Table C.1: NAB Financial Data Summary

Markets Detailed in Yearly Reports

YEAR	ALL AFFILIATES	ALL INDEPENDENTS	UHF AFFILIATES	UHF INDEPENDENTS	UHF STATIONS	VHF INDEPENDENTS
1980	NATIONWIDE	NATIONWIDE		NATIONWIDE	NATIONWIDE	
	1-10	1-10		1-10	11-50	
	11-20	11-25		11-50	51-100	
	21-30	26-80				
	31-40					
	41-50					
	51-60					
	61-75					
	76-100					
1979	NATIONWIDE	NATIONWIDE		NATIONWIDE	NATIONWIDE	
	1-10	1-10		1-10	1-10	
	11-20	11-25		11-70	11-50	
	21-30	26-70			51-100	
	31-40					
	41-50					
	51-60					
	61-75					
	76-100					

Table C.1: NAB Financial Data Summary

Markets Detailed in Yearly Reports

YEAR	ALL AFFILIATES	ALL INDEPENDENTS	UHF AFFILIATES	UHF INDEPENDENTS	UHF STATIONS	VHF INDEPENDENTS
1978	NATIONWIDE	NATIONWIDE			NATIONWIDE	
	1-10	1-10			1-10	
	11-20	11-25			11-50	
	21-30	26 +			51-100	
	31-40					
	41-50					
	51-60					
	61-75					
	76-100					
1977	NATIONWIDE	NATIONWIDE		NATIONWIDE	NATIONWIDE	
	1-10	1-10		1-10	1-10	
	11-20	11-25		11-25	11-50	
	21-30	26 +			51-100	
	31-40					
	41-50					
	51-60					
	61-75					
	76-100					

Table C.1: NAB Financial Data Summary

Markets Detailed in Yearly Reports

YEAR	ALL AFFILIATES	ALL INDEPENDENTS	UHF AFFILIATES	UHF INDEPENDENTS	UHF STATIONS	VHF INDEPENDENTS
1976	NATIONWIDE	NATIONWIDE		NATIONWIDE	NATIONWIDE	
	1-10	1-10		1-12	11-50	
	11-20	11-25			51-100	
	21-30	26-69				
	31-40					
	41-50					
	51-60					
	61-75					
	76-100					
1975	NATIONWIDE	NATIONWIDE		NATIONWIDE	NATIONWIDE	
	1-10	1-10		1-15	11-50	
	11-20	11-25			51-100	
	21-30	26 +				
	31-40					
	41-50					
	51-75					
	76-100					

III. THE ARBITRON DATA BASE

Much of the economic analysis performed as part of our study of the effect of the repeal of the Prime Time Access Rule (PTAR) is based on a large amount of data showing details of station programming and program popularity both over time and for a range of markets within any year. In this section, the reasons for the selection of the particular form of the data base are discussed, along with the details of the data base.

A. DATA SOURCE

The ideal data base to support our analysis would extend from several years before PTAR through to the current period. The data contained within such a data base would provide information on the experience of individual independent stations before and after PTAR. Also, such an ideal data base would have information on other relevant factors to allow exploration of the effects of PTAR in different circumstances.

Our analysis is supported by a data base composed of information from the American Research Bureau's (Arbitron) Television Market Report which covers station programming and program popularity by market areas. We have supplemented and enriched this station and programming data by information on the characteristics of the cites covered.

The Arbitron ratings studies were chosen for several reasons. Arbitron's definition of an ADI is the same as that used by the FCC in determining the top 50 markets (at least through 1993). Also, the data are available across virtually all of the top cities in the nation and over the decades of interest. The hard copy version of the data are now readily available to the public, as well.

The NAB data base, as described above, is a financial data base. It is not nearly as consistent over time as one would like for analysis of the experience of individual stations. While the Arbitron data have the disadvantage of not measuring profitability or other financial variables directly, it has the critical

advantage of being disaggregated at the individual station level in each market. Since we hypothesize that a main short-run and long-run impact of PTAR is on the ratings and shares of individual independent stations, the Arbitron data base is well-suited for the econometric modeling and testing of our hypotheses.

A. C. Nielsen is another source of station ratings and shares data. For this informal rule-making, LECG used its clients' Nielsen Station Index volumes for syndicated programming for 1993 to update the Federal Trade Commission HHI numbers measuring concentration in first-run programming, and to conduct different market definition tests of market power.

B. STRUCTURE OF THE DATA BASE

The salient details of the PTAR regulation provide many guidelines for the construction of a data base that is relevant enough to answer questions relating to PTAR. The FCC uses the Arbitron size rankings of ADIs as of November of each year to determine which markets are subject to the PTAR rule. This fact implies that using each year's Arbitron data is a good choice.

PTAR, as it evolved, related to programming during the hours of 7:00 to 8:00 P.M. in the Eastern and Pacific time zones and 6:00 to 7:00 P.M. in the Central and Mountain time zones. Since, before PTAR, the networks did not program the first half hours of these hours[1], the net effect of PTAR was to reduce the network feed to affiliates by a half an hour each weekday, even though PTAR was framed as a one hour rule. Thus, the relevant time slots to measure the effect of PTAR are 7:30 to 8:00 P.M. in the Eastern and Pacific time zones and the hour of 6:30 to 7:00 P.M. in the Central and Mountain time zones. We have

[1] This is clear from the prime time schedules appendix of Tim Brooks and Earle Marsh, The Complete Directory to Prime Time Network TV Shows, 1946-Present, (New York: Ballantine Books, 1992). Appendix 1 lists all network programming by year by daily time period. The schedules are blank for 7:00-7:30 P.M. (Eastern and Pacific time zone) before 1971 (i.e., the networks did not program this half hour), and also blank for 7:00-8:00 P.M. from 1971 on.

included data on the following hour of programming to enable us to examine any carry-over effects from the previous half hour.

Although PTAR covered the entire week, there are many exemptions to the rule on weekends. For this reason, we limited our data base to Monday through Friday, the days which will enable us to measure, at a highly disaggregated level of analysis, a pure PTAR effect.

PTAR applies to the top 50 markets. Therefore, one focus of our data base is on the experience of these large markets under PTAR. As a proxy for all 50 largest, we use the top 30 markets. Since part of our analysis is estimating the impact of PTAR on the shares and ratings for independent stations, and since through 1979 there were relatively few independents outside the top 30 markets, we fully capture the impact on independents' shares and ratings by examining the top 30 markets.

Another possible way to examine the effect of PTAR is to compare the experiences of stations in the top 50 markets (subject to PTAR) to the experiences of stations below the top 50 (not officially subject to PTAR). This comparison is impossible in the years immediately following the implementation of PTAR because there are so few independent stations outside of the larger markets.

Hard copy data were gathered for 5 years (1968, 1975, 1979, 1987, 1993) for the top 75 markets for all time periods from early fringe through prime time. However, in estimating a structural model, comparisons of the top 50 markets with markets below the top 50 are not relevant. First, there were few independent stations in the smaller markets, beyond the top 30, until many years after PTAR was initiated, so there is no basis for comparison.

Second, although PTAR does not officially apply to markets below the top 50, it essentially covers all markets regardless of size. For economic reasons the networks do not and can not program in markets below the top 50 during prime access as a result of PTAR in the top 50. So the effect of PTAR on network broadcasting extends to all ADI markets. For the same economic reasons, no

syndicator selling national advertising for network-quality productions airing during prime access can clear outside the top 50 markets before clearing in many of the largest top 50 markets.

Thus, above 50/below 50 market is an artificial dividing line for measuring the impact of the rule -- the *same* first run syndicated shows that air outside the top 50 markets air in the top 50 markets, with rare exceptions. These programs are designed for national audiences and sell into the national advertising market more than they sell into the local advertising market. By definition, the broadcast market for selling national advertising is all ADI markets, not markets ranked above 50.

Since the effect of PTAR is the question of interest, our data have as their first focus the years immediately before and immediately after PTAR. The years just before PTAR are defined as 1966, 1967, 1968, 1969, and 1970. The years just after PTAR are defined as 1971, 1972, 1973, 1974, 1975, and 1976.

Examining the effect of PTAR immediately after its implementation is important, but not enough to allow us to predict the effects of repealing PTAR over twenty years later. To examine the possible effects of repeal now, we need data which capture the effects of the important changes since the implementation of PTAR. The most important changes since PTAR are the growth of cable, the increase in the number of independent stations, and the formation of the Fox network.

The late 1970s and early 1980s through the late 1980s is the period of rapid growth of both cable television and the number of independent stations, primarily UHF stations. The years of 1979 and 1987, which have been included in our data base, allow us to examine impacts of both rapid cable growth and the increasing number of independent stations as well as the effects of PTAR.

The most recent year of Arbitron data available, 1993, is included in the data base for three reasons. First, the most recent year serves as a starting point for examination of the possible effects of the repeal of PTAR. Second, 1993

supplements 1987 in that 1993 also records a high level of cable penetration and the experience of independent stations with high cable penetration. Third, 1993, in combination with the earlier years, captures the effect of the origination of the Fox network in late 1987. The effect of networking a set of formerly independent VHF and UHF stations for a growing number of evening hours should be fully captured in 1993 data when contrasted with the earlier pre-Fox years through 1987.

C. DETAILS OF THE DATA BASE CONSTRUCTION

1. Arbitron data

The Arbitron reports were obtained from the historical depository for Arbitron data at the University of Georgia at Athens. The data exist in hard copy format only at the University, and were entered into computer by hand. The Arbitron reports used are those for November of each year (the same time period relied on by the FCC for delineating each year which 50 markets are subject to PTAR). The November Arbitron reports show the average program ratings and shares over the four weeks of November. The years included in the data base are 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1979, 1987, and 1993. Each entry was independently checked, approximating 800,000 cells. Entry into separate Excel spreadsheets was followed by conversion into a master SAS dataset for statistical tests. Arbitron's television operation went out of business in 1993/94 and 1994 data are apparently unavailable.

The Arbitron Television Market Report contains a wide array of data on station programming and program popularity by demographic groups For the purposes of this analysis, several of the many possible data items were selected from the reports. The selected data items are:

- ADI name: An ADI is defined by Arbitron as "An exclusive geographic area consisting of all counties in which the home-market commercial stations and satellite stations reported in combination with them received the greatest percentage of total viewing hours." An ADI usually consists of a central city

and the counties surrounding it which contain the primary viewers of the central city's television stations. A few top 30 ADIs for a few years are omitted because those market reports are missing or lost from the Arbitron depository.

- Day of the week: weekdays Monday through Friday.
- Time slot: each half hour from 7:30 to 9:00 P.M. in the Eastern and Pacific time zones and for each half hour from 6:30 to 8:00 P.M. in the Central and Mountain time zones.
- Program title.
- Station call letters.
- Station channel number.
- Station affiliation as listed by Arbitron. The affiliation codes are ABC, CBS, NBC, and IND (independent commercial station). In 1993, a separate affiliation code for Fox network stations is included. Public television stations, foreign television stations, and non-ADI stations, as identified by Arbitron, are excluded. Low power stations, in the few cases where they were reported by Arbitron, also were excluded. Primarily foreign language stations, as identified by their call letters or programming, also are excluded.
- ADI program rating: the estimated percent of all television households or persons tuned to a specific station.
- ADI program share: the estimated percent of all households using television or persons viewing television tuned to a specific station.

A few problems were encountered in trying to ensure a data base consistent over time and over markets:

- Some stations aired two or more programs in the same day and time slot over the course of the month. In these cases, the data for the program usually aired were entered. If it was not apparent which program was the usual program, the day and time slot was coded as "Special" and the average rating and share was entered.
- If the rating for a particular program was 0.5 or less, Arbitron left the ratings blank. We set the ratings and shares of such programs to zero.

- On occasion, the name of the same program was listed differently in different years and even within the same year. The program names were entered exactly as listed by Arbitron.

2. Additional market data

For each ADI in each year, the Arbitron data are augmented by additional information further describing the ADI. The additional information is:

- Rank of the ADI.
- Time zone of the ADI.
- Total number of households in the ADI as reported by Arbitron.
- Number of households with televisions in the ADI as reported by Arbitron.
- Number of households with televisions capable of receiving UHF signals in the ADI as reported by Arbitron. Arbitron reported the number of UHF households up to 1979; after 1979 we have assumed that all television households are capable of receiving UHF channels.
- Number of households with cable television in the ADI as reported by Arbitron. Before 1973, Arbitron does not report this statistic and we have set the number of cable households to zero.
- Number of households with VCRs in the ADI as reported by Arbitron. Arbitron begins reporting the number of VCR households in 1987; prior to that year, we have assumed that there are no VCR households.
- Per capita income in the metropolitan area represented by the ADI. The income data are part of the U.S. Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, Regional Economic Measurement Division's Regional Economic Information System (REIS). REIS reports metropolitan area per capita income (as aggregated from county level data from the states) for 1969 through 1992. The missing earlier years were estimated using per capita income trends in the home state of the metropolitan area. Per capita income in the last year, 1993, was estimated using recent trends in income within the metropolitan area.

IV. CROSS-SECTIONAL TESTS USING THE ARBITRON DATA BASE

The cross-sectional tests using the Arbitron data base are designed to analyze the rating differences between UHF and VHF signals. As discussed in the main body of this section, we examine the ratings of Fox programs on the same day and in the same time slot on Fox UHF and VHF stations, while at the same time controlling for market size, the number of competing stations, cable penetration, and viewer tastes.

The cross-sectional tests are done using regression analysis. Regression analysis is a method for systematically and quantitatively relating changes in one variable to changes in one or more other factors. In this case, the rating of a Fox program on each day in each half hour time slot (RATING) is related to:

- UHF or VHF signal (this factor is called UVV). This factor is represented by a dummy variable equal to 1 if the Fox station is on a UHF channel and equal to 1 if it is on a VHF channel. If there is a UHF handicap, the effect of this variable on ratings should be negative and significant. If there is no handicap, the coefficient should be insignificant.
- OTHU, the count of non-Fox commercial UHF channels. The coefficient on OTHU should be negative if more UHF channels leads to a lower Fox rating.
- OTHV, the count of non-Fox commercial VHF channels. The coefficient on OTHV should be negative if more VHF channels leads to a lower Fox rating.
- The number of television households (in thousands) as measured by Arbitron (TVHH).
- Cable penetration as measured by Arbitron (CAPEN). Cable penetration might have two different effects. Since cable offers more channels, higher cable penetration might lead to a lower Fox rating. However, if the Fox station is on a UHF channel, having cable might lead to a higher Fox share since the reception would be better.
- Ethnic composition of the population as measured by the 1990 Census. The shares of the population which is black (AFAM) and Hispanic (HISPAN) are included. Whites, American Indian, Eskimos, Aleuts, Asians, and Pacific Islanders are the omitted group.

The form of the regression equation is:

$$\text{RATING} = a + b_1 * \text{UVV} + b_2 * \text{OTHU} + b_3 * \text{OTHV} + b_4 * \text{TVHH} + b_5 * \text{CAPEN} + b_6 * \text{AFAM} + b_7 * \text{HISPAN}$$

The coefficients b_1 through b_6 measure the direction and magnitude of each explanatory factor on the Fox program's rating. Of interest here is whether the coefficient b_1 is negative and significant. If it is, we can say that a UHF signal depresses a program's rating, controlling for the program itself, day of the week, time slot, the number of competing channels, the market size, cable penetration, and viewers' tastes.

Table C.2 presents the regression results for the five days and two half hour time slots. The t-statistics show the level of significance of its corresponding coefficient. A t-statistic above two in this case indicates that the coefficient is significantly different from zero. The adjusted R^2 also is presented. It measures the share of the variation in the ratings which is explained by the factors we have included in the regression.

The presence of other broadcast channels has a mixed effect. More UHF stations tend to increase the ratings of the Fox station, while other VHF stations does not have a substantial affect on the Fox ratings. The size of the market, as measured by the number of television households, generally is insignificant.

Cable penetration has a negative effect on Fox's ratings. The share of the population that is Hispanic does not have a significant influence on Fox's rating in any time period. The share of the population that is black has a significant and positive effect in some time slots. Regional taste differences do not play a significant role in determining ratings and are omitted in the final version of the regressions.

Table C.2: Cross-Sectional Regression Tests Of UHF Ratings Handicap				
	Day and Time Slot			
	Monday First Half Hour		Monday Second Half Hour	
Explanatory Factor	Coefficient	t-statistic	Coefficient	t-statistic
Constant	11.0554	4.44	10.6269	4.06
UHF Signal	-1.3762	2.09	-1.0947	1.58
Number of Other UHF Channels	0.4574	2.60	0.4571	2.47
Number of Other VHF Channels	-0.2533	0.88	-0.1573	0.52
Number of Television Households	0.0001	0.23	0.0002	0.58
Cable Penetration	-0.0529	1.94	-0.0546	1.91
Share of Population which is Black	-0.0240	1.47	-0.0150	0.87
Share of Population Which is Hispanic	0.0074	0.31	0.0154	0.60
Adjusted R^2	0.1778		0.1648	

Table C.2: Cross-Sectional Regression Tests Of UHF Ratings Handicap				
	Day and Time Slot			
	Tuesday First Half Hour		Tuesday Second Half Hour	
Explanatory Factor	Coefficient	t-statistic	Coefficient	t-statistic
Constant	3.1852	1.70	3.2339	2.10
UHF Signal	-1.3227	2.23	-1.3432	3.29
Number of Other UHF Channels	0.5437	3.43	0.2930	2.69
Number of Other VHF Channels	0.3094	1.20	0.1746	0.98
Number of Television Households	0.0001	0.22	0.0001	0.73
Cable Penetration	-0.0275	1.12	-0.0204	1.21
Share of Population which is Black	0.1017	6.91	0.0503	4.97
Share of Population Which is Hispanic	0.0028	0.13	0.0173	1.15
Adjusted R^2	0.5119		0.4732	

Table C.2: Cross-Sectional Regression Tests Of UHF Ratings Handicap				
	Day and Time Slot			
	Wednesday First Half Hour		Wednesday Second Half Hour	
Explanatory Factor	Coefficient	t-statistic	Coefficient	t-statistic
Constant	15.8309	4.56	16.5120	4.51
UHF Signal	-3.8918	4.24	-4.0513	4.19
Number of Other UHF Channels	0.6036	2.46	0.7896	3.05
Number of Other VHF Channels	-0.2674	0.67	-0.2187	0.52
Number of Television Households	-0.0004	1.13	-0.0004	0.85
Cable Penetration	-0.0149	0.39	-0.0219	0.55
Share of Population which is Black	0.0014	0.06	0.00741	0.31
Share of Population Which is Hispanic	0.0198	0.59	0.0085	0.24
Adjusted R^2	0.2586		0.2726	

Table C.2: Cross-Sectional Regression Tests Of UHF Ratings Handicap				
	Day and Time Slot			
	Thursday First Half Hour		Thursday Second Half Hour	
Explanatory Factor	Coefficient	t-statistic	Coefficient	t-statistic
Constant	17.0241	4.11	10.5593	2.89
UHF Signal	-2.2072	2.02	-1.1974	1.24
Number of Other UHF Channels	1.0678	3.64	0.8622	3.33
Number of Other VHF Channels	-0.0566	0.12	0.0309	0.07
Number of Television Households	-0.0003	0.71	0.0005	1.25
Cable Penetration	-0.0713	1.57	-0.0668	1.67
Share of Population which is Black	0.0271	1.00	0.0937	3.90
Share of Population Which is Hispanic	-0.0175	0.43	0.0186	0.52
Adjusted R^2	0.1682		0.3693	

Table C.2: Cross-Sectional Regression Tests Of UHF Ratings Handicap				
	Day and Time Slot			
	Friday First Half Hour		Friday Second Half Hour	
Explanatory Factor	Coefficient	t-statistic	Coefficient	t-statistic
Constant	11.8209	4.77	12.6343	4.96
UHF Signal	-2.1504	3.28	-1.9866	2.95
Number of Other UHF Channels	0.3483	1.99	0.3888	2.16
Number of Other VHF Channels	-0.3732	1.31	-0.3845	1.31
Number of Television Households	-0.0003	1.16	-0.0003	1.09
Cable Penetration	-0.0668	2.47	-0.0773	2.77
Share of Population which is Black	0.0049	0.30	-0.0010	0.06
Share of Population Which is Hispanic	0.0228	0.94	0.0218	0.88
Adjusted R^2	0.2243		0.2189	

APPENDIX D

PREDICTING THE IMPACT OF REPEALING PTAR: ECONOMETRIC EVIDENCE

I. INTRODUCTION

A primary purpose of the May 4, 1970 FCC order enacting PTAR was to create an environment in which independent television stations would improve their economic performance, and thereby prosper and grow.

The purpose of this analysis is to investigate statistically whether PTAR did foster such an environment and whether the repeal of PTAR would compromise that environment fundamentally.

In order to analyze these issues, we focus upon the following measures of economic performance for independent stations:

- The growth in number of independent stations in a market; and
- Audience acceptance of those independent stations as measured by their ratings during the access period and the subsequent two half hours of prime time programming. The specific ratings measures included in the analysis are:
  - The ratings of an average independent station in a market; and
  - The aggregate rating of <u>all</u> independent stations in a market.

The analysis focuses on the top 30 U.S. markets ranked by size and examines performance pre- and post-PTAR. The specific years included in the analysis are the following:

- Period 1: The pre-PTAR years, including 1966 through 1970.
- Period 2: The immediate post-PTAR years, including 1971 through 1976 and 1979.
- Period 3: More recent post-PTAR years, including 1987 and 1993.

Period 1, before PTAR, acts as the control group for the top 30 markets in the post-PTAR Periods 2 and 3. The post-PTAR years are divided into two periods in order to assess possibly differential impacts of PTAR in the decade immediately following its passage (Period 2) and in more recent years (Period 3).

This appendix proceeds as follows: **Section II** presents summary statistics measuring independent station performance over the entire sample period, 1966 through 1993. These summary statistics indicate that PTAR did have a statistically measurable and positive impact upon the economic performance of independent stations throughout the 1971 to1993 period.

These summary statistics tell only half of the story. In order to elaborate more completely upon these conclusions, it is necessary to specify and estimate econometric models of the effects of PTAR. Such econometric models are presented in Section III. The econometric results indicate that PTAR did have and continues to have a statistically measurable and positive impact upon the economic performance of independent stations. Furthermore, the results indicate that the repeal of PTAR will have a statistically measurable and negative impact upon the economic performance of independent stations.

Sections II and **III** tell a corroborative story, which is that PTAR was and continues to be very important for the economic health and performance of the average independent station. **Section IV** demonstrates this continued importance by predicting the impact of the proposed repeal of PTAR on independent stations. The predictions make use of the econometric models estimated in **Section III**. The final Section develops and presents some related technical considerations.

II. OVERVIEW OF THE ANALYTIC RESULTS AND SUMMARY STATISTICS

Table D.1 presents the average number of independent stations and average independent station ratings for the top 30 U.S. markets, by year. Average ratings per station are presented for three groups of independent stations: all independents in the period 1966-1993; all Fox affiliates in 1987 and 1993; and all non-Fox

independents in 1987 and 1993. Finally, the Table presents the average per market rating of all independent stations for the top 30 markets.[2]

Measures of station ratings are developed and presented for two programming periods:

- The access period, includes the half hour of programming between 7:30-8:00 pm in the Eastern and Pacific Time Zones and 6:30-7:00 pm in the Central and Mountain Time Zones.
- Three one-half hour programming periods including the access period defined above and the two one-half hour periods immediately following the access period; specifically, 7:30-9:00 pm in the Eastern and Pacific Time Zones and 6:30-8:00 pm in the Central and Mountain Time Zones.

A variety of distinct temporal patterns is evident in this Table. First, the average number of independent stations per market does not change much over 1966-1979. The number of independents varies between 1.7 and 2.0 in the 1966 to1970 period and between 1.8 and 2.2 over 1971 to 1979. Only in 1987 and 1993 does the number of independent stations increase perceptibly, to 3.6 and 3.9.

On the other hand, average station ratings do increase immediately and substantially with the enactment of PTAR, i.e. from Fall 1970 to Fall 1971. Over this one year, ratings rise by 33 percent for all three programming periods (from 3.03 to 4.02) and by 87 percent (3.18 to 5.93) for the access period. The average station rating remains measurably higher throughout Period 2 compared to Period 1, varying from 3.64 to 4.82 for all programming periods and from 5.71 to 8.41 for the access period.

The increase in average station ratings from Period 1 compared to Period 3, for all programming periods as well as for the access period. However, the increase is not as large as that evidenced from Period 1 to Period 2, indicating that other factors diminished the average effect of PTAR in Period 3.

[2] The method of estimating these averages is described more fully in **Section III** and **Section V**.

Table D.1
Average Performance Measures, By Year

	Period 1					Period 2							Period 3	
	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1979	1987	1993
Number of Independents	1.73	1.74	1.91	2.00	2.00	1.96	1.93	1.93	2.02	2.16	1.84	2.00	3.61	3.90
Average Rating per Station														
All Times	3.70	3.42	2.96	2.81	3.03	4.02	4.13	3.64	3.92	3.97	4.82	4.65	3.32	4.15
Access Period	3.99	4.03	3.59	3.27	3.18	5.93	6.43	5.71	5.88	6.70	8.41	6.18	3.69	4.01
Average Fox Ratings													4.41	7.53
All Times													5.11	6.23
Access Period														
Average Non-Fox Ratings													3.00	3.00
All Times													3.25	3.34
Access Period														
Average Aggregate Ratings														
All Times	6.21	6.10	5.54	5.22	5.92	7.50	7.31	6.51	7.20	7.40	7.92	7.94	11.22	15.43
Access Period	6.59	7.01	6.65	6.01	6.13	10.93	11.35	10.21	10.49	12.20	13.56	10.92	12.48	15.11

Furthermore, the Period 3 average for all independents masks differences between Fox affiliates and non-Fox independents. In Period 3, the Fox affiliates maintain the highest average ratings of all independent stations. Their average ratings are highest for all programming periods and for the access period, and they approximate the average ratings for all independents over 1971 through 1979. On the other hand, the average rating of a non-Fox independent drops below the pre-PTAR average for all independents in Period 1.

The pattern for the average aggregate ratings of all independents reflects the patterns already found in the number of independents and the rating of the average independent. Specifically, the average aggregate rating increases substantially in 1971 precisely because the average station rating increases substantially.[3] Average aggregate ratings remain measurably higher during Period 2. In Period 3, average aggregate ratings increase still further, due to an increase in the number of independents, not an increase in average station ratings. Indeed, average station ratings fell from Period 2 to Period 3.

Table D.2 presents summary statistics for the three periods. The results of several hypothesis tests are also presented. More specifically, panel A of **Table D.2** presents the mean values of the performance measures for the three periods, while panel B presents the results of statistical tests of the equality of these means for pairs of alternative periods.

For example, the first column of panel B of **Table D.2** summarizes results of the test of the equality of the means from Period 1 and Period 2. If the reported values[4] are greater than 2.00, we can reject the hypothesis that the means are equal.

If we define short-run impacts as those occurring in Period 2 and longer-run impacts as those occurring in Period 3, the results in **Table D.2** support the following conclusions concerning the impacts of PTAR.

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[3] The number of independent stations remains fairly constant during this period.

[4] Each reported value is the absolute value of a t statistic testing H_0: the means are equal. The test allows for different sample variances for the estimates of the two means. For values of the t statistic greater than 2.00, we conservatively reject the hypothesis at the 95% level.

Table D.2
Average Performance Measures, By Period

A. Average Values

	Period 1	Period 2	Period 3
Number of Independents	1.906	1.977	3.753
Average Rating per Station			
All Times	3.140	4.177	3.735
Access Period	3.559	6.484	3.853
Average Fox Ratings			
All Times			6.144
Access Period			5.730
Average Non-Fox Ratings			
All Times			2.990
Access Period			3.294
Average Aggregate Ratings			
All Times	5.770	7.407	13.326
Access Period	6.447	11.398	13.797

B. t Statistics For Testing the Equality of the Means Across Periods and Groups of Independents

	Period 1 vs. Period 2	Period 2 vs. Period 3	Period 1 vs. Period 3
Number of Independents	0.058	9.798	10.000
Average Rating per Station			
All Times	6.318	2.913	3.844
Access Period	9.476	9.334	1.038
Average Aggregate Ratings			
All Times	4.918	####	17092.000
Access Period	7.840	3.011	8.882

	Fox v. Non-Fox Ratings
Average Ratings	
All Times	8.995
Access Period	3.674

Short-Run Impacts

- The average ratings of an independent station and the average aggregate ratings of all independent stations per market increased substantially and in a statistically significant fashion in the period immediately following the implementation of PTAR (i.e., from Period 1 to Period 2). Indeed, the effect was visible and measurable in 1971, the first effective year of PTAR.

- Because there was no measurable increase in the average number of independent stations from Period 1 to Period 2, there is no evidence from the comparison of means that PTAR had a short-run impact upon the number of independent stations. This conclusion was expected, as entry into this market during this historical period occurred in the long run rather than the short run, and any measurable impact will be revealed in the longer run.

Longer-Run Impacts

- By 1987, the average number of independent stations per market had increased substantially and in a statistically significant fashion. The number of independent stations increased in Period 3 relative to both Periods 1 and 2. This increase was stimulated by the increased ratings (hence economic performance) of the independent stations observed in Period 2.

- The average station ratings remained higher in Period 3 than the pre-PTAR Period 1. This increase is statistically significant for all programming periods, but not for the access programming period.

- In spite of this increase relative to the pre-PTAR period, the average ratings of an independent station declined in a statistically significant fashion in Period 3 relative to Period 2. This decline occurred for all programming periods and for the access period. Hence, the measured impact of PTAR upon average station ratings has diminished over time, when the average performance is defined over all independents.

- The average aggregate ratings of all independent stations per market increase substantially and in a statistically significant fashion in Period 3, relative to Period 2. This increase is due entirely to the increase in the number of independent stations, since the average station ratings decline from Period 2 to Period 3.

Overall, these results can be interpreted as follows. In the immediately subsequent decade, PTAR increased average independent station ratings by 82 percent during the access period and 33 percent over all programming periods included in our sample. There is nothing other than PTAR to which this increase can be attributed.

PTAR did not have a short-run effect upon the number of independent stations. However, in the longer run, the increased ratings, in addition to other factors, did induce an increase in the number of independent stations.

The long-run increase in the number of independent stations and alternatives such as cable TV generally increased competition and thereby reduced the ratings of the average independent station. However, some independents, such as Fox affiliates, thrived in this newly competitive environment; the average Fox affiliate increased its ratings in Period 3 from Period 2. In any case, the average aggregate ratings of all independent station per market increased in both post-PTAR Periods.

While these statistical results summarize past events, they are extremely relevant for predicting future events, as they summarize the behavioral laws governing the structure and performance of this industry. Specifically, PTAR improved the ratings of the average independent station in the short run, thereby improving its profitability. This improved performance engendered entry and increased competition in the long run.

Should PTAR be repealed, we know that the direction of these short-run and long-run impacts will be reversed. The repeal of PTAR will induce a reduction in the ratings of the average independent station. While it is unlikely that the number of independent stations will be affected in the short run, the reduction of the average