, we identified those stations that are minority and/or female owned with a “1” in the appropriate columns.⁸

⁴ The parent corporation is the ultimate corporate owner of the media unit in question.

⁵ If we could not determine whether there was a different parent corporation or could not identify the location of the parent corporation, we used owner. This measure of local ownership is not an exact measures of ownership, but it is as close a measure as is possible given the data available. We believe that using the owner where we could not identify the parent corporation is a reasonable approach since for almost 95% of all media units in the database, the owner and the parent corporation are the same entity. Additionally, of course, any inaccuracies in the underlying data will affect the accuracy of the variables we have created to measure local or cross ownership. The “media unit” varies by media: stations for TV and radio, newspaper for newspaper, and physical system for cable. Subsets of these variables are the Localcomlsta and Localn/csta variables, which denote local commercial and local non-commercial stations, respectively.

⁶ The variable “LMA Book” matches stations in a TV LMA within a market. Radio LMAs are matches within the Arbitron radio Metro.

⁷ Technically, television or radio cross ownership with newspapers are cross-owned entities where the station signal covers the city where the co-owned newspaper is published with a signal of sufficient strength that would otherwise trigger the “cross-owned” prohibition. *Sources: Broadcasting/Cable Yearbook 2001, pp. A-80 - A-89; NAA (Newspaper Association of America); BIA data bases 4/06 -3/07.*

⁸ Data on female and minority ownership are derived from various combined datasets. For minority ownership, a base year of 2000 was created from the National

TV

For the years 2002 to 2005, we have four year-end snapshots of the ownership of TV stations based on Nielsen TV DMAs. We present various descriptors for all full-power commercial stations (including satellites) and non-commercial stations for all 210 Nielsen TV markets.⁹ From 2002 to 2005, we observe for the TV industry:

- There was a 1.4% increase in the number of both commercial and non-commercial stations.
- The number of commercial owners decreased about 4%, while the number of non-commercial owners remained virtually unchanged. There was therefore an overall slight decrease for total owners of 2%.
- The number of locally owned stations increased approximately 3%.
- There was no change in the number of same-city TV/newspaper combinations.
- The number of TV/radio combinations increased by more than 20%.
- Minority-owned TV stations fell from 20 to 17.
- Female-owned TV stations remained essentially constant at 26.

Table 1 provides a summary of the television data.

Telecommunications and Information Administration's Minority Ownership Report, and a time series was built based on changes reported to the Commission on various forms. For female ownership, a base year of 2001 was created from Media Bureau data, and a time series was constructed based on changes reported to the Commission on various forms. While inaccuracies are likely to arise when combining multiple datasets, and some of the data sources are likely to be incomplete, the data on minority and female ownership is as accurate as possible given the limitations of available data. There are Minority Owners in Appendix A that are not in BIA data. The differences in Minority Station Owner counts may be the result of (i) BIA's definition and application of active station or (ii) the use of FCC Transaction data and NTIA Data in Appendix A. A more complete description of the collection process for these data can be found in the technical appendix.

⁹ Source: *BIA Financial Network, BIA MAPro data base.*

Table 1: TV Stations

Year	No. of TV* Stations	No. of Com'l Stations	No. of Non-Com'l Stations	Total No. of Owners**	No. of Unique Com'l Owners	No. of Unique Non-Com'l Owners	No. of Locally-Owned Stations	No. of Locally-Owned Stations	Com'l Non-Com'l. Locally-Owned Stations	No. of TV Newspaper Combos***	No. of TV/Radio Combos+	No. of Minority Owned Stations++	No. of Female Owned Stations++
2002	1739	1361	378	491	307	189	427	211	216	30	273	20	26
2003	1745	1368	377	492	307	188	431	213	218	30	274	16	26
2004	1750	1372	378	479	295	187	432	212	220	30	316	17	27
2005	1764	1381	383	480	296	190	439	210	229	30	333	17	26

* Full-service commercial (incl. satellites) and non-commercial stations only, no LPTV or CI-A stations.

** Owners - Parent corporations or owners if we could not identify a parent corp.

*** Same city TV/newspaper combinations. These are the TV/newspaper/ combinations that are grandfathered or have waivers of the cross-ownership rule. The cross-ownership rule is triggered when the co-owned TV station's signal contour covers the city where the co-owned newspaper is published.

+ These are TV and radio stations located in the same TV DMA that are owned by the same entity.

++ The master database uses on-air stations located in the 50 states, the District of Columbia and Puerto Rico only. This accounts for a slight difference in the minority and female owned stations counts between the master database and Appendix A. See the Master Summary Table, below, for a comparison of the differing minority and female ownership totals.

RADIO

The radio portion of the study is also based on the TV DMA. We also, however, list the Arbitron radio metro market if the station is located in one.¹⁰ About 60% of the 13,000+ radio stations in the U.S. are located in Arbitron radio metros; the remaining 40% of stations are located outside Arbitron markets. For the years 2002 to 2005, we present four year-end snapshots of the ownership of radio stations based on Nielsen TV DMAs. From 2002 to 2005, we observe that within the radio industry:

- There was an overall increase of 2% in the number of stations, consisting of a decrease in commercial stations of less than 1%, and a 15% increase in non-commercial stations. (Non-commercial stations equal 20% of the total.)
- The number of commercial owners decreased by 8%, while non-commercial owners increased about 2%, resulting in an overall decrease of about 5% of total owners.
- The total number of locally owned stations decreased 3.7%; down 8% for commercial owners but up 10% for non-commercial owners.
- There was no change in the number of same-city radio/newspaper combinations.
- There was a 19% increase in the number of local radio/TV combinations.
- There was an increase of less than 1% in the number of minority-owned radio stations with a larger but transitory increase between 2002 and 2003.
- The number of female-owned radio stations fell 6.9%.

Table 2 presents a summary of the radio data.

¹⁰ An Arbitron radio Metro market is a specific geographic area consisting of one or more contiguous counties that generally coincide with a Metropolitan Statistical Area as specified by the Office of Management and Budget. The number of Arbitron markets range from 286 in 2002 to 297 in 2005.

Table 2: Radio Stations

Year	No. of Radio* Stations	No. of Com'l Stations	No. of Non-Com'l Stations	Total No. of Owners**	No. of Unique Com'l Owners	No. of Unique Non-Com'l Owners	No. of Locally-Owned Stations	No. of Locally-Owned Stations	Com'l Locally-Owned Stations	Non-Com'l Locally-Owned Stations	No. of Radio Newspaper Combos***	No. of Radio/TV Combos+	No. of Minority Owned Stations++	No. of Female Owned Stations+
2002	13263	10916	2347	4633	3382	1351	6746	5227	1519	54	656	376	404	
2003	13360	10909	2451	4567	3308	1373	6632	5076	1556	54	647	390	377	
2004	13475	10923	2552	4488	3222	1382	6524	4909	1615	54	727	371	387	
2005	13590	10893	2697	4412	3119	1381	6498	4827	1671	54	782	378	376	

* Full-service commercial and non-commercial stations only, no LPFM.

** Owners - Parent corporations or owners if we could not identify a parent corp. Also, unique commercial and non-commercial owners do not add to total owners because some entities own both commercial and non-commercial stations.

*** Same-city radio/newspaper combinations. These are the radio/newspaper combinations that are grandfathered or have waivers of the cross-ownership rule. The cross-ownership rule is triggered when the co-owned radio station's signal contour covers the city where the co-owned newspaper is published.

+ These are radio and TV stations located in the same TV DMA that are owned by the same entity.

++ The master database uses on-air stations located in the 50 states, the District of Columbia and Puerto Rico only. This accounts for a slight difference in the minority and female owned stations counts between the master database and Appendix A. See the Master Summary Table, below, for a comparison of the differing minority and female ownership totals.

NEWSPAPERS

To create a time series database of newspaper ownership, we started with a 2006 newspaper database that contained ownership information for all newspapers in operation in 2006.¹¹ This database also included ownership changes for these newspapers over our study period of 2002 to 2005. We used the 2006 list as a base year, and then time series ownership databases for the years 2002 to 2005, adjusting ownership for every newspaper that changed hands during that time period. Additionally, we supplemented this database with newspapers that went out of business or merged with other newspapers over the study period, using a separate database.¹² For the four-year period, we observe for the newspaper industry the following:

- The number of daily newspaper decreased slightly.
- The number of owners decreased by about 8%.
- Locally owned newspapers decreased by about 5%.
- There was no change in the number of same-city newspaper/broadcast station combinations

Table 3 summarizes the newspaper data.

Table 3: Newspapers

Year	No. of Daily Newspapers	No. of Unique Owners*	Newspaper/TV Combos**	Newspaper/radio Combos**	Locally-Owned Newspapers
2002	1449	422	32	32	469
2003	1449	415	32	32	467
2004	1447	403	32	32	458
2005	1445	389	32	32	444

* Owners - Parent corporations or owners if we could not identify a parent corp.

** Same city newspaper/broadcast combinations. These are the newspaper/broadcast station combinations that are grandfathered or have waivers of the cross-ownership rule. The rule is triggered when the co-owned broadcast station's signal contour covers the city where the co-owned newspaper is published .

¹¹ Source: BIA Financial Network, BIA Mapro data base.

¹² Source: *SRDS (Standard Rate and Data Service) Circulation*, various years. Of course, if there were ownership changes that are not reflected in our sources, our data for earlier years will have some inaccuracies. We believe the data to be reasonably accurate despite this potential limitation.

CABLE, DIRECT BROADCAST SATELLITE, AND INTERNET

Cable and DBS data come from two sources, CentrisBRIDGE database and the FCC forms. The CentrisBRIDGE database provided all subscriber and penetration data, which was acquired at the zipcode level and then aggregated to the DMA level.¹³ The FCC cable registration database provided ownership information, which was also aggregated to the DMA level. For the four-year period, we observe the following:

- The number of cable systems, cable owners, and local cable ownership dropped across all four years of the study, except for a single year rise in cable local ownership.
- Cable penetration dropped while DBS penetration rose for all four years, with an overall increase in multichannel video penetration.
- Broadband penetration rose during the period.

Table 4: Cable and DBS

Year	Cable Systems	Cable Owners by DMA	Cable Local Ownership by DMA	Average Cable Penetration by DMA	Average DBS Penetration by DMA
2002	9,680	3,583	2,699	58.0%	20.5%
2003	8,796	3,431	2,406	58.2%	22.1%
2004	8,045	3,307	2,538	56.4%	24.6%
2005	7,779	3,291	2,485	55.9%	24.6%

Conclusions

In general, there were no major changes in media ownership from 2002 to 2005. Cable, DBS, Internet, and Broadband penetration continued their growth. Broadcast and newspaper ownership remained relatively stable between 2002 and 2005. Table 5 recapitulates all of the data. Additional detail is provided in the tables available for download at <http://www.fcc.gov/ownership/>.

¹³ While cable operators do not serve markets at the DMA level, cable data was aggregated to the DMA level in order to provide a common geographic area for comparison across all media. As reflected in the tables, many cable operators serve each DMA, but a few DMAs are served predominantly by a single cable operator due to clustering.

TABLE 5: MASTER SUMMARY TABLE

	2002	2003	2004	2005
Television Stations	1,739	1,745	1,750	1,764
Unique Television Station Owners	491	492	479	480
Locally-Owned TV Stations	427	431	432	439
Minority-Owned TV Stations	20	16	17	17
Minority-Owned TV Stations Adjusted*	20	15	15	16
Female-Owned TV Stations	26	26	27	26
Female-Owned TV Stations Adjusted*	25	26	27	26
TV Stations with Same DMA Radio Cross Ownership	273	274	316	333
TV-Newspaper Same City Cross Ownership	30	30	30	30
Radio Stations	13,263	13,360	13,475	13,590
Unique Radio Station Owners	4,633	4,567	4,488	4,412
Locally-Owned Radio Stations	6,746	6,632	6,524	6,498
Minority-Owned Radio Stations	376	390	371	378
Minority-Owned Radio Stations Adjusted*	358	371	350	355
Female-Owned Radio Stations	404	377	387	376
Female-Owned Radio Stations Adjusted*	401	372	383	370
Radio-Newspaper Same City Cross Ownership	54	54	54	54
Radio Stations with Same DMA TV Cross Ownership	656	647	727	782
Newspapers	1,449	1,449	1,447	1,445
Newspaper Unique Owners	422	415	403	389
Locally-Owned Newspapers	469	467	458	444
Cable Systems	9,680	8,796	8,045	7,779
Cable Owners	3,583	3,431	3,307	3,291
Locally-Owned Cable Systems	2,699	2,406	2,538	2,485
Average Cable Penetration by DMA	58.0%	58.2%	56.4%	55.9%
Average DBS Penetration by DMA	20.5%	22.1%	24.6%	24.6%
Average Internet Penetration by DMA	N/A	50.4%	52.8%	54.3%
Average Broadband Penetration by DMA	12.2%	19.2%	25.3%	31.4%

* The master database uses on-air stations located in the 50 states, the District of Columbia, and Puerto Rico only. This accounts for a slight difference in the minority and female owned stations counts between the master database and Appendix A. The top row of minority or female ownership above comes from Appendix A, and the bottom, “adjusted” row comes from the master database.

Appendix A

Minority and Women Broadcast Ownership Data

By

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Introduction and Background

In preparation for the Commission's review of Media Ownership Rules, the Commission is undertaking or contracting several studies of media. One such study is a study of Minority and Women Ownership. For the period 2001 through 2005 time series are presented on stations that are owned by Minorities/Women.

One possible source of data for a study of minority ownership is the aggregate data from FCC Form 323 on broadcast ownership. With Form 323, broadcast owners biennially provide the explicit distribution/characteristics of their ownership. Unfortunately, there are a variety of problems associated with Form 323 data when the data are considered for use in constructing a time series from 2001 through 2005. In around 2003, the biennial filing deadlines became staggered, tied to the anniversary date of each station's renewal application filing date. This implies that this data no longer contains a single "snapshot" of minority and female ownership for all stations in the industry that could be used as a benchmark for measuring industry ownership trends. In addition, stations whose licensees are sole proprietorships or partnerships comprised of entirely of natural persons (rather than corporate or business entities) are exempt from the biennial filing requirement and need only submit such information voluntarily if they choose. Moreover, in the initial years of filing the new biennial forms, many stations failed to complete their forms correctly, resulting in their responses to Question 9(A) being omitted from an electronic ownership database.

In the early portion of 2001, electronic filing of Form 323 was not required. Review of station files for this period suggests that the files are not complete with respect to ownership information. Furthermore, review of the ownership report data from all periods and the literature suggests that these data contain significant errors. For example, some Minority broadcasters own more the 100% of a license, and Minorities without any or , with zero, ownership are listed as owners. Byerly (2006) found eight instances where Minorities control more than 100% of the vote. Byerly also found gross omission of reports, possible data entry errors, duplicate filings, etc.¹⁴ Importantly, erroneously filed forms are not removed from the database of Form 323s. That is, the database contains correctly filed Form 323s and forms that contain significant errors. Because there is no verification of Form 323 data or quality control over the data (in addition to the inter-temporal problems), I find that Form 323 data are inadequate for the purpose at hand, but these data could be used to augment more reliable data.

Methodology For Constructing A Time Series From 2001 to 2005

Definition of Minority and Ownership

A Minority is defined as an African-American/Black, Asian, Hispanic (White or Non-White), Native American/Alaska Native, Native Hawaiian, or Other Pacific Islander. A

¹⁴ Carolyn M. Byerly, *Questioning Media Access: Analysis of FCC Women and Minority Ownership Data*. Benton Foundation Social Science Research Council. October 2006.

commercial broadcast station in any state of the United States is minority/women owned when a minority/female individual or a group of minority/female individuals own/control more than 50% of votes or more than 50% of total assets (equity plus debt).¹⁵

Methodology

For sole proprietorships and partnerships of individuals, the Commission requires that any change in ownership interest be reported at the closing of a transaction. In fact, on any change of ownership assignment or transfer of control the Commission must give consent, and a FCC Form 314, 315, or Form 316 must be filed at the closing of any transaction. In addition, the Commission requires that a Form 323 be filed at closing of any transaction. The data field that is common to all these forms is Facility ID. Using Facility ID to merge these databases, we can assign ethnicity and gender to any transaction. *Most importantly, transaction data are carefully monitored for compliance and veracity.* This means that transactions-based data should give rise to very reliable minority ownership data.

Because the FCC continually issues broadcast construction permits through FCC Auctions, we must augment our transactions data with data on newly licensed (newly built) stations arising from use of permits won in FCC Auctions.

To create a time series of minority/women ownership, we must begin with a reliable base year of data and, then, track changes in minority/women ownership over time. With knowledge of the changes of minority/women ownership over time we can increase or decrease the number of minority/women owners from the base year to arrive at the number of minority/women owners in the following year. Ultimately, the change in minority/women ownership (the delta) in 2005 would be added to the sequentially constructed year 2004 in order to derive the number of minority owners for year end 2005. A stylized model follows.

Suppose that within a calendar year of the series, any broadcast station cannot be purchased or sold more than once. That is, a station may exchange hands once within a calendar year. We believe this is a reasonable assumption because of transaction costs. In addition, the probability of regulatory delay contributes to transaction costs and suggests that a year is a reasonable period for a station to exchange hands. Let $S_{j,t}$ be the number of stations owned in period t , $t = 2000 \dots, 2005$ by owner-type j , $j = \{Minority, Female\}$. Let $\alpha(S_{j,t-1})$ be a function that gives the number of stations, from period $t-1$ of owner-type j , not sold in period t . In period t the additional stations owned by owner-type j is $A_{j,t} + N_{j,t}$, where $A_{j,t}$ is the number of stations purchased (secondary market) in period t by owner-type j . The value $N_{j,t}$ is the number of newly built auction related stations in period t by owner-type j .

¹⁵ The definition is informed by Section 9(a) of FCC Form 323. This definition is consistent with NTIA's December 2000 Report. See page 14 of that report.

$$S_{j,t} = \alpha(S_{j,t-1}) + A_{j,t} + N_{j,t}, \quad t = 2000, \dots, 2005$$

For the minority ownership series, we use NTIA's 2000 Minority Ownership Report as the base year. NTIA provided to the FCC disaggregate data on minority ownership. The call sign, market, owner, race, ethnicity, and other information are provided on the owners of every station in the NTIA 2000 Ownership Report. NTIA provided the data in electronic form.¹⁶

In this process, NTIA's Minority Ownership data on call sign, service, community of service (market) and state are matched with the FCC's Historical Call Sign Database/File. For any call sign in this database, the service, the community of service, the state of community of service, and facility ID are provided. Thus, each station in NTIA's 2000 Minority Ownership Report is assigned a Facility ID. Form 323 is used to check the accuracy of the match (assuming the correctness of Form 323.)

The base year for the female series is 2001. The Video Division of the Media Bureau of the FCC provided Female Ownership data for the year 2001. The Media Bureau also provided transaction/Form 323 data that were consummated in 2001 and were not in the base year biennial totals.

The function $\alpha(S_{j,t-1})$ is made operational by checking whether Facility IDs for a given owner-type in year $t-1$ are in Form 314, Form 315, and Form 316 database for year t . The Video Division of the Media Bureau provided databases/files of Form 314, 315, and 316 activity for each respective year 2001, 2002, 2003, 2004, and 2005. Given these data, the "merge" statement in the Software Program SAS was used to make $\alpha(S_{j,t-1})$ operational.

The value $A_{j,t}$ was supplied by the Video Division of the Media Bureau. That is, Form 323 data that are directly associated with **consummated** acquisitions, transfer, assignments, and/or changes in ownership interest were supplied by the Media Bureau. These data were supplied for each respective year 2001, 2002, 2003, 2004, and 2005.

The FCC Auctions that affect our time series are Broadcast Auctions 25, 27, 28, 32, 37, 54, 80, 81, and 82. We manually collected data on 478 construction permits from these auctions in order to augment the transactions data. Although 478 construction permits were examined, only data on newly built stations which file Form 323 on completion of construction inform our series. That is, we manually merged Form 323 data with the winning bidders from auctions. If a winning minority/women bidder filed a Form 323 on completion of construction and within the period 2000 to 2005, his/her station was included in the series for the year that the Form 323 was filed. If no Form 323 was filed,

¹⁶ Maureen Lewis of NTIA and David Payne (Economist) of the Commerce Department supplied the NTIA data.

the station had not been constructed. Thus, $N_{j,t}$ is completely informed by FCC Auction data.¹⁷

Results

For the period 2002 through 2005, there was no substantial growth or decline in Minority ownership of commercial radio stations. These results are contained in Table A1 and Table A2.

Table A1: Radio Ownership

YEAR	2002	2003	2004	2005
TOTAL RADIO STATIONS	100.00%	100.00%	100.00%	100.00%
Majority	97.17%	97.08%	97.25%	97.22%
Minority	2.83%	2.92%	2.75%	2.78%
Asian	0.27%	0.31%	0.12%	0.13%
Black	1.39%	1.41%	1.37%	1.27%
Hispanic	1.09%	1.12%	1.15%	1.31%
Native Hawaiian	0.04%	0.04%	0.04%	0.04%
Native American	0.05%	0.04%	0.07%	0.04%

Table A2: Radio Station Ownership

YEAR	2002	2003	2004	2005
TOTAL RADIO STATIONS	13263	13360	13475	13590
Majority	12887	12970	13104	13212
Minority	376	390	371	378
Asian	36	42	16	17
Black	184	188	185	172
Hispanic	145	149	155	178
Native Hawaiian	5	5	5	5
Native American	6	6	10	6

¹⁷ FCC rules require that, if a construction permit is transferred/sold, the buyer must file a Form 323 on consummation of the transaction. This means that $A_{j,t}$ may contain stations not built.

For the period 2002 through 2005, there was a decline in Minority ownership of commercial television stations. These results are contained in Table A3 and Table A4.

Table A3: Television Ownership

YEAR	2002	2003	2004	2005
TOTAL TV	100.00%	100.00%	100.00%	100.00%
Majority	98.85%	99.08%	99.03%	99.04%
Minority	1.15%	0.92%	0.97%	0.96%
Asian	0.12%	0.17%	0.17%	0.23%
Black	0.86%	0.63%	0.69%	0.62%
Hispanic	0.17%	0.11%	0.11%	0.11%
Native Hawaiian	0.00%	0.00%	0.00%	0.00%
Native American	0.00%	0.00%	0.00%	0.00%

Table A4: Television Station Ownership

YEAR	2002	2003	2004	2005
TOTAL TV	1739	1745	1750	1764
Majority	1719	1729	1733	1747
Minority	20	16	17	17
Asian	2	3	3	4
Black	13	11	12	11
Hispanic	5	2	2	2
Native Hawaiian	0	0	0	0
Native American	0	0	0	0

We provided Minority Ownership to other study authors.

Caution and Criticism

There are several points of concern. First, every database supplied by the Video Division of the Media Bureau is noisy or incomplete. We gave comment (above) on Form 323 Data. Second, the Historical Call Sign Database/File is incomplete. This is because not all call signs supplied by NTIA were in the database. Also the same call sign may be used for a FM service or an AM service. The Call Sign History file may not reflect that possible fact. For example, KADA is both FM and AM. The Call Sign History file does not reflect this fact. Third, if the transactions data are incomplete, our series will be incomplete. Fourth, because of FCC rules on the sale/transfer of auctioned permits, permit data may be in the series as opposed to newly built stations. Finally, NTIA's ownership data for the year 2000 includes firms that may not be minority firms.

Reliability of Results

The reliability of our Minority ownership data depends on the quality of the 2000 census of Minority owners by NTIA and on the quality of transaction data from the FCC's Media Bureau. Every effort that is permissible has been undertaken to check NTIA's 2000 census of Minority Ownership, FCC data, and final ownership counts. However, all FCC databases on station ownership contain noise. Moreover, if the transactions data are incomplete, our series will be incomplete.

Two other sources of information are available to check the reliability of our results. First, the National Association of Black Owned Broadcasters ("NABOB") provides a membership list for the year 2001. Because NABOB's membership list is not a list of Minority broadcast station owners, the list is not useful given our precise definition of ownership. Second, the Census Bureau provided the FCC with data on Minority owned radio stations and data on Minority owned television broadcasting businesses. These data are the result of the Census Bureau's Survey of Business Owners ("SBO") for the Year 2002. Using the statistical methodology of the Census Bureau to construct confidence intervals, we find that, for 2002, 95% confidence intervals contain our estimate of 184 Black owned commercial radio stations, our estimate of 36 Asian owned commercial radio stations, our estimate of 145 Hispanic owned commercial radio stations, our estimate of 6 Native America owned commercial radio stations, and our estimate of 5 Native Hawaiian owned commercial radio stations. However, the Census Bureau would consider its own interval estimate not reliable for Native Hawaiians.¹⁸

In light of the SBO data our estimate of the number of Minority owned TV stations is reasonable. This is because SBO data on Television Broadcasting includes more than television station ownership. This means that the number of television broadcasting businesses exceeds the number of broadcast stations. In addition, confidence intervals

¹⁸ The Census Bureau. *Caveats for the 2002 SBO Unpublished Data*.

and estimates of the Census Bureau on Television Broadcasting are not reliable for Blacks.¹⁹ In fact, no estimates of Television Broadcasting ownership are provided for Native Americans and Native Hawaiians.

Conclusion

At best, we have extensive samples or a virtual census of minority and female broadcast ownership data. We do not have an actual census, although perfect information on transactions and a perfect base year (NTIA's 2000 Report) would result in a census. We do not have statistical random samples. In summary, the data contain noise due to errors in the databases that were used to construct the data. However, in the year 2002 our results on Minority ownership of radio stations are captured by 95% confidence intervals that are based on data from the 2002 SBO of the Census Bureau.

¹⁹ *Ibid.*

Appendix B: Variable Names

Proprietary variable in Italic

TV Variables

Rank - TV DMA rank (year)

Market -TV DMA name

TVDMAid – The is the TV DMA control number that identifies the TV DMA over the four-year period. It does not change.

Comm – Commercial station, “1” or “0”.

Noncom – Non-commercial station, “1” or “0”.

Affil – Affiliation of TV station as follows:

Affiliation Network:

ABC/"A" ABC

AZT Azteca

CBS/"C" CBS

DRK Dark

EDU Educational

FOX/"F" FOX

HTV Hispanic TV

HSN Home Shopping

i "i" (ION)

IND Independent

INS Ind. Spanish

NBC/"N" NBC

PAX/"X" Paxson

PBS PBS

PUB Public, non-coml.

REL Religious

SHP Shopping

TBN Trinity B/C

TBS Turner B/C System

TEL Telemundo

TLF Telefutera

UNI Univision

UPN/"P" United Paramount

WB/"W" Warner Bros,

Ownercode - Unique owner identifier.

TVnbr - Unique TV station identifier.

Type – This is the type of TV station: 1 = full-power commercial station; 2 = commercial satellite station; 8 = full-power non-commercial station. Types 3 through 7 are not relevant to this study.

TV Calls – Call sign of station.

Callex – Denotes that the TV call sign has an extension such as “TV”

Channel – Analog channel number.

City of License – City of license of station.

ST– State of license.

DTV Channel – Digital channel number.

Group - If owns more than one station "1" or "0."

LMA - If station is in an LMA (local marketing agreement) with another station there will be a matching number for the other station in the LMA.

LMABook - Matching LMA station within a market.

Owner - Owner of station.

Ownermkts - Owner has stations in this number of markets.

Ownerstations - Owner owns this many stations.

Ownerrevenue - Owner revenue of all stations.

USpctcoverage - Owner reaches this percentage of U.S. population.
Parent - Parent corporation of owner.
Zipcode - Parent zip code.
Parent DMA - DMA where parent located.
Parent nbr - Parent unique identifier.
Parentstations - Parent owns this many stations.
Parentrevenue - Parent revenue of all stations owned.
ParentUSpctcoverage - Parent reaches this percentage of the population.
Parentmkt - Parent owns stations in this many markets.
Nov(Year)td - All-day audience share of station in market. Not available for 2005.
TV-newspaper crossown - These are the same city TV/newspaper cross-owned properties that are grandfathered or have waivers of the cross-ownership rule.
TV radio crossown - These are radio and TV stations located in the same TV DMA that are owned by the same entity.
Radio parents - The radio parent corporation name of the co-owned radio station(s) located in the same TV DMA.
Minority TV - if owned by a minority "1," or "0."
Female TV - if owned by a female "1," or "0."
Unique parent - This is a count of unique parent corporations within a TV market.
Com owner (Sub-set of unique parent.) This is a count of unique commercial parent corporations within a TV market.
Noncom owner (Sub-set of unique-parent.) This is a count of unique non-commercial parent corporations within a TV market.
Local owner - if parent corporation is located in the same DMA as station, "1" or "0".
Local com - (subset of local-owner) if local parent corporation is commercial, "1" or "0".
Local noncom - (subset of local-owner) if local parent corporation is non-commercial, "1" or "0".

Radio variables

Metro - "1" if located in or serves an Arbitron radio metro market, "0" if not.
Noncom - Non-commercial station, "1" or "0".
Comm - Commercial station, "1" or "0".
Mktrank - Arbitron Metro market rank
Market - Arbitron market name
AMFM - Whether the station is AM or FM.
Ownercode - Unique owner identifier
Mktnbr - For reference purposes, this is the radio market control number that stays the same over the four-year period.
Biacode - Unique station identifier.
Radiocalls - Call sign of station.
Class - For AM classes, see <http://www.fcc.gov/mb/audio/amclasses.html>; For FM classes, see <http://www.fcc.gov/mb/audio/fmclasses.html>. The documents available through these links explain the various radio classes.
City of License - City of license of station.
County of License - County of license of station.
ST - state of license.
TVDMAid - This is the TV DMA control number that identifies the TV DMA over the four-year period. It does not change.
TVDMARank - This is the current rank, based on population, of the TV DMA in which the radio station is located.
TVDMA - This is the TV DMA in which the radio station is located.
Duopoly - "1" if the radio station is part of a duopoly in its radio market, "0" if not.
Format Category - Station's current major format category (for example, "60's Oldies" would fall under "Oldies" category).
Format - Station's specific current format (i.e. "60's Oldies").
Format1 - Station's primary format.
Format2 - Station's secondary format.

Format3 - Station's tertiary format.

Groupowner - "1" if owns 3 stations in one market or 2+ in more than one market.

LMA - If station is in an LMA (local marketing agreement) with another station there will be a matching number for the other station in the LMA.

Owner - Owner of station.

Ownermkt - Owner has stations in this number of markets.

Ownerstas - Owner owns this many stations.

Ownerrevenue - Owner revenue of all stations.

Parent - Parent corporation of owner.

Parentcity - City where parent corporation is located.

Parentstate - State where parent corporation is located.

Zipcode - Zipcode where parent corporation is located.

Parentstations - Number of stations owned by this corporation.

Parentrevenue - Revenue for all stations owned.

Spring(year) - Arbitron all-day audience share for date.

ParentDMA - DMA where parent is located.

Parent_nbr - Parent unique identifier.

Local_owner - if parent corporation is located in the same DMA as station, "1" or "0".

Local_com - (subset of local-owner) if local parent corporation is commercial, "1" or "0."

Local_noncom - (subset of local-owner) if local parent corporation is non-commercial, "1" or "0."

Radio-newspaper_crossown - These are the same city radio/newspaper cross-owned properties that are grandfathered or have waivers of the cross-ownership rule.

Radio_TV_crossown - These are radio and TV stations located in the same TV DMA that are owned by the same entity.

TV_parents - The TV parent corporation name of the co-owned TV station(s) located in the same TV DMA.

TV Calls - Call sign of the co-owned TV station.

Minority_radio - if owned by a minority "1," or "0."

Female_radio - if owned by a female "1," or "0."

Unique_parent - This is a count of unique parent corporations within a TV market.

Com_parent (Sub-set of unique parent.) This is a count of unique commercial parent corporations within a TV market.

Noncom_parent (Sub-set of unique-parent.) This is a count of unique non-commercial parent corporations within a TV market.

Newspaper variables

Mktrank - Current TV DMA rank.

TVDMA - TV DMA name.

MSArank - Metropolitan Statistical Area rank for 2006 only.

MSA - Metropolitan Statistical Area name for 2006 only.

Newspaper - Newspaper name.

Home City - Home city of newspaper.

County - Home county of newspaper.

ST - State

Owner/Parent - Parent or owner if we could not determine parent. Since all historical transactions identified only the previous owner and not parent, we have only one owner/parent variable.

Circulationdaily - Daily circulation during that year. Circulation figures only for members of the Audit Bureau of Circulation.

CirculationSunday - Sunday circulation during that year. Circulation figures only for members of the Audit Bureau of Circulation.

Newspaper_TV_crossown - These are the same city newspaper/TV cross-owned properties that are grandfathered or have waivers of the cross-ownership rule.

News_radio_crossown - These are the same city newspaper/radio cross-owned properties that are grandfathered or have waivers of the cross-ownership rule.

Local own - newspaper local ownership = "1" or "0".

Unique Owner/Parent – this is a count of unique owner/parent corporations within a TV market.

Cable variables

PSID - Physical System Identification Number, issued by the FCC.

County - County in which the system is located.

ST - State in which the system is located

Legal Name - Parent/Owner company name.

Assumed Name - Local operating company name.

Owner/Parent Address - Address where parent/owner is located.

Owner/Parent P.O. Box - Parent/owner P.O. Box, if applicable.

Owner/Parent City - City where parent/owner is located.

Owner/Parent ST - State where parent/owner is located.

Owner/Parent Zipcode - Zipcode where parent/owner is located.

Local Zipcode - Zipcode in which the system is located.

Local DMA - DMA in which the system is located.

Local TVDMAid – The is the TV DMA control number that identifies the TV DMA over the four-year period. It does not change.

ParentDMA - DMA where parent/owner is located.

Parent TVDMAid – The is the TV DMA control number that identifies the TV DMA over the four-year period. It does not change.

Local own - cable system local ownership = "1" or "0".

Unique owner - this is a count of unique owner/parent corporations within a TV market.

DMA summary variables

TV Households - Number of TV households by DMA.

Cable Households as Percent of TV Households - Cable Penetration.

DBS Households as Percent of TV Households - DBS Penetration.

Percent of Households with Broadband Subscription - Broadband Penetration.

Percent of Households with Internet Subscription - Internet Penetration.