The Impact of Capital Improvements to Football Facilities on Revenue in FBS Institutions

J. Patrick Marsh, Baylor University
G. Matthew Robinson, Baylor University
Jorge A. Carmona, Baylor University
Jeffrey C. Petersen (Advisor), Baylor University

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The meaning of the phrase “the value of college athletics” has evolved from referring to the intangible benefits one might receive from participating, such as discipline, character, or mental toughness. As collegiate athletics embraces a more business oriented ethos, “value” now invokes thoughts associated with the significant commercial endeavor of collegiate sports at American universities. The majority of NCAA Division I institutions are operating with athletic budgets in excess of $10M, with some exceeding $100M (Fulks, 2010), and it has been suggested that the NCAA is organized in such a manner as to maximize the economic value of sports for its membership (Maxcy, 2013). Even during a time of economic recession, university athletic departments are building larger, higher quality, state-of-the-art facilities at significant rates (Bennett, 2012). The stated reasons for these facility projects vary. Many college administrators view athletics as the “front porch” of the institution, and it has been argued that investing in collegiate athletics leads to increased success in competition. Athletic success carries benefits of increased publicity, enhanced pride, and more valued campus community (Maxcy & Larson, 2015). As collegiate sports trend toward a business orientation, universities face challenges of managing operating budgets and maximizing revenue, and it has been suggested that the economic driver in the collegiate athletic facility boom is consumer demand (Goff, 2014). In order to keep up with the increasing demand for top level college football tickets and capitalize on potential revenue, many universities are adding extra seats and more amenities to their stadiums. The question for athletic and university administrators is how to determine the appropriate size and scope of a capital project in order to maximize the return on investment.

Capital budgeting theory and practice show that one of the most effective ways to estimate and control the rate of return on large capital investments is through the use of established industry standards. This is a process known as benchmarking. One of the most commonly used benchmarks for the evaluation of capital projects is the Internal Rate of Return (IRR) (Roberts & Schermer, 2011). IRR is a metric used to measure the profitability of potential investments and can be thought of as the rate of growth a project is expected to generate (Remer & Nieto, 1995). The annual revenues of NCAA Division I athletic programs are consistently increasing (Fulks, 2010). In order to begin benchmarking IRR in college athletic facilities, we must first determine if there are different rates of growth between institutions having completed capital projects and institutions that have not.

The population for this study was NCAA Division I Football Bowl Subdivision institutions spanning from the 2003-2004 to the 2010-2011 academic year. Schools joining or withdrawing from the subdivision during the time of the study were excluded. Of the 117 FBS institutions for possible inclusion, ten were removed from the study pool due to their competing in a non-university owned football stadium. Additionally, the United States service academies were removed from the study due to not reporting financial data. The final sample pool consisted of 104 institutions.

The study utilized a nonequivalent control group design (Campbell & Stanley, 1963). All institutions within the population were examined to determine if they had conducted football stadium construction or renovation projects at a cost of at least $10M during study time frame. The determination of the construction and renovation projects was made through content analysis of official university websites and media reports of stadium construction projects. This delimitation resulted in 36 institutions identified as having completed projects exceeding $10M. A corresponding control group of institutions not completing construction projects within five years before or after of the time in question were identified and assigned a year for study to correspond with the years in which institutions in the sample completed construction projects. For example, if an institution completed a construction project in 2005, an institution having not completed a construction project from 2000-2010 was assigned the year 2005 for corresponding data collection. A control group of 33 institutions were identified as having not completed a
construction project resulting in a total sample size of 69 institutions. Football revenue data were collected for each of the institutions using the United States Department of Education’s Equity in Athletics Data Analysis Cutting Tool (United States DOE, 2016). Data for each institution were collected for a seven-year period encompassing the three years prior to the project, the year of the project, and the three years after the project. All dollar amounts were then adjusted for inflation by conversion to 2014 dollars using the United States Department of Labor’s Consumer Price Index Inflation Calculator (United States DOL, 2016).

A linear regression AIC model was calculated to predict an institution’s football revenue for each of the three years after the year of study based on the presence of a construction project and the previous four to six years of football revenues. A significant regression equation was found for each year of study. The regression model for the third year after the year of project completion was most noteworthy ($F (3, 60) = 415.639, p < 0.05$), with an $R^2 = 0.954$. The predicted football revenue three years after the year of study was equal to $23.725 + 3.812 \text{ (Project)} + 1.066 \text{ (Previous Revenue)}$, where the presence of a construction project was coded as $1 = \text{Yes}, 0 = \text{No}$, and revenues were measured in millions of dollars. The previous six years of football revenue predicted an increase of $1,066,000$ in football revenue and the presence of a construction project predicted an increase of $3,812,000$ in football revenue three years after project completion.

This study demonstrated a significant increase in football revenue associated with completing a football stadium construction project. This study also showed that this increase was independent from the general increases in revenues experienced by NCAA Division I FBS institutions as a whole and independent from inflation. The ability to separate the growth in football revenue associated with major construction projects from other sources of growth will allow researchers to begin evaluating and benchmarking IRR for these construction projects. This benchmarking has tremendous potential impact on the capital project decision making process by allowing administrators to more accurately predict the financial returns from a capital project based upon the project scope and cost. The IRR benchmarking of capital projects will enhance administrators’ ability to make the most informed decision possible when making multi-million dollar decisions.