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Evaluations of minor league baseball stadiums

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Evaluations of minor league baseball stadiums

by

Steven William Michael

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degrees of
MASTER OF COMMUNITY AND REGIONAL PLANNING
MASTER OF PUBLIC ADMINISTRATION

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Program of Study Committee:
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Iowa State University

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Chapter One

Introduction

The decision whether or not stadiums should be financed and built by a community has become a hotly debated issue over the last thirty years. With dwindling capital expenditures, each local project has to be made with a critical look at its overall potential impact to the community (Baade & Dye, 1988). Until the 1960's, stadium projects had been privately financed nationwide. However, as sports began to gain more of a stronghold on the American heart and mind, cities began to compete against each other to bring in a sports franchise. This competition led to more and more communities having to finance sports stadiums in order to retain or bring in a sports franchise.

The debate whether or not to finance a stadium project first really reached its boiling point in the 1980's when cities such as Miami, Cleveland, and San Francisco failed to pass an additional tax levy to get their stadiums built (Baade & Dye, 1988). It was a clear case of taxpayers concluding that a stadium wasn't worth the delay of other needed projects (Baade & Dye, 1988). The issue of financing sports stadiums persists. Owners continue to use a city's desire for a team to get the best possible deal available for their franchise (Dunn, 1996).

Many authors have written on the subject following the failure of those cities that did not get their stadium projects passed. Much of this work focused on Major League stadiums and the cities that are associated with them. Common rationales that have been used to build these stadiums include (Rosentraub & Swindell, 1998):

- Ability to generate economic growth due to new spending

- Creation of new jobs
- Revitalization tool for a city
- Helpful tool to rework land use patterns

While Major League stadiums have been looked at mostly, Minor League stadiums have been largely overlooked. For any given Major League sport, excluding football, there are considerably more Minor League teams than their Major League counterparts. It can easily be argued that a Major League team plays an important role in a city (Baade & Dye, 1990). However, it can also be argued that although Major League teams play an important role within a city, a franchise is typically just one of many other available entertainment options (Santo, 1995). In Minor League communities, the size, population, and available entertainment options for each individual city are traditionally much smaller.

For small communities, the economic impact of a sports stadium can help make or break their community's future. The desire of a community to fund a new stadium rests on the belief that the project will help spark the local economy (Chapin, 1999). This spark traditionally can be reflected in the form of new restaurants and retail stores, which can potentially revitalize an urban area (Chapin, 1999).

The direct and indirect benefits and costs of a new stadium investment are analyzed to determine its economic feasibility. Direct benefits can include things such as income from rent, concessions, parking, advertising, suite rental, and personal seat license (PSL) (Baade & Dye, 1990). Indirect benefits are significantly more difficult to determine and focus more on the impact of a stadium located in a community (Baade & Dye, 1990). An example of an indirect benefit would be what the presence of a sports franchise means to the people in the city.

Purpose of the Study

The purpose of this study is to examine how the economic impacts of sports stadiums have previously been evaluated. The study will be focused on the development of a methodology for evaluating Minor League Baseball stadiums. Minor League Baseball is an area of sport research that has previously been overlooked. In addition, by focusing on one sport, rather than on the entire sports field, it is possible to produce a sport-specific evaluation methodology.

This study will begin with a look into previous sport stadium evaluation studies. It will follow with a critique of the methods from the previous evaluations. Numerous evaluations have been produced with both adaptations from some of the original evaluations on a stadium's economic impact, along with work that tended to evaluate new areas of study. A methodology may be found that can aid small communities in evaluating how the construction of a stadium may impact their community. The ultimate goal of this process is to develop a clear methodology from previous works that can be utilized by a community that is considering a stadium project. Development of this methodology is crucial for a small community, with limited resources, that has to decide between one project over another.

Methodology of the Study

The methodology offered by this study will be composed of an analysis of evaluation techniques that have been used over the past few decades. The evaluation centered on the following steps:

1. A historical look at the growth of stadiums and the issues associated with this growth.

2. Study the early evaluations developed to gauge the success or failure of a stadium project.
3. Critique previous methodologies.
4. Based on the critique and previous methodologies, develop a comprehensive evaluation technique.

This will allow for a new approach that will combine previous evaluations in order to offer a more comprehensive approach. This process will allow for this study to distinguish itself from previous works due to its focus and overall approach.

Organization of the Remainder of the study

This study will consist of six chapters. The second chapter offers a literature review, looking first at the growth of stadiums throughout America. This portion will be fairly brief and mostly offer an explanation as to where the industry is today and how it got there. Following this portion, the remainder of the literature review will focus on how the successes of previous projects have been evaluated. This portion of the literature review will begin by looking at the oldest evaluations first and proceed to then look at many follow up studies.

The third chapter will go into great detail looking at the previous methodologies used by some of the predominate researchers in the industry. These methodologies will be looked at chronology and comprehensively. The end result will offer a greater understanding of where previous researchers have looked in their evaluation studies. In addition, it will also offer a look at where studies could potentially go.

In the fourth chapter critiques will be given of the previous works. Critiques are necessary to determine what aspects of previous evaluations are useful for this process. Evaluations that have overlapped are noted in this section. In addition, it is necessary to assess the weaknesses that are present in previous studies in order to have a thorough understanding moving forward. The critiques will also be evaluated based on how well the methods would work for a Minor League evaluation.

The fifth chapter will look at the methodology to evaluate Minor League baseball stadiums. This chapter ultimately will attempt to detail criteria a community could use to evaluate a stadium project. This methodology will be based on the previous evaluation techniques and their critiques. The focus of the proposed methodology will be on Minor League Baseball. The final chapter will offer conclusions, summaries, and recommendations.

Chapter Two

Literature Review

Introduction

This literature review is divided into two sections. The first section provides a background of the history of sports stadiums in the United States. [You should explain here what the second section will address.]

Since the 1950's, sports facilities have been packaged to the public, offering potential for an economic boom, not only for revitalizing their communities, but also for adding new businesses and jobs to their individual communities. Much of the analysis that has been done over the last few decades has been to determine how much economic impact, if any, a new or reconstructed stadium may have on a community. The literature review will look at how the analysis has been done over the last twenty five years. The last twenty five years marks the duration in which most of the key studies have been conducted. This section of the review will move on to focus on the analytical process that has been used. This will be done by reviewing previous studies during the aforementioned period of time, and as a result gaining a better understanding of these approaches. The methodology chosen by each of the authors will point to both their strengths and weaknesses.

The second section of this chapter is dedicated to looking at Minor League Baseball stadiums. Minor League stadiums have largely gone overlooked by researchers in the past, who have instead focused on Major League stadiums. These projects are on a much smaller scale, specifically focusing on Minor League communities and potentially offering greater impacts towards an individual community. While there are few existing analytical studies on Minor

League stadiums, the methodologies, approaches and issues can be extended in some cases as further reference.

History of Stadium Research

The early Baade and Dye (1988) is considered to be important early research into the industry. It examined the benefits that were generated by government subsidized constructed stadiums. These benefits consisted of both the revenues from the investment and their multiplier benefits, including increased income and sales for the area as well as the intangible benefits. The authors used two regression models. Overall, limited positive effects were found in their analysis of stadium projects. Also, the authors used a straight line analysis, assuming that the perceived costs would directly match the perceived benefits in order for the project to be funded. The case study used by the authors is Chicago, Illinois, who at the time of the study, 1988, had built a new stadium for the Chicago White Sox baseball team. Multiplier effects used included expanded incomes and retail sales. Baade and Dye mentioned that the issue was trying to figure out if the spending represented new rounds of spending or money spent elsewhere within the community. A third step in the Baade and Dye study was to take into account the new businesses attracted to the area. This is the big league city benefit argument that has been talked about in many works. The idea is that cities have to retain and find more new businesses in order to have positive economic impacts. Three variables were used as the dependent variables in this study, manufacturing employment, manufacturing value added and new capital expenditures. The data was collected from the Annual Survey of Manufactures. A dummy variable is used for a new stadium, a National Football league team or a Major League Baseball team. Little correlation was found to provide evidence that the manufacturing industry was increased after stadium construction.

Baade and Dye (1990) introduced a new methodology to evaluate stadium decisions. Most other works have utilized the methodology provided by Baade and Dye's 1988 and 1990 articles and essentially critiqued and reworked their initial models. In this second investigation, Baade and Dye focused more on possible multiplier effects that were looked into only briefly in their first article. Alternative impacts were looked at in detail in this study. They cautioned that cities should not assume that large economic impacts will be created when a stadium was constructed (Baade and Dye, 1990). The two key questions of this study were, does the new stadium account for an increase in a city's economic activity, and does a new stadium increase the municipality's share of regional economic activity? The strength of this article, unlike the authors' previous work, is that it is much more focused in its approach to determine indirect benefits. In addition, this article looked at the periods of times that jobs were created by a stadium project (Baade & Dye, 1990). This includes jobs that were seasonal in nature, such as vendors, and jobs that were created for only a short period, such as construction jobs. The authors use very little data in their explanations and rely heavily on assumptions. A regression equation is produced to find the stadium effects on the Metropolitan Statistical Area (MSA) aggregate income, spending, and development. Income statistics were regressed on independent variables that were designed to capture the community's character of the metropolitan area's economy both before and after the new stadium. Where the revenues generated by the stadium are spent, whether the money is exported elsewhere or spent within the city is a critical aspect of a community's economic impact. Gaining a further understanding of where the revenues are spent is an important justification for building a stadium (Baade & Dye, 1990). The regression equation produced was manufactured to capture the economic value a stadium offers a community (Baade & Dye, 1990). For the majority of the cities studied, new stadiums were

found to provide little to no additional economic impact (Baade & Dye, 1990). This means that nearly as much new money that came into the community was found to also leak out of the community.

Rosentraub and Swindell (1998) looked at communities that invest in facility projects. Their article reviewed the economic benefits created from the construction of a stadium and analyzed the intangible effects. An example of an intangible effect studied by the authors was what a team's presence means to people in a community. One of the keys of this article is the close attention that is given towards intangible effects, something that had been overlooked previously. In addition, the authors looked at how these projects are invested in; i.e., who pays the bill. A large portion of this article was based on a study done in Indianapolis where fifteen hundred residents were polled to measure the intangible benefits, and to identify who receives them. Another interesting conclusion found in this article is the identification of professional sports not being a public good. It was instead considered as a packaged good that includes many things. Additionally, looking at issues through polling information helped the authors discover information such as who did and didn't attend games (Rosentraub & Swindell, 1998). By determining an individual's use value the authors were able to gain a better understanding about who should and who shouldn't be taxed, leading towards conclusions about the potential ways to finance a project. An example would be financing the construction of a stadium through game event taxes (Rosentraub & Swindell, 1998).

Coates and Humphreys (2000) followed a different approach than some of the previous articles. It should be noted that many of the initial studies and statistics of stadium projects proposed were offered by the teams themselves. Hence the individuals who are trying to convince city decision makers of the desirability of building a stadium are the same ones who are

putting the data together. The authors conducted their research throughout their article to assess the flaws of Advocacy planning and management (Coates & Humphreys, 2000). The Maryland example was used to show the issues that can be produced when multiplier effects are needed in order to prove the worth of a project (Coates & Humphreys, 2000). Another key difference in this article was Coates and Humphreys' ability to show that an investment in a stadium project is not a simple tax issue but an investment in real capital (2000). This is different in many respects from previous works. Coates and Humphreys' point is to not look at the overall amount coming back to a community but look at the investment in comparison to alternative investment strategies (2000). Coates and Humphrey's were arguing that opportunity cost of investing in one project against another needs to be researched by a community. The research done by previous authors, according to the research done in this article, looked for the net effects of a project in comparison to the previous economic statistics of a community as a whole. This article, using all 37 cities that have a major sports franchise, used an econometric scale to determine only the amount of raised income in an area, which the authors determined as the key to deciding if a stadium project offers a positive or negative impact for a city (Coates & Humphreys, 2000). The overall findings showed minimal overall impact (Coates & Humphreys, 2000).

Colclough, Dallenbach, and Sherony (1994) looked at the evaluation techniques used when La Crosse, Wisconsin proposed building a new baseball stadium to attract a Minor League Baseball team (Colcough, Daellenbach, & Sherony, 1994). The authors first explained that when the stadium was first proposed, it was done so by arguing, the economic benefits that would be obtained by building the stadium. The proponents of the stadium suggested that the project would bring an estimated 4.3 million dollars a year to the community (Colcough, Daellenbach, & Sherony, 1994). The estimated economic impact was found using a regional input-output model

based on data collected from the Midwest League general managers. The authors found several issues in the proposed economic impact. The construction of the stadium was found to have a much smaller impact on the local community than the original estimates. Fewer jobs were also found to be created in the community (Colcough, Dallenbach, & Sherony, 1994). Construction impact only occurs for the community one time. The authors found that the overall impact was significantly smaller than the proponents argued amount. A final comment made by the authors mentioned that a more comprehensive analysis would account for entertainment value, community identity and quality of life (Colcough, Dallenbach, & Sherony, 1994).

Santo (2005) concluded that many of the independent studies performed utilized old and outdated data. Santo also argued out that the type of stadium and use of a stadium has changed very much over the last 15 years (2005). Santo decided to look at 19 cities that gained, lost, or built a new stadium from 1984 to 2001. Another aspect that Santo looked at differently than previous studies is the difference between a stadium being located within the Central Business District (CBD) or in other areas within the Metropolitan Statistic Area (MSA) (Santo, 2005). Santo focused somewhat on the connections between a city's stadium and the community. Eight of the nineteen metro areas had a positively related relationship in terms of the regional income share (Santo, 2005).

Santos first reevaluated the Baade and Dye (1988, 1990) articles. He then reworked the methodology based on the basis of the new data and information. Baade and Dye used two regression models. Santo declared that the regression models used were designed to show a straightforward test that sports-related spending and the multiplier effects would lead to increased metropolitan area income (Santo, 2005). Santo's research design started where Baade and Dye left off, and extended Baade and Dye's study from 1984 to 1996 to 2001 (Santo, 2005).

Older stadium projects were excluded and the focus was put on stadiums built from 1996 to 2001 (Santo, 2005). Santo's research also used more than double the previous number of cases that the Baade and Dye study used (Santo, 2005). Unlike the previous studies, Santo looked at cases where teams were relocated or where expansion did occur. This gave an indication of both the impact of a team coming into a community and a team leaving a community. The other indicator used was the separation of baseball and football stadiums (Santo, 2005). Baade and Dye's previous work set both football and baseball stadiums as "Multipurpose" stadiums (Santo, 2005). Santo's results differed from Baade and Dye when he found that nearly half of the cities studied had at least some economic impact as a result of constructing the stadium (Santo, 2005).

Literature Review's meaning towards Minor League stadiums

Baade and Dye looked at things laterally, leaving out many aspects that later studies would touch on. No issue, however, is that clear cut that it can be looked at in a straight line. Some of the other studies looked at only one variable. Rosentraub and Swindell (1998) decided to focus their research on a survey. An issue with the authors' research is that it was focused only on one city. The city researched, Indianapolis, also happens to be a city that is fairly steep in sports tradition, which will potentially give greater results than another city that is less steeped in sports tradition. Funding seems to be an issue that was not been touched on enough. Baade and Dye (1988, 1990) ignored this effect and it seems as though many of the other studies did as well. Most of the methodologies developed after Baade and Dye (1988) used the same type of equations that Baade and Dye used, but added other variables in certain points of contention.

A potential change in the overall system is the fact that Minor Leagues haven't been looked at as heavily. The multiplier alone would be different in this case because Minor League

communities tend to be smaller. Most studies used all types of sports facilities as a case study. This causes a bit of an issue for a study focusing on a single use stadium. It is odd that none of the studies have really tried to separate the two. Hockey and basketball arenas can be used more as multipurpose buildings allowing for the community to use the facility for things like concerts and other venues. Football stadiums, particularly outdoor ones, are more commonly used for only one real purpose, to play football. A multipurpose Football and baseball stadium can also cause different effects than a sole baseball or football stadium. The issue is which type of stadium has the greater impact and how much of an impact. This is something that should be looked into a much greater detail.

Rosentraub and Swindell (1998) looked at a sport stadium in comparison to other entertainment venues. Is a community better off with a sports stadium or a new museum? It's a difficult question to answer, but perhaps a qualitative approach here, similar to what was done in Indianapolis is the answer to this issue. Another difficulty is that the authors approach their methodology differently. Similar data sets were used throughout the studies, but the manner the authors went about their research directed the results differently. The methodologies that were the most productive looked at the outside issues. Instead of trying to further look at the same statistics, these works expanded upon the original work of authors like Baade and Dye.

At the same time, there was little that focused on the Minor Leagues. There have been some articles and papers written, however, where most were pretty limited and didn't really find a way to better understand the multiplier effects. In addition, what does exist, commonly uses Baade and Dye's (1988, 1990) original work instead of attempting to draw from newer information.

A few case studies, such as Coates and Humphreys (2001), attempted to take their research to other areas within the same field of research. To make the most comprehensive analysis, it is important to look at the opportunity costs, or what a community has to give up in order to construct a stadium. Not only does this mean looking at financial analysis, but also looking at what other options the community may have. Baade and Dye's model has been used time and again, but reviewing what variables are included is important to the success of this research. The key issue is trying to find the focus between all of the literature.

Most of the variables that must be looked at are those laid out by Baade and Dye (1988, 1990). These variables are revenue created, the multiplier benefits as far as increased income and sales for the area and intangible benefits. Additionally, stadium location, tourism affects, social impacts and community interest are other variables that help determine the overall impact (Coates and Humphreys, 2000). These variables are much more complicated to evaluate, but they may be important to understanding the overall impact.

Chapter Three

Methodology Approaches

The methodologies used by various authors over the years has varied a great deal and led to contrasting results. Promotional studies put together by consulting firms have commonly used regional input-output data that has typically lead to inflated economic benefits (Siegfried & Zimbalist, 2000). This look at methodological approaches will focus on the growth and changes in methodologies used by independent researchers.

An Analysis of the Economic Rationale for Public Subsidization of Sports Stadiums

(Baade & Dye, 1988)

- a. This methodological approach was formulated by Baade and Dye to look at the benefits cities were receiving from the construction of sports facilities throughout the United States (Baade & Dye, 1988). This initial work became the blueprint that other authors would use in the coming years to analyze the success or failure of a sports facility.
- b. The authors of this article broke down their rationale for the support of stadium construction into four segments:
 - i. **Direct Municipal Revenues**
 1. The direct municipal revenues looked at the entertainment income that was directly generated by the stadium. The findings were that

direct revenues only helped pay back a small portion of the projects overall costs (Baade & Dye, 1988).

2. The analysis takes into account stadium upkeep cost and the cost of debt service.
3. It was found that a stadium can generate enough revenue in most cases to cover operating costs, but not enough to cover capital costs, such as the cost of construction (Baade & Dye, 1988).
4. Baade and Dye found that in Cook County, Illinois, commercial sports only accounted for .0136% of service income (Baade & Dye, 1988). This meant that wages earned at sports facilities in Cook County, Illinois only represented .0136% of the total earnings in the county. The authors also found that commercial sports and entertainment accounted for 0.24% and 0.41% of personal income in Cook County. These numbers illustrate why communities are so concerned about putting 5% to 10% of their budget towards a stadium project (Baade & Dye, 1988).

ii. Multiplier Benefits

1. Multiplier or indirect benefits are described as the benefits a city receives in the form of new revenue from taxing expanded retail sales and expanded incomes (Baade & Dye, 1988).

2. The authors introduced the question of whether the spending generated by the stadium is new spending or a reallocation of money (Baade & Dye, 1988). Money that had been spent at a local shop or a movie may have been spent instead towards a ticket to a baseball game. This means that a portion of the money generated at the baseball park is not new spending.

iii. Business Attraction

1. The idea of a “big league” city was introduced. A “big league” city is the concept that a sports franchise can help a city attract other businesses and improve its overall image (Baade & Dye, 1988).
2. The authors decided to focus on if manufacturing-service industry had been constructed in a city as a result of stadium construction. Three variables were used to gauge including (Baade & Dye, 1988):
 - a. Manufacturing employment
 - b. Manufacturing value added
 - c. New capital expenditures
3. No positive correlation was found between a stadium and newly generated economic activity (Baade & Dye, 1988).

iv. Intangibles

1. Intangibles in this study were characterized as both “measurable and immeasurable” benefits (Baade & Dye, 1988).
2. Immeasurable benefits included the identification of fans, civic pride, and public-good benefits.
3. Measurable benefits included events brought to the city, national exposure, and media exposure.

Conclusions to Baade and Dye (1988)

The article ultimately found that the measurable intangible benefits were relatively small (Baade & Dye, 1988). The authors found that public image was difficult to place a value on in monetary terms, thus making it difficult to accurately calculate the complete economic benefit of a stadium. Indirect spending, in the form of new or increased spending, was found to have limited impact (Baade & Dye, 1988). The authors’ final conclusion is that intangible benefits should be argued, rather than direct or indirect benefits, due to the lack of overall impact found in either category (Baade & Dye, 1988).

The impact of stadiums and professional sports on metropolitan area development (Baade & Dye, 1990)

The authors of the 1988 article followed up their initial work in 1990. This follow up study focused on the potential impact of a stadium and professional sports teams (Baade & Dye, 1990). The analysis was done by developing a regression equation. In this article, the authors decided to focus more on the analysis of indirect benefits than they had in their previous article. A Metropolitan Statistical Area (MSA) was used as the data source to conduct their research.

While still arguing that the impacts created through direct revenue alone doesn't warrant the building of a stadium, the authors instead attempted to use indirect benefits as the key justification for the project (Baade & Dye, 1990). The indirect benefits created are the new spending produced by the stadium (Baade & Dye, 1990). An important factor in determining the impact of those indirect benefits is where this money is spent, locally or elsewhere, and how it is spent, exports or imports (Baade & Dye, 1990).

The regression model produced by Baade and Dye was used to evaluate the overall impact a stadium might have on Standard Metropolitan Statistical Area (SMSA) aggregate income, spending, and development, which were determined to be the best measures of economic activity (Baade & Dye, 1990). The SMSA statistics developed allowed the authors to paint a picture of the community's economy both before and after the stadium was constructed (Baade & Dye, 1990). The authors attempted to minimize bias by making both the population and time variables be controlled (Baade & Dye, 1990). The decision to make the population variable a control was due to its ability to explain a large fraction of changes in income (Baade & Dye, 1990). Time was chosen as the other control variable in order to account for omitted variables (Baade & Dye, 1990). The two-part equation goes as follows:

Equation 1

$$Y_i = b_0 + b_1 \text{POP}_i + b_2 \text{STAD}_i + b_3 \text{FOOT}_i + b_4 \text{BASE}_i + b_5 \text{TREND}_i + e_i, \text{ where:}$$

Y_i = the i th SMSA's real aggregate personal income

POP_i = the i th SMSA's population

$STAD_i$ = a dummy variable which assumes a 0 value before the i th SMSA renovates an old stadium or builds a new stadium; the value of 1 is assigned after a stadium is renovated or built

$FOOT_i$ = a dummy variable which assumes a 0 value if the i th SMSA does not have a professional football team in a given period; the value 1 is assigned if it does

$BASE_i$ = a dummy variable which assumes a 0 value if the i th SMSA does not have a professional baseball team in a given period; the value 1 is assigned if it does

$TREND$ = a variable assigned a value of 1 for 1965 and going up to 19 for 1983

e_i = stochastic error

Equation 2

$Y_i/YR_i = b_0 + b_1(POP_i/POPR_i) + b_2STAD_i + b_3FOOT_i + b_4BASE_i + b_5TREND + e_i$, where:

Y_i/YR_i = the fraction of real aggregate personal income in the appropriate multi-state region represented by the i th SMSA

$POP_i/POPR_i$ = the fraction of regional population represented by the i th SMSA

Conclusions Baade and Dye (1990)

The results showed that the stadium impact on the level of personal income (for the MSAs studied) was insignificant (Baade & Dye, 1988). The lack of significant impact was found in both professional baseball and football (Baade & Dye, 1990). The authors noted that baseball franchises were found to have a positive impact on area income, whereas football stadiums were

found to have a negative impact (Baade & Dye, 1990). This was attributed to the amount of home games in a baseball season compared to the amount of home games in a football season (Baade & Dye, 1990).

Stadiums, Professional Sports, and Economic Development: Assessing the Reality (Baade, 1994)

Baade followed up his previous work by developing an economic theory and empirical techniques to assess the role professional sports has in the development of a city (Baade, 1994). Three types of impacts are said to be sources of economic benefits: direct expenditures, indirect expenditures and psychological benefits (Baade, 1994). Direct expenditures include any money spent by the team, its staff or the customers attending the game (Baade, 1994). Indirect expenditures are the process of money being put back into the community through further rounds of spending (Baade, 1994). Psychological benefits are related to quality of life matters (Baade, 1994). An example of a psychological benefit is television coverage of a team helps bring new attention to the city (Baade, 1994).

Unlike the previous methodologies, opportunity cost is looked into here. Baade describes the opportunity cost as the value of the best of the other subsidy options for possible projects (Baade, 1994). This introduction to opportunity cost is particularly important because the previous studies did not note that building a stadium comes at the cost of building or financing other projects.

Baade followed the introduction of opportunity cost by then taking a look at how stadiums' economic impacts had previously been tested. The first model looked at is the Standard Model, which uses expenditure and multiplier estimates to determine the value of sports-based

development strategies (Baade, 1994). A major issue with this type of traditional analysis is that all types of spending was classified as new spending, thus the analysis can greatly overstate a stadium's contribution.

Due to the issues with the traditional model, Baade concluded that an empirical comparison of the before and after profiles is the ideal way to study a community. The empirical comparison would be the second model Baade would introduce. In essence, Baade is providing a more detailed rationale for the methodology that his previous studies have used, while also providing further details. Baade's model was designed to provide some evidence as to whether the stadium increased the economic activity or just helped move the economic activity from one area of the city to another (Baade, 1994). Like the previous studies, MSAs were used and stadiums that were less than ten years old were chosen.

Conclusions to Baade (1994)

In this article, Baade found little statistically significant evidence that stadiums boost economic activity (Baade, 1994). 30 of the 32 MSAs studied showed no significant growth in per capita personal income growth (Baade, 1994). A potential objection to Baade's methodology is that the model he developed does not adequately capture growth in personal income numbers (Baade, 1994). Baade argued that, while the model does not capture personal income growth, the methodology developed does accurately measure real income growth (Baade, 1994). The article also focused only on economic growth after the stadium was constructed. The community may have also achieved some economic growth during the stadium construction period (Baade, 1994).

Professional sports as catalysts for metropolitan economic development (Baade, 1996)

Baade developed and published this article as a follow-up to his 1994 article. The 1996 article looked at whether or not sports franchise help increase income and create jobs in cities (Baade, 1996). Again, MSAs were used as a data source. Two equations were developed to gain a better understanding on a stadiums effect on both income and jobs. Equation 1 was developed to gain a better understanding of the empirical results and equation 2 was developed to determine the stadiums' effects on jobs.

Equation 1

$$(y_{i,t} - \sum y_{j,t} / k) - (y_{i,t-1} - \sum y_{j,t-1} / k) = \beta_0 + \beta_1 NT_{i,t} + \beta_2 NS_t + e_t, \text{ where:}$$

$Y_{i,t}$ = real per capita income in city i at time t

k = number of cities in the sample

n = number of years in the sample

$NS_{i,t}$ = number of stadiums less than 10 years old in city i at time t

$NT_{i,t}$ = number of professional sports franchises at time t

e_t = stochastic error

Equation 2

$$CE_{i,t} ISE_{j,t} = \beta_0 + \beta_1 CRPCY_{i,t} + \beta_2 ISRCPCY_{j,t} + \beta_3 CAWW_{i,t} + \beta_4 ISAWW_{j,t} + \beta_5 CPOP_{i,t} / SPOP_{j,t} + \beta_6 NT_t + \beta_7 NS_t + \beta_8 TREND + e_t$$

Where:

$CE_{i,t} ISE_{j,t}$ = city i 's share of state employment in the amusement and recreation

industry (SIC 79) or the commercial sports industry (SIC 794) at time t

$CRPCY_{i,t}/ISRPCPY_{j,t}$ = ratio of city i 's real per capita personal income to state j 's at time t

$CPOP_{i,t}/ISPOP_{j,t}$ = city i 's share of state population at time t

$CAWW_{i,t}/ISAWW_{j,t}$ = ratio of average hours worked per week in the durable goods sector in the city relative to the state at time t

NT_i = number of professional sports teams in city i at time t

NS_i = number of new stadiums in city i at time t

TREND= variable assigned a value of 1 for the first observation and numbered consecutively for each observation thereafter

e_i = stochastic error

Conclusions to Baade (1996)

None of the 35 cities studied that had built a stadium showed a positive correlation for real per capita income growth (Baade, 1996). Baade further found that the economic impact in terms of real dollars would not be significant in a large city (Baade, 1996). It was also found that the construction of a stadium does not mean a significant amount of jobs will also be created (Baade, 1996). The author concluded from the results that stadiums do not add economic activity to communities, but realign it (Baade, 1996).

The Economics of Sports Facilities and Their Communities (Siegfried and Zimbalist, 2000)

Siegfried and Zimbalist attempted to follow up on the work done by Baade in the previous decade by taking a closer look at some of the indirect measures. The first measure looked at is the substitution effect. The substitution effect is the rearranging of spending and economic activity within a community (Siegfried and Zimbalist, 2000). Instead of a family spending their money going to a movie, they could instead spend it by going to a baseball game. By making this choice, the family would be substituting where they spent their money within a community. The second measure discussed is the multiplier effect. Siegfried and Zimbalist instituted a new multiplier that combined both leakages and new spending (Siegfried and Zimbalist, 2000).

$$\text{Sports multiplier} = 1 / [1 - \text{MPC}(1 - \text{MPI})(1 - t)]$$

In this equation, MPC is the marginal propensity to consume. MPI is the marginal propensity to import into the local economy. MPI occurs when a group or individual prefers to import a good rather than produce or consume locally (Siegfried and Zimbalist, 2000). An example would be if a sports team would prefer to hire the stadium's vendors from outside of the community. T refers to the marginal tax rate (Siegfried & Zimbalist, 2000). The final two indirect measures include core redevelopment and big league city effect. Once the sports multiplier has been calculated, it then has to be multiplied by the local net value added to the local economy (Siegfried & Zimbalist, 2000).

Conclusions to Siegfried and Zimbalist

The authors concluded that sports facilities should not be counted on as significant contributors to the city's tax base. It is argued that the way a stadium is financed will have a great deal of effect on how successful the stadium may be (Siegfried & Zimbalist, 2000). If the

cost of the stadium project is great and primarily falls on the city, there may be significant budget issues yearly. Other costs include: infrastructure maintenance, incremental sanitation, security expense, probable cost overruns, and facility enhancement (Siegfried & Zimbalist, 2000). Any of these costs can lead a community towards budgetary gaps and cause a lack of services (Siegfried & Zimbalist).

Value of Public Goods from Sports Stadiums: The Contingent valuation Method (CVM) Approach (Johnson & Whitehead, 2000)

Johnson and Whitehead (2000) used the Contingent Valuation Method (CVM) as a method to measure a public good. The authors used civic pride, fan loyalty, and community spirit as examples of public goods produced by a team (Johnson & Whitehead, 2000). Due to the fact that previous studies have had difficulty establishing a cultural significance of a stadium and team to a community, the CVM method was used. The CVM method is most commonly used to measure the value of an environmental public good (Johnson & Whitehead, 2000). The authors used the CVM method to find what the preferences were for a public good by surveying people to find their willingness to pay for a stadium facility compared to another municipal project. The article looked specifically at the value of sports as a public good for those who do not attend games and also the value of public goods generated by sports team for the community as a whole (Johnson & Whitehead, 2000).

The first part of the authors' study centered on the survey. The CVM had to capture both use and nonuse values (Johnson & Whitehead, 2000). A potential nonuse value would be an individual talking about the sports team to his neighbors or friends. Use values are generated by those who actually attend a game. Respondents were first asked how many times they attended a

game last season. This question was followed by asking the respondents how many of them have either talked about or read about the sports team in the last week. Another question that was asked is how important their team is to their lives. Other questions that were asked centered on whether the respondent would pay for an improvement onto the stadium and how much that amount would be. From the data collected the author then created an empirical model to determine if people would be willing to pay for a new stadium.

Conclusions to Johnson and Whitehead

Johnson and Whitehead ultimately concluded that this analysis would have to be taken county wide in order to be effective. However, by rating an individual's willingness to pay, the authors found a way to potentially add to a community's rationale for building a stadium. Nonuse values for the communities analyzed were found to be positive and statistically significant (Johnson & Whitehead, 2000). Demographics were insignificant predictors of an individual's willingness to pay according to the authors (Johnson & Whitehead, 2000).

By determining an individual's willingness to pay, the authors were able to give a rationale for subsidizing a sports facility (Johnson & Whitehead, 2000). It was further argued by the authors that willingness to pay measure should be added to the annual flow of benefits generated by a facility (Johnson & Whitehead, 2000). This process can be estimated by multiplying the mean willingness to pay by the number of households in the community (Johnson & Whitehead, 2000). If the capital value, including the willingness to pay measure, is found to be greater than the project costs, the construction costs may be deemed worthwhile for the community (Johnson & Whitehead, 2000).

The Effect of Professional Sports on Earnings and Employment in the Services and Retail Sectors in US Cities (Coates & Humphreys, 2001)

Coates and Humphreys looked at the effect a stadium may have on the earnings and employment in the service and retail sectors, just as Baade and Dye had done a decade earlier. Unlike previous work, the authors estimated a linear reduced form model for both wages and employment (Coates & Humphreys, 2001). The authors set out to test the null hypothesis that the sports variables, wages and employment, are insignificant (Coates & Humphreys, 2001). If the null hypothesis was rejected, then those in favor of sports-led development would be correct (Coates & Humphreys, 2001). The equation created:

$$Y_{jity} = \beta_j x_{it} + \gamma_j z_{it} + \mu_{jit}, \text{ where:}$$

i = indexes of numbers

t = indexes of time

j = indexes of dependent variables of interest

The authors argued that, unlike the past studies that used simplified measures, their analysis attempted to balance the data that was available with the opinions of proponents for stadiums as an economic tool (Coates & Humphreys, 2001). This type of analysis further promoted the need to pay more attention to intangible benefits related to a team and a community.

The first measure discussed by the authors was how successful the team was in terms of wins and losses (Coates & Humphreys, 2001). The second measure associated with the overall

environment is attendance. Again, the key aspect to this article was a further explanation and understanding of intangible effects.

Conclusions to Coates and Humphreys

The authors found that the null hypothesis cannot be rejected in either retail employment or in wages per employee in eating and drinking establishments (Coates & Humphreys, 2001). Wages per employee in hotel establishments were able to be rejected at the .05% level, but not at the .01% level (Coates & Humphreys, 2001). Based on this evidence, the authors concluded that sports facilities do have statistically significant impact on retail and service industries in the local economy (Coates & Humphreys, 2001). The authors further concluded that since the impact was found on in service industries, sports stadiums impact may be very localized (Coates & Humphreys, 2001). The overall impact for the community was found to be insignificant.

Forecasting the Long-Term Viability of an Enterprise: The Case of a Minor League Baseball Franchise (Yokum, Gonzalez, & Badgett, 2006)

Yokum, Gonzalez, and Badgett decided to focus their work on Minor League Baseball. The goal of their research was to forecast or predict the long term viability of a Minor League Baseball team (Yokum, Gonzalez, & Badgett, 2006). The first thing the authors tested was whether or not attendance is stable or not through a test of market persistence (Yokum, Gonzalez, & Badgett, 2006). The authors then used a Bass model to determine whether the product life cycle is either up or down. Both the Gompertz and logistic curves are then used to forecast the long term viability of the baseball franchise in the community. The final step is to use a logistic regression equation on the cross-sectional data (Yokum, Gonzalez, & Badgett,

2006). The authors argued that these simple methods should be used unless there is substantial evidence “that greater complexity is required” (Yokum, Gonzalez, & Badgett, 2006).

The approach provided a contrast from traditional methodologies used. It is important to note here that the authors are looking at smaller communities with potentially less variables than larger cities. While the authors only looked at attendance, the methods used could potentially be useful to as part of an overall methodology approach.

Conclusions to Yokum, Gonzalez, and Badgett

A Minor League franchise was found to be most viable during the first five or six years (Yokum, Gonzalez, & Badgett, 2006). If attendance fell below 1,000 spectators a game or 40,000 a year, it would be difficult to justify continuing to schedule games (Yokum, Gonzalez, & Badgett, 2006).

The Impact of a Professional Sports Franchise on County Employment and Wages (Jasina & Rotthoff, 2008)

The key aspect of Jasina and Rotthoff’s 2008 article wasn’t a new statistical model, but a change in data used. All of the previous work used the MSA data. Instead of using MSA data, the authors used county wide data in addition to using more detailed SIC industry codes (Jasina & Rotthoff, 2008). The argument made by the authors is that more detailed industry codes along with a better defined area will lead to a more precise measurement of the effects a stadium could potentially have (Jasina & Rotthoff, 2008). Like Coates and Humphreys’ work in 2003 the authors used SIC codes for specific industry codes such as drinking places and eating places. The overall impact of the authors’ research is to get more specific and better defined in order to assure that the data collected and found is worthwhile to the research.

Conclusions to Jasina and Rotthoff

Although a different data source was used, the authors found that their results were consistent with Coates and Humphreys (2003) (Jasina & Rotthoff, 2008). The authors found little significant support that employment and wages increase in any industry (Jasina & Rotthoff, 2008). The authors found that a stadium project could have a positive impact overall on employee income, but not on the individual worker's income (Jasina & Rotthoff, 2008). It is further concluded that jobs are not created by the construction of a stadium, but moved from elsewhere within the community. A stadium was also found to have very little effect on payrolls for any industry (Jasina & Rotthoff, 2008). The authors' conclusions match closely with the results that have preceded their work in the past decades.

Conclusions

There has been a clear line of development from the early methodological approaches to the more modern ones used. Methodologies have become increasingly refined and at times contradict each other. The next chapter will look in depth at some of the weaknesses and strengths of each of these methodologies and what can potentially be taken from them.

Chapter Four

Methodology Critiques

Following the summaries of the various methodologies used of late, it is now necessary to review and critique those strategies. This will allow for strengths and weaknesses to become more obvious. It is also important in this chapter to begin to focus more on what will work best for Minor League Baseball. The critiques offered will be made with a mindset towards a methodology that will fit best for Minor League Baseball. The methodologies will be critiqued in the same order that they were previously listed in chapter three.

An Analysis of the Economic Rationale for Public Subsidization of Sports Stadiums (Baade & Dye,1988)

What should be taken from this article is a basic outline of the areas that bring in revenue:

- I. Direct Municipal Revenues
- II. Indirect Benefits
- III. Business Attraction
- IV. Intangibles

For a Minor League methodology approach, some of these measures are more useful than others. Business attraction in the Baade and Dye article was focused on the amount of manufacturing companies that were brought in as a result (1988). For a Minor League stadium, this may be emphasized less due to the smaller scale of the stadium project. Another measure the authors detailed was the improvement of the community's image as a result of having the team. Minor

League franchises will not have the same name value as a Major League team (Baade & Dye, 1988). Additionally, advertisement was brought up as a benefit. Minor League games will likely not be shown on national television like their Major League counterparts. This means that the advertising that is created for the community as a result of the baseball team will likely only be seen locally. Thus advertising becomes less important to Minor League franchises. As a result of some measures having a decreased impact on Minor League communities, direct municipal revenues become increasingly important.

Baade and Dye offered a weak explanation of indirect benefits, something that needed to be further explained and detailed in order for a community to have an understanding of what benefits it should look at and receive. Baade and Dye looked at too few indirect benefits in their initial methodology, which caused the need for so many follow up methodology approaches focusing on the indirect benefits. Authors would later offer a more complete explanation of indirect benefits.

Business attraction can be an area of focus however; it can also be argued that the scale of a Minor League Baseball community is much smaller than a big league city. The type of business attraction looked at by Baade and Dye was manufacturing industry (Baade & Dye, 1988). It can be argued that looking at the business attraction may not be worth focusing on. Later studies focused on service based industry growth, something that may be more useful. While the authors' original concept may not be replicable for Minor League cities, leisure, retail, and service industries can be looked into. Later articles found small increases in these industries. The concept is still useful if the type of industry growth that a study focuses on is adjusted properly.

The final measurable that was looked at was intangibles. Baade and Dye used identification of fans and civic pride as two potential examples of intangible benefits (Baade & Dye, 1988). Again, the issue here is that to design a methodology useful to a community, this measure has to be better defined and an approach has to be created to determine their worth. The authors used a team's success as an intangible. This is measured in terms of wins and losses. For a Minor League franchise, a few more variables may be in play. The appeal of the Major League franchise affiliated with the Minor League team located in the community may play a role in the team's success. A Minor League franchise of the New York Yankees located in the Northwest may have a greater appeal than a Minor League franchise of the Seattle Mariners located in the Northwest. Wins and losses will still play a great role, but the quality of player or star potential of a player on the team will also have a great role in a team's appeal. A Minor League franchise that commonly has the top young players is likely to have an appeal to the fan base.

The impact of stadiums and professional sports on metropolitan area development (Baade & Dye, 1990)

In Baade and Dye's follow-up article, the authors focused on indirect benefits, something that had previously been a weakness in their prior article. Baade and Dye developed their regression model using MSA data (Baade & Dye, 1990). Little focus is given towards the other three measures, discussed in the previous article. Attendance and competition are mentioned, but largely overlooked as part of the equation. The aspect of attendance is focused on in other articles related to Minor League Baseball (Yokum, Gonzalez, & Badgett, 2006). While Major League franchises are able to bring in additional revenue to compensate for low attendance, a

Minor League franchise relies heavily on attendance and needs to achieve a minimal level of attendance yearly (Yokum, Gonzalez, & Badgett, 2006)).

The equation developed by Baade and Dye may be a good methodological approach to determining the overall benefits. The purpose of the equation was to determine the amount of new economic activity that was generated in the community as a result of the stadium construction (Baade & Dye, 1990). This concept can be useful regardless if you are looking at Major or Minor League stadiums. An issue is that the equation may be too complicated for a Minor League facility. Again, the industry focused on in the equation probably needs to be adjusted for Minor League communities. Not a great deal can be taken from this article that already wasn't suggested in the previous article by the same authors. The key from both of these articles and what should be taken is the basic outline of concepts; direct municipal revenues, indirect benefits, business attraction, and intangibles, which should be looked and accounted for.

Stadiums, Professional Sports, and Economic Development: Assessing the Reality (Baade, 1994)

Following the Baade and Dye 1990 article, Baade continued to develop a methodological approach to determine a stadium projects impact on a community (Baade, 1994). It is worth mentioning here that Baade does go through how other methodologies have been developed and their overall weaknesses.

An example of these studies was Edward Shils 1985 estimation that Philadelphia sports franchise contributed at least 500 million dollars to the city's economy (Baade, 1994). Baade does not go into detail explaining how Shils came up with his estimate of \$500 million. Instead, Shils estimate is put alongside Hal Lancaster's estimate that the 1986 Baltimore Colts generated

\$200,000 in economic activity (Baade, 1994). Baade used these estimations to illustrate the disparities that existed in economic estimations. These illustrations were discussed to show the need for an accurate methodological approach. A regression model developed to determine the indirect benefits needs to have consistency. The previous studies have often overlooked or enhanced variables potentially overvaluing how much each may gain.

One of the biggest strengths of this article is that it does detail opportunity cost. Any methodology developed needs to have a section on opportunity cost. For a small community, the cost of producing a stadium comes at the cost of another civic project. This portion should come at the beginning of a methodology. A community needs to decide if building a sports stadium provides itself with the greatest net impact (Baade, 1994). Baade argued that a community's first decision should be an evaluation of whether a community would be better off being taxed for the stadium or not (Baade, 1994). A community also has to weigh the strengths of a stadium project against any other potential project before deciding whether or not to construct the stadium (Baade, 1994).

Professional sports as catalysts for metropolitan economic development (Baade, 1996)

The development of equations to determine the increase of income and jobs created can potentially be very useful (Baade, 1996). The variables have to be looked at and perhaps simplified, but the overall concept is useful under the indirect benefits portion. Baade again used MSA data instead of countywide data. The industry codes used by Baade would have to be simplified and more industry specific to match the needs of a Minor League Baseball methodology. Baade used broad industry codes in this article, something that may not be useful

to a Minor League study. The two equations, however, if tweaked could be very useful in the indirect benefits section.

The Economics of Sports Facilities and Their Communities (Siegfried & Zimbalist, 2000)

Siegfried and Zimbalist centered their article over the development of the sports multiplier. This multiplier is very important piece of the direct benefits part of a methodology. A sports multiplier was developed by the authors to help determine the indirect benefits created by the construction of the stadium (Siegfried & Zimbalist, 2000) The multiplier is fairly simplistic and helps determine how much money is coming in versus how much money is leaving the community (Siegfried & Zimbalist, 2000). This becomes even more significant when you consider that the salaries earned by the players are much less than that of a big league player, thus there is less money being removed from the economy. The multiplier has the same worth that it would for Major League cities. Whether it is a Minor League or Major League city, a community needs to have an understanding of the overall benefits created by the stadium. The multiplier also helps account for a leakage or substitution that may occur.

Value of Public Goods from Sports Stadiums: The CVM Approach (Johnson & Whitehead, 2000)

The CVM approach is extremely useful to an overall methodology for a Minor League Baseball stadium project. By evaluating a community's use values and desire for a franchise, a community can better determine whether the project is worth being built. It will also allow a community to better determine its preferences in relation to other potential projects. If the community is found to heavily value a sports franchise, then the CVM approach helps provide further rationale for building a sports stadium. The value that the CVM approach provides to a

community is important in the overall evaluation process. This is important not only when deciding the psychological benefits a team has to a community, but also when deciding its weight compared to another project. The CVM method should be used in the early stages of a methodology, before benefits should be calculated. By doing so, the CVM method provides an early indicator for what the community values and is interested in.

The Effect of Professional Sports on Earnings and Employment in the Services and Retail Sectors in US Cities (Coates & Humphreys, 2001)

Coates and Humphreys development of their indirect benefit equation fits more closely to a Minor League methodology needed than Baade and Dye's previous equations. Baade and Dye focused on specific industries such as manufacturing to help determine the indirect benefits. The focus of Coates and Humphreys' article was to study employment and earnings for workers in sports related industries (Coates & Humphreys, 2001). These industries include: eating and drinking establishments, hotels and lodging, amusements and recreation, and retail sectors (Coates & Humphreys, 2001). The type of industries detailed by the authors is a closer match to the potential growth that a small community may attract by building a baseball stadium. Coates and Humphreys simplified their indirect benefits by focusing on wages in the retail sector (Coates and Humphreys, 2001).

The equation developed by the authors would fit along side with Siegfried and Zimbalist's sports multiplier equation (2000). Using the Coates and Humphreys' two equations to first find the amount of jobs and wages brought into the area then using the sports multiplier, it would then be possible to determine the actual amount of money that stays into the community versus the amount of money that is brought in. After a community used Coates and Humphreys'

equation to determine the growth in jobs and income in the industries listed above, the multiplier would then be used to figure out what portion of the economic growth would stay in a community. Baade and Dye's equation may be too complicated for a smaller sized community and was developed for larger cities. Coates and Humphreys developed their indirect benefit equation simple enough that it could easily be adapted and added to the sports multiplier equation.

Forecasting the Long-Term Viability of an Enterprise: The Case of a Minor League Baseball Franchise (Yokum, Gonzalez, & Badgett, 2006)

Yokum, Gonzalez, and Badgett produced two linear equations that can be useful when considering the long term viability of a stadium project (Yokum, Gonzalez, & Badgett, 2006). Their equations would allow the community to determine the long term cost/benefits associated with the project. This analysis could go hand and hand with the CVM analysis. Not only would the community get a chance to determine its interest and desire for a team, but an analysis would also be available at the same time determining the long term liability. These two variables should be looked during the early stage of a methodology.

The Impact of a Professional Sports Franchise on County Employment and Wages (Jasina & Rotthoff, 2008)

Jasina and Rotthoff used the same equations developed by Coates and Humphreys (Jasina & Rotthoff, 2008). The main difference is the type of data and codes used. Previous studies had been far too broad. The authors use of SIC codes provided a more industry specific set of data that could produce more valuable results. These codes are very useful when considering a small community and allow for the most accurate data. Using county wide data also may be more

useful to small communities who do not necessarily have a built up downtown region (Jasina & Rothhoff, 2008). Consumers could potentially come from anywhere in the regional, making community wide data a more useful source than the MSA data that had been used.

Conclusions

Through the literature review, review of methodology approaches and critiques of these approaches, it is now possible to develop a methodology that can be used for small baseball communities. It was important to have an understanding of what had previously been done, how it had been developed, and what it found. The following chapter suggests a methodology that may be used for a community wishing to build a Minor League Baseball stadium.

Chapter Five

Proposed Methodology for Minor League Baseball

A great deal of the literature has been written studying Major League stadiums. The potential methodology laid out in this chapter was written to focus on Minor League stadium projects. While many of the authors reviewed in this thesis focused on Major League teams, their concepts, variables, and measures can be used universally. The literature review, methodology review, and critiques can help a community gain a better understanding before the construction of a stadium project.

During the 1990's, 90% of stadium financing was funded by state and local governments. The increase in the percentage of stadium costs taken on by a city makes it increasingly important to have an analytical approach to measure the economic impact of the stadium before the community decides to build a stadium (Johnson & Whitehead, 2000). This chapter will offer an example of an overall methodology that could be followed by a community to conduct a comprehensive analysis of their stadium project. This methodology was formulated on the basis of the needs and circumstances associated with a Minor League Baseball franchise.

The economic impact of a new stadium includes determining the revenues generated by the stadium, the substitution effects, potential leakages, core redevelopment and cultural enrichment (Zimbalist, 2003). Revenue generated by a team is the money directly made by a team (Zimbalist, 2003). An example of revenue generated by a team would be ticket sales. The substitution effect refers to dollars that could be spent on a different entertainment item, such as

going out to eat, that are now spent somewhere else, such as a ticket to a baseball game (Zimbalist, 2003). The term leakage refers to the amount of money that was spent by a working member of the community, such as a baseball player, outside of the community (Zimbalist, 2003). Core redevelopment looks at how the community has redeveloped around the stadium (Zimbalist, 2003). The final term mentioned, cultural enrichment, refers to a stadium and a team's ability to culturally enhance the life of the individuals who live in that community (Zimbalist, 2003).

Direct and Indirect benefit analysis in many communities has produced insignificant or negative economic impact (Shropshire, 1995). Much of this analysis has been based on predictions of the future nature of a project (Shropshire, 1995). Models produced by the contractors building the stadium typically produce results that are, at least to a degree, inflated to the actual results the project produces ultimately (Baade, 1994). In order to be as complete as possible, a mix of various methodologies will be presented, potentially offering ways in which a community can determine a real project value for each of the before mentioned variables.

Revenues generated by a stadium

Revenues generated by the stadium have typically included things like rent, concessions, parking, advertising, suite rental and preferred seating rentals (PSLS) (Baade & Dye, 1990). Direct expenses have included utilities, repairs, maintenance, insurance and debt (Baade & Dye, 1990). Authors have found in the past that direct benefits alone do not match the cost of building a stadium (Baade & Dye, 1988). Further, in a Chicago study, it was found that no person would benefit more than 0.41% of direct personal income (Baade & Dye, 1988). This percentage represents the increase, 0.41%, an individual may say as a result of the stadium being

constructed. However, the yearly budget for the same study found that the stadium took up 5% to 10% of the county budget (Baade & Dye, 1988). A community needs to be aware that the direct benefits alone more than likely will not match the overall costs. By having an idea of the deficit associated, the community can then determine, based first on the direct benefits along with other measures, whether the project comes close to matching the cost. Of course, the projects perceived value to a community also plays a role in the overall decision process.

Substitution Effects

More and more consumers are found to have inflexible leisure budgets due to increased constraints with individual's personal budgets (Siegfried & Zimbalist, 2000). New stadiums have begun to offer a greater array of services (Baade, 1996). More food and entertainment options have been made available within the stadium. This increase in services has only lead to a greater amount of potential revenue being taken away from the local community and instead being spent in the stadium (Baade, 1996). Previous authors have found that sporting events have found that 5% to 20% percent of the consumers at a sporting event are from outside of the metropolitan region (Siegfried & Zimbalist, 2000). If 5% to 20% of the consumers come from outside the region, then it would mean that 80% to 95% of the consumers who attend a sporting event are from within the region. These consumers would not represent new spending, but a redistribution of entertainment spending that was typically spent elsewhere (Siegfried & Zimbalist, 2000). The 5% to 20% of fans from outside the region would represent new spending (Siegfried & Zimbalist, 2000).

A good indicator of new spending would be an increase in hotel rooms occupied or retail sales around the stadium (Coates & Humphreys, 2001). Previous work has found that little

increase in either of those sets of data is likely to take place (Coates & Humphreys, 2001). It is noted that spending by those within the community represent “recycled” money, rather than new money (Crompton, 1995). This type of spending does not offer any new economic impact (Crompton, 1995). Thus, when a community is attempting to determine the substitution effects, it is important to make the determination whether this is new money or simply recycled money. Using city data for local hotels, restaurants and retail shops before and after the stadium can be a good indicator to give a good read on the overall impacts.

The types of data used in the different methods are very important. In the past, many methodologies used MSA data (Jasina & Rotthoff, 2008). It has since been argued that in order to get a more accurate indicator of a sports franchise impact, MSA data may cover too small of an area (Jasina & Rotthoff, 2008). County wide data can be used instead to expand the overall coverage area. County Business Pattern database can be used and retrieved from the US Census Bureau (Jasina & Rotthoff, 2008).

Employment has been used as an indicator whether the spending increase is a substitution or new spending. The concept is that employment will increase in areas most affected by stadium construction (Coates & Humphreys, 2001). The industries and codes focused on for a Minor League team should be, apparel and accessory stores (SIC code 56, NAICS code 448), hotels (SIC code 7011, NAICS code 7211), drinking places (SIC code 5813, NAICS code 7224), eating places (SIC code 5812, NAICS code 722), and liquor stores (SIC code 5921, 4453) (Jasina & Rotthoff, 2008). This data can be used in Coates and Humphreys’s multiplier effects equation, mentioned in chapter three and four, to determine the growth. This type of analytical methodology should offer a more comprehensive approach to determine what the growth potential for the neighborhood is.

Potential Leakages

The construction of a stadium can bring in new income and jobs for labor unions, contractors, property owners, and other parties (Siegfried & Zimbalist, 2000). Stadium projects have been found to be more successful than other subsidy projects in the past (Siegfried & Zimbalist, 2000). Once a team is actually located in a city and a stadium has been built, a leakage becomes a major issue for communities. Over 50% of team revenue goes to player and team officials, while the rest goes to the owner (Siegfried & Zimbalist, 2000). Where the players and team officials spend their money, either in the community or elsewhere, has significant impact on the economic success for a community.

Where this income is spent becomes very important to the overall economic value of a stadium project. If that revenue is spent back in the community, then it benefits the community. However, if that income is being spent elsewhere, then a leakage has occurred. While stadiums attract individuals from outside their metropolitan area, the money generated is typically quickly spent elsewhere (Baade, 1996). This becomes more of an issue when considering that some of the revenue generated may have come from an entertainment dollar that would have been spent at a locally-owned business (Siegfried & Zimbalist, 2000). A sports multiplier was developed with estimated values, that look at both new spending and leakages (Siegfried & Zimbalist, 2000). The values used by the authors were generalized estimates that could be used for any community.

Sports multiplier = $1/[1 - MPC(1 - MPI)(1 - t)]$, where:

- MPC- marginal propensity to consume
 - Value of 2/3 was attached

- MPI- marginal propensity to import goods into the local economy
 - Value of $1/2$ was attached

- T- marginal tax rate
 - Value of $2/5$ was attached

Once the multiplier is established, which in the above example was set at 1.25, the multiplier is then multiplied by the net value added to the local economy (Siegfried & Zimbalist, 2000). This multiplier is necessary and beneficial to help a community determine what percentage of the revenue will stay in the community and become new rounds of spending and what will go elsewhere. Without the use of the multiplier, a community can have inflated expectations. The use of the multiplier is a useful tool to help make the best decision with the most accurate information for a community.

Core Redevelopment

Core redevelopment or redevelopment of the inner city, has often been used as rationale for building a stadium since the 1950's (Zimbalist, 2003). Core redevelopment analysis falls in the same line as determining the substitution effects. By determining the indirect benefits, as mentioned above, you are determining both the new money that comes into a region and its effects on industry and jobs. Many communities have used the idea of new stadium construction to offer hope for the revitalization of the downtown region (Zimbalist, 2003). Using the same type of analysis that was discussed previously by the 2000 Siegfried and Zimbalist article, it is possible to determine what redevelopment has taken place. In addition, the numbers of industries brought into the region directly surrounding the stadium are good indicators of the

overall redevelopment impact of a stadium (Siegfried and Zimbalist, 2000). These indirect benefits are pivotal to determining the overall worth of the project.

Cultural Enrichment

Part of any methodological approach is developing a measure to determine a stadium's cultural significance to a community (Johnson & Whitehead, 2000). While direct and indirect benefits may not match a community's cost for building a stadium, a team's cultural significance to a community can help rationalize a stadium's cost (Johnson & Whitehead, 2000). How great of an effect a stadium has on civic pride has been difficult to evaluate and is a missing factor in many of the previous studies attempting to determine a stadium's worth to a community (Johnson & Whitehead, 2000).

Authors who have investigated this aspect have argued that this measure is not only difficult to determine, but also that it is easy to justify in order to rationalize the building of a stadium (Delaney & Eckstein, 2003). Politicians and coalitions can and will argue that the construction of a stadium offers a means to unite a community better than other community projects such as a new park or library (Delaney & Eckstein, 2003). While these sentiments may be true, it is important to not rely on traditional thoughts regarding stadiums. Instead, a methodological approach needs to be developed to determine a stadium's worth to a community.

The contingent valuation method (CVM) could fit in nicely to determine the public worth of a stadium project. The CVM has typically been used to determine the value of an environmental good; however, it can also be useful in determining individuals' willingness to pay for a stadium project (Johnson & Whitehead, 2000). The CVM methodology proposed by Johnson and Whitehead allows a community to not only determine the extent someone would

attend a game, but also the value to those who do not attend the games and the potential value of the franchise as a public good for a community (Johnson & Whitehead, 2000).

The first step a community needs to take is to develop a survey of randomly selected households within the community (Johnson & Whitehead, 2000). A survey is a good method to help determine a team's cultural worth to a community (Johnson & Whitehead, 2000). A community must determine which method a survey will be sent to the households. The survey should be composed of both use and non-use questions (Johnson & Whitehead, 2000). An example of a use question would be, how many games would you attend if baseball franchise was brought into a community? A non-use question would be how often do you read about or listen to baseball games? If a franchise is already in place and a community is looking to build a new stadium, questions about past use can be asked. If a franchise is looking to relocate to a community, questions must be asked about future use (Johnson & Whitehead, 2000). These questions should not be yes or no answers. Questions should also ask the residents whether or not they approve the tax increase (Johnson and Whitehead, 2000). Surveys have been finished by asking demographic and economic questions (Johnson & Whitehead, 2000). An example of a demographic question would be asking what age you are. Economic questions could be based on income level.

After the data have been collected, an empirical model needs to be produced to determine whether or not people are willing to pay for the new stadium (Johnson & Whitehead, 2000). In a previous study developed to determine whether or not Lexington, Kentucky, residents were willing to finance a stadium for a Minor League Baseball franchise, variables were developed to determine the amount of time individuals read about, talked about and had an overall interest in

the sport (Johnson & Whitehead, 2000). A fourth variable was developed to determine what the quality of life in the community would be without the franchise (Johnson & Whitehead, 2000).

The empirical results will be produced following the development of the model. The results will have a great deal of policy implications and give actual evidence to whether or not the community supports and desires a new stadium to be built.

Other considerations

Another key aspect worth considering is the long term liability of the team (Yokum, Gonzalez, & Badgett, 2006). While it is important to first have an understanding whether the community wants to finance the stadium project, it is also equally as important to have an idea as to whether the team will be successful in attracting fans. Focusing on Minor League Baseball, a methodology has been developed to forecast whether a team would ultimately fail in a community. This type of forecast can be used whether a team is present currently or not (Yokum, Gonzalez, & Badgett, 2006). The methodology laid out by the authors can be seen in chapter three. The final results will allow the community to determine the life cycle of a stadium (Yokum, Gonzalez, & Badgett, 2006).

How a stadium is financed is another issue that needs to be addressed. In some cases, it may be possible for a stadium to be heavily privately financed, whereas in other situations a city will take on the financial burden. A city also has to decide how it will come up with the funds necessary to build the stadium. Sales tax, amusement taxes, liquor taxes, and municipal bonds are a few of the potential ways in which a community may finance the project. The way that a city decides to fund the stadium and the percentage of the stadium construction costs a community takes on will weigh heavily on the economic success of a stadium project. Another

consideration is the duration a city has to pay of the stadium costs. In other words, does the city finance the project over ten years or fifteen years for example? A stadium project also will limit a city's budget for years to come. The constraints caused by the decision to construct a stadium must be understood before making a final decision to build or not.

Another important concept that needs to be weighed heavily is the opportunity cost. A stadium needs to be weighed against other potential projects. For a community that is attempting to decide between two or more projects, the economic benefits of each project must be weighed against each other. In addition to the economic benefits, a community needs to find out how much individual's value each project. The opportunity cost of constructing a stadium or not also needs to be weighed.

Chapter Six

Summary and Conclusions

This study began with a discussion of the issues a community faces when deciding whether to build a sports stadium or not. The focus had been on Minor League Baseball specifically. Evaluations have been made over the years in attempt to better understand the potential benefits of constructing a sports stadium. Groups supporting a stadium construction have argued that the potential economic impacts as rationale for stadium construction. Independent research has found that the overall economic impact of a stadium construction for a community is much more limited than stadium proponent's estimations. This study has found that the intangible benefits may be the best argument for the construction of a stadium.

The literature reviewed discussed the evolution of stadium construction in the United States and the rationale behind it. The increased burden on cities to fund a stadium project led to the rise in research on the economic impact those stadiums had on their communities. Early research focused on direct and indirect benefits. Researchers continued to expand upon initial work with a focus on additional variables that were overlooked or understudied. While the additional research has led to new insight concerning the subject, it has also made the decision of what methodology to use become increasingly complicated.

A closer look at the methodologies provided insight towards each authors approach regarding economic evaluations on municipal sports projects. These evaluations detailed the methodology approach, data used, and the results found by the authors. A critique was then provided of the methodologies selected. This critique was necessary in order to develop a comprehensive methodology that would work for Minor League Baseball.

Before a community begins a stadium project, it needs to be well versed in the possible outcomes. The literature review showed that the overall economic impact created through direct and indirect benefits will likely not match the cost overall construction costs for a community. The direct revenues alone will likely not match the stadium's operating costs. Beginning with the CVM and Yokum, Gonzalez, and Badgett's long term viability analysis, a community can gain a better idea of what the community wants and what real benefits the project will bring. Following these initial two steps, direct benefits can begin to be calculated. The direct benefits can show how much of a loss or gain a community may face directly.

The goal of this thesis was to offer both a proposed methodology, but also to illustrate the number of variables that must be looked at and identified. These variables may differ from community to community; however, a basic framework remains. A potential issue is the calculation of the indirect variables. Minor League communities more than likely do not require an equation as complicated as the one designed by Baade and Dye. A community must have clear expectations for each aspect of their project before deciding whether to build a new stadium or not. By proceeding through a methodological approach, a community can have a well round explanation on possible economic benefits it may receive in various measures associated with the stadium.

The methodology purposed may not fit every community. Community size and need may change the type of calculations or variables included needed. Larger cities were noted to have more measures than a small community of only a few thousand people. This is in large part due to lesser secondary effects, such as the trickle down of money.

Further study needs to occur on developing a more suitable method for determining the secondary effects on small communities. The variables used and suggested may potentially skew the analysis. If a simplified equation can be developed, the results will potentially be more refined and accurate (Yokum, Gonzalez, & Badgett, 2006).

Research could be done with a specific focus on stadium finance. How a stadium is financed can help determine how successful a stadium will be. Another research topic in the same line of thought would be looking further into the percentage of a stadium project a community should take on and still be economically successful.

The equations developed in the before mentioned methodology are broad-based. Potentially, certain areas of the country experience may have a greater economic impact than others. An example of this would be looking at the success level of Minor League Baseball in the southwest versus the success of Minor League Baseball in the northwest. There may be regional indicators that could be put in place to help determine the success of a Minor League Baseball stadium being built. An example of this would be the weather in that region.

Another area in need of future study is to develop methodologies based on level. Minor League Baseball is divided by triple A, double A, single A, rookie baseball, and independent leagues. It may be worthwhile to divide a methodology based on each level. A triple A franchise, or the highest league of Minor League Baseball, is typically in a much larger city than a rookie baseball team. Due to this, it should be looked into whether or not the methodology used should be adjusted or whether a singular methodology can be used, regardless of size. Various sized organizations would need to be tested to best judge this.

The overall purpose was to develop a methodology based on what has been done in the past for a specific purpose, Minor League Baseball. If a community chooses to build a stadium, it may be one of the larger projects the community will take part in. Communities must be aware of all the variables that may be involved. It was the purpose of the literature review, methodology critiques and finally the proposed methodology to do such. This should provide a guide in how stadium projects have previously been examined and what others may potentially do in the future to make the best decision possible for their community in regards to whether to build or not.

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