Defining Available Wealth and Its Impact on Demand for Attendance in Major League Baseball: Home Values, Local Population Density and Stadium Placement

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Team managers focusing on ticket pricing strategies have been guided by demand analyses that have focused on three sets of explanatory variables: 1) quality and outcome of the product on the field, 2) underlying economic characteristics of the region, and the 3) presence of substitutes (Knowles, Sheryon and Haupert, 1992; Schmidt and Berri, 2001; Meehan, Nelson and Richardson, 2007; Paul, 2003; Coates and Harrison, 2005; Coates and Humphreys, 2007; Gustafson and Hadley, 2007; Rascher and Solmes, 2007; Lee and Fort, 2008; Soebbing, 2008; Lemke, Leonard and 'T'hokwan, 2010; Tainsky and Winfree, 2010). There is reason to believe, however, that two sets of variables have been ignored that may well offer better insights into attendance patterns. One set deals with the profound effects of the current recession and its impact on household wealth (Case, Quigley and Shiller, 2011). The second deals with the spatial distribution of people, corporations, and wealth in a region and a facility's location (Winfree and Rosentraub, 2011). While earlier work (for example, Siegfried and Eisenberg, 1980) did not have access to the wealth of data available today, future researchers would be well served to make use of advances in granular spatial analysis in evaluating markets for professional sports and their respective stadiums.

Persistently high unemployment levels have been one characteristic of the recent economic downturn, but that has not been its most profound and unique effect. This recession has also involved an unprecedented decline in property values leading to a very large decrement in the wealth of middle and upper class sport fans. Traditional demand analyses have generally relied on income as the main determinant of economic situation or status. Overall income levels fail to record what has happened to fans' overall wealth levels. It will be argued that changes in attendance levels at major sport events are better explained by an inclusion of variables that measure this loss of wealth. Consumer changes in income represent changes in the "flow" of capital, and changes in income are not necessarily seen as changes in wealth or "stock" of capital. This recession has caused a decrease in wealth for Americans as consumers most valued asset, the home, have seen dramatic dips in value that represent changes in wealth, or this capital "stock" of consumers. Understanding how changes in wealth affect attendance would be a valuable addition to the attendance demand literature that is currently lacking.

The second part of our empirical investigation will be to analyze how population density and the density of wealth influence attendance demand from a spatial planning perspective. Traditional analyses have used population data from the Metropolitan Statistical Area (MSA) that the stadium or ballpark is located, in addition to the aforementioned per capita income. Many of these areas can be very large and span multiple states, possibly representing an unrealistic "commute shed" population that would actually consider traveling to the ballpark for a game (travel costs). In addition, the MSA measure changes over time and may include larger land areas for areas where population is more spread out, making the comparability of these areas difficult across the country. This would obviously bias any evaluation of assumed travel costs for fans attending baseball games and the true size of the home market. For this reason our analysis will look at population densities around ballparks based upon different drive time intervals to see whether population density around the ballpark can better explain attendance performance than traditional MSA measures.

Our data come from multiple sources. Attendance and other MLB related variables come from a combination of Sports Business Data (2011), Retrosheet (2011) and Baseball Reference (2011). From these sources, we include team level (quality and ticket price) and league level (competitive balance) variables within the analysis. The data used span from 2000 through the 2009 season, covering both the recent recession and preceding boom in the U.S. housing market. Economic variables come from the U.S. Census, U.S. Department of Commerce's Bureau of Economic Analysis (BEA), as well as the Federal Housing Finance Agency (FHFA). We utilize geographical analysis tools such as ArcGIS and Microsoft Map Point to evaluate wealth and population densities within multiple drive time radii from each of the stadium locations and include these as variables in our final regression. The general statistical model for
the analysis consists of a right-censored panel tobit regression to account for sellouts.

This analysis has obvious managerial implications for league managers, team owners and municipalities making investments in sport. First, understanding the wealth in a given market is of utmost importance for relocation or expansion for which large infrastructure investments are often necessary. Correctly evaluating the market and minimizing risk can save the league, team, and municipality significant capital. If a market is determined to be viable, stadium placement may play an additional role in attendance and popularity of a team. The most recent example of mismanagement of these considerations is that of the Tampa Bay Rays, who have experienced low attendance despite a rather successful baseball team. We plan to address this issue further within our presentation.

While this work is currently under way, we hypothesize that higher population densities in the stadium vicinity—i.e. reduced travel costs—and ‘stock’ of wealth—in terms of nearby housing values—will lead to more successful stadium locations and better predict the likelihood of attending baseball games. We plan to extend our work to the other three major North American sports leagues and evaluate the influence of density and wealth on sustainability of multiple sports teams.