

A Method of Measuring the Value of Minor League Sports to a Community: An Illustration of the Application of Economic Impact Analyses

Dennis H. Tootelian, California State University, Sacramento

Andrey G. Mikhailitchenko, California State University, Sacramento

Abstract

The American public, as well as those in other countries, has long been fascinated with athletes, sports teams, and sports events. As a result, one of the dilemmas confronting city managers in their efforts to serve their residents is whether to seek to add or retain a professional sports team to their city's leisure/entertainment mix. In addition to assessing resident interest in spectator sports as a leisure-time activity, one of the more critical questions they must address in their decision-making processes is: How much economic value is there in having a professional sports team in the city? Economic value is a function of benefits and costs. This study describes a model for examining the economic benefit of this leisure-time activity to a community. Variations will exist among communities, and the "costs" of attracting or retaining a sports team must be considered against the economic benefits created.

Introduction

The American public, as well as those in many other countries, has long been fascinated with athletes, sports teams, and sports events. Whether it be at the high school, college, or professional levels, people in most demographic categories and across most geographic areas spend a respectable portion of their entertainment time and/or dollars on spectator sports (Humphreys & Ruseski, 2008).

Historically, consumers spent approximately 5% of their total expenditures on leisure/entertainment activities, with sports being one of the various forms included (United States Bureau of Labor Statistics, 2018). Americans spent more than \$34.5 billion in 2019 on attending sports events and purchasing sports merchandise, with gate revenues growing at an expected annual rate of 2% and merchandise sales growing at an expected rate of 2% per year to 2019 (Heitner, 2015). Overall, interest in spectator sports is significant, and it is not likely to go away. Additionally, interruptions due to COVID-19 in 2020 may result in additional waves of "delayed demand" after physical distancing restrictions are lifted.

The public's interest has caught the attention of city managers, and some cities have gone to great lengths to attract or retain professional sports as one of its forms of entertainment. Many city managers believe there are intangible economic benefits from the city's having a professional sports team (Rappaport & Wilkerson, 2001), and some organizations which rank cities in terms of their desirability and livability include professional sports among the rating criteria (Bloomberg, 2012).

Accordingly, one of the many dilemmas confronting city managers in their efforts to serve their residents and best use public funds is whether to seek to add or retain a professional sports team to their city's entertainment mix, and how much to offer in terms of financial incentives. Unfortunately, attracting a sports team is expensive, land use decisions are complex, and actually allocating land and constructing a suitable facility create a multitude of issues. Similarly, retaining a sports team often necessitates facility renovations, infrastructure improvements, etc., for which public subsidies are commonly sought by team owners. Thus, one of the more critical questions for city managers is: *How much economic value is there in having a professional sports team in the city?* This becomes an issue of measuring the economic benefits and evaluating that against the costs associated with attracting or retaining a sports team.

This question is equally critical to owners of sports franchises because the mere fact that the public is fascinated with sports does not guarantee a team's financial success. Win and loss records are fickle, and many teams have experienced long winning records only to be followed by protracted losing seasons. This is especially true in some minor leagues because team owners have little control over who the players will be within a season and from one season to the next. Those decisions are made by the major league teams to which they are affiliated.

For a long-term successful union between a city and team owners, a team must also become part of the "fabric" of a community—a component that helps both define and add benefits for its residents and local businesses. This is what helps justify community support in the form of land use issues, public financial incentives for retaining a team, etc., and builds and maintains attendance during the good and bad seasons (Mason, 1999).

Economic models frequently are used to assess the impact of sports events and teams in a city. With professional sports, such as baseball, football, basketball, soccer, and ice hockey, a unique set of issues arise. While there are the costs associated with attracting or retaining a team and constructing or renovating a venue which creates a one-time spurt in economic activity, there is the potential ongoing economic benefit derived from annual team operations and the additional use of the facilities for other sports and non-sports events.

Critics of the financial value of sports teams argue that the economic activity generated by a sports team is mostly one of "trading dollars" (Crompton, 1995; Damonte, Marcis, & Rella, 2013; Hudson, 2001). In essence, the money residents would spend to attend a team's games would be spent on other forms of entertainment, so the net economic value would be negligible. While there is validity to a portion of the "trading dollars" issue (also known as the "substitution effect"), some of that is not the case since there is an inflow of dollars that would not occur if the city did not have a sports team from player salaries, visiting team spending, and spending by non-local visitors who come to the area for a game(s) (Agha & Rascher, 2016). Non-local visitors also have derivative spendings such as visiting local restaurants, staying for a night in the hotel etc.—the expenses that would not take place if "traded" dollars were spent on some other entertainment (Delaney & Eckstein, 2003). And, some residents will travel to other cities to watch their favorite sport—money that is lost to the resident's city. Team owners know that cities want their teams, and expect some form(s) of incentives to locate there. City managers know they are competing with other locations for teams and are conflicted on how best to use public funds.

Accordingly, economic impact studies provide useful insights that allow city managers to estimate how much economic activity, employment, labor income, and business taxes a team

may generate annually. This is the “economic benefits” component of the equation and must be weighed against the costs and loss of other opportunities. This information will form one basis for any financial incentives a city may offer. Similarly, team owners need to know how much value they bring to a community in order to negotiate financial incentives. Impact studies offer each side one way to evaluate the viability of a team locating in a city and what each could expect in terms of financial benefits. While negotiations always will be necessary, computing the economic impact creates a pathway to more enlightened decisions by all parties.

Purpose of the Study

The purpose of this study was to describe a model that demonstrates how an impact analysis can measure the annual economic benefits of a professional sports team’s operations in a community. The annual nature of these types of studies is critical to providing information to assess how cities will be able to pay for any incentives offered to build or renovate venues and/or make infrastructure improvements.

This study only addressed the benefits side because the costs associated with attracting or retaining a sports team are a function of both the actual costs and the lost opportunities to use land and financial resources for other purposes. Each community will have unique sets of priorities and options for serving its residents, and they may range from varying forms of entertainment to healthcare to housing, etc. Because the nature of the real and opportunity costs will vary greatly by geographic area, they are not considered here. This model provides the sports benefit component against which the values of other opportunities should be compared to determine the “net” economic impact (i.e., benefits minus costs).

In cities that do not have professional sports teams, if city managers can quantify the possible economic benefits of professional sports on an annual basis, they will be better able to assess whether it would be worthwhile to try to attract a team, what would be economically viable to offer in the way of subsidies/support to build facilities, how long it would take to earn an acceptable return on the city’s investments, and whether this investment is better than other options for land use and financial resources. Similarly, in communities with sports teams, understanding the economic benefits can be useful when it comes time to make decisions regarding infrastructure improvements, building renovations/replacements, etc. that may be necessary to retain a team.

For team owners, information such a model could provide beneficial information when negotiating the terms of agreement with city managers. It also would be useful for marketing efforts to demonstrate to community residents that “their” team continually is a valuable contributor to the local economy, and supporting the team (i.e., resident loyalty) is mutually beneficial.

Literature Review

Major sports economic impact studies tend to be built around two major approaches: economic impact of a major sports event and economic impact of having a professional team (Groothuis & Rotthoff, 2016). In hosting major sports events, impact studies focus on analyzing the incremental revenues from tourism, both directly associated with the event and in the future (i.e., the legacy effect), as well as benefits of using a new sports facility (du Plessis & Maennig, 2011; Streicher, Schmidt, Schreyer, & Torgler, 2017). The events usually center around individual games such as the Super Bowl or international tournaments such as Olympic Games,

World Championships, World Cups, etc. (Cornelissen, Bob, & Swart, 2011; Giesecke & Madden, 2011; Li, Blake, & Thomas, 2013).

Economic impact studies related to having a professional team in a community tend to focus on the costs of construction, with the emphasis usually placed on that spending in the local area that should manifest itself through continuing to generate incomes, jobs, and taxes to pay for that construction (Agha, 2013). These studies focus on the cost-benefit analysis with substantial attention paid to justifying public subsidies in building new facilities and infrastructure (Coates & Humphreys, 2003; Santo, 2005; Zimbalist & Noll, 1997). Since the costs of attracting or keeping a sports team is high, impact studies can provide insights into the long-term benefits a team could provide as well as the time it takes to offset required investments.

Stakeholder Perspectives on Economic Impact

In general, economic impact studies provide estimates of direct, indirect, and induced costs and benefits resulting from a certain activity in a community (Allan, Dunlop, & Swales, 2007). However, various community stakeholders may have differing objectives and expectations with regard to what is most important when it comes to investing in a professional sports team.

Some see the major benefit of an impact study as the opportunity to estimate annual returns on certain investments (Crompton, Lee, & Shuster, 2001). This has become an important issue to city managers as they contend with more stringent budgets.

Others take a marketing approach, suggesting enhanced community visibility, positive publicity, and synergy with other promotional activities should be the main focus of the analysis (Baade, 1996; Noll & Zimbalist, 1997; Roche, Spake, & Mathew, 2013). The marketing perspective is very difficult to quantify for impact purposes, but is of interest to local business owners and team owners looking for expanded entertainment and sales opportunities.

Still others take a psychic income approach, focusing on the internal socio-political benefits for the community. They emphasize such aspects of the impact as civic pride, emotional binding, communal solidarity, and community self-esteem (Agyemang, 2014; Crompton, 2004; Hamilton & Kahn, 1997). The major proponents of this perspective, which also is very difficult to quantify, are elected officials and local policymakers.

Controversies Regarding Economic Impacts of Professional Sports Teams

The literature is mixed relative to the economic impact of professional teams on local communities. In some studies, the presence of any impact from a sports event or team is questioned. For example, Coates and Humphreys (2003) state that “no retrospective study found any evidence of positive economic impact from professional sports facilities or franchises on urban economies.” Morgan (1997) argues that there is a myth of a “golden goose” relative to professional sports in terms of local economic effect. Groothuis and Rotthoff (2016) argue that economists’ findings on the impact of professional sports consistently contradict estimates sponsored by teams and politicians who support the use of public funds, “primarily because these estimates misapply the analysis of economic impact” (Groothuis & Rotthoff, 2016, p.22).

Some studies, not questioning the presence of an economic impact, emphasize that the impact is typically overestimated. The authors claim that this overestimation often happens because these studies are produced by institutions which are involved or otherwise interested in the

event or activity (Chanaron, 2014). Overstatement of both the likelihood and magnitude of the expected economic benefits leads to overinvesting of public resources in professional sports activities (Wassmer, Ong, & Propher, 2016) as well as an imbalance between costs and benefits of these investments (Rosentraub, 1999).

Some literature suggests that one of the major reasons for exaggerating the returns to the community in the economic impact studies is ignoring or misapplying the delineation between different categories of customers (Dwyer & Forsyth, 2005; Hodur & Leistritz, 2006) or different levels of leagues and types of venues (Agha & Rascher, 2016). Spending behavior of those who would spend money anyway in the area (i.e., the “trading dollars” effect), regardless of the sports activity, should be excluded from the analysis (Crompton, 1995; Damonte, Marcis, & Rella, 2013; Hudson, 2001). The novelty effect, a brief period of higher attendance of newly built facilities that is not sustainable in long-term, should be taken into account as well (Soebbing, Mason, & Humphreys, 2016).

Many of these criticisms focus on “how” analyses are conducted rather than on whether impact studies are appropriate. If issues associated with economic impact studies are properly addressed (e.g., trading dollars, expenditure outmigration, novelty effect), the results can be a useful tool for city managers when making critical economic and political decisions such as budget allocation, government subsidies, and planning infrastructure projects. And, the information can be used by team owners in their marketing efforts to help generate team loyalty and community support.

It also is important to recognize that an impact study, while perhaps designed to show annual impacts, is really only for a one-year period. To do this right, multiple impact studies are needed using different data sets to estimate annual changes in team and spectator expenditures over some period of time.

Methodology for Conducting the Analysis

The emphasis either on hosting mega sports events or on the feasibility of construction projects associated with obtaining or retaining a professional sports team, from our perspective, creates a prevalence of economic impact studies focused on the relatively short-term. Studies for “one and done” purposes or to measure the immediate impact of construction which is a long-term investment need to be approached differently from those designed to measure on-going events on an annual basis.

This study focuses on the ongoing operations of professional minor league sports teams for several reasons. First, there are considerably more opportunities for cities to obtain or retain minor league sports than there are for major league teams. Second, major league teams tend to gravitate to larger metropolitan areas, whereas minor league teams tend to be more viable in medium and smaller cities which often to have more limited entertainment options within the community and greater potential for the out-migration of entertainment dollars. Third, minor league teams and stadiums are considerably less expensive to build and maintain than are their major league counterparts and, thereby, are more affordable for the vast majority of cities. Fourth, it is difficult for minor league teams to rely on the teams’ success since their players and coaches are selected by their major league affiliates, and residents cannot expect a “favorite” player to remain with the team from one year to the next or even within the current season. And, fifth, a proposal under consideration by Major League Baseball in 2019 was to reduce the number of MiLB teams by 42 and reorganize the leagues and classifications of some teams

(Cooper, 2020; Diamond, 2020). If this becomes a reality now or in the future, consolidations could mean that the cost of acquiring a team could rise, and increase the competition between cities to attract teams.

This analysis did not consider the costs associated with attracting or retaining a sports team. Some of these costs are real, including expenses related to building a stadium and providing the needed infrastructure (e.g., roads, lighting, sewage and other waste disposal, water). Other costs are opportunity costs associated with using the land and financial resources for other purposes which may or may not be linked to entertainment.

To make a complete analysis, an impact study measures the ongoing incremental economic benefits activity against real and opportunity costs. This model can provide the benefits side of the equation, and when costs are subtracted, the net value will determine whether it is economically advisable to attract or retain a MiLB team.

For this study, the analysis concerns a MiLB team in the Triple-A category. In actual practice for a specific city, however, an impact study could be used for different types and levels of professional sports teams. The critical variables remain about the same, and the city manager or team owner could adjust the input data accordingly.

This study describes a model that can be used to estimate what an average MiLB might bring to a community:

- What is the overall economic impact of a Triple-A baseball team and its facilities on the local community?
- How much employment does a Triple-A baseball team and its facilities create for the local community?
- How much employment income does a Triple-A baseball team and its facilities generate that will be spent within the local community, and how could that spending be diffused to benefit various sectors of the community's economy?
- How much in the way of tax dollars does a Triple-A baseball team and its facilities create that could be used for the benefit of the local community, and what could those tax dollars pay for in the city's annual budget?

To conduct an economic impact analysis based on the annual operations of a team and the use of its facilities for other purposes, two component models are required. One, the "Feeder Model," is most critical since it determines the net incremental expenditures that accrue within a defined geographic area, while the other (in this case, IMPLAN) is the mechanism that computes the actual impact of that level of expenditures in terms of overall economic activities, job creation, non-income tax generation, etc. While this study used IMPLAN, it is only one of several models available for economic analyses, together with REMI, CUM, RIMS II (Bonn & Harrington, 2008; Rickman & Schwer, 1995).

Feeder model

Expenditures create economic activity, and the Feeder Model component of this MiLB team analysis includes variables critical in determining expenditures within a city or region:

- *Expenses for team operations.* This includes team expenditures except for amortization and depreciation, which are non-cash expenses. However, some expense categories were adjusted downward because not all occur within the

community (e.g., insurance payments). Thus, only expenditure categories which represent actual spending are included in the analysis, and some of those are discounted for the possible outmigration of expenditure dollars. For this study, it was assumed that 33% of the team's expenditures would be spent outside the local area. A chief financial officer of one team indicated that this could range from 11% to 33%, and that in practice a team will have records of the locations of its vendors. The net team operating expenditures represents incremental dollars to the community—if the team was not located in the community, this spending would not occur (Brown, Busser & Baloglu, 2010).

- *Spending by the MiLB affiliate for players and coaches salaries.* All Triple-A teams are affiliated with major league teams. The major league affiliate pays the salaries of players and coaches, and a portion of those salaries are spent within the community during the baseball season. That spending represents incremental dollars of economic activity.
- *Spending by players and coaches other than salaries.* Salaries for many Triple –A players are relatively low, and the families of players and coaches residing in the area during the baseball season often augment their income from other sources (e.g., signing bonuses, jobs taken by family members, off-season work by players). Spending of some of this income represents incremental dollars for the community. For this analysis, it was assumed that players and coaches would spend between 22% and 44% of their salaries and other outside income in the local area. This generally equates to the percent of the year they might spend in the community.
- *Spending by members of the visiting team.* Visiting players' and coaches' expenditures in the local area for lodging, food, etc. represent incremental dollars of economic activity. It was assumed that players and coaches would spend their "per diem" as set by the league within the local area.
- *Spending by residents and non-residents at home baseball games.* Residents and out-of-town visitors spend money at home games. A portion of this would be incremental dollars and a portion would not. Some residents would not spend those dollars in the area if there were no team in the community—they might travel to other cities to attend sporting events, engage in leisure travel, etc. And, some visitors would only come to the city to attend a game. This resident and non-resident spending would be incremental. Residents who would spend that money on other forms of entertainment, and visitors would come to the area anyway, would just be trading dollars—which is not incremental and is excluded from the analysis. For this analysis, it was assumed that residents and non-residents would spend approximately \$22.00 for food, beverages, merchandise, and parking per game (Reichard, 2014).
- *Spending by non-residents for travel to the community to attend baseball games.* Some non-residents (e.g., baseball enthusiasts, family/friends of visiting team members) will travel to the community to watch either the home or the visiting team. Some estimates of the percentage of non-local visitors to MLB games range from 5% to 52% (Agha & Rascher, 2016; Pan, Taks & Green, 2013). Some will make day trips and others might stay overnight in the community specifically to attend baseball games. Their travel expenditures within the community represent incremental dollars that would not otherwise be generated in the area for food, beverages, lodging, etc. For this analysis, it was assumed that 10% of the attendees were non-residents (e.g., Siegfried & Zimbalist, 2002), and that only 5% of the non-residents would stay overnight, and the costs of lodging for the geographic areas included in this study

ranged from about \$70 to \$140 (cheaphotels.org). We assumed \$75 per night to be conservative.

- *Use of the stadium for events other than MiLB.* This is an optional category that may or may not be included in an impact study. A stadium’s capacity and the way it can be configured could make it attractive for alternative types of large and small events. The extent to which a stadium can be used depends on the configuration, geographic area and climate, and other options available (Bader, 2011). To the extent that these events would not be held at other local venues, they represent incremental dollars of economic activity. How much a stadium would be used for non-baseball events is very community-specific. Conservative numbers were used for this analysis. It was assumed that there would be between 15 and 20 non-baseball events held within the stadium, which is about one every other week in the off-season. The average spending by attendees was assumed to be approximately \$55.00 for admission, food, beverages, merchandise, and parking, which is about what someone could spend at a baseball game.

For this analysis, a hypothetical average MiLB team was created that blended the actual geographic characteristics of several teams. This was necessary because individual teams generally do not divulge specific operating revenues and expenses, preferring to maintain confidentiality. To preserve confidentiality, an average of six teams was used, two of which were located in the south, two in the Midwest, and two in the west. The population bases for these teams were reasonable similar, with all being within +/- 100,000 of each other, and their city budgets for various services (e.g., police, fire, community development, parks and recreation, public works) being within a range of +/- \$75 million. All of the teams have been in the AAA league for at least fifteen years, have seating capacities of 8,000 or more, and had total attendance in 2019 of at least 450,000.

For this example, the following geographic characteristics of the city were used (Table 1):

Table 1. Geographic characteristics of the city

Population of the metropolitan area:	575,000
Number of households:	210,000
Median household income:	\$64,000
Median age of residents:	38.5 years

The following team characteristics were used (Table 2):

Table 2. Team characteristics

Stadium capacity	11,500
Total attendance per year	441,500
Average attendance	6,300
Average ticket price	\$15

In this illustration, care was taken to conservatively measure only the incremental dollars of spending resulting from having a MiLB team in the community. The expenditure estimates were based on MiLB league averages. These included the MiLB website, media reports regarding sports activities and expenditures, team statistics reported in the media, and conversations with executives of a MiLB team. In practice, a MiLB team would have the hard data relative to each area of spending. Expenditure levels used here were only to demonstrate how the model can be applied, and uses an “average” team operating under the characteristics cited above.

IMPLAN model

IMPLAN was used as the second component model to compute the overall impact. In both academia and industry, IMPLAN is recognized as one of the most practically applicable tools due to combining high level of sophistication and calibration with user friendliness (Crompton et al., 2016). IMPLAN data are typically used for regional input/output impact assessments (Giesecke, 2011). Studies using this tool have derived direct, indirect, and induced impacts for a number of variables (e.g., value added, employee compensation, indirect business taxes, and jobs) that are major determinants of total economic impacts (Santos, Grado, Grace, & Stuart, 2011).

While this mechanism was used for the impact computations, as previously indicated, other models are available. These include social accounting matrix, occupation-based, and computable general equilibrium models (Drakakis & Papadaskalopoulos, 2014). Although each method has its advantages and disadvantages, IMPLAN was chosen because it is widely accepted, allows for internal customization, and can provide data down to the zip code level if desired (Bonn & Harrington, 2008).

None of the economic impact models are free of limitations and constraints. Each model has its proponents and critics. However, the tools most widely used for economic impact evaluation are models such as RIMSII, REMI, and IMPLAN software packages. One study comparing the multipliers of several models found that when controlling for the differences in their approaches, the multipliers were statistically indistinguishable (Rickman & Schwer, 1995).

The full range of economic impacts measured by IMPLAN includes direct, indirect, and induced benefits.

- *Direct benefits* consist of economic activity contained within the designated area(s). This includes all expenditures made and all people employed.
- *Indirect benefits* define the creation of additional economic activity that results from linked businesses, suppliers of goods and services, and provision of operating inputs.
- *Induced benefits* measure the consumption expenditures of direct and indirect sector employees. Examples include employees' expenditures on items such as retail purchases, housing, banking, and medical services.

The total direct, indirect, and induced benefits arising due to the multiplier effect are presented in four ways:

- *Output* accounts for total revenues including all sources of income for a given time period in dollars.
- *Employment* demonstrates the number of jobs generated and is calculated on an annual full-time equivalent basis.
- *Labor Income* includes all forms of employee compensation paid by employers (e.g., total payroll costs including benefits, wages and salaries of workers), and proprietary income (e.g., self employment income, income received by private business owners).
- *Indirect Business Taxes* consist of property taxes, excise taxes, fees, licenses, and sales taxes paid by businesses. While taxes on normal business operations are included, taxes on profits or income are excluded.

The multipliers for each effect are imbedded within IMPLAN based on the geographic area and are not set by the analyst. Each area will have a different multiplier based on its demographic and socio-economic characteristics. Basically, the analyst selects a geographic area, a primary economic sector (e.g., spectator sports), and the dollars expended. IMPLAN then computes through its proprietary model the multipliers for that geographic area.

Results of the Analysis

Since economic impact is a function of expenditures within a defined region, the first step in the analysis was to compute the incremental level of expenditures that would occur if a MiLB team was located in a community. After the expenditure level was determined through the Feeder Model, the economic impact of that spending was computed using IMPLAN.

Incremental Level of Expenditures Results

Expenditures related to a MiLB team's presence in a community were grouped into five categories. An optional sixth expenditure category was defined to be the use of the MiLB venue for non-MiLB purposes (e.g., civic functions, private parties). The outmigration of expenditures ranged from 12% to 33% depending on the expense category, and the trading-dollars effect was set at 50%. These, of course, could be adjusted in a real situation based on the particular community within which a team was located. A summary of these is presented in Table 3.

Table 3. Incremental expenditures.

Expenditures for Team Operations	\$5,432,427
Spending by Players and Coaches	\$140,274
Spending by Visiting Teams	\$149,278
Spending by Area Residents for Baseball Games	\$1,370,830
Spending by Non-Residents for Baseball Games	\$1,556,255
Spending for Non-MiLB Use of Venue	\$348,550
Totals	
MiLB-Related	\$8,649,064
Non-MiLB	\$348,550
Total	\$8,997,614

Expenditures for team operations was the largest category. This includes all spending other than for players' and coaches' salaries and non-cash expenditures (e.g., depreciation and amortization). Although these expenditures would only occur if the team was located in the community, not all of it will remain within the local area (e.g., insurance, payments to the league, payments to umpires, transportation costs outside of the area). An average overall expenditure level was based on team revenues and expenses cited by MLB, and then discounted for the outmigration of dollars (i.e., 33%). As a result, the average MiLB team's incremental expenditures within the community was set at just over \$5.4 million.

Salaries for players and coaches are paid by the MiLB's major league affiliate. For the time that players and coaches reside in the local community during the baseball season, this represents

an inflow of dollars that otherwise would not occur. To be conservative, minimum player salary levels were obtained from the league's website, and estimates of coaches' salaries were based on the MiLB website. The total of these salaries were then adjusted downward to account for only the time that players and coaches would be residing in the community (i.e., number of weeks residing in the local area which is approximately 22% of the year), and then discounted further for estimates of how much of that money would be spent outside the community (i.e., 33%). Based on these computations, the average team's players and coaches would spend approximately \$140,275 in the area for living expenses.

A third expenditure category was the spending by players and coaches of visiting teams. The league sets per diem levels for players and these were used for both players and coaches. Lodging was based on average hotel group rates. All of the nearly \$149,280 is incremental since it would only occur if a MiLB team was in the community.

The fourth and fifth categories of expenditures were for spending by residents and non-residents to attend MiLB games. Average attendance figures from the league's website were used to estimate attendance, and average prices for tickets, parking, food and beverage expenditures, and merchandise purchases were based on websites for individual teams+.

For residents, total spending was discounted significantly for a possible "trading dollars" effect and adjusted for residents who would go outside the community to attend sporting events if MiLB were not available. The trading dollars effect and the extent to which residents will travel to other areas for entertainment are functions of the size of the community, variety of entertainment options already available, and socio-economic factors. These will be community-specific and need to be estimated by city managers through market studies (Agha & Rascher, 2016). For this analysis, it was assumed that the trading dollars effect would be 50%. The incremental expenditures for residents was computed to be nearly \$1.4 million.

Non-resident attendance at a MiLB game is mostly incremental. This includes similar spending patterns as residents although adjustments could be made if it was felt that visitors spend less for merchandise, although there is no evidence of that (Pan, Taks & Green, 2013). And, only a portion of non-resident attendance would include overnight stays (e.g., relatives of players and coaches), and spending outside of the stadium. This total was then discounted to account for the possibility that some non-resident attendance would not be incremental— attendees would have come to the local area whether there was a MiLB game or not, and some would stay with relatives/friends residing in the area. Total incremental expenditures for non-residents was estimated to be nearly \$1.6 million. This is somewhat larger than for resident spending due to the significant discount taken for the "trading dollars" effect for residents.

The final category of expenditures is for the use of the venue when MiLB games are not being played. This was considered on an incremental basis in that it was assumed the stadium would only be utilized if no other suitable venue was available locally. Expenditures include spending by promoters of events while they are in the local area, rental of the facilities, and spending by residents and non-residents for events (e.g., tickets, parking, food and beverages). These expenditures were then discounted for the "trading dollars" effect for residents. The total incremental dollars for the use of the stadium was computed to be about \$348,550.

Overall, MiLB team related expenditures were set at more than \$8.6 million for an average team, and non-MiLB related expenditures of \$348,550. Thus, the total incremental expenditures on an annual basis was computed to be nearly \$9.0 million. Adjustments already described

reduced total expenditures by 77% for MiLB and 52% for non-MiLB events, for combined overall reduction of 77%.

IMPLAN computation results

Incremental expenditure levels were entered into the IMPLAN model separately. One was for the total dollars (approximately \$9.0 million), another for MiLB-related expenditures (approximately \$8.6 million), and still another for non-MiLB expenditures (approximately \$348,550). Results are presented in Table 4. These results would be expected to occur each year so long as incremental expenditures remained at the computed level.

Table 4. Summary of IMPLAN results.

	Direct	Indirect	Induced	Total
	Output	Output	Output	Output
Total	\$8,997,614	\$4,299,295	\$6,166,779	\$19,463,638
MiLB-Related	\$8,649,064	\$4,132,772	\$5,927,923	\$18,709,759
Non-MiLB Related	\$348,550	\$166,523	\$238,856	\$753,879
Percentage	46.2%	22.1%	31.7%	216.3%*
	Employment	Employment	Employment	Employment
Total	111.9	26.5	32.8	171.2
MiLB-Related	107.6	25.5	31.5	164.5
Non-MiLB Related	4.3	1.0	1.3	6.6
Percentage	65.4%	15.5%	19.1%	153.0%*
	Labor Income	Labor Income	Labor Income	Labor Income
Total	\$4,412,045	\$1,472,849	\$1,915,431	\$7,800,325
MiLB-Related	\$4,241,154	\$1,415,802	\$1,841,241	\$7,498,197
Non-MiLB Related	\$170,890	\$57,047	\$74,190	\$302,128
Percentage	56.6%	18.9%	24.6%	176.8%*
	Business Taxes	Business Taxes	Business Taxes	Business Taxes
Total	\$604,969	\$157,359	\$345,472	\$1,107,800
MiLB-Related	\$581,537	\$151,264	\$332,091	\$1,064,892
Non-MiLB Related	\$23,432	\$6,095	\$13,381	\$42,908
Percentage	54.6%	14.2%	31.2%	183.1%*

*Multiplier effect.

Overall, having a MiLB team in a local community generated nearly \$19.5 million in economic impact. Of that, 46% is the direct result of team operations and venue use, and the rest is due to the multiplier effect. Essentially, for every incremental dollar the team spends and the venue is used for events that otherwise would not occur in the community, there is an additional \$1.16 of

new economic activity. Clearly, due to the spending levels, the vast majority of the economic impact is derived from team operations, which accounts for 96% of the incremental impact.

In terms of employment, a MiLB team creates approximately 171.2 annual full-time equivalent jobs in the community. The majority of this (65%) would be the direct result of team operations and venue use, and the remainder a consequence of the increased business activity created by having a team in the community. Some of this could be part-time jobs created during the baseball season, but impact analyses refine them to a full-time equivalent basis. Nevertheless, these are jobs created within the community that results in additional income for residents to spend within the geographic area.

Incremental “Labor Income” is projected to be more than \$7.8 million. These are dollars that residents have to spend which get recycled through the economy. These are incremental dollars resulting from the additional employment that is created, and does not include salaries to players and coaches who may live only part-time in the area. Shown in Table 5 is the possible diffusion of this spending based on United States Bureau of Labor Statistics estimates of household spending patterns.

Table 5. Possible diffusion of labor dollars.

	Total	MiLB Operations	Non-MiLB Operations
Total Labor Income	\$7,800,325	\$7,498,197	\$302,128
Shelter	\$1,496,858	\$1,438,880	\$57,977
Food at home	\$559,475	\$537,805	\$21,670
Vehicle purchases (net outlay)	\$556,967	\$535,394	\$21,573
Utilities, fuels, and public services	\$541,360	\$520,392	\$20,968
Food away from home	\$419,154	\$402,919	\$16,235
Health insurance	\$414,834	\$398,766	\$16,068
Entertainment	\$396,022	\$380,683	\$15,339
Other vehicle expenses	\$384,038	\$369,163	\$14,875
Gasoline and motor oil	\$291,234	\$279,953	\$11,280
Apparel and services	\$257,233	\$247,270	\$9,963
Household furnishings and equipment	\$253,332	\$243,519	\$9,812
Education	\$183,240	\$176,143	\$7,097
Household operations	\$182,404	\$175,339	\$7,065
Medical services	\$110,223	\$105,954	\$4,269
Personal care products and services	\$95,173	\$91,487	\$3,686
Public and other transportation	\$92,108	\$88,540	\$3,568
Housekeeping supplies	\$91,272	\$87,737	\$3,535
Drugs	\$59,222	\$56,928	\$2,294
Medical supplies	\$20,763	\$19,958	\$804
Reading	\$15,885	\$15,270	\$615
All Other	\$1,379,528	\$1,326,095	\$53,433

Indirect business taxes consist of property taxes, excise taxes, fees, licenses, and sales taxes paid by businesses, but does not include taxes on profits or income. Indirect business taxes

were computed to be more than \$1.1 million dollars. In effect, for every incremental dollar spent by a MiLB team and venue users, the local community generates approximately 12.3 cents in indirect business taxes. While most of this (55%) is the direct result of team operations and venue use, 45% is due to the increased business activities generated through the multiplier effect. These are incremental tax dollars that could be used for purposes that benefit the community.

The economic impact of having a MiLB team and venue impacts nearly all of the business sectors of a community's economy. Presented in Table 6 are how the total economic impact, employment, labor income, indirect business taxes would be diffused through a local economy.

Discussion

The model described here is based on an average Triple A MiLB team and used conservative incremental expenditures to assess the economic benefits a team might generate. In this application of the model, the results suggest that there can be a significant positive economic benefit from having a MiLB team in a community. The positive impact includes incremental increases in business activity across many industrial sectors, employment, labor income, and indirect business taxes. Industries which are major beneficiaries of the sports team's presence, in addition to entertainment, are professional services, manufacturing, real estate, and retailing.

This illustration does not imply that every minor league baseball team has this level of economic benefit on their communities. Impact levels need to be studied on a case-by-case basis using actual data to the extent it is available.

The question becomes whether these annual benefits outweigh any development/renovation costs that are needed to attract or retain a team, and how long it would take for a city to breakeven on any subsidies it may have to offer. In a real case, city managers and team owners can insert data that is appropriate for their individual cities and teams before running IMPLAN or another impact model. Then, city managers can weigh the resultant economic benefits against the potential costs of venue and infrastructure construction for a professional sports team.

Similarly, city managers need to compare the economic benefits of a sports team with other opportunities for the use of land and financial resources. Economic impact models can be created to estimate the economic benefits of other uses for land and resources that could benefit the community.

Team owners can use economic impact models to generate data to support their requests for public funds to support facilities development/renovation and/or infrastructure improvements. Owners also can use the data in their marketing messaging to demonstrate their value to the community and the mutual benefits derived from fan loyalty.

What is most important is for analysts to realize that an impact study is for one year and that they should enter conservative data relative to expenditures within a defined geographic area. In addition, they should include the fact that there will be a trading-dollars effect which mitigates local spending, that there will be an outmigration of local dollars if the city does not offer adequate spectator sports options demanded by residents. And, they should note that there will be an influx of spending by visiting teams and spectators from outside the community as well as teams' generated amenities and disamenities in real estate markets (Humphreys & Nowak, 2017).

Table 6. Economic impact across industrial sectors.

Total Output	Direct	Indirect	Induced	Total
Arts, entertainment, recreation	\$8,997,614	\$1,521,999	\$256,493	\$10,776,106
Professional Services		\$1,492,351	\$1,532,222	\$3,024,573
Real Estate		\$295,992	\$986,037	\$1,282,029
Manufacturing		\$374,471	\$775,545	\$1,150,016
Retailing		\$163,142	\$805,090	\$968,233
Health		\$13,218	\$633,416	\$646,634
Wholesaling		\$61,840	\$255,050	\$316,889
Administrative		\$97,616	\$60,692	\$158,308
State and local		\$37,203	\$88,225	\$125,428
Education		\$1,860	\$94,359	\$96,219
Farming		\$17,227	\$53,671	\$70,898
Federal		\$10,381	\$17,234	\$27,615
Accommodations, food services		\$5,426	\$11,462	\$16,888
Other		\$206,569	\$597,284	\$803,853
Total	\$8,997,614	\$4,299,295	\$6,166,779	\$19,463,688
Total Employment	Direct	Indirect	Induced	Total
Arts, entertainment, recreation	111.9	13.6	1.2	126.6
Professional Services		6.5	6.8	13.3
Retailing		0.8	7.3	8.2
Health		0.1	4.2	4.3
Real Estate		1.7	2.5	4.2
Manufacturing		0.9	1.3	2.3
Wholesaling		0.3	1.2	1.5
Education		0.0	1.2	1.2
Administrative		0.5	0.3	0.8
State and local		0.2	0.3	0.5
Farming		0.1	0.3	0.5
Federal		0.1	0.2	0.3
Accommodations, food services		0.0	0.1	0.1
Other		1.6	5.8	7.4
Total	111.9	26.5	32.8	171.2
Labor Income	Direct	Indirect	Induced	Total
Arts, entertainment, recreation	\$4,412,045	\$587,171	\$63,217	\$5,062,433
Professional Services		\$525,487	\$542,429	\$1,067,916
Health		\$48,166	\$307,268	\$355,434
Manufacturing		\$4,798	\$335,268	\$340,067
Real Estate		\$68,071	\$200,656	\$268,727
Retailing		\$67,526	\$102,776	\$170,302
Wholesaling		\$27,133	\$111,906	\$139,039
Education		\$36,323	\$22,994	\$59,317
Administrative		\$17,717	\$31,825	\$49,543
State and local		\$794	\$46,652	\$47,446
Federal		\$9,312	\$15,167	\$24,479
Farming		\$4,181	\$12,563	\$16,744
Accommodations, food services		\$1,735	\$3,653	\$5,388
Other		\$74,435	\$119,058	\$193,492
Total	\$4,412,045	\$1,472,849	\$1,915,431	\$7,800,325

Table 6. Economic impact across industrial sectors (cont)

Indirect Business Taxes	Direct	Indirect	Induced	Total
Arts, entertainment, recreation	\$604,969	\$72,523	\$9,046	\$686,539
Retailing		\$23,134	\$117,897	\$141,031
Health		\$7,335	\$97,319	\$104,655
Professional Services		\$25,715	\$34,295	\$60,010
Wholesaling		\$9,782	\$40,344	\$50,125
Real Estate		\$11,773	\$28,714	\$40,486
Manufacturing		\$93	\$5,323	\$5,416
Education		\$1,665	\$1,372	\$3,037
Accommodations, food services		\$471	\$915	\$1,386
Farming		\$334	\$871	\$1,205
State and local		\$11	\$770	\$781
Administrative		\$0	\$0	\$0
Federal		\$0	\$0	\$0
Other		\$4,522	\$8,607	\$13,129
Total	\$604,969	\$157,359	\$345,472	\$1,107,800

Furthermore, economic impact models are well suited for these types of studies when city managers and team owners run “what if” scenarios with a variety of more and less conservative assumptions. These analyses should be done multiple times using different data on a year-by-year basis either over the projected life of a venue or at least over a time period until the investment in the venue and infrastructure breakeven.

Contribution to Impact Studies

This study contributes to the body of studies that sought to examine what economic impact of professional sports teams have on the communities in which they are located. Although each team’s impact will be different based on city characteristics and individual team data, the model described herein showed that an economic benefit model can be applied by city managers and team owners to measure the annual economic value to a community.

This approach to economic analyses for ongoing expenditure streams differentiates itself from the existing body of research which analyzed the impact of a one-time sport event (Chanaron, 2014; Giesecke & Madden, 2011; Li et al., 2013; Müller, 2014), and professional sport in the context of building an arena and the necessary infrastructure to operate (Bernthal & Regan, 2004; Coates & Humphreys, 1999; Crompton, 2004).

Study Limitations and Implications for Further Research

It should be noted that this model reveals only the tangible economic benefits mentioned above. In a broader socio-economic sense, a team’s impact is associated with non-tangible benefits that are on the borderline or even outside of the scope of any quantitatively-based economic impact study. These benefits include civic pride, increased community visibility, community

consciousness, social bonding, and enhanced community image. Both the tangible and intangible economic benefits must be weighed against the costs of directing resources to a sports team instead of other options for serving the community.

A promising direction for future research could be investigating the intangible contributions of a professional sport team and what it brings to a city in the form of urban development and social change. From a marketing perspective, this intangible element is an important area of research.

References

- Agha, N. (2013). The Economic Impact of Stadiums and Teams, The Case of Minor League Baseball. *Journal of Sports Economics*, 14(3), 227-252.
- Agha, N. & Rascher, D. A. (2016). An explanation of economic impact: Why positive impacts can exist for smaller sports. *Sport, Business and Management*, 6(2), 182-204.
- Agyemang, K. (2014). Toward a framework of "athlete citizenship" in professional sport through authentic community stakeholder engagement. *Sport, Business and Management*, 4 (1), 26-37.
- Allan, G., Dunlop, S., & Swales, K. (2007). The Economic Impact of Regular Season Sporting Competitions: The Glasgow Old Firm Football Spectators as Sports Tourists. *Journal of Sport and Tourism*, 12(2), 63-97.
- Baade, R.A. (1996). Professional sports as catalyst for metropolitan economic development. *Journal of Urban Affairs*, 18 (1), 1-17.
- Badger, Emile (2011). Keeping Stadium Neighborhoods Alive in the Off-Season. Citylab.com <https://www.citylab.com/solutions/2011/10/stadium-neighborhoods-alive-off-season/260/>
- Bloomberg (2012). *America's 50 best cities*. Retrieved from: <https://www.bloomberg.com/news/photo-essays/2012-09-28/americas-50-best-cities>.
- Bonn, Mark A, & Julie Harrington (2008). A Comparison of Three Economic Impact Models for Applied Hospitality and Tourism Research. *Tourism Economics*, 14(4), 769-789, <https://doi.org/10.5367/000000008786440148>
- Brown, C., Busser, J. A., & Baloglu, S. (2010). Sport tourists in a gaming destination: Predicting gaming and non-gaming expenditures. *UNLV Gaming Research & Review Journal*, 14(2), 59-68. Retrieved from <http://proxy.lib.csus.edu/login?url=https://search-proquest-com.proxy.lib.csus.edu/docview/815776242?accountid=10358>
- Caple, J. (2010). *Bringing back the multipurpose stadium*. ESPN, November 24, 2010. Retrieved from: [http://www.espn.com/espn/page2/story/_/page/caple%2F101124_MLB_stadiums/sport Cat/mlb](http://www.espn.com/espn/page2/story/_/page/caple%2F101124_MLB_stadiums/sport%2FCat/mlb) (accessed 20 July 2019).
- Chanaron, J.J. (2014). Technology and Economic Impact of Mega-Sports Events: A Key Issue? Exploratory Insights from Literature. *Megatrend Review*, 11(4), 9-30.
- Coates, D.C. & Humphreys, B.R. (1999). The growth effect of sport franchises, stadia and arenas. *Journal of Policy Analysis and Management*, 9 (1), 14-35.
- Coates, D.C. & Humphreys, B.R. (2003). The Effect of Professional Sports on Earnings and Employment in the Services and Retail Sectors in US Cities. *Regional Science and Urban Economics*, 33, pp. 175–98.
- Cooper, J. J. Sources: MiLB Ready To Agree To Significant Reduction In Teams. *Baseball America*. April 21, 2020. <https://www.baseballamerica.com/stories/sources-milb-ready-to-agree-to-significant-reduction-in-teams/>

- Cornelissen, S., Bob, U., & Swart, K. (2011). Towards redefining the concept of legacy in relation to sport mega-events: Insights from the 2010 FIFA World Cup. *Development Southern Africa*, 28(3), 307-318.
- Crompton, J.L., Lee, S., & Shuster, T.J. (2001). A Guide for Undertaking Economic Impact Studies: The Springfest Example. *Journal of Travel Research*, 40, 79-87.
- Crompton, J.L. (2004). Beyond Economic Impact: An Alternative Rationale for the Public Subsidy of Major League Sports Facilities. *Journal of Sport Management*, 18, 40-58.
- Crompton, J.L. (1995). Economic Impact Analysis of Sports Facilities and Events: Eleven Sources of Misapplication. *Journal of Sport Management*, 9 (1), 14–35.
- Crompton, J.L., Jeong, J.Y., & Dudensing, R.M. (2016). Sources of Variation in Economic Impact Multipliers. *Journal of Travel Research*, 55(8), 1051–1064.
- Daily, D. (2014). *Sports Venues Keep Large Events in the Ball Game*. InfoComm International, January 2014. Retrieved from: <https://www.infocomm.org/cps/rde/xchg/SID-98523D9A-0CF71852/infocomm/hs.xsl/38935.htm>.
- Damonte, L.T., Marcis, J.G., & Rella, T. (2013). Methodology to Reduce Bias in Tourism-Driven Economic Impact Studies. *Atlantic Economic Journal*, 41(4), 451-452.
- Delaney, K. J., & Eckstein, R. (2003). The Devil is in the Details: Neutralizing Critical Studies of Publicly Subsidized Stadiums. *Critical Sociology*, 29(2), 189–210. <https://doi.org/10.1163/156916303769155805>
- Diamond, Jared. Minor Leagues Take a Hit. *The Wall Street Journal*, April 10, 2020.
- Drakakis, P. & Papadaskalopoulos, A. (2014). Economic Contribution of Active Sport Tourism: The Case of Four Sport Activities in Messinia Greece. *Journal of Sport and Tourism*, 19 (3/4), 199-231.
- du Plessis, S. & Maennig, W. (2011). The 2010 FIFA World Cup high-frequency data economics: Effects on international tourism and awareness for South Africa. *Development Southern Africa*, 28 (3), 349-365.
- Dwyer, L. & Forsyth, P. (2005). Estimating the Impacts of Special Events on the Economy. *Journal of Travel Research*, 43(4), 351–359.
- Dwyer, L., Forsyth, P., & Spurr, R. (2004). Economic Effects: New and Old Approaches. *Tourism Management*, 25(3), 307–317.
- Dwyer, L., Forsyth, P., & Dwyer, W. (2010). *Tourism Economics and Policy*. Bristol, UK.
- Forbes (2016). *The World's 50 Most Valuable Sports Teams, 2016*. Retrieved from: <https://www.forbes.com/pictures/mli45fgemg/1-dallas-cowboys/#1d555f17b59b>.
- Giesecke, J.A. (2011). Development of a Large-scale Single US Region CGE Model using IMPLAN Data: A Los Angeles County Example with a Productivity Shock Application”, *Spatial Economic Analysis*, 6(3), 331-350.
- Giesecke, J.A. & Madden, J.R. (2011). Modelling the Economic Impacts of the Sydney Olympics in Retrospect - Game Over for the Bonanza Story? *Economic Papers*, 30 (2), 218-232.
- Goldman, S. (2014). *The Goldmine: Multi-purpose Stadiums Sustain the Local Economy*, CityCollegeNews, August 3, 2014. Retrieved from: <https://citycollegenews.com/2014/08/03/sams-sports-thoughts-multi-purpose-stadiums-sustain-the-local-economy/>
- Gratton, C., Shibli, S., & Coleman, R. (2005). Sport and economic regeneration in cities. *Urban Studies*, 42 (5), 985-999.
- Groothuis, P.A. & Rotthoff, K.W. (2016). The Economic Impact and Civic Pride Effects of Sport Teams and Mega-Events: Do the Public and Professionals Agree? *Economic Affairs*, 36 (1), 21-32.
- Hamilton, B.W. & Khan, P. (1997). Baltimore's Camden Yards ballpark, in Noll, R.G. and Zimbalist, A. (Eds.) *Sports, jobs, and taxes: The economic impact of sports teams and stadiums*, Brookings Institution, Washington, DC, 245-281.

- Heitner, D. (2015). Sports Industry Sports Industry to Reach \$73.5 Billion by 2019. *Forbes*, Oct. 19, 2015. Retrieved from: <https://www.forbes.com/sites/darrenheitner/2015/10/19/sports-industry-to-reach-73-5-billion-by-2019/#4ce1c3451b4b>.
- Hodur, N.M. & Leistriz, F.L. (2006). Estimating the Economic Impact of Event Tourism: A Review of Issues and Methods. *Journal of Convention and Event Tourism*, 8 (4), 63-80.
- Humphreys, B.R. & Ruseski, J.E. (2008). Estimates of the Size of the Sports Industry in the United States. *North American Association of Sports Economists*, August 2008, 1-36.
- Humphreys, B. R. & Nowak, A. (2017). Professional sports facilities, teams and property values: Evidence from NBA team departures. *Regional Science and Urban Economics*, 66, 39-51. <https://doi.org/10.1016/j.regsciurbeco.2017.06.001>.
- Hudson, I. (2001). The use and misuse of economic impact analysis. The case of professional sports. *Journal of Sport and Social Issues*, 25(1), 20-39.
- Klebnikov, S. (2016). Minor League Baseball's Most Valuable Teams. *Forbes*, July 8, 2016. Retrieved from: <https://www.forbes.com/sites/sergeiklebnikov/2016/07/08/minor-league-baseballs-most-valuable-teams/#586f4d2443b2>
- Li, S., Blake, A. & Thomas, R. (2013). Modeling the economic impact of sports events: The case of the Beijing Olympics. *Economic Modelling*, 30, 235-244.
- Mason, D. S. (1999). What is the sports product and who buys it? The marketing of professional sports leagues. *European Journal of Marketing*, 33(3/4), 402-418.
- McCartha, A. (2002). It pays to win. *Business and Economic Review*, 49(1), 3-12.
- Morgan, J. (1997). *Glory for Sale*, Bankroft Press, Baltimore, MD.
- Müller, M. (2014). After Sochi 2014: costs and impacts of Russia's Olympic Games. *Eurasian Geography and Economics*, 55(6), 628-655
- Noll, R.G. & Zimbalist, A. (1997). "The Economic Impact of Sports Teams and Facilities", in Noll, R.G. and Zimbalist, A. (Eds.). *Sports, Jobs, and Taxes*, The Brookings Institute, Washington, DC.
- Pan, B., Huan, T., Taks, M., Christine Green, B., Chalip, L., Kesenne, S. and Martyn, S. (2013), "Visitor composition and event-related spending", *International Journal of Culture, Tourism and Hospitality Research*, Vol. 7 No. 2, pp. 132-147. <https://doi.org/10.1108/IJCTHR-04-2013-0020>
- Rappaport, J. & Wilkerson, C. (2001). What are the Benefits of Hosting a Major League Sports Franchise? *Economic Review*, First Quarter 2001, 55-85.
- Reichard, Kevin (2014). Average Cost for Family of Four at MiLB Game. *Ballpark Digest*, June 5, 2014. <https://ballparkdigest.com/201406057357/minor-league-baseball/news/average-cost-for-family-of-four-at-milb-game-6355>
- Rickman, Dan S. & R. Keith Schwer (1995). A Comparison of the Multipliers of IMPLAN, REMI, and RIMS II. *The Annals of Regional Science*, 29, 363-374.
- Rosentraub, M.S. (1999). *Major league losers: The real cost of sports and who's paying for it*, Basic Books, New York, NY.
- Roche, S., Spake, D. F. & Mathew, J. (2013). A model of sporting event tourism as economic development". *Sport, Business and Management*, 3(2), 147-157.
- Santo, C. (2005). The Economic Impact of Sports Stadiums: Recasting the Analysis in Context. *Journal of Urban Affairs*, 27(2), 177-192.
- Santos, X.T., Grado, S.C., Grace, L.A. & Stuart, W.B. (2011). Effects of Changes in Impact Analysis for Planning Model Industry Sector Data on the Economic Impacts of the Logging Industry in Mississippi. *Forest Products Journal*, 61(5), 390-400.
- Siegfried, J., & Zimbalist, A. (2002). A Note on the Local Economic Impact of Sports Expenditures. *Journal of Sports Economics*, 3(4), 361-366. <https://doi.org/10.1177/152700202237501>

Soebbing, B.P., Mason, D.S., & Humphreys, B.R. (2016). Novelty effects and sports facilities in smaller cities: Evidence from Canadian hockey arenas. *Urban Studies*, 53(8), 1674-1690.

Streicher, T., Schmidt, S.L., Schreyer, D. & Torgler, B. (2017). Is the economy, stupid? The role of social versus economic factors in people's support for hosting the Olympic Games: evidence from 12 democratic countries. *Applied Economics Letters*, 24(3), 170-174.

The Minor League Teams That Could Lose M.L.B. Ties. *The New York Times*, November 16, 2019.

United States Bureau of Labor Statistics (2016). *Annual Calendar Year Tables, 2018, Table 1800*. Available at: <https://www.bls.gov/cex/tables.htm#annual>.

Wassmer, R.W., Ong, R. & Propheter, G. (2016). Suggestions for the Needed Standardization of Determining the Local Economic Impact of Professional Sports. *Economic Development Quarterly*, 30(3), 252–266.

Zimbalist, A. & Noll, R.G. (1997). Sports, Jobs, and Taxes: Are New Stadiums Worth the Cost? in: Noll, R.G. and Zimbalist, A. (Eds.), *Sports, Jobs, and Taxes*, The Brookings Institute, Washington, DC.

