Examination of the Effects of the Current Economic Crisis on MLB Attendance Demand

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Major League Baseball (MLB) has experienced a 6.5% drop in attendance during the 2009 season. This has been the largest single-season loss in attendance since 1952, excluding years involving a work stoppage. Twenty teams have experienced a decline in attendance, including five teams’ attendance that have seen a decrease of more than 20% entering the final week of the MLB season. The Kansas City Royals and Texas Rangers are the only teams boasting 10% or greater increases (USATODAY.com, 2009). This surprising attendance drop may be attributable to the current economic crisis since tighter budget constraints may cause a fundamental trade-off for consumers. In other words, the opportunity cost of consuming more of one good or service will result in the reduction of the amounts consumed of other goods and services (Fort, 2006). Therefore, consumers may reduce the quantity of sporting events attended since the current economic crisis directly relates to the consumers’ financial status as well as their psychological status, which tends to lead to a decrease in expenditures regardless of the consumers’ actual financial status.

Most of the studies conducted on attendance demand have focused on identifying every possible factor affecting attendance. Statistically, it is true that when the inclusion of every possible variable occurs, the greater the r square, suggesting such an approach would be neither economically efficient nor practically feasible (Pan & Zhu, 1999). Moreover, in the demand equations, unnecessary predictors will add noise to the estimation of other quantities that interest us, resulting in a decrease in degree of freedom. Therefore, this study will carefully include important demand variables frequently examined by previous research. More importantly, this study will attempt to capture the effects of the current economic crisis on MLB attendance demand during the 2009 season.

Explanatory variables

Current economic crisis: The mainstream media and Wall Street have reached the consensus that the current economic crisis is the worst since the post-war period (Businesswire.com, 2009). To measure the effect of the current economic crisis on MLB attendance demand, the difference in monthly unemployment rates between 2008 and 2009 in cities will be used as an indicator. Obviously, the unemployment rate is important as a gauge of the local economy’s growth rate. Also, the unemployment rate is frequently used by the Federal Reserve and investors to determine the health of the economy (Amadeo, 2009). Thus, as an indicator of the current economic crisis, difference of monthly unemployment rate between 2008 and 2009 will be used.

Population: To assess the impact of market size on attendance in the United States, the population of the Consolidated Metropolitan Statistical Area (CMSA or MSA) reported by the U.S. Census Bureau has been widely used to represent a population variable in demand equations. However, large size MSA populations do not reflect distance-related concerns. For example, the MSA population of Chicago includes residents of Illinois, Indiana, and Wisconsin (Meehan, Nelson, & Richardson, 2007). If a Chicago Cubs fan who lives in Indiana wants to go to Wrigley Field, he or she would have to drive four hours to attend a game. Thus, in order to pinpoint a specific population effect, population of the home city where the team plays will be used.

Fan income: Similar to the effect of population, it is common in the literature on attendance demand to include fan income, usually termed income per capita. However, the use of income per capita in terms of the MSA population may raise similar issues discussed with the population variable. Therefore, as Pan and Zhu (1999) recommended, income mean household indicating the total number of household units at income mean of the city, and income level household indicating the number of households at different income levels will be measured to better reflecting the effect of fan income on attendance demand.

Team performance: A number of demand studies have demonstrated the effect of team quality expressed as team performance on attendance demand. There are various variables assessing team performance in the previous literature: 1) current season’s winning percentage, 2) last season’s winning percentage or appearance in the playoffs.
or the championships, and 3) opponent’s current winning percentage. Thus, in this study, all three variables will be used to measure the effects of team performance on attendance demand.

Competitive balance (playoff uncertainty): The measure of the playoff uncertainty captures how likely the team is to advance to the playoffs or wildcard in MLB. This measure assumes where a game is significant in determining promotion or relegation, or for participation in the playoffs or a wildcard race, then fans are more attracted, resulting in higher attendance (Borland & Macdonald, 2003; Fort, 2006; Simmons, 2006; Soebing, 2008). Playoff uncertainty is widely measured by games behind the division leader in contention for playoff qualification (Baade & Tiehen, 1990; Butler, 2002; Canes, 1974; Demmert, 1973; Domazlicky & Kerr, 1990; Hill et al., 1982; Hunt & Lewis, 1976; Meehan et al., 2007; Noll, 1974; Schmidt & Berri, 2004; Simmons, 2006).

Competing substitutes: The number of sports franchises in a city reflects the scope of alternative sporting events available to residents of the city, as well as visitors (Coates & Humphreys, 2005; Noll, 1974). To measure the effects of competing substitutes, we will use the number of other major sports teams in a city.

Star player: To assess the popularity of a star player, the number of star players who were on the MLB All-Star team roster for the 2008 and 2009 seasons will be used as an indicator. The number of the All-Star team roster for the 2008 season will be coded for the games before the 2009 All-Star game while the number of the All-Star team roster for the 2009 season will be coded after the 2009 All-Star game.

We will use secondary data, including each team’s game-by-game attendance as a dependent variable and the explanatory factors affecting team attendance discussed above. The data will be collected from multiple resources, such as ESPN.com, for each team’s game-by-game attendance, winning percentage, and the number of competing substitutes, http://www.retrosheet.org for the games behind the division leader, and www.city-data.com for a city’s population, income level, and unemployment rate. For data analysis, ordinary least squares (OLS) will be conducted since OLS is the most widely used econometric technique for estimating the attendance demand function in sports economics literature (Feehan, 2006).