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December 6, 2007

BY ELECTRONIC TRANSMISSION

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, S.W.
Washington, DC 20554

Re: Notice of Ex Parte Presentation in Connection With the Consolidated
Application for Authority to Transfer Control in Connection With the
Sirius/XM Merger, as Amended
(MB Docket No. 07-57)

Dear Ms. Dortch:

The Consumer Coalition for Competition in Satellite Radio (“C3SR”), through its counsel, hereby submits the attached slides for use in a presentation entitled “Preliminary Review of CRA Regression Analysis.” At the request of the staff, these slides are being submitted the day before a presentation to occur on December 7, 2007.

Pursuant to Section 1.1206 of the Commission’s Rules and DA-07-1435, these slides are submitted via ECFS for inclusion in the public record of these proceedings.

Respectfully submitted,

Benjamin D. Arden
Counsel to C3SR

Attachment

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Preliminary Review of CRA Regression Analysis

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Overview

- Limits of Analysis
- Flaws of CRA Approach
- CRA Analysis Revised
- Additional Regression Analysis

Limits of Analysis: Elasticity

- CRA regression analysis does not provide evidence on **cross-price** elasticity of demand as required by the *Merger Guidelines*
- Cross-price elasticity can only be estimated based on changes in the relative prices of two goods
- Without a cross-price elasticity estimate, there is no evidence of demand-side substitution between SDARS and terrestrial radio
- Thus, CRA has provided no evidence that the relevant product market includes terrestrial radio

Limits of Analysis: Cross-Sectional Data Set

- CRA's data is entirely cross sectional
- CRA's analysis cannot explain whether a specific group of individuals substitute between satellite and terrestrial radio

The Flaws in CRA's Regression Analysis (1 of 2)

- CRA's regression is misspecified
 - LHS variable is satellite penetration while the RHS variable is terrestrial *signals*
 - LHS measures current satellite *demand*, but RHS measures maximum terrestrial *supply*
- Given the misspecification, how can one interpret the results?
 - Terrestrial supply is *highly* correlated with population
 - CRA's analysis amounts to a regression of 1/population on terrestrial supply

The Flaws in CRA's Regression Analysis (2 of 2)

- CRA's analysis is performed at an inappropriately granular level
 - Presumes that the geographic market is appropriately measured at the Zip Code level as opposed to the officially recognized Arbitron Market Definitions
 - But many venture outside of their Zip Codes while listening to radio
 - Nonsensical results appear in the data (e.g., SDARS penetration of 2500 percent, which CRA then sets to 100 percent)

An Appropriate Specification

- $SDARS\ usage = TR\ usage + \text{other factors}$
- Endogeneity controls would also be necessary
- Panel data would explain substitution over time for a given population
- CRA's dataset cannot meet this specification
- Even this specification does not explain cross-price elasticity

Further Exploration of CRA's Regressions

- Assuming CRA's analysis is correct
 - The relationship between SDARS usage and TR signals should be negative and significant after one controls for population
- We aggregate to Arbitron and ZCTA3 level to correct for the outlier problem in CRA's data (many observations with penetration of 0 or 1)

Arbitron Results 1

Dep Var = SDARS Subs

Number of Obs	251
F(9, 861)	316.95
Prob > F	> 0.001
R-Squared	0.9221
Adj. R-Squared	0.9192
Root MSE	13166

	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
TR Signals	7.28E+01	163.3574	0.45	0.656	-248.9795	394.6015
Median Household Income	-794.5309	830.7849	-0.96	0.34	-2431.058	841.9959
Median Household Income^2	1.50E+01	9.060432	1.66E+00	0.099	-2.823589	32.87191
Car %	-146994	128495.5	-1.14	0.254	-400111.7	106123.7
Urban %	-64449.21	65042.47	-0.99	0.323	-192573.5	63675.1
Car % * Urban %	184695.1	160293.3	1.15	0.25	-131059.8	500449.9
Female %	196251.8	94392.3	2.08	0.039	10312.54	382191.1
Population	0.0340609	0.001359	25.07	0	0.0313844	0.036737
Population Density	-2.05E+07	1.34E+07	-1.53	0.127	-4.69E+07	5862341
Constant	-36090.28	65762.85	-0.55	0.584	-165633.7	93453.09

Arbitron Results 2

Dep Var = SDARS Subs

Number of Obs	251
F(9, 861)	242.12
Prob > F	> 0.001
R-Squared	0.93
Adj. R-Squared	0.9261
Root MSE	12587

	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
TR Signals	-7.28E+03	11410.83	-0.64	0.524	-29757.93	15201.28
TR Signals^2	529.5227	868.0347	0.61	0.542	-1180.526	2239.572
TR Signals^3	-1.90E+01	30.87066	-6.20E-01	0.538	-79.83276	41.79912
TR Signals^4	0.3480322	0.515218	0.68	0.5	-0.666959	1.363023
TR Signals^5	-0.002568	0.003251	-0.79	0.43	-0.008972	0.003837
Median Household Income	-1061.894	815.8122	-1.3	0.194	-2669.063	545.276
Median Household Income^2	16.68573	8.998922	1.85	0.065	-1.042359	34.41383
Car %	-91214.07	124515.5	-0.73	0.465	-336512.7	154084.5
Urban %	-4.65E+04	6.29E+04	-0.74	0.46	-1.70E+05	77389.76
Car % * Urban %	129910.9	154570.8	0.84	0.401	-174597.3	434419.2
Female %	121916	94878.72	1.28	0.2	-64997.39	308829.3
Population	0.0364111	0.001414	25.75	0	0.0336256	0.039197
Population Density	-1.62E+07	1.30E+07	-1.25	0.214	-4.18E+07	9394692
Constant	27538.73	85436.07	0.32	0.747	-140772.4	195849.8

ZCTA3 Results 1

Dep Var = SDARS Subs

Number of Obs	871
F(9, 861)	89.41
Prob > F	> 0.001
R-Squared	0.7499
Root MSE	6982.3

	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
TR Signals	533.5717	429.3418	1.24	0.214	1376.251	309.1074
Median Household Income	-161.3706	157.0604	-1.03	0.305	-469.6366	146.8955
Median Household Income^2	2.883565	1.539447	1.87	0.061	-.1379442	5.905073
Car %	-16352.97	11802.13	-1.39	0.166	-39517.28	6811.342
Urban %	-21411.16	8182.952	-2.62	0.009	-37472.03	-5350.292
Car % * Urban %	60063.95	20455.36	2.94	0.003	19915.74	100212.2
Female %	-86932.95	21054.81	-4.13	0.000	-128257.7	-45608.19
Population	.0341661	.0025422	13.44	0.000	.0291765	.0391557
Population Density	-248387.4	511117.1	-0.49	0.627	-1251569	754793.9
Constant	54669.89	11895.61	4.60	0.000	31322.1	78017.69

ZCTA3 Results 2

Dep Var = SDARS Subs

Number of Obs	871
F(9, 861)	78.50
Prob > F	> 0.001
R-Squared	0.7564
Root MSE	6906.9

	Coefficient	Std. Err.	t	P> t	[95% Conf. Interval]	
TR Signals	-1582.79	7430.747	-0.21	0.831	-16167.4	13001.81
TR Signals^2	639.8427	6770.094	0.09	0.925	-12648.1	13927.75
TR Signals^3	372.1097	2639.101	0.14	0.888	-4807.75	5551.969
TR Signals^4	-154.925	449.9012	-0.34	0.731	-1037.96	728.1126
TR Signals^5	13.03431	27.57745	0.47	0.637	-41.0929	67.16156
Median Household Income	-152.638	150.0624	-1.02	0.309	-447.171	141.895
Median Household Income^2	2.856366	1.474546	1.94	0.053	-0.03778	5.75051
Car %	-17101.4	12293.39	-1.39	0.165	-41230.1	7027.261
Urban %	-22615.1	8196.405	-2.76	0.006	-38702.4	-6527.68
Car % * Urban %	55628.43	20227.24	2.75	0.006	15927.69	95329.16
Female %	-93750.3	20042.39	-4.68	0	-133088	-54412.3
Population	0.033636	0.002528	13.3	0	0.028674	0.038598
Population Density	-174794	476197.1	-0.37	0.714	-1109444	759854.8
Constant	58925.07	11761.34	5.01	0	35840.66	82009.48

Preliminary Conclusion

- CRA's regression is measuring the strong correlation between population and the number of terrestrial signals
- CRA's regression cannot explain substitution between terrestrial and satellite radio