

The Economic Impact of Professional Sports in the United States

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Abstract

Since 1990, stadium construction for professional sport franchises has boomed significantly (Harger et al., 2016). Often times these stadiums are publicly subsidized by tax payers to lure franchises to either stay in the city they are present in, or replace the organization in a new city. Public officials often promise economic benefits to come with the presence of a new stadium or professional franchise when subsidies are campaigned for (Feng & Humphreys, 2018). Literature on this topic of economic impacts, relating to professional sport franchises and sports facilities, show mixed evaluations (Jasina & Rotthoff, 2016). The purpose of this synthesis was to review the literature on the economic impact of American professional sports franchises.

Chapter One: Introduction

Over the past century, professional sports in the United States, have become a major cultural factor within American society. According to Statista, in a survey conducted in 2019, more than two thirds of adults (age 18 and over) considered themselves fans of at least one of the following sport leagues: National Football League (NFL), Major League Baseball (MLB), National Hockey League (NHL), National Basketball Association (NBA), and Major League Soccer (MLS). This fandom has led to a major amount of economic capital produced by sporting leagues and franchises. In 2010, when pooled together, the NFL, MLB, NBA, and NHL franchises were collectively valued at \$66 billion, according to Forbes (Propheter, 2012). The size of the sports industry in the United States has led to many questions and studies concerning how professional sports impact American economies.

Generally, the public perception on how sports economically impact a community where professional franchises are nearby, have shown to be positive (Douvis, 2008). One could presume that this perception has allowed franchises like the Las Vegas Raiders to receive a reported amount of \$750 million dollars in public subsidies, approved by Nevada legislatures, for the construction of their new stadium (U.S. News, 2017). Contrary to this belief, that professional sports positively impact local economies, in recent research that has been conducted, the presence of professional sports franchises has often shown to create little to no definitive economic benefits for the cities they are present in (Coates & Humphreys, 2011; Harger, Humphreys & Ross, 2016; Humphreys & Nowak, 2017; Jasina & Rotthoff, 2016; Propheter, 2012.). Inversely, current literature also proposes that measurable, positive economic benefits can be accredited to the existence of professional sport franchises and facilities, within

the cities they are located (Agha, 2013; Connaughton & Swartz, 2014; Davis & End, 2010; Feng & Humphreys, 2018; Propheter, 2019.). As sports have remained a major entertainment player within American society, the analyzation of the economic impacts created because of them, is essential for public knowledge.

The primary theme of this research will be focused on understanding how professional sports impact the American economy. Specifically, this study will investigate correlations that exist between economic factors (e.g. property values, wages, business openings, job creation, income, rent prices, and employment) and cities that are host to professional sports franchises. This synthesis will also examine professional sports franchises from leagues such as: the NFL, MLB, NHL, NBA, and MLS, to analyze which economic factors are most highly impacted (positively and/or negatively) by their presence in metropolitan statistical areas (MSAs) and counties.

A primary component within the overall presence of a professional sports franchise is the major sports facility that they are “home” to. Over the last 20 years, the construction of professional sports facilities, within the United States, has boomed significantly (Feng & Humphreys, 2018). These facilities have been viewed by policy decision makers as potential opportunities for local economies to take advantage of space that is not being utilized within their city (Propheter, 2019). The construction of American professional sports facilities is often publicly subsidized by tax payers as an attempt by local governments to create positive economic benefits for their city and surrounding area to experience (Harger et al., 2016). From 1991-2006, between the MLB, NBA, NHL, and NFL, 64 sports facilities were newly constructed, while most of them utilized public subsidies paid by tax payers (Humphreys, 2017). This synthesis will

examine current literature, relating to the economic impact of professional sports facilities (and the construction of them) to help provide better knowledge on whether or not public subsidization is economically beneficial for cities.

Statement of the Problem

The sports industry in the United States of America is a major producer of economical capital. According to Statista, the North American sports industry generated more than \$71 billion in revenue in 2018 and this figure is expected to reach more than \$83 billion by 2023. As professional sports franchises continue to grow in terms of revenue and popularity, it is important to understand how a community is impacted economically by their presence. Groups in favor of the public subsidization of newly constructed sport facilities, have proclaimed that this action should be considered “sound economics” and the indirect and direct economic advantages, outweigh the overall costs for taxpayers (Propheter, 2012). It is important for the general public to understand how professional sport franchises and public subsidies will potentially affect their local economies. When cities vote on whether or not to bring in professional sports franchises, or to subsidize a sports facility, extensive research should be available to the public on how that team or facility may affect the economic climate in the city.

Purpose of the Study

The purpose of this synthesis project is to review the literature on the economic impact of American professional sport franchises.

Operational Definitions

1. Economic Impact - How factors such as employment and income are affected, within a specific area, in the aftermath of an action (Coates & Humphreys, 2011).

2. Consumption Shift – When a location experiences the loss of a particular business, sports franchise, etc., and the public moves to expending time and income to other options nearby (Jasina & Rotthoff, 2016).
3. Metropolitan Statistical Area (MSA) - Described as a densely populated region, typically in an urban setting (Agha, 2013).
4. Per Capita Income – The average earning of residents in a specified area (Agha, 2013).
5. Professional Sports Franchise - The sports team that represents a city and fanbase e.g. Buffalo Bills (Davis & End, 2010).
6. Subsidies - In terms of sport related context, subsidies can be described as the act of publicly financing professional sport franchises and their facilities (Propheter, 2012).
7. Sport facility - Described as a multi-purpose arena or stadium that is often viewed as a local amenity for urban settings (Humphreys & Nowak, 2017).

Research Questions

- How do professional sport franchises and/or major sports facilities economically impact a community?
- Which economic factors can be seen as positively impacted by professional sport franchises and/or major sports facilities and which factors are presumed unaffected or negatively impacted?
- Are public subsidies well spent by local and state governments to fund sport facility construction?

Delimitations

- All articles reviewed and incorporated within the critical mass of this synthesis were published post 2010.
- All articles that were reviewed dealt with either American professional sport: franchises, facilities, and/or events, in the United States.
- Economic impact factors were a major topic in all articles that were examined.

Chapter Two: Methods

The purpose of this chapter is to highlight the methods that were used to identify the most qualified research concerning how professional sports economically impact society in the United States. The research gathered in this study was obtained via the EBSCO database from The College at Brockport's Drake Library. Google Scholar, SportDiscus and Academic Search Complete were the three databases used to collect research within EBSCO.

The key word phrase "Sports and United States Economic Impact" was used to generate the first results of the study as it was entered into SportsDiscus. This search on SportsDiscus accumulated 433 results. A "full text" limiter was then placed on the search, in addition to exempting articles published before the year 2010, which cut down the results to 157. Articles were then selected based on if they specifically mentioned American professional sport franchises (or facilities) and economic factors in the title or the abstract. Ultimately four articles met the criteria and were selected from SportsDiscus to be included within the critical mass of this study.

The key word phrase "Sports and United States Economic Impact" was then entered into Academic Search Complete. The results for the search totaled to 673. A limiter of "full text" was then applied to the search (along with eliminating articles prior 2010). This brought the total amount of hits down to 173. Articles were then analyzed and chosen based upon keywords that were in the titles and abstracts. These keywords had to be about economic factors and American professional sport franchises or sport facilities. Ultimately, two articles were picked from Academic Search Complete to be included within the critical mass of this study.

The last database that was used to gather articles for this synthesis was Google Scholar. The key word phrase “Economic Impact of Professional Sports” was entered into the search engine and generated 2,530,00 hits. The search was then delimited to articles published post 2010, which then reduced the hits to 240,000. Although many articles could have been potentially suitable to be incorporated in this synthesis, ultimately four were identified as the most relevant and strongest to be included within the critical mass of the study. Every article included from Google Scholar focused on studies conducted within the United States.

All journal articles that were ultimately selected to be included in this synthesis and incorporated within the critical mass, were scholarly, peer reviewed, and provided full text. Keywords that were identified, to determine whether or not the studies justified to be incorporated in this synthesis, had to be highly centered around discussing economic factors. The key words: wages, employment, taxes, income, property values, economy, and subsidies were among the most abundant and relevant, relating to economics, identified during the research process. In addition to key words that were linked to economic factors, articles also had to highlight mentions of professional sports franchises, professional sports facilities and/or professional sport events. All studies had to take place in the United States.

Overall, ten studies made up the critical mass of this synthesis. The ten studies came from a variety of academic journals including: (4) *Journal of Sports Economics*, (1) *Economic Inquiry*, (1) *Journal of Business & Economics Research*, (1) *International Journal of Sport Finance*, (1) *Journal of Urban Affairs*, (1) *Regional Science and Urban Economics*, and (1) *Applied Economics*.

This review took place in a vast amount of different locations throughout the United States. The critical mass data of this synthesis is comprised of a total of 594 MSAs or counties, located within the United States, that were host to a professional sports franchise and/or professional sports facility. The NFL, MLB, NHL, MLB, MiLB, and MLS were the professional sport leagues examined and included in the research.

The 10 critical mass studies in this synthesis analyzed data using a variety of techniques. Per capita income, wages, residential property values, employment levels, business openings and commercial rent prices were the primary economic factors examined. Data on these economic factors were obtained by the authors via government databases such as: The Regional Economic Information System created by the Bureau of Economic Analysis, Regional, Current Population Survey (CPS), Consumer Price Index, Dun and Bradstreet MarketPlace, U.S Census Bureau's County Business Patterns, Charlotte Sports Commission, Reference USA, and Department of Finance. After data was obtained, a variety of equation models were used by the authors to generate results relevant to their respective studies. The primary models exercised in this synthesis included: Coates and Humphreys (1999), Empirical Equations, Coates and Humphreys (2002), a sales regression equation, a hedonic price equation, a spatial lag hedonic housing price equation, a difference-in-differences equation, a DDD rent equation, and a random effect regression equation. The variety of different economic factors examined and models utilized, provided this synthesis a broad and encapsulating overview of how professional sports economic impact the United States public.

Chapter Three: Review of Literature

The goal of this chapter is to highlight the purpose, method, and primary findings of each literature incorporated within this synthesis. Articles examined are categorized into groupings indicating if the results generated from the studies yielded mixed or insignificant results, positive results, or negative results. The “results” are in reference to whether or not the economic factor(s) examined, in each respective study, indicated positive, negative, mixed or insignificant correlations linked to the professional sport franchises or facilities examined.

Within each initial grouping, the studies are further subcategorized into the economic factor(s) they are examining. Creating these subcategories allows the reader to identify which economic factors are seen to be linked with either positive, negative or mixed/ insignificant results.

Mixed or Insignificant Results

The following studies in this category indicated that the economic factor(s) examined, in relation to professional sport franchises or facilities, showed mixed or insignificant impacts on the local economy in question.

Income

A study investigating how minor league baseball teams’ affect local economies, Agha (2013) sought to determine if per capita income is positively or negatively correlated with the presence of specific leagues and stadiums. The data in Agha (2013) consisted of 238 MSAs, in a time period spanning from 1985-2006, that were host to a minor league or independent league baseball team. The dependent variable analyzed in this study was the per capita income of the 238 MSAs under examination. A “panel heteroscedastic, autocorrelated model” (p. 237) was used

to estimate if the presence of a minor league team and/or minor league stadium impacts the per capita income of the MSA where the team and stadium is located (Agha, 2013).

As a result of the model used for analysis, the authors found that no significant negative effects were statistically linked with minor league teams or stadiums, in regard to per capita income, in any MSAs examined. Although the results were in large part insignificant, AAA teams, A+ teams, rookie stadiums, and AA stadiums showed positive effects on per capita income in the MSA where they were located (Agha, 2013). Overall, the majority of minor league teams and stadiums showed to induce very minor effects, one way or another. Agha (2013) suggests that its results created a framework for future research to be conducted concerning the economic impact of minor professional sports stadiums and leagues, specifically mentioning minor league hockey.

Another study, focused on examining the economic impact of NBA franchises and sports facilities. Propheter (2012) investigated the effect that professional basketball arenas have on regional personal income, in their respective MSAs. 24 MSAs, host to professional basketball franchises from 1979-2009, were included in this study. As mentioned, regional personal income was the economic factor examined. Propheter (2012) utilized Baade and Dye's (1990) traditional model in order to assess the gathered data. Baade and Dye (1990) was then expanded to account for three covariates. Six random effect regression models were additionally ran to examine if regional strength is linked to an arena's economic returns.

As a result of the Baade and Dye (1990) model, no significant statistical association was found between MSA regional personal income and cities host to an NBA arena. Propheter (2012) notes that, "Although a handful of cities in this study were found to be positively impacted by an

arena (Atlanta, Boston, Chicago, Denver, Indianapolis, and Oklahoma City), income transfers from the suburban area around the central city may be responsible” (p.457). For the MSAs that had NBA arenas built in the time period of 2001-2009, results showed an average decline of more than \$2,400 in per capita income.

Propheter (2012) concluded by suggesting that professional sports may not be the cause of economic development in an MSA, but rather the effect. Comprehension of the context of a city, and its preexisting economy, are the key factors that predict the economic success of basketball facilities (Propheter, 2012). Propheter (2012) also suggests that basketball arenas are an “economic complement” of a city rather than the primary source of economic development.

Wages

Coates & Humphreys (2011) investigated the impact professional sports have on wages for individuals working in business sectors presumably tied closely to the sports industry. This study focused exclusively on the impact of wages for the male gender. The workers included in this research came from the following business sectors: food service, lodging, and amusement/recreation. The data within Coates & Humphreys (2011) contained a sample of 250 urban MSAs located in the United States. 42.7% of the individuals within these MSAs lived in a city that was host to either an MLB, NBA and or NFL franchise(s) and 67% of the subjects lived in a MSA that did not have a professional sports franchise (from the MLB, NBA, or NFL) present in their city. Using the Current Population Survey (CPS) March Supplements data, Coates & Humphreys (2011) collected wage information (in the industries mentioned above) from the time period of 1983-2002. To allow for the determination of wages, this study initially utilized a “reduced form econometric model” equation to generate results statistically. While

controlling for the two dependent variables (average weekly earnings and average hourly earnings) in the analysis portion of this study, the authors analyzed data by creating and utilizing six empirical models.

In conclusion of the model equations, Coates & Humphreys (2011) provides statistical evidence that the presence of a professional sports franchise affects the labor market in the host MSA. The results suggest that an MSA, host to an NFL franchise, is significantly associated with higher hourly and weekly earnings in the three business sectors (food service, lodging, and amusement/recreation) examined, compared to MSAs without an NFL team present. On average, an MLB franchise is linked to lower wages in occupations directly related to sports in the MSAs where they are located. NBA franchises overall, showed insignificant results one way or another compared to the NFL and MLB.

The authors suggest that this study provides an important validity check on prior negative resulting research, concerning wages and professional sports impact because it does not aggregate data between individuals in specific areas. Addressing economists and prosubsidization groups that have made claims that employees working in direct and indirect businesses tied closely to professional sports will see positive impacts in their earnings, Coates & Humphreys (2011) reinforces prior studies exclaiming that public subsidies are not justified for increasing wages in these sectors.

Employment Levels

Jasina & Rotthoff (2016) took advantage of the NHL lockout endured during the 2004-2005 season, that resulted in zero games being played for the year, by analyzing the effect of county employment and payroll data in cities that were home to an NHL franchise at that time.

This study utilized U.S. Census Bureau's County Business Pattern (CBP) data to determine county employment and payroll levels (four years before, the year during, and four years after the lockout took place (2001-2009)) in the locations/businesses under examination.

Accommodations, drinking places, restaurants, and spectator sports were the business sectors that were included in the data. 142 counties, 25 of the counties were host to NHL franchises and the remaining 117 were bordering the "NHL counties", made up the data set.

Jasina & Rotthoff (2016) applied an empirical model approach for its analysis, utilizing separate linear equations for each respective industry. Surrounding non-NHL county employment and wage (payroll) results were compared to NHL counties. Jasina & Rotthoff (2016) suggested in its findings that even though the NHL lockout lasted a prolonged amount of time, only "drinking places" saw a decrease in employment in counties that had an NHL team during 2004-2005 season timeline. In addition, three of the four industries showed a significant decrease in 1st quarter payrolls in NHL counties during the lockout. The authors suggest that the spectator sports/performing arts industry is presumed to be affected by the wage decrease in result of the lack of player contracts, making these findings insignificant.

Jasina & Rotthoff (2016) mentioned a common term, consumption shift, to explain how other business sectors or areas in a location may see an increase in economic return, when or where sports aren't being played. The idea that there is a consumption shift in NHL counties when professional hockey isn't being played, is supported by the fact that the results showed wage increases in non-NHL counties when the lockout took place. Consumption shift, in relation to professional sports being present or not in cities, has been a topic discussed in many economic literature pieces and the results of Jasina & Rotthoff (2008) supports this line of research and its

current consensus. Professional sports are not a catalyst of economic growth but rather an economic complement.

Business Openings

Harger et al. (2016) examined the impact a new sports facility had on the number of business openings taken place nearby the facility. Prior to this investigation, no economic impact study (focused on professional sports or stadiums) utilized establishment-level data to carry out research (Harger et al., 2016). New sports facilities dedicated to NFL, MLB, NHL, or NBA franchises, that opened up between the years 2002 and 2006, made up the primary portion of the data set. In total, 10 new facilities opened up in that time period, resulting in 10 cities being a part of the study. Information on business activity openings, in these respective areas, was extracted from Dun and Bradstreet (D&B) Marketplace files.

Within each MSA, where the new facility was constructed, census tracts were identified to find contrasts in business openings close and far away from the facility (Harger et al., 2016). The authors created an empirical difference-in-difference model equation to compare contrasts in business openings in census tracts one, three, and five miles away from the new facility. Census tracts unbound to the one, three, and five-mile restrictions, but were still apart of the MSA where the facility was constructed, were also analyzed to compare to the census tracts that were right next to the stadium (Harger et al., 2016). Ultimately, there were 7,996 census tracts included in the data set. In result of the model equation being ran, the authors determined that there is no evidence of a significant positive increase in business openings, in census tracts closer to the facility, compared to census tracts that are further distanced away in the MSA.

Positive Results

The following studies indicated that the economic factors examined, in each respective study, yielded positive impact reviews in relation to the professional sport franchise(s) and/or sports facilities under investigation.

Income

Davis and End (2010) focused on the economic factor of income when they examined how the success of an NFL franchise, or lack thereof, may impact individuals economically in the host city. It has been hypothesized that when an NFL franchise wins a super bowl, the average personal income of the individuals, in the MSA where the team is located, increases in relation (Davis & End, 2010). Thirty-eight American cities that were host to an NFL, MLB, and or NBA franchise, between the years 1969 and 1998, made up the collection of data to be examined. Real per capita income and real wage per capita were the two economic factors examined in the study and this data was obtained via the national consumer price index.

Davis & End (2010) utilized an econometric method to generate results. Coates & Humphreys (2002) and Matheson (2006) were both slightly modified and used as the models for this study. Matheson's (2005) data set was analyzed and incorporated as a robustness check. As a result of the data generated from the equations, the statistics presented suggest that as the winning percentage of an NFL franchise increases, per capita personal income of the team's respective MSA, rises in relation (Davis & End, 2010). An increase in the growth rate of real wage income per capita was also identified and correlated with NFL franchises' winning percentages.

A result of the findings, Davis & End (2010) suggested that psychological impacts may be the answer behind this phenomenon presented. “One possible explanation for this relationship is that workplace productivity increases as a function of the team success” (Davis & End, 2010, p.49). Another idea supported by these findings and presented in the conclusion, as a policy recommendation, is the suggestion that stadium financing should be dependent upon a franchise’s success. Having a competitive balance across teams in the NFL is potentially very important for a city’s economy (in regards to per capita income) with a franchise (Davis & End, 2010). According to Davis & End (2010), if a team begins to win too many games beyond 11, the per game effect on personal income actually starts to decline. This idea suggests that in relevant cities, the NFL should work to implement policies to make sure the league is as competitively balanced as possible, to help influence positive impacts on per capita income.

Property Values

Feng and Humphreys (2018) examined how the proximity of two sports facilities, one being dedicated to an MLS team (Columbus Crew) and the other to an NHL team (Columbus Blue Jackets), impacted residential property values in Columbus, Ohio in the year 2000. One of the facilities, Nationwide Arena (NHL) opened in 2000 and the other, Crew Stadium (MLS), opened one-year prior in 1999. Residential housing transaction data was analyzed in this study and it was obtained via prior literature such as Brasington and Haurin (2006) and Brasington (2007). 9,504 single-family homes, that were sold at the price of more than \$30,000, in the year 2000, constituted the data set.

A spatial lag hedonic model equation, Anselin (1988), was used as the model for this study to determine how these two sports facilities impacted housing values in Columbus, Ohio.

Spatial effects were incorporated, and the effects of businesses on housing levels was controlled in the model, to assure reliability. Feng & Humphreys (2018) ultimately stated that the results showed that there is a significant positive impact on the value of homes that are located close to both stadiums and this impact fades as the distance from the facility increases "...values increase by 1.75% for each 10% decrease in the distance from the house to the facility" (p. 206). Feng & Humphreys (2018) exclaimed that this research's results aid in the support for the public subsidization of sports facilities. Sports facilities create intangible benefits for a city to enjoy, such as: cultural importance, increased public image, community visibility, and these benefits are turned into economic gains for a city through increased housing values (Feng & Humphreys, 2018).

Employment and Gross Revenue

A study investigating the economic impact of sports teams and sporting events, Connaughton & Swartz (2014) examined the effect that sports created in the MSA of Charlotte, NC in 2011. Output (revenue) and employment levels were the two economic factors under investigation in this research. Connaughton & Swartz (2014) grouped together professional sports franchises (the Carolina Panthers, Charlotte Bobcats and Charlotte Knights) present in Charlotte, NC in the year 2011 as well as the few most impactful collegiate sports teams, UNC Charlotte men's basketball and John C. Smith men's football and basketball. Also included in the data set, were major sporting events that took place in the year examined. These sporting special events included: NASCAR races, a PGA Tournament, the ACC Football Championship, the Belk Bowl, CIAA Basketball Tournament, and the Gold Cup.

The business sectors analyzed in Connaughton & Swartz (2014) were categorized into on-site spending industries, which included: spectator sports companies, television/radio broadcasting, cable networks and program distributors, as well as off-site spending industries: food/beverage stores, gas stations, general merchandise, and lodging (hotels and motels). This study utilized industry firm databases such as, Dunn and Bradstreet and Reference USA, to gather employment and revenue information on the on-site and off-site business sectors examined. Connaughton and Swartz (2014) made use of “IMPLAN” multipliers (derived from the Minnesota IMPLAN Group) to help estimate direct revenue and employment figures created by the sports industry in the business sectors included in the data. These multipliers were statistically applied to the numbers derived from Dunn and Bradstreet and Reference USA.

As a result of the analysis in 2011, the professional and collegiate sport teams located in Charlotte, N.C., generated an estimate of more than \$800 million in revenue (\$700 million from on-site businesses and \$100 million from off-site) and impacted 9,827 jobs (8,583 on-site and 1,245 off-site). For the special sporting events analyzed, more than \$614 million in revenue (\$369 million from on-site businesses and \$244 million from off-site) was estimated to be produced and 7,376 jobs (4,528 on-site and 2,849 off-site) were impacted in result of the events taking place. Connaughton & Swartz (2014) suggest that the results generated from the study show that the sports industry in the Charlotte MSA, over the pasts 30 years, has become a big business sector in the city and can be seen as an “important economic cluster for the regional economy” (p. 228).

Commercial Rent Prices

Propheter (2019) estimated the presumed effect of commercial rent prices in Brooklyn N.Y. induced by the construction of the Barclays Center. The Barclays Center underwent construction beginning in 2010 and ultimately opened in 2012, costing more than \$840 million to construct. In order to access the presumed effects mentioned on commercial rent prices, Propheter (2019) utilized a triple difference-in-differences (DDD) model to estimate the effect of net operating income (NOI) on businesses located within a one-mile radius of the sports facility. The NOI of businesses included in the data set, was obtained over a ten-year period (2006-2015) from the Department of Finance (DOF). Throughout the ten years, there were a total of 19,670 tax lots observed and included in the data.

Propheter (2019) utilized three Heckman Correction Models and an OLS method in order to properly analyze the data derived from the DDD model. As a result of the analysis, Propheter (2019) found that commercial landowner's NOI fell by an average of 3.7% per 1,000 feet leading away from the facility. This "distance-decaying effect" (p. 108) on commercial rent prices, suggests that businesses are willing to pay higher prices in order to be located closer to the Barclays Center (Propheter, 2019). Like other studies concerning professional sports facilities, these results are consistent with prior research supporting the idea that residential real estate prices can be positively impacted by their presence. Propheter (2019) also suggests that since a maximum estimate of \$66 million was collected in the form of taxes from commercial landowners, in the first four years after construction was complete (within a one-mile radius of the Barclays Center), "value-capture financing" (p.109) could be an important tool to use and

gain support for public subsidies. The author concludes by stating that further attention is needed by policy makers on the topic of commercial land tax returns and sport facility construction.

Negative Results

The following study provided a negative impact result, on the economy in question, created by the presence of a professional sports franchise.

Property Values

Focusing on how the departure of professional sports franchises impacts an economy, Humphreys & Nowak (2017) investigated the effect that two NBA teams had on residential property values in the cities they moved away from. The two NBA franchises that were included in this study were the Charlotte Hornets and Seattle SuperSonics. The Seattle SuperSonics abandoned their arena and relocated to a new city in 2008 and the Charlotte Hornets left their respective location and arena in 2002. Residential property values were examined in a five-mile radius of each arena from the years 2000-2013 for Seattle and 1990-2004 for Charlotte. Residential property sale price data were obtained via the “King County, Washington, and Mecklenburg County, North Carolina Assessors’ offices” (Humphreys & Nowak, 2017, p. 41).

An important component included within the analysis of Humphreys & Nowak (2017) is the fact that both arenas continued to host events like: NCAA games, WNBA games, concerts, and others, after the NBA franchises departure in the cities examined. This allowed the authors to analyze the presumed effect the SuperSonics and Hornets had on residential property values while they were present in their respective locations as well as after they relocated. In order to properly assess the effects on residential property values, Humphreys & Nowak (2017) utilized a repeat sales regression model and a hedonic price model. As a result of the model equations, the

data shows a substantial percentage increase in condominium and single-family home prices in the areas examined, after the NBA teams departed compared to when they were present in Seattle and Charlotte (respectively).

NBA games create consistent large crowds around the stadiums they play games in. These large crowds are seen as a disamenity for the public located very close (within one mile) of the facility (Humphreys & Nowak, 2017). Large crowds create additional disamenities throughout the areas located near the stadiums including: litter, traffic, noise pollution, and others (Humphreys & Nowak, 2017). Humphreys & Nowak (2017) suggests that these consistent disamenities, that diminished in the locations examined in Seattle and Charlotte, were the primary factors affecting the increase in residential property values in this study.

The authors concluded by stating that this literature does not support Tax Increment Financing, which is the act of using public bonds to finance city projects in the hope that increased property taxes (from surrounding areas close to the project) will create enough revenue over time to pay for the interest and principle on the bonds expended, of sport facility construction. Evidence shows a lack of enough revenue being generated from residential property taxes, in areas close to the stadiums. Humphreys & Nowak (2017) also suggested that over time, residents living close to professional sports facilities may actually see a depreciation in the value of their property.

Summary

Analyzing the economic impact of professional sports franchises and sports facilities is a complex process that generates results dependent upon a multitude of factors. As seen in this literature review, five studies indicated their results generated mixed or insignificant conclusions,

four indicated positive results, and one strictly stated negative results. A variety of economic factors were examined in this literature review including: per capita income, wages, property values, business openings, employment levels, commercial rent prices, and gross revenue.

Interestingly enough, three of the economic factors examined overlapped one another in terms of being linked to a negative, positive, or mixed review, e.g. income was linked to both positive and mixed reviews. This shows the volatility that professional sports and facilities have on an economy. As mentioned by many of the authors, the context of a city is extremely important when analyzing the economic impact of a sports facility and or sports franchise.

Chapter 4

Results, Discussion and Recommendations for Future Research

The purpose of this chapter is to present the results of the review of literature on the economic impact of American professional sport franchises and how these results align with the purported research questions which guided this synthesis project. In addition, recommendations for future research, as it relates to the economic impact of professional sport franchises, are presented.

The results of this review of literature revealed the following sentiment that the analyzation of the economic impact of professional sport franchises, within the United States, is an extremely volatile process that generates different results based on a multitude of factors such as: the professional sport league, professional sport team, location observed, measurement level (e.g. MSA, county, state) utilized, and the economic factor(s) under investigation. As previously mentioned, the research review generated five studies that identified mixed economic results, four positive results, and one negative. Overall, seven economic factors were investigated in the literature review: income, wages, property values, business openings, employment levels, commercial rent prices and revenue. While some of these economic factors were only analyzed in one study included in the literature review (e.g. business openings, commercial rent prices, and revenue), income, wages, property values, and employment levels were all analyzed more than once and, in some cases, showed more than one result (in terms of being a negative, positive, or mixed review).

Discussion

Interpretations

As part of this literature review, several research questions were posed. The first research question stated: how do professional sport franchises and/or major sports facilities economically impact a community? The results from the literature review confirm that this question provides a more complex response than a simple “good” or “bad” answer. For example, Agha (2013) found that minor league baseball teams/stadiums economically impacted certain MSAs in a positive manor and negatively in others, showing mixed results dependent upon the location. Indifferently, Humphreys & Nowak (2017) clearly stated that the departure of two NBA franchises (Seattle SuperSonics and Charlotte Hornets), led to economic benefits in areas located near the facilities that they respectively played at, by observing an increase in residential housing values, after the teams left town. In another study that looked at housing values, Feng & Humphreys (2018) exclaimed that Crew Stadium and Nationwide Arena positively impacted property values in homes that were located near the facilities. A careful examination of each respective city, and its sports franchise/facility, is necessary to fully estimate if professional sports are economic catalysts for a community. Professional sports may not be the cause of economic development in a city, but rather the effect (Propheter, 2012). Contrary to popular belief amongst the general public and sport’s fans alike, having a professional sports franchise does not guarantee economic benefits for a city. Researchers ought to work to fully understand a city’s economic climate and should provide that knowledge to its readers, before presenting conclusions.

The second research question examined was, which economic factors can be seen as positively impacted by professional sport franchises and/or major sports facilities and which factors are presumed unaffected or negatively impacted? Based on the seven economic factors examined in the literature review, the results showed a variation of results. Agha (2013) and Propheter (2012) both observed mixed results in per capita income in terms of being positively or negatively impacted by professional sport franchises/sport facilities, whereas Davis & End (2010) stated that per capita income can positively be impacted by a successful NFL franchise. The studies that focused on the economic factor of wages, Coates & Humphreys (2011) and Jasina & Rotthoff (2016), stated that there were both positive and negative effects observed, dependent upon the specific professional sports leagues investigated, ultimately showing mixed results. The two studies that probed the effect that professional sports have on property values, Humphreys & Nowak (2017) and Feng & Humphreys (2018), showed conflicting results. Feng & Humphreys (2018) stated that two professional sport facilities contributed towards positive effects on property values, whereas Humphreys & Nowak (2017) expressed the contrary when observing the departure of two NBA franchises. For the economic factor of employment levels, Connaughton & Swartz (2014) stated positive impacts were created by professional sports and Jasina & Rotthoff (2016) showed mixed and insignificant results.

The final three economic factors observed in the literature review: business openings (Harger et. al. (2016)), commercial rent prices (Propheter (2019)), and revenue (Connaughton & Swartz (2014)), were all probed once. Business openings were linked with mixed/insignificant results, in contrast to revenue and commercial rent prices, which were both associated with

positive findings. Ultimately, based on the results, professional sport franchises and sport facilities show mixed results in terms of being linked with the economic factors examined.

Finally, the third and last research question probed was, are public subsidies well spent by local and state governments to fund sport facility construction? The public subsidization of professional sport facilities, and whether or not it is plausible, is the crux of many economic impact studies that are linked with sports. Like the previous two research questions examined, this question also yielded mixed responses. Feng & Humphreys (2018) stated that their results provided evidence as to why stadiums continue to subsidize sport facilities when it was found that Nationwide Arena and Crew Stadium positively influenced property values surrounding the facilities. Another study that leaned into support for the public subsidization of sports facilities, Propheter (2019), provided evidence that commercial rent prices were higher for properties located closer to the Barclay's Center, compared to others that were located farther away. Inversely, Harger et. al. (2016) and Humphreys & Nowak (2017) supported existing literature that has previously stated that sport facilities do not create enough economic benefits to justify public subsidies being used for there construction. In order to project whether or not the public subsidization of professional sports facilities is justifiable, Propheter (2019) suggests that value-capture schemes may be beneficial tools for governments and pro/anti subsidization groups to utilize, in order to gain support one way or the other.

Implications

Researchers that have studied the economic impacts of professional sports have expressed varying results dependent upon a multitude of factors. These factors include the following: professional sports league/team under investigation, an area's economic climate,

economic factor (income, property values, etc.), and measurement level (e.g. MSA). While some studies, such as Feng & Humphreys (2018), state, for example, that the economic factor of property values is positively impacted by professional sports, other studies, such as Humphreys & Nowak (2017), express the exact contrary. This pattern is consistent with many of the other economic factors that researchers investigate. The conclusions made in this synthesis confirm what other researchers and theories have found by showing mixed and varying results.

Multiple practical implications were formed for researches and public knowledge as a result of the literature review and conclusions constructed. Based on the research conducted, it was found that the NFL, and its franchises, may have more of a positive affect on a city's economy, compared to the other major professional sports leagues (MLB, NBA and NHL). This bit of knowledge provides the implication that an NFL franchise, due to the NFL's extreme popularity in the United States, may be more of an economic catalyst for a city, compared to MLB, NBA, and/or NHL franchises. Another implication that can be provided from this line of research is the fact that having a professional sports franchise in a specific city, does not mean that that city is guaranteed to be more economically successful, compared to others without a professional sports franchise. Researchers have also implied that when a city loses a professional sports franchise, consumption shifts to other business sectors takes place, making up for a potential loss in economic activity. Lastly, it can be implied that by using county level measurement data, researchers may help provide more of an accurate result, compared to when data at the MSA level is utilized.

Recommendations for Future Research

In reviewing some of the most current literature concerned with understanding the economic impact of professional sports in the United States, several limitations were acknowledged regarding the studies under investigation. The first limitation that was noted dealt with the lack of knowledge in understanding the economic climate of each city included in the studies. Very seldom did any of the studies acknowledge the fact that certain cities may be more economically healthy compared to other cities, regardless of the professional sport franchise(s) presence. Another limitation in this line of research to note, is that the researchers also rarely display knowledge on the history of success and popularity surrounding the professional sport franchise(s) included in each respective study. Lastly, there is a limitation surrounding the idea that professional sports are directly the result of change in the economic impact factors investigated. In other words, it may not be entirely plausible to directly link professional sport franchises and facilities to certain economic factors as the main cause for effect.

Based on these limitations and other insights related to the literature, the following recommendations for future research should be considered:

1. Research that compares professional sport franchises and/or facilities that are located in cities with similar economic climates and population levels.
2. Longitudinal research studies that compare professional sport franchises and/or sports facilities that are from the same league and that have had similar successes or failures as a franchise, over an extended period of time.
3. Research that uses methods and procedures that examine county level data, rather than data at the MSA level.

Summary

Overall summary

The purpose of this literature review was to investigate the economic impact of professional sports in the United States. Delimiting variables were utilized to exercise an extensive data-based search, which yielded 10 core articles. These studies were then systematically analyzed and organized to determine the economic impact of professional sports in the United States.

Research disclosed that professional sport franchises and facilities, in general, effect cities and communities in a mixed nature. Five of the studies included in the research review revealed mixed economic effects, four indicated positive effects, and one described strictly negative effects. Many researchers highlight the fact that professional sport franchises/facilities may not be the catalyst of economic activity for a city and surrounding areas, but rather an economic complement. Specific sport leagues, such as the NFL and its franchises, might have more of a positive economic effect compared to sport leagues of lesser popularity: NHL, MLB, and NBA. More research needs to be conducted on this topic to draw stronger conclusions as public subsidies continued to be used for stadium financing and as professional sports grow in terms of revenue.

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Appendix A

Article Grid

Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Recommendations
Agha, Nola (2013)	The Economic Impact of Stadiums and Teams: <i>The Case of Minor League Baseball</i>	<i>Journal of Sports Economics</i>	To investigate the effect minor league baseball teams and stadiums have on per capita income in the MSAs they are located in.	238 Metropolitan Statistical Areas (MSAs) that hosted affiliated or independent minor league teams between 1985 and 2006 were subject to this examine. The dependent variable is this study is real per capita income which was obtained from the Regional Economic Information System created by the Bureau of Economic Analysis.	Coates and Humphreys (1999) equation is used to assess the data. Robustness checks were assessed. Tables are set up to observe data. Minor league teams are also compared with Major league teams.	AAA teams, A+ teams, AA stadiums, and rookie stadiums showed to create a positive effect on per capita income for the MSA they are located in and negative effects were seen with AA, A, A-, rookie and independent teams in addition to AAA, A+, A, A- and independent stadiums. No significant negative effects were seen but there were significant positive correlations. Majority of minor league teams and stadiums showed to have very minor effects one way or another.	The authors suggest that this study creates a quality path for future research to be conducted to help explain why minor league teams may help increase per capita income. Minor League Hockey may have similar effects.
Coates & Humphreys (2011)	The effect of professional sports on the earnings of individuals: evidence from	<i>Applied Economics</i>	To examine the effects professional sports have on wages in local econo	The authors looked at the wages of males working in occupations closely affected by professional sports. The business sectors included in this study were: food service workers, lodging workers, and amusement / recreation workers.	Six empirical models are used to control dependent and independent variables to help generate the best	The data shows that NBA, NFL, and NBA may influence the wages of individuals working in the sectors examined in this study. An NFL franchise is seen to be associated with higher hourly and	Due to the mixed nature of results between professional sport franchises and wages across sport related industries, this study

	microeconomic data		mies in sectors closely linked to sports (i.e. restaurants, retail, lodging, sports recreation, and the sports industry as a whole)	Coates & Humphreys (2011) contained a sample of 251 urban MSAs in the United States (42.7% of the individuals in the study lived within an MSA that was host to an MLB, NBA, and or NFL franchise(s) and 67% of the individuals in the sample did not live in an MSA with a professional sports franchise). Using Current Population Survey (CPS) information, this study observed wage data from 1983-2002. An econometric model equation is used to develop data on wage impact.	data possible. Tables are utilized and a summary of data is presented. Important to note that Males are only a part of the analysis.	weekly earnings (in the sectors examined) compared to cities without an NFL team. On average, an MLB franchise is associated with lower wages for employees in some of the sectors examined. NBA franchises seem to impact wages of individuals on a less significant level (negative or positive) compared to MLB and NFL franchises. In general, this data supports evidence that NFL franchises may have positive effects on wages, and MLB franchises may have negative effects.	does not support evidence for publicly subsidizing professional sports. The authors do suggest that this study supports evidence that professional sports may affect labor markets in some capacity. The authors presume that this study is an important robustness check for previous research that focused on using aggregated data in a similar context.
Davis & End (2010)	A Winning Proposition: The Economic Impact of Successful National	<i>Economic Inquiry</i>	To measure the economic impact a successful NFL, NHL, or NBA	Every American MSA (38) that had an NBA, MLB, or NFL team between 1969-1998 were subject to this study. Real per capita income and real wage income per capita were the two economic factors examined in the study. Information	An econometric method was used to generate results. Coates and Humphreys (2002) model was extended and Matheson'	For NFL franchises and the cities, they are present in, as winning percentage increases per team, so does real per capita personal income. "One possible explanation for this relationship is that workplace productivity	Stadium financing should be dependent upon a franchise's success. Competitive balance is huge for the cities with an NFL team.

	1 Football Franchises		team may have on a city compared to franchises that do not perform well.	was derived from the national consumer price index.	s (2005) data set was analyzed as a robustness check. Arellano and Bond (1991) was also used.	increases as a function of the team success”. Increases in real wage income per capita was also correlated with team’s higher winning percentages.	According to the data, if a team starts to win too many games, the effect of personal income actually starts to decline. Personal income is most effected in teams that have fewer wins
Feng & Humphreys (2018)	Assessing the Economic Impact of Sports Facilities on Residential Property Values	Journal	To measure how the proximity of a sports facilities impact residential property values.	Two sports facilities were subject to the study (located in Columbus, Ohio): Nationwide Arena, home of the NHL’s Columbus Blue Jackets, and Crew Stadium, home of the MLS’s Columbus Crew. Transaction data for the year 2000 in Columbus, OH was analyzed in this study. Houses had to be worth at \$30,000 to be incorporated in the study.	A Spatial Lag Hedonic Housing Price Model was used. Variable statistics are accounted for. Tables and charts are used to organize the data. Robustness checks are also assessed	The results show that the presence of both facilities have a significant positive effect on the value of surrounding houses and this positive effect decreases as the distance from the facilities increases.	The authors suggest that using the hedonic model is crucial for this type of research. This study helps provide evidence as to why cities continue to subsidize teams and stadiums.
Harger, Humphreys, & Ross (2016)	Do New Sports Facilities Attract New	<i>Journal of Sports Economics</i>	To examine the impact a new sports facility has on	13 new stadiums that were constructed for MLB, NFL, NHL, and NBA, professional sports teams between 2002 and 2005 were	A difference-in-differences equation model was used.	No strong evidence was found to link new stadiums to increased business openings and employment. Trends in business openings and	The authors suggest that the results are consistent with other studies that state that

	Businesses?		new business openings and business composition in MSAs.	examined. 12 MSAs and business openings in census tracts one, three, and five miles away from the stadium were analyzed. Data from the year 2002 and also 2006 was obtained from the Dun and Bradstreet MarketPlace to determine the number of new business openings and new jobs in the MSAs examined.		employment numbers close to the stadium were similar to openings in different areas throughout the entire MSA examined.	new stadiums may affect wages and income, but not employment. In regard to public subsidies, this literature aids into the existing studies that have exclaimed that sport stadiums do not create tangible economic benefits for MSAs. Future studies should focus on how new stadiums affect existing businesses.
Jasina & Rotthoff (2016)	The Impact of the NHL Lockout on County Employment.	<i>International Journal of Sport Finance</i>	To measure the impact the NHL lockout had on county employment levels and	25 counties with NHL teams, in the 2004-2005 NHL season, made up the sample of this study. Within each county, employment and payroll data was acquired from the U.S Census Bureau's County Business Pattern database". The four business industries examined in this	The sample period of the study's analysis takes place from 2001-2009 (four years before the lockout and four years after). An empirical	Even though the NHL lockout lasted a prolonged amount of time, only "drinking places" saw a decrease in employment in counties that had an NHL team from the 2004-2005. Three of the four industries examined showed a significant	The authors suggest that this study supports the current literature concerning professional sports impact on local employment and wages. The results also support

			payroll	study were; accommodation, restaurants, spectator sports/performing arts, and drinking places.	model approach takes place, using separate linear equations for each industry examined. Surrounding non-NHL county employment and wage levels are compared to the NHL counties. Robustness checks are also utilized.	decrease in 1st quarter payrolls in NHL counties. The authors suggest that the spectator sports/performing arts industry is presumed affected by the wage decrease in result of the lack of player contracts (making the findings insignificant). The authors suggest that there is a consumption shift in NHL counties when the season is not in play as this is hypothesized because of wage increase observed in non-NHL counties.	literature that have provided evidence for consumption shifts in areas where professional sport teams were present and moved.
Humphreys & Nowak (2017)	Professional sports facilities, teams and property values: Evidence from NBA team departures	<i>Regional Science and Urban Economics</i>	To investigate the effect of two NBA teams leaving a city on residential property prices.	Two professional sports franchises sports' facilities were subject of this experiment: The Charlotte Hornets and the Seattle SuperSonics. The Seattle SuperSonics left the city and their arena in 2008 and the Charlotte Hornets left the city and arena in 2002. Residential property values were examined in a five-mile radius of each arena from the	A repeat sales regression model and a hedonic price model were used to generate statistics. Variables were controlled in equations to create the best estimates possible.	The departure of both the Seattle SuperSonics and Charlotte Hornets led to a substantial increase in condominium and single-family home prices compared to when the teams were present. NBA Games create consistent large crowds around the stadiums. These large crowds are seen as a disamenity for the public located	Results support evidence that Tax Increment Financing may not generate enough tax revenues for cities to pay back public subsidies put towards facility construction. Residents living close to sports

				years 2000-2013 for Seattle and 1990-2004 for Charlotte. Each arena continued to have concerts and events in the years after the sports franchise's left the arenas/cities.		very close (within one mile) of the facility. These large crowd disamenities include; trash, crowds, traffic, and noise (among others). Since the facilities continued to host concerts in the years after the team departures, it is pretty clear that the property values were negatively affected by the sport teams and events.	facilities may see a depreciation in the value of their property.
Connaughton & Swartz (2014)	The Economic Impact of Sports and Sporting Events on The Charlotte Metropolitan Statistical Area (MSA) Economy	<i>Journal of Business & Economics Research</i>	To examine the impact that sports and sporting events created economically for the MSA of Charlotte, NC in the year 2011.	The MSA under examination in this study was Charlotte, NC. For the purpose of this synthesis, this study examined professional sports teams such as the; Carolina Panthers, Charlotte Bobcats, and Charlotte Knights as well as "special sporting events" such as NASCAR races and the PGA Tournament. Output (or revenue) and employment were investigated in this study in relation to the teams and events listed above. The Charlotte Sports Commission and industry databases such as	The authors analyzed on-site and off-site employment and revenue data within the retail, lodging and food service sectors as well as employment and revenue data within the most important supply chain industries impacted by sports	In 2011, professional and college sports teams (as well as special sporting events) created 17,203 jobs and generated more than \$1.4 billion in revenue across all sport teams and sport related industries for the MSA of Charlotte, NC.	This study suggests that over the last 30 years, sports have become a big business sector within Charlotte, NC.

				Reference USA and Dunn & Bradstreet were used to obtain revenue and employment figures. Spectator sport companies, radio and television broadcasting companies, cable networks, retail stores, lodging and food services were the business sectors examined. An email survey was also sent out to the organizations to ensure the most accurate financial and employment data was being used. Spending habit surveys were sent to over 2,500 ticket holders and on-site surveys were also conducted to understand fan behavior at events. The study utilized the “IMPLAN 382 by 382 multiplier matrix” to obtain multipliers that could be used to estimate the amount of revenue and employment created by the sporting teams/events.	(real estate, radio and television, telecommunications, insurance carriers, etc.).		
Prophe- ter, Geoffr- ey (2012)	Are Basketb- all Arenas Catalyst of	<i>Journ- al of Urban Affairs</i>	To analyz- e whethe- r or not	The regional income of 24 MSAs hosting professional basketball arenas, from the years 1995-2009, were	Baade & Dye (1990) was expanded to account	No significant association was found statistically between MSA regional personal income and cities	Professional sports may not be the cause of economic developmen

	Economic Development?		basketball arenas are a producer of economic development.	examined in this study. Baade and Dye (1990) was used, with the exception of running two separate models (instead of one) to account for coefficients and standard errors, to generate the initial data.	for three covariates. Then, six random effect regression models were ran to examine if “regional strength” is linked (or not linked) to arena’s economic returns.	host to an NBA arena. “Although a handful of cities in this study were found to be positively impacted by an arena (Atlanta, Boston, Chicago, Denver, Indianapolis, and Oklahoma City), income transfers from the suburban area around the central city may be responsible” (p.457). For MSAs that had arenas built in the time period of 2001-2009, results showed a decline of more than \$2,400 in per capita income.	t in a city but rather the effect. The authors suggest that understanding the context of a city and its preexisting economy, are the key factors that predict the success of basketball facilities. In other words, the quality of a city’s economy is potentially more telling in determining the success of a basketball facility, than examining the context of the facility itself.
Prophet, Geoffrey (2019)	Estimating the Effect of Sports Facilities on Local Area Commercial Rents: Evidence	<i>Journal of Sports Economics</i>	To analyze the impact of commercial rent prices created by the Barclays	A “DDD rent equation” was used to examine the NOI of businesses located within a one-mile radius of the Barclay Center. The NOI of businesses was obtained over a ten-year period (2006 through 2015) from the Department of	The variables; NOI, Square ft., distance to arena, etc., within the DDD equation. were statistically analyzed in terms of	A “distance-decaying effect” on commercial rent prices suggests that businesses are willing to pay higher prices in order to be located closer to the Barclays Center. Commercial landowners NOI fell by 3.7% for	Commercial landowners may be the true beneficiaries of close proximity to sports facilities compared to businesses. “Value-capture

	<p>e from Brooklyn's Barclays Center</p>		<p>Center in Brooklyn, N.Y.</p>	<p>Finance (DOF), looking at each year individually.</p>	<p>mean, standard deviation, minimum and maximum. Three Heckman correction models and an OLS method is used to analyze the variables within the DDD equation</p>	<p>each 1,000 feet leading away from the arena.</p>	<p>schemes” may be an important factor in determining if public subsidization is justifiable for facility construction (\$131 million of tax payers’ money was used to subsidize the Barclays construction costs and the facility could of made an estimated \$66 million of taxes generated from commercial landowners within 1 mile of the facility in the first four years of being open).</p>
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