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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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October 15, 2002

EX PARTE OR LATE FILED

BY HAND DELIVERY

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
236 Massachusetts Avenue, NE
Suite 110
Washington, DC 20002

Re: Notice of Permitted Ex Parte Presentation
MB Docket No. 02-277; MM Docket Nos. 01-235, 01-317, 00-244

Dear Ms. Dortch:

On behalf of Clear Channel Communications, Inc. ("Clear Channel"), submitted herewith pursuant to Section 1.1206(b)(2) of the Commission's rules are an original and one copy of this notice regarding a permitted *ex parte* presentation in the above-referenced proceeding. On October 11, 2002, Richard J. Bodorff and the undersigned of Wiley Rein & Fielding LLP, and Professor Jerry A. Hausman of the Massachusetts Institute of Technology, met with Robert Ratcliffe, Deputy Chief of the Media Bureau, and Paul Gallant and Judith Herman of the Media Ownership Working Group, concerning the empirical studies released by the Commission in connection with its comprehensive review of the broadcast ownership rules.

Professor Hausman and Clear Channel's representatives expressed to the Commission staff in attendance their desire to obtain access to the data used in certain of the Commission's studies (specifically, Study #4 and Study #10), for the purpose of testing the conclusions reached in those studies and possibly conducting alternative studies. Professor Hausman raised with the staff several concerns about Study #4 and Study #10, including concerns that those studies do not reflect actual prices paid for advertising and do not take the impact of local cable advertising into account. The participants also discussed ideas for additional empirical studies that might be helpful to the Commission. Clear Channel's representatives advised the staff that Clear Channel supports a broadened definition of a local media market that takes media other than radio into account.

The participants also discussed several economic issues relevant to the subject proceeding. Professor Hausman discussed his study in connection with Clear Channel's March 2002 comments in the Commission's radio ownership proceeding (MM Docket Nos. 01-317 and 00-244), which (1) found substitutability among

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various forms of media; (2) determined that radio consolidation had no effect on advertising prices; and (3) was based on rates that local advertisers actually paid. A copy of this study (which was distributed to the FCC staff in attendance) is attached hereto. Professor Hausman also discussed his views on radio station owners' perceived ability to price-discriminate. Attached hereto is a followup email sent by Professor Hausman to Ms. Herman concerning this subject.

Should there be any questions concerning this matter, please contact the undersigned.

Very truly yours,

Gregory L. Masters

cc: Robert Ratcliffe, Esq.
Paul Gallant, Esq.
Judith Herman, Esq.

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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.

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

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[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.

Chapter 14 of W. Greene, *Econometric Analysis*, 3rd ed., 1997.

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 Commission's

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[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.

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

"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.

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[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

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.

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period studied.

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

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

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 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). 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"

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

(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.

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.

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

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[10] P. Steiner, "Program Patterns and Preferences, and the Workability of Competition in Radio Broadcasting," *Quarterly Journal of Economics* 66, 1952.
[11] S. Berry and J. Waldfogel, "Do Mergers Increase Product Variety? Evidence from Radio

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 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.

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.

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 1993 to 2001 has resulted in increased format variety.

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[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, 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	0.291	0.298	0.290	0.282
	(0.142)	(0.146)	(0.142)	(0.152)	(0.140)
Log (Newspaper CPM)	0.333	0.333	0.372	0.339	0.310
	(0.190)	(0.201)	(0.207)	(0.214)	(0.186)
Log (Population)	0.553	0.682	0.462	0.664	0.448
	(0.619)	(0.636)	(0.658)	(0.656)	(0.600)
Year 2001	0.066	0.008	0.081	0.008	0.039
	(0.536)	(0.110)	(0.125)	(0.112)	(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.

Masters, Gregory

From: Bodorff, Richard
Sent: Tuesday, October 15, 2002 10:47
To: Masters, Gregory
Subject: FW:

-----Original Message-----
From: Jerry Hausman [mailto:jhausman@cambridge-econ.com]
Sent: Monday, October 14, 2002 11:04 AM
To: jherman@fcc.gov
Cc: Bodorff, Richard
Subject:

Judy,

It was nice to meet with you on Friday. I checked and the average percentage change in CPMs from 1995 to 2001, based on my stratified random sample of actual radio station invoices, was 49%. This sample was used in my study that I submitted in January 2002 to the FCC, which I gave you a copy on Friday.

The price discrimination paper reference that demonstrates you have to be able to target customers with above a 90% accuracy to be successful is:

J. Hausman et. al., "Market Definition Under Price Discrimination," with G. Leonard and C. Vellturo, Antitrust Law Journal, Vol. 64, 1996.

If you have questions about the previous FCC submission or the paper, please contact me my email of call at 617-715-0210.

Yours,

Jerry Hausman

Jerry Hausman

Phone: 617-715-0210
Fax: 617-715-0301