

APPENDIX A

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The Expansion of Diversity:

A Longitudinal Study of Local Media Outlets in Five American Communities

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Biographical Note

David Pritchard is a professor at the University of Wisconsin-Milwaukee, where he chairs the Department of Journalism and Mass Communication and serves as senior scholar in the university's Center for Canadian-American Policy Studies.

He received a B.A. degree from the University of Wisconsin-Madison in 1972, an M.A. from Ohio State University in 1976, and his Ph.D. (in mass communications with a minor in law) from the University of Wisconsin-Madison in 1984. He has been a full-time faculty member since 1984, first at Indiana University in Bloomington, and since 1993 at the University of Wisconsin-Milwaukee.

Professor Pritchard is well-known for his empirical studies of various forms of media regulation, for his research on the news media and the criminal justice system, and for his studies of Canadian journalists. His research has been cited not only in major communication journals but also in law journals (e.g., *Yale Law Journal*, *University of Pennsylvania Law Review*), journals that focus on law and social science (e.g., *Law & Society Review*, *Law and Human Behavior*), political science journals (e.g., *American Journal of Political Science*, *American Politics Quarterly*), and journals in the field of public health (e.g., *American Journal of Public Health*, *Regulatory Toxicology and Pharmacology*).

Professor Pritchard has headed the law division of the world's largest association of journalism and mass communication professors, has been a Fulbright research scholar, and has won several awards for teaching and research. His books include *Les journalistes canadiens: Un portrait de fin de siècle* (Presses de l'Université Laval, 1999) and *Holding the Media Accountable: Citizens, Ethics, and the Law* (Indiana University Press, 2000). He has published more than 40 scholarly articles and essays. Before moving into the academic world, Professor Pritchard was a newspaper reporter in Wisconsin for seven years.

His most recent work in the area of media regulation was an empirical study of political news and opinion in jointly-owned newspapers and broadcast stations in three U.S. cities, commissioned by Quebecor Media. Quebecor, one of Canada's largest media companies, submitted the study both to the Canadian Radio-television and Telecommunications Commission (CRTC) and to the Quebec National Assembly. A revised version of the study was published in *Federal Communications Law Journal*.

Professor Pritchard also is a leading scholar of media self-regulation. He has published empirical studies of the effects of press councils, news ombudsmen, and ethics codes. In late 2000 a leading Canadian research center (le Centre d'études sur les médias) commissioned him to prepare a report comparing media self-regulation in Canada and the United States, which was submitted to the CRTC.

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Introduction

In late 2001, the Federal Communications Commission issued a Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking (together, the “Notice”) that sought comment on a variety of issues relating to multiple ownership of radio stations in local markets. Among the issues upon which the Commission requested comment was the effect that consolidation of radio ownership has had on diversity in local markets since the passage of the Telecommunications Act of 1996. The Commission expressed particular interest in empirical data about diversity in local markets.

Historically, the Commission has treated diversity of ownership as a probable indicator of diversity of viewpoints expressed by a broadcast station. Recently, however, the Commission has questioned whether diversity of ownership is a valid proxy for other forms of diversity. The Notice specifically requested empirical data about whether the public in three specific markets -- Syracuse, New York; Rockford, Illinois; and Florence, South Carolina -- has experienced a reduction in diversity in the wake of the Telecommunications Act of 1996 and the consolidation in the radio industry that followed it.

The study reported here responds to the Commission's call for empirical data by providing evidence about increases in outlets for news and information about local events in five American communities (including Syracuse, Rockford, and Florence) from 1942 to early 2002. Of special interest was whether the rate of increase in the number of local media outlets accelerated or slowed in the wake of the Telecommunications Act of 1996.

Policy background

The Telecommunications Act of 1996 required the Commission to revise its rules regarding local radio ownership. Specifically, Section 202(b)(1) of the Act mandated the following rule:

- (a) In a market with 45 or more commercial radio stations, a party may own, operate, or control up to eight commercial stations, not more than five of which can be in the same service (AM or FM);
- (b) In a market with 30 to 44 commercial radio stations, a party may own, operate, or control up to seven commercial stations, not more than four of which can be in the same service (AM or FM);
- (c) In a market with 15 to 29 commercial radio stations, a party may own, operate, or control up to six commercial stations, not more than four of which can be the same service (AM or FM); and

- (d) In a market with 14 or fewer commercial radio stations, a party may own, operate, or control up to five commercial stations, not more than three of which can be in the same service (AM or FM), except that a party may not own, operate, or control more than half of the stations in the market.

As required by the Act, in March 1996 the Commission replaced portions of the local radio ownership rule with the language of Section 202(b) of the statute. The rule has not been changed in the ensuing six years.

In addition to requiring the Commission to adopt the specified rule relating to local radio ownership, the Telecommunications Act also directed the Commission to review all of its ownership rules biennially (including the statutorily mandated radio ownership rules). Section 202(h) of the Act required the Commission to repeal or modify any ownership rules that it concluded were not necessary in the public interest.

Since 1996, the Commission has completed two of the mandated reviews. In each instance, the Commission decided to retain the local radio ownership rule without modification. In the final report of the 2000 biennial review, the Commission expressed a concern that consolidation in the local radio industry might reduce viewpoint diversity despite the fact that the record of the proceeding contained no empirical evidence to support such a view.

On November 9, 2001, the Commission released the Notice mentioned at the beginning of this report. The Notice was intended to initiate a comprehensive

examination of the Commission's rules and policies concerning local radio ownership. Noting that the radio industry had changed substantially since the passage of the Telecommunications Act of 1996, the Commission expressed concern that its policies on local radio ownership did not adequately reflect current industry conditions. "Our framework for analyzing proposed radio combinations particularly has led to unfortunate delays that do not serve well the interests of the agency, the parties, or the public," the Commission said in the Notice. "Our goal in this proceeding is to develop a new framework that will be more responsive to current marketplace realities while continuing to address our core public interest concerns of promoting diversity and competition."¹

Diversity has long been one of the bedrock principles behind the Commission's restrictions on media ownership. The diversity principle has been intended to advance the values of the First Amendment, which, as the Supreme Court stated, "rests on the assumption that the widest possible dissemination of information from diverse and antagonistic sources is essential to the welfare of the public."² As noted earlier in this report, the Commission has tended to focus on diversity of ownership rather than using other measures of media diversity. The Commission has justified the focus on

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1. Rules and Policies Concerning Multiple Ownership of Radio Broadcast Stations in Local Markets, *Notice of Proposed Rulemaking*, MM Docket No. 01-317, FCC 01-329 (Nov. 9, 2001) [hereinafter *Notice*], para. 19.
 2. *Associated Press v. United States*, 326 U.S. 1, 20 (1945).

ownership by positing that “the greater the diversity of ownership in a particular area, the less chance there is that a single person or group can have an inordinate effect, in a political, editorial, or similar programming sense, on public opinion at the regional level.”³

In the November 2001 Notice, however, the Commission asked for comment on the presumed relationship between diversity of ownership and diversity of viewpoints. Stations under common ownership, the Commission acknowledged, may have a strong commercial incentive to differentiate themselves from their sister stations in any given market.⁴ A typical strategy for an entity that owns multiple radio stations in a local market is to have each commonly owned station serve a distinct audience via distinct programming. In other words, a single owner might have a strong incentive to differentiate outlets under its control through distinct programming.

In contrast, stations under independent ownership may have an incentive to compete with each other for the largest audiences, which could result in a tendency to provide programming similar to that offered by competitors. Diversity of ownership, in other words, could lead to duplication of programming formats.

3. *Amendment of Sections 73.35, 73.240, and 73.636 of the Commission's Rules Relating to Multiple Ownership of Standard, FM, and Television Broadcast Stations*, Report and Order, 45 FCC 1476, 1477 (1964).

4. *Notice*, para. 37.

The Commission's decision to rethink its practice of using ownership diversity as a proxy for viewpoint diversity is consistent with a recently published study that found no evidence of ownership influence on news coverage of the 2000 presidential campaign in commonly owned newspapers and broadcast stations in Chicago, Dallas, and Milwaukee.⁵ That study concluded that "the evidence does not support the fears of those who claim that common ownership of a newspaper and broadcast stations in a community inevitably leads to a narrowing, whether intentional or unintentional, of the range of news and opinions in the community."⁶

The questioning of the connection between diversity of ownership and other forms of diversity comes at a time when citizens in communities across the United States have gained access to a range of outlets for local information and programming that would have been unimaginable when the Commission adopted its first local radio ownership rules in the early 1940s. In 2002, local media content is provided by commercial and non-commercial AM and FM radio stations, commercial and non-commercial television stations (including low-power stations), daily and weekly newspapers, local magazines, PEG cable channels, leased cable access channels that

5. David Pritchard, *A Tale of Three Cities: "Diverse and Antagonistic" Information in Situations of Local Newspaper/Broadcast Cross-Ownership*, 54 Fed. Comm. L.J. 31 (2001).

6. *Id.* at 49.

feature locally oriented programming, and Internet sites featuring news and information of local interest.

Method

The study reported here examined outlet diversity in five American communities at 20-year intervals beginning in 1942, with an additional assessment for 1995, the year before the Telecommunications Act of 1996. The year 1942 was of interest because radio and print were dominant (television was still in its experimental stages) and because it was in the early 1940s that the Commission first adopted rules limiting ownership of broadcast stations. In 1962, radio and television were pervasive but cable was limited to isolated rural areas. In 1982, cable had arrived in a significant number of American households but the Internet was still in the future. In 2002, both cable and the Internet are in a majority of American homes.

The equal, 20-year intervals enable easily understood comparisons of the increases in outlet diversity from one period to the next. We also examined outlet diversity in the communities under study for 1995, the last full year before the enactment of the Telecommunications Act of 1996. We assessed outlet diversity in 1995 to be able to address the important question of whether the rate of increase in outlet diversity accelerated or decelerated after the 1996 Act. The Notice of Proposed Rulemaking specifically sought data relating to this question.

The five communities included in this study are New York, New York; Syracuse, New York; Florence, South Carolina; Rockford, Illinois; and Lisbon, North Dakota. Syracuse, Florence, and Rockford were chosen because the Commission specifically requested empirical data about changes in diversity in those three markets in the wake of the Telecommunications Act of 1996. We also included the nation's largest media market (New York) as well as an isolated rural market (Lisbon, North Dakota) so that we would have information about changes in diversity in very large and very small markets.

Because the number of neighborhood media outlets (as opposed to community-wide media outlets) in a community is to a great extent a function of the number of neighborhoods in the community, we examined only one neighborhood in each community for each year. This required us to identify "typical" neighborhoods for each year under study. We used the most recent census data (e.g., 1960 census data for information about neighborhoods in 1962) to determine the characteristics of a typical household in terms of demographics. The neighborhood selections were then discussed with knowledgeable local informants such as veteran employees in municipal planning departments.

In January 2002, five graduate students with experience in field research were hired and received several hours of training from the principal investigator. Each graduate student was assigned to gather data on one of the communities under study.

The research assistants obtained a considerable amount of information about their assigned communities via the telephone and the Internet before traveling to the communities to gather data about local media in 1942, 1962, 1982, 1995, and 2002. Each research assistant stayed in his or her assigned community for an average of three days, gathering information about local media outlets from media companies, industry directories, libraries, historical societies, old telephone books, long-time community residents, and (for 2002) personal observation.

For each community in each time period, the research assistants attempted to recreate the range of local media outlets readily available to a resident of a typical neighborhood in the community. In all time periods they looked for radio stations, television stations, and print media. Print media included not only newspapers available in the selected neighborhoods but also local magazines, foreign-language newspapers, English-language ethnic, community, or “alternative” publications (i.e., publications aimed principally at an audience defined by race, national origin, age, religion, or political orientation), and newspapers based at institutions of higher education if they circulated in the neighborhood under study. Beginning in 1962 they also looked for evidence of local content on cable systems. By 1982, cable and FM radio proved to be much more important. In 1995 the Internet had arrived, and by 2002 Internet media outlets were fairly numerous.

Rather than rely on indirect sources for information about accessible radio stations in 2002, each research assistant physically visited the target neighborhood in his or her community and listened on car radios to each audible radio station that was considered as a possible channel for locally oriented information or entertainment. Only those stations that carried locally oriented programming of some sort (e.g., local newscasts, concerts, sports events) were retained for the study.

Radio and television stations were coded without regard to whether they came into the home via traditional over-the-air broadcasting, cable, satellite, or even the Internet. If the content of a broadcast station did not vary with the means of transmission, the station was considered to be a single media outlet.

In many cases, media organizations provide additional content via newer technologies. Good examples of this phenomenon are newspaper Internet sites that offer textual, audio, and video material beyond what is provided by the traditional print version of the newspaper. In such cases, the print version of the newspaper was considered one media outlet, the Internet site owned by the newspaper a second media outlet. To obtain a more conservative measure of media diversity, we also computed the 2002 results for each community's distinct media outlets without including Internet sites affiliated with established media organizations.

The results of the analysis are presented in the form of an itemization of the media outlets to which a typical household had access in the years under study, and a

comparison of the rates of increase in the number of media outlets in a community from one time period to the next.

Results: Lisbon

The approximately 2,300 residents of Lisbon, North Dakota, located about 60 miles southwest of Grand Forks,⁷ have not been served by a local daily paper during the past 60 years, as Table 1 shows. The number of non-daily print media that focus on the community has increased only slightly, from six in 1942 to eight in 2002.

TABLE 1. Media outlets in Lisbon, North Dakota, 1942-present.

Year	Daily news-paper	Other print media	AM radio station	FM radio station	B-cast TV station	Local cable chan.	Media Web site	Other Web site	Total media outlets
1942	0	6	4	1	0	0	0	0	11
1962	0	5	8	1	3	0	0	0	17
1982	0	7	9	5	4	0	0	0	25
1995	0	8	10	10	5	1	0	0	34
2002	0	8	10	14	5	1	18	8	64

There has been significant growth in radio stations, however, from four AM and one FM station in 1942 to 10 AM stations and 14 FM stations in 2002. Residents of Lisbon in 2002 also have access to six local television and cable channels as well as to 26

7. U.S. Census, *Profile of General Demographic Characteristics: 2000 -- North Dakota*.

Internet sites, 18 of which are affiliated with traditional media but eight of which are not.

Internet access in Lisbon is available via personal computers in homes and schools. Grade school students as well as high school students have access to the Internet at school. As of January 2002, the public library in Lisbon did not offer access to the Internet. Lisbon residents can access the Internet either via a standard modem or with a faster wireless connection offered by Amerion, a company based in Sioux Falls, South Dakota.

The number of local media outlets in Lisbon grew at a rate of 0.3 per year from 1942 to 1962 (a net gain of six media outlets in the 20-year period). The rate of growth was only slightly higher in the 20-year period from 1962 to 1982 (0.4 new media outlets per year, or a net gain of eight). The most rapid growth was between 1982 and 2002, a period during which the number of media sites available to residents of Lisbon more than doubled (from 25 to 64, a net gain of 39 or a growth rate of 1.95 new media outlets per year).

Within the 1982-2002 period, did the number of local media outlets available in Lisbon grow more quickly from 1982 to 1995, or from 1995 to 2002? In other words, was the rate of growth higher before the passage of the Telecommunications Act of 1996 or after it?

Table 1 shows a net gain of nine media outlets from 1982 to 1995. On average during the 13-year period before passage of the Telecommunications Act, Lisbon gained 0.69 new media outlets annually. The net gain in media outlets from 1995 to 2002 was 30, for an average annual gain of 4.29 media outlets per year in the years immediately following passage of the Telecommunications Act, indicating that the number of outlets available to the residents of Lisbon grew six times faster after the passage of the 1996 Act than in the period immediately preceding it.

Several of the Lisbon media outlets created after 1995 were affiliated with existing media organizations. Some (though not all) of their content was the same as the content of the existing media organizations. Deleting the Internet sites affiliated with established media organizations that serve Lisbon produced a net gain of 12 local media outlets from 1995 to 2002, or an average annual gain of 1.71 media outlets per year. In other words, even a conservative method of counting media outlets in Lisbon reveals that the rate of growth after the Telecommunications Act of 1996 was more than twice the rate of growth in the period before the Act.

Results: Florence

Florence, a city of about 31,000 in northeast South Carolina 60 miles from the Atlantic coast, is the largest city in Florence County and a hub of the seven-county Pee

Dee region of the state.⁸ Florence and the surrounding region comprise the 229th largest metropolitan area in the United States, with a population of about 126,000 people.⁹

As Table 2 shows, in 1942 there were only four local media outlets in Florence. The arrival of television in 1962 helped push the number of local media outlets to seven. By 1982 the community was served by 12 local media outlets. The arrival of the Internet as well as a large increase in the number of radio stations broadcasting to Florence boosted the number of local media outlets in 2002 to 84.

TABLE 2. Media outlets in Florence, South Carolina, 1942-present.

Year	Daily news-paper	Other print media	AM radio station	FM radio station	B-cast TV station	Local cable chan.	Media Web site	Other Web site	Total media outlets
1942	1	1	2	0	0	0	0	0	4
1962	1	1	3	0	2	0	0	0	7
1982	1	2	3	2	4	0	0	0	12
1995	1	6	3	3	6	1	0	0	20
2002	1	10	12	18	7	2	22	12	84

8. U.S. Census, *Profile of General Demographic Characteristics: 2000 -- South Carolina*.

9. Demographia, *US Metropolitan Area Population: 1990-2000*, at <http://www.demographia.com/db-usmet2000.htm>

The public library in Florence was a popular place for people to use the Internet, and the public schools in Florence had an aggressive program to provide Internet access to all students.¹⁰

The rate of increase in local media outlets from 1942 to 1962 in Florence was a modest 0.15 per year (a net gain of three in 20 years). From 1962 to 1982 the average annual gain in media outlets was only 0.25 per year (a net gain of five in 20 years). From 1982 to 2002, however, the average annual gain in local media outlets was 3.60 (a net gain of 72 in a 20-year period).

The rate of gain from 1982 to 1995 was 0.62 per year. After passage of the Telecommunications Act of 1996, the average annual rate of gain in local media outlets for Florence was 9.14 per year (a net gain of 64 media outlets in a seven-year period). When Internet sites affiliated with traditional media organizations are excluded from the calculation, the post-Telecommunications Act rate of gain of 6.00 per year far exceeds the rate of increase in local media outlets in any previous time period. Even this cautious estimate represents a rate of increase almost 10 times higher than the pre-Act rate of 0.62 new media outlets per year.

10. Florence School District One, *Technology in Education Plan 1999-2002*, available at <http://www.fsd1.org/technology/techplan.htm>.

Results: Rockford

Rockford, the second-largest city in Illinois with some 150,000 residents, is located in the north-central part of the state about 70 miles west northwest of Chicago. The Rockford metropolitan area is the 110th largest in the United States, with a population of about 371,000 people.¹¹

Like Lisbon and Florence, Rockford had relatively few local media outlets in 1942. Of the five local media outlets in 1942, Table 3 shows that two were daily papers, one was an AM radio station, and two were non-daily print media.

TABLE 3. Media outlets in Rockford, Illinois, 1942-present.

Year	Daily news-paper	Other print media	AM radio station	FM radio station	B-cast TV station	Local cable chan.	Media Web site	Other Web site	Total media outlets
1942	2	2	1	0	0	0	0	0	5
1962	2	3	4	1	2	0	0	0	12
1982	1	4	5	4	3	2	0	0	19
1995	1	10	4	10	4	2	0	0	31
2002	1	10	4	11	7	2	21	6	62

11. Demographia, *US Metropolitan Area Population: 1990-2000*, at <http://www.demographia.com/db-usmet2000.htm>.

The arrival of television and more radio stations gave Rockford 12 local media outlets in 1962, a number that rose to 19 in 1982 with the arrival of cable and growth in FM stations. In 2002 Rockford had 62 local media outlets, including 21 Internet sites affiliated with established media organizations.

The Rockford Main Library, which offers Internet access to the public, is about a mile and a half from the city neighborhood under study. Three branches of the Rockford library system are within four miles of the neighborhood, and they too offer Internet access.

Rates of growth in local media outlets in Rockford were modest during the first period under study, 1942-1962. There was a net gain of seven media outlets during that period, for an average annual gain of 0.35. That rate remained constant from 1962 to 1982, a period during which there was another net gain of seven local media outlets.

The rate of growth increased from 1982 to 1995, a period with a net gain of 12 media outlets for an average annual gain of 0.92. From 1995 to 2002 the number of local media outlets in Rockford doubled, from 31 to 62. The net gain of 31 in the seven-year period yielded an average annual gain of 4.43 media outlets. About two-thirds of the net gain from 1995 to 2002 was in Internet sites affiliated with established media organizations. Deleting them from the calculation leaves an average annual gain of 1.43 media sites during that period, a rate considerably higher than the rate in the period immediately prior to the Telecommunications Act of 1996.

Results: Syracuse

Syracuse, a city of about 150,000 residents in central New York, is the center of the 73rd largest metropolitan area in the United States. The population of the Syracuse metropolitan area is about 735,000.¹²

Table 4 provides an overview of local media outlets in Syracuse. In 1942 there were three daily newspapers, several non-daily print media, and several AM radio stations. The arrival of FM radio and television by 1962 resulted in a net gain of only three media outlets because the number of non-daily print media outlets declined.

TABLE 4. Media outlets in Syracuse, New York, 1942-present.

Year	Daily news-paper	Other print media	AM radio station	FM radio station	B-cast TV station	Local cable chan.	Media Web site	Other Web site	Total media outlets
1942	3	6	6	0	0	0	0	0	15
1962	3	3	5	4	3	0	0	0	18
1982	3	12	6	8	5	1	0	0	35
1995	3	19	7	15	7	0	0	0	51
2002	2	27	7	28	9	4	47	20	144

12. Demographia, *US Metropolitan Area Population: 1990-2000*, at <http://www.demographia.com/db-usmet2000.htm>.

In 1982 Syracuse had 35 local media outlets, nearly double the number from 20 years earlier. By 1995 the area had 51 media outlets, thanks to sharp increases in FM radio and non-daily print media. In 2002 residents were served by 144 media outlets, almost half of which were Internet-based.

All schools in the city of Syracuse school district have some Internet access. Internet access also is available at local public libraries.

As in the three communities previously discussed, the rate of increase in local media outlets climbed steadily from one period to the next. The average annual gain from 1942 to 1962 was 0.15 media outlets. From 1962 to 1982 the pace had increased to an average of 0.85 new media outlets per year. Between 1982 and 1995, the rate of gain increased again, this time to 1.23 new media outlets annually.

In the years since the passage of the Telecommunications Act, Syracuse gained an average of 13.29 media outlets annually. If Internet sites affiliated with established media organizations are not considered to be distinct media outlets, the rate of gain remains quite high at 6.57 new media outlets per year. In other words, the average annual rate of increase in new media outlets in Syracuse in the period after the enactment of the Telecommunications Act was five to 10 times higher than the rate of increase in the preceding period.

Results: New York

New York is the largest, and perhaps the most diverse, media market in the United States. It is the only community under study that had not only multiple FM stations but also television in 1942, as Table 5 shows. New York residents in 1942 had access to 57 local media outlets.

TABLE 5. Media outlets in New York, New York, 1942-present.

Year	Daily news-paper	Other print media	AM radio station	FM radio station	B-cast TV station	Local cable chan.	Media Web site	Other Web site	Total media outlets
1942	18	18	14	5	2	0	0	0	57
1962	19	32	16	18	8	0	0	0	93
1982	21	56	16	20	20	0	0	0	133
1995	21	80	17	20	20	4	5	3	170
2002	22	94	18	20	22	13	43	12	244

Significant expansion in FM radio, television, and non-daily print media provided the typical New Yorker with access to 93 local media outlets in 1962. By 1982 additional growth in non-daily print media and television gave New Yorkers 133 local media outlets from which to choose. By 1995 the number was 170, including several Internet sites, and in early 2002 the typical New Yorker had access to 244 local

media outlets, including 43 Internet sites affiliated with established media organizations.

Residents of the neighborhood under study had many possibilities for public access to the Internet. All public schools – from elementary to high school – offer Internet access to their students. The local branch of the public library also provides free access to the Internet. High-speed cable modem access is provided to home customers by Time Warner's Road Runner service.

Broadcast television reception is unreliable in New York City because of signal blockage caused by tall buildings. As a result, cable television has a high rate of penetration and usage. The neighborhood under study is served by Time Warner Cable via its digital cable service. Time Warner offers its New York cable subscribers an exclusive 24-hour news channel, "NY1." NY1 covers the city's five boroughs with more than 25 full-time reporters and presents viewers with original coverage of New York City news, sports, weather, business and feature stories.

New York gained an average of 1.80 local media outlets annually between 1942 and 1962. The rate increased a bit to an annual gain of 2.00 new media outlets in the period between 1962 and 1982. From 1982 to 1995, the average annual gain in local media outlets was 2.85 in New York. After passage of the Telecommunications Act, the rate of gain increased to 10.57 new media outlets annually (or 4.43 if Internet sites affiliated with established media organizations are not counted). Such gains

demonstrate a sharp post-Telecommunications Act increase in the rate at which new media outlets were created in this media-outlet-rich city.

Conclusion

The data presented in this study make it clear that the number of media outlets focusing on news and information about local events has increased steadily over the years. That the rate of increase has accelerated since the Telecommunications Act of 1996 was passed suggests that the economic consolidation that ensued did not diminish diversity of local media content. The patterns in all of the five communities we studied were similar. In every case, the average annual gain in local media outlets increased modestly from one period to the next through 1995 (i.e., 1942-1962, 1962-1982, and 1982-1995). After the passage of the Telecommunications Act of 1996, the rate at which new local media outlets were created increased sharply in every community. This finding holds true even if Internet sites affiliated with established media organizations are not counted as new media outlets, as Table 6 shows.

TABLE 6. Average annual gain in local media outlets during the time periods under study.

Time period	Lisbon	Florence	Rockford	Syracuse	New York
1942-1962	0.30	0.15	0.35	0.15	1.80
1962-1982	0.40	0.25	0.35	0.85	2.00
1982-1995	0.69	0.62	0.92	1.23	2.85
1995-2002*	4.29 (1.71)	9.14 (6.00)	4.43 (1.43)	13.29 (6.57)	10.57 (4.43)

* The number in parentheses is the average annual gain excluding Internet sites affiliated with established media organizations.

Studies of 60-year periods present a number of methodological challenges. It is next to impossible to recreate the past with perfect accuracy. Although we made every effort to identify every media outlet that met this study's criteria for inclusion, it would be foolish to claim that we were able to track down each and every one. A small number may have been missed. This may be especially true with New York, a community with a vast and ever-changing array of local media outlets.

Despite the possibility of small imperfections in the data, however, the fact remains that the data do not support the view that consolidation in the local radio industry has limited the diversity of local media content available to ordinary Americans. A recent study mentioned earlier in this report found a range of diversity of viewpoints in jointly owned local newspaper/broadcast combinations,¹³ casting doubt on the wisdom of using diversity of ownership as a proxy for viewpoint diversity.

13. Pritchard, *A Tale of Three Cities*, *supra* note 5.

The study presented here further challenges the wisdom of focusing on issues of ownership to attempt to maximize access to diverse media outlets. Media ownership became increasingly concentrated during the 60 years covered by this study, and especially in the years after passage of the Telecommunications Act of 1996, but the number of media outlets providing local content to the studied communities kept growing at an increasing rate.

APPENDIX B

Google Search Results
for “Media Consolidation”

February 28, 2002



Advanced Search Preferences Language Tools Search Tips

media consolidation

Google Search

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Searched the web for **media consolidation**.

Results 1 - 10 of about **494,000**. Search took **0.22** seconds.

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APPENDIX C

Professor Jerry Hausman
Department of Economics, MIT

Declaration I

Statement of Professor Jerry A. Hausman

1. My name is Jerry A. Hausman. I am MacDonal Professor of Economics at the Massachusetts Institute of Technology in Cambridge, Massachusetts, 02139.

2. I received an A.B. degree from Brown University and a B.Phil. and D. Phil. (Ph.D.) in Economics from Oxford University where I was a Marshall Scholar. My academic and research specialties are econometrics, the use of statistical models and techniques on economic data, and microeconomics, the study of consumer behavior and the behavior of firms. I teach a course in "Competition in Telecommunications" to graduate students in economics and business at MIT each year. Competition among broadcast TV, cable networks, direct to home satellite (DTH) providers, newspapers, and radio is one of the primary topics covered in the course. In December 1985, I received the John Bates Clark Award of the American Economic Association for the most "significant contributions to economics" by an economist under forty years of age. I have received numerous other academic and economic society awards. My curriculum vitae is attached as Exhibit 1.

3. I have done significant amounts of research in the telecommunications industry. I have published numerous papers in academic journals and books about telecommunications. I have also done research and published academic papers regarding advertising on TV and radio.

4. I have previously submitted Declarations to the Commission regarding the

competitive impacts of policies affecting DTH, DBS, cable TV, and broadcast TV service offerings. I have also submitted Declarations regarding competition between cable TV and DTH and broadcast TV. I have previously made presentations to the Department of Justice regarding competition in TV, cable TV, and radio. I have served as a consultant to the Tribune Corporation over the past decade. Tribune owns broadcast TV stations, radio stations, and newspapers. I have also consulted over the past 10 years for a variety of companies which sell consumer goods and do large amounts of advertising, e.g. Budweiser, Kodak, and Revlon.

I. Summary and Conclusions

5. The radio industry has undergone significant changes in market structure in recent years. Changes have been especially rapid since the passage of the Telecommunications Act of 1996. I have conducted empirical studies on two possible effects of these changes: the effect on advertising prices, and the effect on format variety.

6. For the first study on advertising prices I collected data on radio advertising prices in 37 Arbitron markets in 1995 and 2001. I find that consolidation of radio ownership during this period did not lead to higher advertising prices. Instead, the change in the price of radio advertising during this period can be explained by changes in television advertising prices, newspaper advertising prices, and population.

7. The second study on format variety uses data on the radio formats available in over 240 Arbitron markets in 1993, 1997, and 2001. I find that decreases in the number of

owners in a market lead to increases in the number of formats available in that market. Hence I conclude that consolidation has led to increased format variety.

II. Consolidation and Advertising Prices

8. Considerable consolidation has occurred in the radio industry since 1995. I investigate whether this consolidation has led to higher advertising prices, using a “before” and “after” sample of advertising prices across radio markets for the years 1995 and 2001. These years straddle the Telecommunications Act of 1996, which allowed the rapid changes in the radio industry to occur. I use an econometric technique known as fixed effects estimation to determine the effect of consolidation on advertising prices.¹

A. Econometric Technique

9. The logic of fixed effects estimation is illustrated by the following example. Suppose we have data on the price of radio advertising in two markets (A and B) at two points in time (1995 and 2001). Suppose further that Market A experienced a large increase in concentration between 1995 and 2001, while the degree of concentration in Market B did not change. To determine the effect of concentration on price, it is necessary to compare the change in price in Market A to the change in price in Market B. Using the change in advertising prices in the two markets allows me to control for common changes across the two markets, e.g. the

¹ Fixed effects estimation is a well-known technique in econometrics that avoids bias that might otherwise lead to unreliable results. See, e.g., J. Hausman and W. Taylor, "Panel Data and Unobservable Individual Effects," *Econometrica* 49, 1981, and for a textbook discussion see

general state of the economy. If the price change in Market A exceeds the price change in Market B by a significant margin, then we would conclude that increased concentration leads to higher prices. However, if the price changes in the two markets were approximately the same, we would conclude that there is no significant relationship between concentration and price.

10. The fixed effects technique I use reflects this basic logic. In addition, it allows for the use of more than two markets and takes into account other factors that may affect price, including the prices of competitive substitutes for radio advertising such as television and newspaper advertising.

11. It is important to note that the fixed effects estimation technique is unaffected by changes in advertising prices that occur at a national level. To determine the effect of concentration on price, the fixed effects technique essentially compares the change in price in markets with large increases in concentration to the change in price in markets with little or no increases in concentration. Since price changes common to all markets do not affect this comparison, they do not affect the conclusion about the effect of concentration on price. Hence my results about the effect of consolidation on radio advertising prices are unaffected by the general downturn in the advertising market in 2001.

B. Data Collected

12. I collected data from 121 stations in 37 Arbitron markets. These markets are listed in Table 1. The sample selection used a stratified random sampling approach where the different strata represented different market sizes, and hence the markets in the sample represent a wide variety of market sizes. Eighteen of the markets are in the top 50 Arbitron markets, nine are in Arbitron markets 51-100, and ten are in Arbitron markets 100+.

13. For each station I collected the average unit rate during the morning drive daypart in the fourth quarter of 1995 (the quarter immediately preceding the Telecommunications Act of 1996) and the fourth quarter of 2001 (the most recently available quarter). To calculate the radio CPM (cost per thousand) for each market, I sum the unit rates of the sampled stations in each market and divide by the number of people listening to those stations (in thousands) during the morning drive daypart. I then convert the CPM to real terms using the CPI.

14. I calculate two measures of concentration. The first measure is the Herfindahl-Hirschman Index (HHI), which is the sum of squared market shares for all firms in the market.² The HHI is the standard measure of market concentration used by both the DOJ and FTC.³ The Commission has also used the HHI in its previous analysis of proposed mergers. As an alternative measure of concentration, I construct an indicator variable based on the

² Market share for a given firm is calculated as the revenue of that firm's stations (including stations that it operates under LMAs) divided by the total revenue of all stations in the market. Revenues and ownership information are from the *Investing in Radio Market Report*, 1995 3rd edition and 2001 1st edition, published by BIA.

Commission's "50/70" screen. This variable equals one if the largest firm's market share is at least 50 percent or if the combined market share of the two largest firms is at least 70 percent. Otherwise, this variable equals zero.

15. I would expect the price of radio advertising to also depend on the price of substitutes for radio, which include television and newspapers. Hence I also include variables for the television CPM and the newspaper CPM in each market.⁴ Since CPMs may be affected by market size, I also include a variable for the market's population.

16. Characteristics that differ across markets but do not vary substantially over time, such as income and commute time, are captured by the fixed effects for each market.⁵ Thus, each radio market is allowed to have its own individual characteristics in the econometric model.

17. The final variable I include is an indicator variable for observations from 2001. This variable captures the national trend in the price of radio advertising.

³ See *DOJ and FTC Horizontal Merger Guidelines*, 1992.

⁴ The television CPM is the average prime-time household CPM for the fourth quarter of each year as reported by SQAD. The newspaper CPM is the daily inch rate divided by circulation (in thousands). For markets with more than one newspaper with at least ten percent coverage of the market, the circulation-weighted average CPM is used. Newspaper data is from the 1996 and 2002 editions of *Circulation*, published by SRDS. Both CPMs are converted to real terms using the CPI.

⁵ The assumption is that these variables do not change markedly across cities during the time period studied.

C. Preliminary Data Analysis

18. Before estimating the regressions, I conduct a preliminary analysis of the data by comparing the change in prices across markets that experienced different changes in concentration. I partition the markets into three categories based on the change in the HHI between 1995 and 2001. In ten markets the change in the HHI was less than 1000 points, in seventeen markets the change in the HHI was between 1000 and 1500 points, and in the remaining ten markets the HHI changed by over 1500 points. For each category I calculate the average change in the natural log of the radio CPM. This measure is approximately equal to the percentage change in the radio CPM.

19. The results are in Table 2. Recall that if increases in concentration led to increases in price, the change in prices would be greater in markets that experienced larger changes in concentration. This pattern is exactly the opposite of the pattern actually observed in Table 2: the average price change is lower in markets with larger changes in concentration.

20. I obtain a similar result using the 50/70 indicator variable as the measure of concentration. The markets that experience an increase in concentration according to this measure have a slightly lower average change in price than the markets where concentration does not change.

21. In order to take into account the effects of other variables it is necessary to use more sophisticated econometric methods, but these preliminary comparisons suggest that increases in concentration have not led to increases in advertising prices.

D. Econometric Analysis

22. The results of the fixed effects econometrics approach, reported in Table 3, confirm the preliminary finding that consolidation has not affected price. In Column 1 of Table 3 the HHI is used to measure concentration. The estimated coefficient on this variable is negative and statistically insignificant, indicating that consolidation does not lead to higher advertising prices.⁶ However, the estimated coefficients on the television and newspaper CPM variables indicate that the price of radio advertising does respond to the price of substitutes. Both of these coefficients are positive and statistically significant.⁷ The coefficients indicate that a ten percent increase in the price of either television or newspaper advertising is predicted to increase the price of radio advertising by about three percent.

23. These results are corroborated by the estimates in Column 2 of the table, in which concentration is measured by the 50/70 indicator variable. The estimated coefficient on this

⁶ In order to determine whether the insignificance of the HHI coefficient is due to measurement error in the HHI variable, I have estimated the model using the revenue share of the two largest firms (which is likely to be measured with greater accuracy) as an instrument for the HHI. The HHI coefficient continues to be negative and insignificant when estimated by this method, and a Hausman specification test indicates that measurement error is not a problem. See J. Hausman, "Specification Tests in Econometrics," *Econometrica* 46, 1978, or W. Greene, *Econometric Analysis*, p. 443 for a textbook discussion.

⁷ The television coefficient is significantly different from zero at the five percent level, and the

variable is negative and statistically insignificant, which reinforces the conclusion that radio advertising prices have not been affected by consolidation.

24. I also test whether the effect of consolidation on price varies by market size. I partition the markets into three categories based on their current Arbitron ranking: large (Arbitron rank 1-50), medium (51-100), and small (100+). When the regressions are estimated allowing for interactions between market category and concentration, I find that the effect of concentration on price is negative or close to zero and insignificant for every market category (see Columns 3 and 4 of Table 3). I cannot reject the statistical hypothesis that the effect of concentration on price is the same in each category. These results support the conclusion that, across all market sizes, prices have not been affected by consolidation.

25. The coefficient on the Year 2001 variable is the change in price from 1995 to 2001 that cannot be explained by changes in the other variables. In all specifications of Table 3 this coefficient is small and statistically insignificant. Hence the change in the price of radio advertising between 1995 and 2001 can be explained by changes in television advertising prices, newspaper advertising prices, and population.

26. Thus far I have shown that there is no relationship between average advertising price and overall market concentration. This finding does not necessarily rule out the possibility that a merger between two stations that share the same format could allow those stations to raise

newspaper coefficient is significantly different from zero at the ten percent level.

their prices. However, given the ease with which radio stations are able to switch formats, any attempt to exercise market power in this fashion would be defeated by other stations switching to that format. As evidence of the ease of format switching, I note that over 35 percent of the stations in the markets in my sample changed formats between 1995 and 2001.⁸

27. I also conduct an empirical test of whether increased concentration within formats leads to higher prices. For a given market I calculate the HHI within each major format category, and then calculate the average format HHI for the market, using format revenue shares as weights.⁹ If increased concentration with a format leads to higher prices, then markets that experienced a larger increase in average format HHI should have experienced a larger increase in price. I find the exactly opposite result, as the estimated coefficient on the average format HHI variable is negative (see Column 5 of Table 3). If anything, increases in the average format HHI lead to decreases in price. Thus, the claim that concentration within a format can lead to higher advertising prices is not supported in the data.

28. My empirical results refute the Department of Justice (DOJ) claim that radio is a separate market in their Jacor Consent Decree (August 5, 1996). The DOJ stated that radio gives advertisers the ability to reach target audiences "far more efficiently than other media" (p. 4).

⁸ I use the major format categories defined by BIA to determine whether a station changed formats.

⁹ The mathematical formula for the average format HHI is $\sum_f s_f HHI_f$ where s_f is the revenue share of format f and HHI_f is the HHI within format f . I had previously discussed using a modified HHI with differentiated products in J. Hausman, G. Leonard, and D. Zona, "A Proposed Method for Analyzing Competition Among Differentiated Products," with G. Leonard

The DOJ claims that TV and newspapers are good vehicles for reaching a "broad, undifferentiated audience", but they generally lack radio's ability "to provide efficient targeting" (pp. 4-5).

29. The empirical results refute the DOJ's claims in three ways. (1) My finding that newspaper and TV advertising prices affect radio advertising prices demonstrates that the three modes of advertising are significant substitutes for each other. (2) If radio were a separate market, changes in concentration of the size that have occurred in radio markets should have led to increased radio advertising prices. These advertising price increases did not occur. (3) The DOJ's concern that existing radio stations could not re-position their formats so that a merger could lead to higher advertising prices in a given format is demonstrated to be incorrect because 35 percent of the stations shifted format over the six year period. Also, the use of "within format" HHIs do not find any evidence of a price increase with increased concentration within a format.

30. My overall conclusion is that changes in concentration (either at the market level or within formats) did not have a significant effect on radio advertising prices in the period 1995-2001. Instead, changes in television advertising prices, newspaper advertising prices, and population were the main determinants of the changes in radio advertising prices over this time period.

and J.D. Zona, Antitrust Law Journal, 60, 1992.

III. Consolidation and Format Variety

31. The idea that consolidation can create consumer welfare benefits in the radio industry by increasing variety was first proposed fifty years ago by Peter Steiner.¹⁰ In Steiner's model the audience is composed of groups that prefer different formats. If two stations in a market have different owners, they may both choose the format favored by the largest audience group. If the two stations have the same owner, that owner can reach a larger audience by switching the formats of one of the stations. Thus consolidation can lead to an increase in format variety.

32. However, one of Steiner's assumptions is that the prices radio stations charge advertisers are independent of the chosen formats. Instead it may be the case that two stations that share a format compete more vigorously than stations with different formats. If so, competing stations would have an incentive to choose different formats. Whether competing stations would actually choose different formats depends on the precise nature of listener preferences and competition, among other factors. Thus the nature of the relationship between consolidation and format variety is ultimately an empirical question.

¹⁰ P. Steiner, "Program Patterns and Preferences, and the Workability of Competition in Radio

33. A recent paper by Steven Berry and Joel Waldfogel provides empirical support for the prediction that consolidation leads to increases in format variety.¹¹ Berry and Waldfogel study the change in the number of formats in 243 Arbitron markets from 1993 to 1997, and find a significant positive relationship between consolidation and format variety: markets with a larger decrease in the number of owners experience a significantly larger increase in the number of available formats.

34. The radio industry has continued to consolidate since 1997. In order to determine whether the positive relationship between consolidation and format diversity continues to hold when more recent changes in industry structure are taken into account, I update Berry and Waldfogel's study using data from 2001.¹² Estimating Berry and Waldfogel's model using the updated data, I find that there continues to be a positive and significant relationship between consolidation and format variety.

35. I estimate an econometric model using a fixed effects regression that relates the number of formats available in a market to the number of owners in the market and market size. For all except three markets, I have observations for 1993, 1997, and 2001.¹³ The left hand side

Broadcasting," *Quarterly Journal of Economics* 66, 1952.

¹¹ S. Berry and J. Waldfogel, "Do Mergers Increase Product Variety? Evidence from Radio Broadcasting," *Quarterly Journal of Economics* 116, 2001.

¹² The source for the 2001 data is the Spring 2001 edition of *Duncan's American Radio*. The sources used by Berry and Waldfogel are the Spring 1993 and Spring 1997 editions of the same publication.

¹³ Between 1997 and 2001 Arbitron discontinued coverage of three markets in the original sample: Danville, IL, La Crosse, WI, and Waterbury, CT. For these three markets there is no 2001 observation.

variable in the econometric model is the number of formats available in the market. The right hand side variables are the number of owners in the market and the population of the market. I expect the number of formats to increase with the size of the market. The effect of the number of owners is ambiguous from a theoretical viewpoint, as I discussed above.

36. I use two-stage least squares (2SLS) to estimate the model, using the “policy band” approach of Berry and Waldfogel. I define three policy band variables, which are indicator variables that depend on the number of stations in the market.¹⁴ I treat the number of owners as jointly endogenous, and use the policy band variables and policy band-year interaction variables as instruments. A Hausman specification test indicates that this estimation strategy is necessary to estimate the parameters of the model correctly, and a test of the overidentifying restrictions confirms the validity of the instruments.¹⁵

37. The 2SLS results are in Table 4. The coefficient on the number of owners is statistically significant and negative, demonstrating that a decrease in the number of owners in a market leads to an increase in format variety. The estimated coefficient indicates that the number of formats in a market increases by one when the number of owners in the market declines by seven. Hence, my conclusion is the consolidation in the radio industry that has occurred from

¹⁴ The policy band variables are based on the number of stations in the market in 1993 (as measured by the number of stations in the Arbitron book). One variable indicates markets with 15 to 29 stations, the second is for markets with 30 to 44 stations, and the third is for markets with 45 or more stations. These categories are based on Section 202(b)(1) of the Telecommunications Act of 1996.

¹⁵ See J. Hausman, “Specification Tests in Econometrics,” and J. Hausman, “Specification and Estimation of Simultaneous Equation Models,” *Handbook of Econometrics*, vol. 1, Chapter 7,

1993 to 2001 has resulted in increased format variety.

1983.

Table 1: Markets in Advertising Price Study

New York
Los Angeles
Chicago
Dallas-Ft. Worth
Philadelphia
Houston-Galveston
Washington, DC
Boston
Detroit
Atlanta
San Diego
Tampa-St. Petersburg-Clearwater
Portland, OR
Cleveland
Cincinnati
Kansas City
San Antonio
Orlando
Louisville
Albany-Schenectady-Troy
Tucson
Grand Rapids
Fresno
Omaha-Council Bluffs
Baton Rouge
Little Rock
Charleston, SC
Youngstown-Warren
Worcester
Jackson, MS
Beaumont-Port Arthur, TX
Springfield, MO
Salisbury-Ocean City
Fayetteville (North West Arkansas)
Tallahassee
Lincoln
Lubbock

Table 2: Changes in Price by Market Category

	Average change in Log (Radio CPM)	Number of Markets
HHI change < 1000	0.268	10
HHI change between 1000 and 1500	0.230	17
HHI change > 1500	0.208	10
50/70 indicator change = 0	0.237	21
50/70 indicator change = 1	0.230	16

Table 3: Advertising Price Regressions

Dependent variable: Log(Radio CPM), morning drive daypart

Variable	Column 1	Column 2	Column 3	Column 4	Column 5
HHI (0-1 scale)	-0.430 (0.506)				
HHI*Large market			-0.552 (0.734)		
HHI*Medium market			-0.890 (0.832)		
HHI*Small market			-0.375 (0.540)		
50/70 indicator		-0.002 (-0.068)			
50/70*Large market				0.019 (0.089)	
50/70*Medium market				-0.034 (0.115)	
50/70*Small market				0.007 (0.104)	
Average format HHI (0-1 scale)					-0.525 (0.277)
Log (Television CPM)	0.303 (0.142)	0.291 (0.146)	0.298 (0.142)	0.290 (0.152)	0.282 (0.140)
Log (Newspaper CPM)	0.333 (0.190)	0.333 (0.201)	0.372 (0.207)	0.339 (0.214)	0.310 (0.186)
Log (Population)	0.553 (0.619)	0.682 (0.636)	0.462 (0.658)	0.664 (0.656)	0.448 (0.600)
Year 2001	0.066 (0.536)	0.008 (0.110)	0.081 (0.125)	0.008 (0.112)	0.039 (0.112)
R^2	0.934	0.934	0.936	0.934	0.938
Root MSE	0.140	0.141	0.143	0.145	0.136
N	74	74	74	74	74

Notes: All regressions include market fixed effects. Heteroskedasticity-robust standard errors in parentheses.

Table 4: Format Variety Regression

Dependent variable: Number of formats

Variable	
Number of owners	-0.145 (0.046)
Population (millions)	7.886 (1.486)
R^2	0.903
Root MSE	1.785
N	726
Overidentification test statistic	2.541
Degrees of freedom	8

Notes: Regression includes market and year fixed effects. Heteroskedasticity-robust standard errors in parentheses. Policy band variables and policy band-year interaction variables are used as instruments for the number of owners.

EXHIBIT 1

**Curriculum Vitae
Professor Jerry Hausman
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EDUCATION:

OXFORD UNIVERSITY
D. Phil. 1973 (Ph.D)
B. Phil. 1972

BROWN UNIVERSITY
A.B. (Summa Cum Laude), 1968

THESIS: "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"
Oxford University, 1973.

FELLOWSHIPS, HONORS AND AWARDS:

Phi Beta Kappa
Marshall Scholar at Oxford, 1970-1972
Scholarship at Nuffield College, Oxford, 1971-1972
Fellow, Econometric Society, 1979.
Frisch Medal of the Econometric Society, 1980
Fisher-Schultz Lecture for the Econometric Society, 1982
John Bates Clark Award of the American Economic Association, 1985
Jacob Marschak Lecture for the Econometric Society, 1988
Fellow, National Academy of Social Insurance, 1990
American Academy of Arts and Sciences, 1991.
Fellow, Journal of Econometrics, 1998.

EMPLOYMENT:

1992- MASSACHUSETTS INSTITUTE OF TECHNOLOGY
John and Jennie S. MacDonald Professor
1979- Professor, Department of Economics
1976-79 Associate Professor, Department of Economics
1973-76 Assistant Professor, Department of Economics
1972-73 Visiting Scholar, Department of Economics

VISITING APPOINTMENTS:

1986-87 Visiting Professor, Harvard Business School
1982-83 Visiting Professor, Harvard University Department of Economics

1968-70 U.S. ARMY, ANCHORAGE, ALASKA
Corps of Engineers

PROFESSIONAL ACTIVITIES:

Associate Editor, Bell Journal of Economics, 1974-1983
 Associate Editor, Rand Journal of Economics, 1984-1988
 Associate Editor, Econometrica, 1978-1987
 Reviewer, Mathematical Reviews, 1978-1980
 American Editor, Review of Economic Studies, 1979-82
 Associate Editor, Journal of Public Economics, 1982-1998
 Associate Editor, Journal of Applied Econometrics, 1985-1993
 Member of MIT Center for Energy and Environmental Policy Research, 1973-
 Research Associate, National Bureau of Economic Research, 1979-
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern
 District of New York in Carter vs. Newsday, Inc., 1981-82
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation,
 1984-1992
 Member, Committee on National Statistics, 1985-1990
 Member, National Academy of Social Insurance, 1990-
 Member, Committee to Revise U.S. Trade Statistics 1990-1992
 Director, MIT Telecommunications Economics Research Program, 1988-
 Board of Directors, Theseus Institute, France Telecom University, 1988-1995
 Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-
 Member, Committee on the Future of Boston, 1998
 Advisory Editor, Economics Research Network and Social Science Research , 1998-
 Advisory Editor, Journal of Sports Economics, 1999-

PUBLICATIONS:**I. Econometrics**

- "Minimum Mean Square Estimators and Robust Regression," Oxford Bulletin of Statistics, April 1974.
- "Minimum Distance and Maximum Likelihood Estimation of Structural Models in Econometrics," delivered at the European Econometric Congress, Grenoble: August 1974.
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- "Stochastic Problems in the Simulation of Labor Supply," in Tax Simulation Models, ed. M. Feldstein, University of Chicago Press, 1983.
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- "Specification and Estimation of Simultaneous Equation Models," in Handbook of Econometrics, ed. Z. Griliches and M. Intriligator, vol. 1, 1983.
- "Full-Information Estimators," in Kotz-Johnson, Encyclopedia of Statistical Science, vol. 3, 1983
- "Instrumental Variable Estimation," in Kotz-Johnson, Encyclopedia of Statistical Science, vol. 4, 1984
- "Specification Tests for the Multinomial Logit Model," with D. McFadden, Econometrica, 52, 1984.
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APPENDIX D

Professor Jerry Hausman
Department of Economics, MIT

Declaration II

Statement of Professor Jerry A. Hausman

1. My name is Jerry A. Hausman. I am MacDonald Professor of Economics at the Massachusetts Institute of Technology in Cambridge, Massachusetts, 02139.
2. I received an A.B. degree from Brown University and a B.Phil. and D. Phil. (Ph.D.) in Economics from Oxford University where I was a Marshall Scholar. My academic and research specialties are econometrics, the use of statistical models and techniques on economic data, and microeconomics, the study of consumer behavior and the behavior of firms. I teach a course in "Competition in Telecommunications" to graduate students in economics and business at MIT each year. Competition among broadcast TV, cable networks, direct to home satellite (DTH) providers, newspapers, and radio is one of the primary topics covered in the course. In December 1985, I received the John Bates Clark Award of the American Economic Association for the most "significant contributions to economics" by an economist under forty years of age. I have received numerous other academic and economic society awards. My curriculum vitae is attached as Exhibit 1.
3. I have done significant amounts of research in the telecommunications industry. I have published numerous papers in academic journals and books about

telecommunications. I have also done research and published academic papers regarding advertising on TV and radio.

4. I have previously submitted Declarations to the Commission regarding the competitive impacts of policies affecting DTH, DBS, cable TV, and broadcast TV service offerings. I have also submitted Declarations regarding competition between cable TV and DTH and broadcast TV. I have previously made presentations to the Department of Justice regarding competition in TV, cable TV, and radio. I have served as a consultant to the Tribune Corporation over the past decade. Tribune owns broadcast TV stations, radio stations, and newspapers. I have also consulted over the past 10 years for a variety of companies which sell consumer goods and do large amounts of advertising, e.g. Budweiser, Kodak, and Revlon.

5. I am submitting a separate declaration in this proceeding consisting of two empirical studies that analyze changes in advertising prices and format variety. (Hausman Statement I) In this declaration I respond to certain economic issues raised in the NPRM (MM Docket No. 01-317)

I. Summary and Conclusions

6. At least three services (products) compete within a relevant antitrust product market to allow advertisers to reach their target audiences. TV advertising is by

far the largest. Different programming attracts different concentrations of given demographic groups. Next in importance are newspapers which allow targeted advertising in different sections of the papers. Lastly, radio targets different demographic groups by different stations broadcasting different formats. Many advertisers use one or more of these media to reach their target audiences.

Advertisers often switch among the media in an attempt to reach their target audiences in a cost efficient manner. My empirical results demonstrate this conclusion since I found that the prices of TV advertising and newspaper advertising vary with the price of radio advertising, and that TV and newspaper advertising are substitutes for radio advertising.

7. Radio is a differentiated market in which different stations broadcast in different formats that appeal to different audiences. This economic factor of differentiation has an important effect on competitive and antitrust analysis. The HHI has limited usefulness, because anti-competitive outcomes typically arise from “unilateral effects” in differentiated product markets. My empirical results demonstrate that high concentration or high shares for the largest or two largest firms does not lead to higher advertising prices. Thus, the concern over market share, defined in a standalone radio market, is misplaced. The empirical results demonstrate that a wider market definition than only radio is required to do correct economic analysis.

8. Within a differentiated product market, barriers to entry are typically not as important as barriers to mobility. My empirical results demonstrate that barriers to mobility do not exist in radio. Given the ease with which radio stations are able to switch formats, any attempt to exercise market power by unilateral action would be defeated by other stations switching to that format.

9. My empirical results find benefits to consumers without offsetting costs from industry consolidation. The creation and exercise of market power has not occurred because my empirical results demonstrate that advertising rates did not increase more in markets that experienced more consolidation. Also, consumers were not harmed by industry consolidation because the number of formats increased with consolidation, giving consumers a wider range of listening choices. The benefits from industry consolidation are greater format diversity and decreases in the change in advertising prices. The goals of the Telecommunications Act of 1996 have been realized. Less regulation has allowed market outcomes to determine the appropriate industry structure. Prices have not increased from this consolidation and consumer welfare has increased.

II. Product and Geographic Market Definition: Radio is Not a Separate Market

10. The NPRM (§§ 41-42) raises the question of product market definition. It notes that the DOJ considers radio to be a separate market. However, the DOJ market definition is not determined by the actual competition in the marketplace and is

refuted by the empirical evidence in my accompanying declaration. (Hausman Statement I)

11. In my view at least three services (products) compete within a relevant antitrust product market to allow advertisers to reach their target audiences. TV advertising is by far the largest. Different programming attracts different concentrations of given demographic groups, e.g. professional basketball compared to "Friends". Cable TV has been important at the national level, (e.g. MTV compared to Nickelodeon) and it is becoming increasingly important at the local level. Next in importance are newspapers which allow targeted advertising in different sections of the papers. Tires and cellular telephone are heavily advertised in the Sports section, while department stores and furniture stores advertise in the Living section or the Style section. Lastly, radio targets different demographic groups by different stations broadcasting different formats, e.g. classic rock compared to all sports radio. Many advertisers use one or more of these media to reach their target audiences.¹ Advertisers often switch among the media in an attempt to reach their target audiences in a cost efficient manner. TV, newspapers, and radio form the relevant market in which to do competitive analysis of mergers in the radio industry.² My empirical results demonstrate this

¹ Advertisers also use billboards, direct marketing, and other media to reach their targeted audiences. However, I disregard these alternative media to concentrate on TV, newspapers, and radio advertising.

² Note that if one were doing competitive analysis in the TV industry, radio might be sufficiently small so as not to create an important competitive constraint for television. However, television creates an important competitive constraint for radio.

conclusion since I found that the prices of TV advertising and newspaper advertising vary with the price of radio advertising, and that TV and newspaper advertising are substitutes for radio advertising. (Hausman Statement I, ¶ 22, Table 3)

12. I am aware that the Department of Justice (DOJ) in their Jacor Consent Decree (August 5, 1996) and other filings claimed that radio is a separate market. However, I disagree with the DOJ's claims. The DOJ states that radio gives advertisers the ability to reach target audiences "far more efficiently than other media". (p. 4) The DOJ claims that TV and newspapers are good vehicles for reaching a "broad, undifferentiated audience", but they generally lack radio's ability "to provide efficient targeting." (pp. 4-5) My experience with advertisers and in TV directly contradicts DOJ's claims. As I explained above, advertisers use broadcast and cable TV, radio, and newspapers to reach target audiences. One hour spent watching MTV and noting the advertisers followed by one hour watching ESPN and noting the advertisers will lead to the conclusion that advertisers reach targeted audiences through TV. Similarly, on broadcast TV the UPN network ("Buffy") and CBS ("60 Minutes") often offer programs that appeal to quite different demographic groups. Also, a look through the different sections of an urban newspaper will demonstrate the same outcome. Indeed, a given advertiser, e.g. Budweiser, will use a mixture of TV, cable TV, radio, and newspapers to reach its target demographic groups.

13. The Commission has previously noted that cable TV offers specialized programming in its 1990 Cable Report which discusses the "steadily-expanding complement of specialized program services offered by the typical cable system." (p. 4972). This judgment has been re-affirmed by numerous Commission Cable Reports. Specialized program networks such as MTV, Nickelodeon, and ESPN allow advertisers to reach targeted demographic groups in a cost efficient manner. Broadcast TV also reaches targeted audiences via different programs as I discussed above. Thus, the DOJ market definition does not comply with commercial reality.

14. The DOJ claim of repetition or frequency is the opposite of what many advertisers seek. In both radio and TV advertisers pay a higher rate per thousand when the audience is larger. This non-linear relationship has existed for many years. Advertisers desire a larger "reach" so that more people hear or see an advertisement, rather than a smaller group seeing the same commercial numerous times.³ The cost of producing radio commercials and the ability to get fast turnaround is not unique to radio—it is also found in newspaper advertisements. Lastly, radio reaches people in cars, but so do billboards. Also, the advent of satellite radio provides another means for advertisers to reach people in cars. Both XM and Sirius, the two new satellite radio services, provide multiple

³ A recent article explains this premium for larger audiences in the context of TV. See e.g. J.M. Higgins and A. Romano, "Cheaper by the Thousand," Broadcasting and Cable, February 4, 2002, pp. 21ff. The article states, "The bottom line is that advertisers put a premium price on reach; they want to cast as wide a net as possible." (p. 22)

channels, many of which have advertising.⁴ Thus, they will provide additional competition to broadcast radio, newspapers, and TV, all of which allow advertisers to target different demographic groups. Thus, broadcast radio does not have unique features. The NPRM recognizes that “many advertisers consider alternative media to be good substitutes for radio advertising, but the DOJ’s analysis indicates that alternative media are not good substitutes for a significant number of advertisers.” However, economic analysis demonstrates that prices are set at the margin. Thus as long as a sufficient number of advertisers find alternative media to be good substitutes for radio, radio advertising prices will not increase. The demand for all goods has this feature—many customers (“infra-marginal” customers) would not switch unless the price changed greatly, while other price-sensitive customers (“marginal” customers) would switch in response to a small price increase. These latter customers defeat an attempted price increase and hold down prices for everyone.⁵

⁴ XM has an exclusive distribution arrangement with General Motors, other automotive manufacturers, car audio dealers and national electronics retailers. XM commenced commercial service in September 2001 and launched nationwide in November 2001. XM states: “We offer advertisers an effective way to aggregate geographically disparate groups of listeners in their targeted demographic markets.” (Source: “XM Investor Information”) Sirius has agreements with Ford Motor Company, DaimlerChrysler Corporation and BMW of North America that contemplate the manufacture and sale of vehicles that include radios capable of receiving Sirius’s broadcasts. (Source: Sirius Prospectus, January 7, 2002) Sirius began operation in February 2002.

⁵ DOJ makes the classic mistake in their market definition analysis by stating that “many [advertisers] are not likely to switch any or some of their advertising budget” if radio prices rise 5-10%. (p. 5) It is well known that only a small group of marginal customers needs to exist to create a broader market. For the relevant market to be broader than only radio, economic analysis demonstrates that only 5-10% of advertisers would need to switch; thus, it is not a requirement that “many” advertisers switch in the event of a 5-10% price increase. DOJ offered this same argument, and it was rejected in Federal District Court in a case in which I testified for Kodak, U.S. v. Eastman Kodak, 853

15. The DOJ market definition is based on a qualitative description without any quantitative analysis. My empirical analysis in my accompanying declaration demonstrates that the market definition is broader than radio. As I discussed above, TV advertising and newspaper advertising are found to be significant substitutes to radio advertising. Furthermore, given the rapid consolidation in radio since the passage of the Telecommunications Act of 1996, if radio were a separate market, advertising prices should have risen significantly in markets where concentration increased greatly. In many markets that I analyze the HHI increased by more than 1000 between 1995 and 2001, a significant increase that would make the market “highly concentrated” according to the *DOJ and FTC Horizontal Merger Guidelines* (1992). If, as asserted by DOJ, radio were a separate market, changes in concentration of the size that have occurred in radio markets should have led to increased radio advertising prices. However, my empirical study demonstrates that these increases in concentration did not lead to increases in advertising prices. Thus, the empirical evidence demonstrates that the DOJ market definition is incorrect.

16. I agree with the NPRM (§ 43) that the relevant geographic market is local. While both local and national advertising are important revenue sources for radio, the

F.Supp. 1454 (W.D.N.Y. 1994), aff'd 63 F.3d 95 (2d Cir. 1995). DOJ then attempts to make a price discrimination argument but it fails to realize that the argument is also wrong because they incorrectly assume that radio stations can perfectly target customers. This argument has been rejected by the FTC in a case in which I testified, In the Matter of RR Donnelley, Final Order, July 21, 1995. See also J. Hausman, et al., "Market Definition Under Price Discrimination", Antitrust Law Journal, 1996.

local stations set advertising rates that differ across geographic markets. National advertising is generally a much less important factor for radio than it is for television.⁶ Again my empirical results demonstrate that advertising rates differ across local markets and that changes in variables such as population in local markets affect changes in advertising rates. I do not believe that the empirical analysis would be affected in any significant manner by the exact definition of the geographic market as the NPRM asks (§ 44). My empirical results are not sensitive to the exact measure of concentration used as my accompanying declaration discusses. (Hausman Statement I, ¶ 22-23, Tables 2 and 3)

III. Radio is a Differentiated Product

17. Radio is a differentiated market in which different stations broadcast in different formats that appeal to different audiences. This economic factor of differentiation has an important effect on competitive and antitrust analysis.⁷ Thus, the HHI has limited usefulness, because anti-competitive outcomes typically arise from “unilateral effects”, actions by a single firm, in differentiated product markets.⁸ My empirical results in my accompanying declaration (Hausman Statement I, ¶ 22-23), however, demonstrate that high concentration or high shares for the largest or two largest firms does not lead to higher advertising prices. Thus, the concern over market share, defined in a radio market without taking account of competition from TV and newspapers, is misplaced.

⁶ However, a relevant economic market for television is also local advertising.

⁷ See e.g. Section 2 of the *DOJ and FTC Horizontal Merger Guidelines* (1992).

⁸ It is generally agreed that coordinated interaction does not typically occur in differentiated product markets. See *ibid.*

18. Within a differentiated product market, barriers to entry are typically not as important as barriers to mobility. (NPRM ¶ 46-47) The relevant question is whether other products can economically reposition themselves to increase supply and hold down a possible price increase. The empirical results in my accompanying declaration (Hausman Statement I) demonstrate that barriers to mobility do not exist in radio. Given the ease with which radio stations are able to switch formats, any attempt to exercise market power by unilateral action would be defeated by other stations switching to another format. Thus, I agree with the NPRM (¶ 47) that stations often change their programming format. These changes provide a check on the exercise of unilateral market power, as my empirical results demonstrate. As evidence of the ease of format switching, I find that over 35 percent of the stations in the markets in my sample changed formats between 1995 and 2001.⁹

19. In a recent working paper by DOJ economists C. Romeo and A. Dick, “The Effect of Format Changes and Ownership Consolidation on Radio Station Outcomes” (December 2001), the authors do an empirical analysis of format changes. They conclude that the changes are not effective in changing audience share and they also conclude that format mobility is unlikely to be effective in countering market power. However, they do find that the most important factors affecting format

⁹ I use the major format categories defined by BIA to determine whether a station changed formats.

changes are the economic incentives of attempting to improve below average listening shares.¹⁰

20. While the DOJ economists find evidence of a significant number of format changes driven by economic considerations, as do I in my separate study (Hausman Statement I), they conclude that they are not “effective”. They do not explain why the companies undertake the cost of the format changes if they are likely not to be “effective.” However, I believe that the DOJ economists have missed a basic economic point by not considering advertising prices. A company may shift format on economic grounds if it gains a higher advertising price, even if its listening share does not go up.¹¹ The economic profit to a radio station comes from the advertising price per thousand listeners times the number of listeners. The DOJ economists have only considered half of the revenue equation. Thus, if a single company gained a large “share” of a particular format, other companies would find it profitable to shift formats and constrain an attempted price increase, even if their listening shares did not increase.

21. Also, the DOJ paper does not consider the results of the increased consolidation in the radio industry that took place during their study period. As I have discussed, advertising prices did not go up more in the markets that had significantly more consolidation. I also did a more refined analysis in which I considered

¹⁰ I have significant questions about the econometric techniques used in the paper. However, since I do not have access to the data I cannot investigate further.

¹¹ Indeed, its listening share could decrease and the format change could still be profitable.

concentration within segments to see whether market power could be exercised within a given format, if mobility and format changes were insufficient supply responses (Hausman Statement I, ¶ 27). Since many of the sample markets became “highly concentrated” under the *DOJ and FTC Horizontal Merger Guidelines* (MG), often with a single company having a share significantly above 35 percent, one of three conclusions should hold: (1) the MG approach of using shares to predict the effect of mergers does not apply to the radio industry, (2) radio advertising is not a separate market,¹² or (3) format changes are effective in stopping advertising prices from increasing. My view is that all three reasons are likely to hold. The empirical fact is that advertising prices did not increase more in markets that experienced more consolidation. The DOJ economists never consider price data, and hence miss the key economic fact of testing the outcomes of consolidation in the radio industry.

IV. Potential Benefits and Costs to Radio Consolidation

22. Economists generally agree that the reason for industry consolidation is to increase the combined value of the merging companies. Increased value typically arises from two sources: (1) increased revenues, which follow from increased price or increased output, and (2) decreased costs. Increases in price (holding output constant) are anti-competitive and decrease consumer welfare. My empirical results in the accompanying declaration (Hausman Statement I) demonstrate that increased advertising prices did not occur with increased

¹² The Romeo and Dick paper states that the DOJ maintains its position that radio advertising is a separate market, p. 26, fn 31.

consolidation. Thus, increased industry consolidation did not cause an increase in advertising prices.

23. Increased output in radio arises from an increase in the number of listeners. If this event occurs, consumer welfare has increased and the outcome is pro-competitive because consumers find the new content better than the old content. Increased output can arise because of greater diversity in formats. Greater diversity in formats allows for “niches” in the market to be better served. My empirical results in the accompanying declaration (Hausman Statement I) demonstrate that the number of formats increased with industry consolidation. This outcome creates a benefit to both consumers and to advertisers.

24. Lastly, reduced costs are pro-competitive because they lead to lower prices and increased output.¹³ Lower costs appear to be the major reason for consolidation in the radio industry. Radio stations have significant fixed costs. By combining stations these fixed costs are spread over a wider base. Variable costs (which are the determinant of prices) also decrease with consolidation because labor inputs are used more efficiently. Economies of scope also occur across stations, which lead to lower costs and prices. My empirical finding that increased consolidation leads to lower changes in advertising prices (Hausman Statement I, ¶ 22-23, Table 3) is consistent with cost savings being the main reason for industry

¹³ Even a monopolist passes on part of the cost savings in terms of lower prices. See J. Hausman and G. Leonard, “Efficiencies from the Consumer Viewpoint,” with G. Leonard, George Mason Law Review, 7, 1999.

consolidation. Advertisers are the main beneficiaries of these lower costs and lower prices. Lower prices to advertisers lead to lower prices for consumers.

25. Thus, according to my empirical results industry consolidation has created benefits for consumers without any offsetting costs. The creation and exercise of market power has not occurred (NPRM ¶ 49) because my empirical results demonstrate that advertising rates did not increase more in markets that experienced more consolidation. The NPRM stated (¶ 49): “Studies and other evidence showing that advertising rates for radio station combinations are significantly higher after a consolidation than before a consolidation would be particularly useful.” However, my empirical study finds the **opposite result**: prices did not increase more in markets that experienced more consolidation and, if anything, increased by a lesser amount. Also, consumers were not harmed by consolidation (NPRM ¶ 49) because the number of formats increased with consolidation, giving consumers a wider range of listening choices. Lastly, the NPRM mentioned the possibility of coordinated behavior with increased industry consolidation. (NPRM ¶ 50) As I discussed before, it is well recognized among economists and also in Section 2 of the *DOJ and FTC Horizontal Merger Guidelines* (1992) that coordinated behavior is unlikely to occur in differentiated product markets such as radio. Further, my empirical results demonstrate that coordinated behavior did not occur since price increases were not greater in markets that experienced more consolidation.

26. Thus, the benefits from industry consolidation are increases in format diversity and decreases in the change in advertising prices. The goals of the Telecommunications Act of 1996 have been achieved. Less regulation has allowed market outcomes to determine the appropriate industry structure. Prices have not increased from this consolidation and consumer welfare has increased.

EXHIBIT 1

Curriculum Vitae

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EDUCATION:

OXFORD UNIVERSITY
D. Phil. 1973 (Ph.D)
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BROWN UNIVERSITY
A.B. (Summa Cum Laude), 1968

THESIS: "A Theoretical and Empirical Study of Vintage Investment and Production in Great Britain,"
Oxford University, 1973.

FELLOWSHIPS, HONORS AND AWARDS:

Phi Beta Kappa
Marshall Scholar at Oxford, 1970-1972
Scholarship at Nuffield College, Oxford, 1971-1972
Fellow, Econometric Society, 1979.
Frisch Medal of the Econometric Society, 1980
Fisher-Schultz Lecture for the Econometric Society, 1982
John Bates Clark Award of the American Economic Association, 1985
Jacob Marschak Lecture for the Econometric Society, 1988
Fellow, National Academy of Social Insurance, 1990
American Academy of Arts and Sciences, 1991.
Fellow, Journal of Econometrics, 1998.

EMPLOYMENT:

1992- MASSACHUSETTS INSTITUTE OF TECHNOLOGY
John and Jennie S. MacDonald Professor
1979- Professor, Department of Economics
1976-79 Associate Professor, Department of Economics
1973-76 Assistant Professor, Department of Economics
1972-73 Visiting Scholar, Department of Economics

VISITING APPOINTMENTS:

1986-87 Visiting Professor, Harvard Business School
1982-83 Visiting Professor, Harvard University Department of Economics

1968-70 U.S. ARMY, ANCHORAGE, ALASKA
Corps of Engineers

PROFESSIONAL ACTIVITIES:

Associate Editor, Bell Journal of Economics, 1974-1983
 Associate Editor, Rand Journal of Economics, 1984-1988
 Associate Editor, Econometrica, 1978-1987
 Reviewer, Mathematical Reviews, 1978-1980
 American Editor, Review of Economic Studies, 1979-82
 Associate Editor, Journal of Public Economics, 1982-1998
 Associate Editor, Journal of Applied Econometrics, 1985-1993
 Member of MIT Center for Energy and Environmental Policy Research, 1973-
 Research Associate, National Bureau of Economic Research, 1979-
 Member, American Statistical Association Committee on Energy Statistics, 1981-1984
 Special Witness (Master) for the Honorable John R. Bartels, U.S. District Court for the Eastern
 District of New York in Carter vs. Newsday, Inc., 1981-82
 Member of Governor's Advisory Council (Massachusetts) for Revenue and Taxation,
 1984-1992
 Member, Committee on National Statistics, 1985-1990
 Member, National Academy of Social Insurance, 1990-
 Member, Committee to Revise U.S. Trade Statistics 1990-1992
 Director, MIT Telecommunications Economics Research Program, 1988-
 Board of Directors, Theseus Institute, France Telecom University, 1988-1995
 Member, Conference on Income and Wealth, National Bureau of Economic Research, 1992-
 Member, Committee on the Future of Boston, 1998
 Advisory Editor, Economics Research Network and Social Science Research , 1998-
 Advisory Editor, Journal of Sports Economics, 1999-

PUBLICATIONS:**I. Econometrics**

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 European Econometric Congress, Grenoble: August 1974.
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