Television Broadcast Demand in Markets Without Local Teams

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Introduction:

The National Football League (NFL) receives more than $3.7 billion annually in television broadcasting revenue (Badenhausen, Ozanian, & Settimi, 2009). To put this into perspective, the average National Hockey League (NHL) franchise generated just $92 million in total revenue in 2007-08 and the entire NHL collectively earned less than $200 million per year in national television broadcasting contracts from both the United States and Canada (“NHL Team Valuations,” 2008). Furthermore, the popularity and success of the NFL is such that the revenues each team receives from the league’s national television deal represents more than four times those generated by the National Basketball Association (NBA) or Major League Baseball (MLB).

Given the dollars involved, it is imperative that the NFL and its television partners make sound choices regarding which games to televise, both on national and regional broadcasts. Failing to broadcast games in highest demand inevitably leads to suboptimal viewership and television ratings, financially harming the league, the television networks and their local affiliates. This study quantifies the importance of various factors in estimating broadcast ratings in markets without NFL teams, where all of the games televised can be selected to maximize viewership.

Purpose:

This study uses television ratings for NFL contests to estimate demand in five large markets without a local team. Applying many of the same techniques and variables used in studies employing attendance data, this research poses two questions:

1) Which determinants in traditional demand estimations (markets with teams) are also significant in estimating demand in markets without teams?

2) What new parameters are significant in estimating attendance in markets without teams?

Methods:

Data on NFL games for the 2006 and 2007 seasons were collected from nfl.com and espn.com. Traditional team quality, divisional standing, franchise tenure, and timing of the contest (including late game, post-Thanksgiving and week one indicators) variables were added to new variables that could potentially impact demand in non-local markets. Those new variables included team distance from the market where the ratings were measured as well as indicator variables representing the closest team, “America’s Team” (the Dallas Cowboys), and whether there was another game telecast at the same time. Television ratings for each contest were obtained from the Nielsen Company.

Given this presence of within market correlation (intra-class correlation of 0.205), using Ordinary Least Squares could result in statistical distortion. Specifically, the standard errors of the parameters may be biased downward, resulting in inflated Type I error and the efficiency and validity of estimates of the model parameters could also be adversely affected (Diggle, Heagerty, Liang, & Zeger, 2000). For these reasons, Generalized Linear Mixed Models were employed to account for the presence of within-market correlation.

Results:

The Cox and Snell’s R-Square indicates that 47 percent of the variability in ratings is explained by the model. This pseudo R-Square, an attempt to emulate the properties and interpretation of the R-Square, is based on the likelihood ratio of the null model relative to the final model. Ten of the fifteen parameters were included in the complete model.
with eight significant at the .01 level. Those found to be significant and positive were team quality (for each team), team age (for each team), the Dallas Cowboys dummy, the closest team in proximity, and games held after Thanksgiving. The presence of another game at the same time had a negative impact on ratings. Further results will be presented at the conference.

Discussion:

This study is the first to estimate demand for professional sports in markets without teams. This fan population that has been overlooked previously in the sport literature corresponds to roughly half of the US population and is particularly important to the NFL given the value of its national television contracts. The findings of this research demonstrate that while there are a number of ways in which the fans considered in this study behave similarly to those measured in previous demand estimations, there are unique considerations significant in the viewing choice of fans in markets without a local team. The results suggest that familiarity with the teams featured is especially important to this group of fans. These estimations provide important information to the networks and their local affiliates who make no fewer than three game selections weekly in dozens of like markets.

References:

