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# Professional Sports Facilities, Franchises and Urban Economic Development

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## Abstract

*Local political and community leaders and the owners of professional sports teams frequently claim that professional sports facilities and franchises are important engines of economic development in urban areas. These structures and teams allegedly contribute millions of dollars of net new spending annually and create hundreds of new jobs, and provide justification for hundreds of millions of dollars of public subsidies for the construction of many new professional sports facilities in the United States over the past decade. Despite these claims, economists have found no evidence of positive economic impact of professional sports teams and facilities on urban economies. We critically review the debate on the economic effects of professional sports and their role as an engine of urban economic redevelopment, with an emphasis on recent economic research.*

## Economic Development and Sports

On the surface, sports facilities and franchises appear to be prime candidates for economic development projects aimed at revitalizing urban neighborhoods. Unlike abstract economic development tools like tax credits and empowerment zones, sports facilities – stadiums, arenas,

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football pitches, etc. – are highly visible structures. Sporting events are wildly popular throughout the world and widely understood and appreciated by residents of cities. In the United States, new sports facilities are frequently cited as important components of urban redevelopment initiatives and sources of considerable economic growth in terms of job creation and income generation. Cities provide the owners of professional sports franchises with hundreds of millions of dollars of subsidies for the construction of new stadiums and arenas and expect these facilities to generate economic benefits exceeding these subsidies by large margins.

However, a growing body of evidence indicates that professional sports facilities, and the franchises they are home to, may not be engines of economic growth in urban neighborhoods. Econometric studies of the determination of income and employment in US cities find no evidence of positive economic benefits associated with past sports facility construction and some studies find that professional sports facilities and teams have a net negative economic impact on income and employment. These results suggest that at best, professional sports teams and facilities provide non-pecuniary benefits like civic pride, and a greater sense of community, along with consumption benefits to those attending games and following the local team in the media; at worst, residents of cities with professional sports teams pay a high cost for the privilege, both in terms of large public subsidies and in terms of lost income and employment.

The striking difference between the claims of the champions of sports-led urban redevelopment, expressed through prospective “economic impact studies,” and the results in retrospective econometric studies published in peer-reviewed academic journals, raises a number of interesting and important questions about the public financing of professional sports facilities. Are sports-led urban redevelopment projects viable? Are large subsidies for the construction and renovation of professional sports facilities justified by tangible, or even by intangible, non-pecuniary benefits to the residents of urban areas? What about voting on referendums for these subsidies – do their outcomes suggest that taxpayers favor subsidies for professional sports teams despite the potential costs?

To better frame and begin to answer these questions, we critically survey the literature on the economic impact of professional sports on urban economies in order to assess their role as engines of economic development. We focus on those studies that have examined the local

economy before and after the construction of a facility or the arrival of a franchise. Additionally, we describe the literature on the effects of mega-events, like the Super Bowl and the Olympics, and the literature on the political economy of stadium construction. We begin with a brief discussion of the financing of stadium and arena construction.

## **Public Financing of Stadium Construction**

There has been an enormous boom in publicly financed sports stadium construction in the United States over the past decade. This boom is sometimes traced to the opening of Oriole Park in Camden Yards, the home of the Baltimore Orioles Major League Baseball (MLB) franchise. Unlike many of the new suburban sports facilities built earlier, Oriole Park is located in Baltimore's Central Business District and figures prominently in the redevelopment plan for the downtown area of Baltimore. Oriole Park was widely praised on aesthetic and economic grounds and this model was soon widely copied by many other cities. The land acquisition and stadium construction costs for this sports facility were almost entirely borne by taxpayers, another feature that was widely copied by other cities.

Table 1 contains information about the costs and extent of public subsidization for all of the new professional football, basketball, and baseball facilities opened in the United States in the past six years. This table shows the total costs of the new facility, including land acquisition costs, and the total amount of public money spent on these facilities in constant 2003 dollars. A number of additional facilities are already under construction or in the planning stages in the United States and there were also several new facilities opened in Canada during this period. With a few notable exceptions, the majority of the financing from these new sports facilities came from public, not private, sources. Note that some of these facilities are home to both a professional basketball franchise in the National Basketball Association and a professional hockey franchise in the National Hockey League. There has also been a boom in the construction of new minor league professional baseball facilities over the past decade, but Table 1 does not include information on facilities that host minor league baseball, professional soccer, or other professional sports franchises in the US.

On average, public financing accounted for 65% of the cost of these projects, and the average amount of public spending was \$208 million. The median, and average age of the facilities replaced was 31 years, which represents a stadium built sometime in the late 1960s. A number of cities (Cincinnati, Ohio; Detroit, Michigan; Houston, Texas; Pittsburgh, Pennsylvania; Denver, Colorado; and Seattle, Washington) replaced two professional sports facilities during this brief period. In total, the sports facility construction projects on this table accounted for \$5.4 billion dollars of public spending.

Siegfried and Zimbalist (2000) point out that the effective useful economic life of a sports stadium appears to be about 30 years, a figure consistent with the average age of the stadiums replaced in the past six years. There are currently 90 professional football, basketball and baseball franchises in North America and very few multi-purpose stadiums, suggesting an average of three facilities replaced a year in steady-state equilibrium. Some additional expansion or relocation is possible in all three leagues. Many of the new sports facilities built in the past ten years contain features like extensive sections of premium seats and luxury boxes, swimming pools, restaurants, hotels, and theme-park like attractions that make sports facilities into entertainment centers. These features have the potential to generate revenues well above the familiar ticket, food, drink and parking revenue streams generated by sports facilities built ten or twenty years ago and could start a “stadium arms race” that would reduce the effective economic lifetime of sports facilities, leading to even more new facility construction in the future.

Even without a decrease in the effective economic lifetime of sports facilities, there will continue to be a significant amount of sports facility construction in the future. If the recent past provides any guidance, much of this future construction will be publicly financed. What economic benefits flow from a sports facility and team?

## **Evidence on the Effectiveness of Sport-led Development**

There are two categories of evidence about the economic impact of professional sports facilities on urban economies. Every time the owner of a professional sports franchise wants a new facility built using public financing, an “economic impact study” is commissioned to justify the

spending of hundreds of millions of dollars of public money on the projects. These impact studies are always prospective in nature – they forecast the future economic impact flowing from a new publicly financed sports facility – and always conclude that there will be large positive economic benefits to the local economy; these positive benefits typically include hundreds of millions of dollars of additional tax revenues and income, and hundreds or, in some cases, thousands of new jobs created. Impact studies commonly rely on the use of spending multipliers to arrive at these large positive economic benefits. Economic impact studies are commonly performed by consultants or large consulting firms. Referring to these studies, Crompton (1995) says, "Too often, the motives of those commissioning an economic impact analysis appear to lead to adoption of procedures and underlying assumptions that bias the resultant analysis so the numbers support their advocacy position". He continues by critiquing the typical assumptions and procedures that produce the biased results, including frequent references to specific studies that made the unfounded assumptions.(1)

The second category of evidence about the economic impact of professional sports on urban economies comes from retrospective studies published in peer-reviewed academic journals. Most of these studies use econometric techniques to assess the effect that professional sports had on urban economies, in terms of changes in the average level of income per capita, average earnings of workers in various sectors of a city's economy, and employment. We discuss these studies in more detail below. Some evaluations of the effects of stadiums and professional sports involve cost benefit analysis and others use contingent valuation techniques. We discuss the contingent valuation approach in more detail in the section on non-pecuniary benefits.

An example of a retrospective study that does a cost-benefit analysis is that of Mark S. Rosentraub and David Swindell (1991) who performed a type of impact study analyzing the effects of relocation of a minor league baseball team into Fort Wayne, Indiana. The city of Fort Wayne was asked by owners of the Wausau Timbers, a minor league baseball team, to build the team a stadium so that the owners could relocate the franchise to Fort Wayne. The ultimate decision of the city of Fort Wayne was to offer to loan the investors \$1.2 million dollars at 6.48% interest over 15 years to be used in the renovation of an existing stadium. The team was required to raise an additional \$750,000. The city would pay for maintenance and the team would pay no rent for use of the facility. The

owners could not find private sector support for the \$750,000 so the team was not relocated. Rosentraub and Swindell (1991) conclude that Fort Wayne made the right decision in not funding the construction of a new stadium and that the loan "was the very most the city should have offered to the owners of the team."

Siegfried and Zimbalist (2000) recently surveyed the growing literature on retrospective studies of the economic impact of sports facilities and franchises on local economies. The literature published in peer-reviewed academic journals differs strikingly from the predictions in "economic impact studies." No retrospective econometric study found any evidence of positive economic impact from professional sports facilities or franchises on urban economies. While evidence exists suggesting that narrowly defined occupational groups, like workers employed in the sports industry (SIC Code industry 79 – Recreation and Amusements), benefit from the construction of new sports facilities, building new sports facilities and attracting new professional sports teams did not raise income per capita or total employment in any US city. In fact, some research has found a negative economic impact of professional sports on urban economies.

In this academic literature, Rosentraub, Swindell, Przybylski, and Mullins (1994), Baade (1996), Baade and Dye (1990), Baade and Sanderson (1997), and Coates and Humphreys (2003) have found no economic impact of professional sports facilities and franchises on income and employment. Noll and Zimbalist (1997) edited a collected volume focused on this topic that explores a number of economic and political issues related to the economic impact of professional sports on cities. Coates and Humphreys (1999, 2001a) found evidence of a negative overall impact of professional sports on the economies of all US cities that were home to a professional football, basketball, or baseball team over the period 1969-1998.

Coates and Humphreys (1999) attacked the issue of the effect of professional sports on local economies differently than had earlier researchers. This study pooled data from each city that had either a professional football, baseball, or basketball team at any time during the period 1969 to 1995. In this way, the study used panel data techniques to control for city and year specific influences on the level of income per capita. The study also introduced a broad array of variables to capture the entire spectrum of sport's effects on the local economies instead of the simple indicator variable for the presence of a sports team used in previous research. For example, variables included dummy variables for the entry or exit of teams within the past 10 years, and for construction of

stadiums within 10 years, the seating capacity of each of the sport facilities in the city, and the presence of a team in each of the three sports.

The implication of their analysis was that taken as a whole, the sports environment tended to reduce the per capita personal income in the city by a small but statistically significant amount.

Coates and Humphreys (2003) extended this research to examine the earnings and employment in narrowly-defined occupational groups in US cities with professional sports teams. In this study, the earnings and employment in the SIC-code industry containing sports facilities and teams – SIC-code 79, Amusements and Recreation – were higher but the earnings and employment in other important sectors like Retail Trade, Hotels, and Eating and Drinking Establishments were lower. The economic benefit from sports facilities and franchises appears to be concentrated in a small sector of the economy and comes at the expense of other sectors of urban economies.

The lack of positive economic impact associated with professional sports facilities and franchises, as well as the provocative finding of overall net negative economic impacts, suggests a number of interesting economic questions. How can the sports environment in a city reduce per capita personal income? What do we know about the value of non-pecuniary or “consumption benefits” to residents of cities with professional sports teams? What about mega sports events like the Super Bowl or the Olympic Games, do they generate positive economic benefits? Sports subsidies are often voted on in local referenda, what can we learn about tax payers desires for sports facilities based on these votes? We examine these issues in the following sections.

### **Explanations for the Negative Economic Impact of Sports**

Given the preponderance of evidence that indicates at best no effect from stadiums and arenas, and a good deal of evidence of negative effects, it is necessary to explain why these results seem plausible. There are several reasons, in fact, and they are not mutually exclusive. In other words, they can all be working simultaneously to produce the results that the sports environment induces a reduction in average income in a community.

First, household spending on sports – direct spending on tickets, licensed merchandise, etc. and indirect spending on food and drinks at or near a sports facility - is highly substitutable for other forms of entertainment

spending like movie tickets, food and drinks in areas of the city far from the facility, bowling and the like. Professional sport does not induce residents to increase total spending by drawing on savings or borrowing against future earnings. Residents maintain their level of entertainment spending but alter the allocation of this spending toward sport-related spending and away from other close substitutes. Sports redirect spending by residents from one part of the local economy to another. Coates and Humphreys (2003) report that earnings and employment in the Amusements and Recreation sector (SIC Code industry 79) – the sector of the economy containing professional sports - rise and earnings and employment at Eating and Drinking Establishments (SIC 58) and Retail Trade establishments fall with the size of the professional sports environment in cities.

Impact analysis studies routinely ignore reductions in spending on other forms of entertainment due to substitution in private spending when they compute spending increases from the construction of a stadium or arena and the presence of a professional sports franchise. This systematically overstates the claimed economic benefits from new sports facilities and excludes any potential economic harm done to other businesses in the entertainment sector of the local economy.

Impact analysis studies also claim that a new sports facility will attract new visitors to a city, leading to additional economic benefits. Visitors attracted by a new sports facility may occupy hotel rooms and eat meals that would have been purchased by visitors who came to the city for other reasons, and the direct spending on sport made by these visitors would have gone to other entertainment establishments. Porter (1999) and Porter and Fletcher (2002) report little or no increase in hotel occupancy rates, retail sales, or airport traffic in cities that hosted Super Bowls and Olympic Games in the U.S. in the past ten years.

Second, the existence of professional sports may result in workers spending less time on the job working and more time on the job handicapping the upcoming game or discussing the outcome of the last game. This time is recorded as time at work, but production is lower, resulting in lower income. To date, no research has focused on the link between productivity and professional sports. However, Coates and Humphreys (2002b) found that income per person was higher in the city that was home to the Super Bowl champion the previous season and Berument and Yucel (2003) found a positive relationship between the growth in industrial production and soccer wins in a city in Turkey,

providing some evidence of a link between sports and the productivity of workers.

Third, money spent subsidizing the professional sports franchises may come at the expense of other important and highly productive public services. For example, there may be fewer police on the street, fewer firemen, less frequently repaired streets and highways, a weaker education system, and so on. All of these may result in lower productivity of workers and, therefore, lower incomes. No evidence exists that professional sports have a detectable impact on local government spending or tax revenues. Given the lack of support for the notion that professional sport raises income or employment, this appears to be an important topic for future research.

Fourth, the multiplier for spending on sports in a city may be substantially smaller than the multiplier on other forms of entertainment spending, perhaps the most plausible explanation. The majority of the revenues from professional sports go into salaries for players, managers, coaches, trainers, scouts and to income for the ownership. Most of these individuals, especially the more highly paid ones, do not live full time in the city where the games take place. Unlike the wages and salaries paid to employees of local restaurants, movie theaters, car dealerships, department stores, etc., the large salaries earned by players and coaches leak out of the local economy. Moreover, the spending and saving patterns of relatively highly paid players, with relatively short careers, differ from those of typical workers. Specifically, players save a larger portion – and spend a smaller portion – of their earnings than the typical worker because the wealthy tend to save more than the non-wealthy and because the high earnings of players are transitory and a substantial fraction will be saved until the years after their playing days are over. Also, Siegfried and Zimbalist (2000) emphasize that the size of the multiplier on spending on professional sport also depends on the location where the spending takes place. They claim that, because of the factors discussed above, the size of the multiplier varies directly with the radius of a circle drawn around the stadium.

In each of the four cases described above, the additional income generated from subsidies to professional sports is lower than it would be had the money been spent in alternative uses. Consequently, when comparing a city with a sports franchise to one without such a franchise, all other things equal, one will find income lower in the former.

Alternatively, the observed lower income may simply be a measure of the value of the sports environment, a “compensating wage differential.” Just as wages are higher in jobs with more risk or requiring more skill, and lower in cities with desirable amenities like pleasant weather, good schools, and little pollution, wages may be lower in communities with professional sports franchises because citizens are willing to forego some income to have access to that amenity. Unlike the previous explanations, a compensating wage differential does not entail any direct link between the sports facility and economic activities. It does require sufficient in migration of individuals with strong preferences for access to professional sports and out migration of individuals without these preferences to produce a steady-state equilibrium with lower wages in cities with professional sports.

### **The Importance of Non-Pecuniary Benefits**

The evidence suggests that urban economies receive no positive economic benefits from the billions of dollars of public subsidies provided for the construction of new professional sports facilities in the past, and that professional sports may have a small but negative impact on local economies. What benefits have taxpayers received from these subsidies, and are they large enough to justify the costs?

A common justification for subsidizing professional sports is that there are substantial positive externalities from sports and that these would not be available without subsidies. For example, proponents of sports led development frequently refer to the "world class" city status conferred on a city by the presence of professional sports franchises. It is also common to point out that citizens of a community may derive enjoyment from following the exploits of the local teams on television, the radio, or in the newspaper, but never attend a game. The difficulty is in measuring these benefits, whether from the world class city effect or the enjoyment of the fans, because these are not traded in a market where their value is determined.

Coates and Humphreys (1999) suggest that the negative impact on per capita personal income they find may be a measure of the value of the professional sports environment to the citizens. The reduced income is implicit compensation for the access to the sports environment of the city. The increase in per capita income associated with winning the Super Bowl that Coates and Humphreys (2002b) found may measure the benefits of

the world class city, as the victory swells the workers with pride and makes them happier and more productive.

Johnson and Whitehead (2000) and Johnson, Grootius, and Whitehead (2002) use the contingent valuation approach to measuring the benefits of sports stadiums and sports franchises, respectively. In this approach, researchers ask individuals how much they would pay to avoid an undesirable event or to acquire a desirable one. For example, in Johnson, Grootius, and Whitehead (2002) people are told the local professional hockey team may leave town because their current arena is not adequate to generate sufficient revenues to put a quality team on the ice. They are then told that the city is considering buying the team to keep it in town and that doing so would require a tax increase of \$X, where X is randomly assigned to the respondent and was either 1, 5, 10 or 25 dollars. Finally, the respondent is asked if he or she would be willing to pay \$X each year in higher city taxes to keep the team in town. Respondents were then asked the most they would be willing to pay and presented with a card with dollar amounts listed for them to choose from. The study "suggests that the value of public goods generated by major league sports teams may not be large enough to justify the large public subsidies" (Johnson, et. al., 2002).

Carlino and Coulson (2002) estimate hedonic regressions of rents and wages to determine the extent to which these values are influenced by the presence of a team from the National Football League in the city. Their goal is to assess the value of the "public goods" the football team provides to the city and to compare that to the subsidies paid to the teams. In equilibrium, the value of such goods will be capitalized into rents and wages, with rents being higher and wages lower than they would be in an identical city without a football team. They find about a 8% boost in rents associated with the NFL and a 2% reduction in wages. Based on these values, Carlino and Coulson conclude that the value of the public goods is substantially larger than the subsidies paid by cities and states to professional football teams. Coates and Humphreys (2001b) report similar results for professional football, basketball and baseball using a larger sample of data.

The literature focused on measuring the non-pecuniary benefits of sports franchises and facilities shows considerable promise. These papers apply novel empirical approaches to data not previously used in to study the economic impact of sports. The results are interesting in that the results from wage models estimated with micro data imply large non-pecuniary

consumption benefits when aggregated across the population of the typical metropolitan area. However, this research is still in its infancy and more work needs to be done.

### **What About Mega-Events?**

If the overall sports environment has no impact on the local economy, perhaps one-time, short duration, large attendance events like the Super Bowl or the Olympic Games will aid growth and development of the local economy. Evidence on this issue is mixed.

Humphreys (1994) examined the effect on Georgia of hosting the 1994 Super Bowl. This study estimated the economic impact of hosting the Super Bowl was \$166 million in spending, \$56 million in additional earnings, and 2,736 jobs. However, this study was retrospective only in that it used actual net attendance at the game. The impacts were measured using multipliers based on net attendance.

Hotchkiss, Moore, and Zobay (2003) examined the counties in Georgia for evidence of effects from hosting the 1996 Summer Olympic Games. They find that in those counties close to or hosting Olympic activities that employment rose by 17% more than it did in non-Olympic venue counties. The evidence did not, however, find strong effects of the Olympics on wages.

Porter (1999) examined monthly commercial sales, hotel rates, and room occupancy data in three counties that hosted 6 Super Bowls between 1979 and 1996. He found one Super Bowl produced a small rise in commercial sales, two generated slight declines in commercial sales and that three others had no detectable effects.

Coates and Humphreys (2002b) examined the impact of hosting the Super Bowl as well as participation in the league playoffs or championships in baseball, basketball, and football. They found no statistically significant effect of any of these on local income. Interestingly, the one effect they did find to be statistically significant was for the home city of the winning team from the Super Bowl. In the year the team wins, income in the home city is larger than it would otherwise have been.

Porter and Fletcher (2002) examined hotel occupancy, hotel room rates and traffic at the local airports for the effects of the Olympic Games held in Atlanta and Salt Lake City. If the Olympics generate the economic

development the proponents claim, measured perhaps by the increased sales, then one should see that hotel occupancy rates climb and that arrivals at the local airports are larger than otherwise. What they found is that the rent on hotel rooms climbs dramatically, by 138% in Atlanta and 123% in Salt Lake City, but that occupancy rates and arrivals at the airports are essentially unchanged. Sales increased in Atlanta by \$122.6 million, relative to a monthly average of \$2.42 billion, but fell in Salt Lake City by \$78.4 million.

Unlike the literature on the economic impact of sports teams and facilities on incomes and employment, there is some evidence that mega sporting events like the Super Bowl or the Olympic Games may have a beneficial effect on urban economies. However, this positive evidence is offset by compelling evidence that these events also simply re-distribute spending to different parts of the urban economy. Furthermore, the two cases where positive economic impacts have been found are both in the same city, Atlanta, Georgia, and occurred only two years apart. Furthermore, one of these studies is primarily a prospective investigation. The evidence of positive economic benefits from mega sporting events should be considered weak at best.

### **Voting on Sports Subsidies**

Stadiums and arenas have been sold to communities across the United States for their beneficial effects on economic growth, development, and urban renewal. Voters are frequently asked to support subsidies for professional sports and some research has focused on these events. Fort (1997, 1999), Blair and Swindell (1997), and Brown and Paul (1999) have each examined voting in referendums on sports subsidies as case studies, descriptive narratives, or in a purely theoretical context. Agostini, Quigley and Smolensky (1997) report statistical evidence, in the form of estimates from a regression model at the census tract level, relating the proportion of the vote that was favorable to a variety of socio-demographic variables. The upshot of their analysis is that higher income, better-educated voters were more likely to favor the initiative. Males, counter-intuitively, were more likely to oppose the subsidy for the stadium. Asians also were more likely to favor it.

A short-coming of the Agostini, et al., (1997) analysis is that the regressions did not account for proximity to either the existing facility or to the site proposed for the new stadium. Coates and Humphreys

(2002c) address this issue examining a series of referenda in Brown County, Wisconsin, home of the National Football League's Green Bay Packers, and in Harris County, Texas, home of the Houston Rockets of the National Basketball Association. They match voting precincts to census tracts in each location, estimating logit models on referendum results controlling for socio-demographic variables and proximity to the facilities or the proposed locations of new venues.

In Green Bay, the first referendum concerned whether to increase the sales tax rate with the proceeds going to renovate the existing football stadium. Subsequent referenda addressed the disposition of any revenues from the sales tax that remained after the stadium bills were paid and whether or not the community should sell the right to name the stadium as a way of reducing the tax cost of the renovation. The evidence from Green Bay indicates that the people closest to the stadium supported the idea of raising the tax to refurbish the field, but that people living farther from the stadium were not statistically more or less likely to support the subsidy.

The story in Harris County, Texas is more complicated. There, referenda proposing new taxes on rental cars and hotel and motel stays were on the ballot in two successive years. In each case, the proceeds of the taxes would be used to pay for the construction of a new arena for the Houston Rockets. The first referendum differed from the second one in that it also included a surcharge on tickets to events at the arena. The first referendum failed while the second one passed.

The evidence from voting on the referenda in Harris County suggests two interesting things. First, people living in and around the existing facility and people living in and around the site of the proposed facility were more likely to vote in favor of the tax increase for stadium construction. This seems to suggest that people with experience living in the neighborhood of an arena did not find that a net gain. On the other hand, people in the vicinity of the proposed facility expected net benefits from living in close proximity to the venue. Second, because the two locations are quite close to one another, some precincts are "close" to both sites. Such people tended to vote against the subsidy.

Coates and Humphreys (2002c) conclude that living near an arena or stadium is a mixed blessing. Some people find the additional traffic, the noise, and garbage, etc., too high a cost to pay for whatever benefits they may obtain. Others, like those living near to Lambeau Field in

Green Bay, appear to find living close to the stadium provides enough benefits to cover the annoyance of game day traffic in their neighborhood. What role is played by the difference between football, with roughly 10 home dates a year in Green Bay versus basketball with at least 41 home dates is unclear.

## **Summary and Directions for Future Research**

The growing literature on the economic impact of professional sports facilities and franchises on urban economies should prove to be a fertile area for future research. New stadium and arena construction is in the midst of a boom period. Cities are increasingly interested in these facilities as the centerpiece of urban renewal projects, and may be willing to invest hundreds of millions of dollars in public subsidies on these projects. Despite a growing body of academic research that contains no evidence supporting the idea that sports facilities are important engines of economic growth, the sizable gulf between the predictions of prospective “economic impact studies” and the academic literature still exists; proposed stadium and arena construction projects still go forward based on the promise of large positive tangible economic benefits flowing from these projects. The flawed “multiplier” approach remains firmly entrenched as the empirical tool of choice among proponents of stadium subsidies. Only additional careful empirical research, and better dissemination of the existing results in the literature, can close the gulf between “impact studies” and academic research and help tax payers to make informed decisions about subsidies for sports facility construction.

The appropriate definition of the area of interest for the economic impact for a sports facility needs to be carefully considered. Most studies of the economic impact of sports teams and facilities focus on the effects of the sports environment on an entire city or standard metropolitan statistical area (SMSA). A common criticism of the impact analysis methodology is that it makes a great deal of difference if one defines the local market narrowly or broadly. For example, if one considers only the neighborhood surrounding the stadium, then the number of “out of town” visitors includes fans from the suburbs and even from other neighborhoods within the city. On the other hand, if one includes the entire SMSA, the sports environment may become essentially a trivial part of the overall economy. One can level these same criticisms on the retrospective studies that have found little effect of the sports environment on the economy of the entire SMSA.

Is it possible professional sports facilities and franchises generate some localized positive economic benefits that cannot be detected in data aggregated to the level of SMSAs? This question is closely related to the one discussed above. If the economic benefits from sports teams and facilities are distributed unevenly across cities, then spatial models of economic behavior hold promise for increasing our understanding. Coates and Humphreys (2002a) recently undertook a preliminary spatial analysis on the economic impact of sports facilities. In this paper they draw rings of different diameter around each stadium or arena in use in 1990 and collect information on property values, rents, age of the housing stock, and population within those rings. They then use regression methods to explain how the property values and rents change from the inner most ring to more distant rings. Their results suggest the possibility of some narrowly focused positive benefits, but this study focuses on housing values and rents. Many of the claimed economic benefits flowing from sports facilities take the form of job creation.

If the stadium or arena has effects on the local economy, one might think that those effects would appear most obviously in the vicinity of the facility. Proponents of stadium and arena led growth typically contend that restaurants, bars, and hotels in the area will expand their business as fans patronize the establishments before and after the game. If this argument is correct, then property values and rents should rise as the present value of the new stream of profits is capitalized into property values. On the other hand, property values may fall as the presence of rowdy, drunken fans in the neighborhood makes it a less pleasant place to live or operate a business.

The results suggest that property values are slightly higher in the first ring, with a diameter of a half mile. Property values in the other more distant rings are not statistically different from one another, and rents are not statistically different in any of the rings. The evidence from this preliminary study is consistent, therefore, with the results examining the entire SMSA which find no effect of the sports environment on the local economy.

Further research in this area should focus on employment and the formation and destruction of new businesses; however, such research requires a significant amount of data work, as most sources of firm-specific data do not contain precise information on the location of the firms and are not integrated with geographical information system software.

The sports environment in a city, like good weather or access to a coast, may be viewed by workers as an amenity for which they receive compensating wage differentials. If true, then the interpretation of the observed reduction in income per capita in cities with professional sports teams changes considerably. Rather than a drain on the local economy, firms in a city with professional sports teams can hire workers at a lower wage than firms in cities without professional sports teams.

To answer this question, researchers must turn to longitudinal or cross-sectional microeconomic data in order to control for the effects of individual characteristics like education and experience on wages. Some promising preliminary evidence supporting this theory has recently emerged. In particular, Coates and Humphreys (2001b) and Carlino and Coulson (2002) both provide evidence of a compensating wage differential associated with professional sports, based on microeconomic data from the Current Population Survey.

The idea of compensating wage differentials linked to professional sports teams also hinges critically on the effect of access to sports on migration decisions. The existence of compensating wage differentials depends critically on a steady-state equilibrium where individuals sort themselves into cities based on the amenities and wages across these cities. To date, no research has examined the link between migration and sports, but this area is ripe for additional empirical analysis.

Opportunity costs in public spending have long been considered as a potential link between professional sports and negative economic outcomes. If the local government spends large sums on building and operating a professional sports facility, then less may be spent on public health, public safety, education, infrastructure and other publicly provided goods. In the long run, this could reduce earnings in cities. The proponents of these subsidies also claim that tax revenues will increase as a result of the construction of new sports facilities, but no retrospective research has examined this issue. Despite the wealth of data on state and local government spending and revenues, there has been no research into the impact of professional sports teams and facilities on government budgets. Clearly, this is another area with room for additional research.

Finally, as Siegfried and Zimbalist (2000) pointed out, referenda on sports subsidies tend to be close contests and often appear on the ballot multiple times. They are also characterized by significant spending by the pro-subsidy side. Despite the potential to reveal important information about the preferences of tax payers for sports subsidies, few empirical studies have examined the determinants of these votes. The existing empirical research on these referenda, summarized earlier, has not taken into account the effects of spending by the well-financed proponents of stadium subsidies.

**Table 1: New Sport Facility Construction in the US Since 1998**  
**Real 2003 Dollars**

<b>City and State</b>	<b>Professional Sport</b>	<b>Year Opened</b>	<b>Total Cost</b>	<b>Public Subsidy</b>	<b>Age of Facility Replaced</b>
Cincinnati, OH	Baseball	2003	\$297 mil.	\$297 mil.	34
Detroit, MI	Football	2002	\$306 mil.	\$199 mil.	27
Houston, TX	Football	2002	\$374 mil.	\$257 mil.	37
Boston, MA	Football	2002	\$332 mil.	none	31
Seattle, WA	Football	2002	\$408 mil.	\$306 mil.	26
San Antonio, TX	Basketball	2002	\$179 mil.	\$179 mil.	9
Denver, CO	Football	2001	\$417 mil.	\$313 mil.	41
Pittsburgh, PA	Football	2001	\$263 mil.	\$183 mil.	31
Dallas, TX	Basketball*	2001	\$438 mil.	\$219 mil.	21
Milwaukee, WI	Baseball	2001	\$410 mil.	\$317 mil.	48
Pittsburgh, PA	Baseball	2001	\$273 mil.	\$231 mil.	31
Cincinnati, OH	Football	2000	\$479 mil.	\$479 mil.	31
Atlanta, GA	Basketball*	2000	\$227 mil.	\$195 mil.	3
Detroit, MI	Baseball	2000	\$319 mil.	\$122 mil.	88
Houston, TX	Baseball	2000	\$266 mil.	\$191 mil.	35
San Francisco, CA	Baseball	2000	\$351 mil.	\$11 mil.	40
Cleveland, OH	Football	1999	\$311 mil.	\$311 mil.	53
Nashville, TN	Football	1999	\$319 mil.	\$319 mil.	--
Denver, CO	Basketball*	1999	\$187 mil.	\$10 mil.	24
Los Angeles, CA	Basketball*	1999	\$363 mil.	\$65 mil.	32
Indianapolis, IN	Basketball	1999	\$201 mil.	\$87 mil.	25
Seattle, WA	Baseball	1999	\$587 mil.	\$409 mil.	23
Baltimore, MD	Football	1998	\$251 mil.	\$251 mil.	44
Tampa, FL	Football	1998	\$190 mil.	\$190 mil.	22
Miami, FL	Basketball*	1998	\$197 mil.	none	10
Phoenix, AZ	Baseball	1998	\$392 mil.	\$267 mil.	--

\*: Also home to a professional hockey franchise

## Notes

(1) Roger Noll and Andrew Zimbalist (1997) also discuss the shortcomings of the typical prospective economic impact analysis.

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## References

- Agostini, Stephen J., John M. Quigley, and Eugene Smolensky. 1997. "Stickball in San Francisco," in Roger G. Noll and Andrew Zimbalist eds. *Sports, Jobs, and Taxes: The Economic Impact of Sports Teams and Stadiums.*, Washington, D.C.: Brookings Institution Press. pp.385-426.
- Baade, Robert A. 1996. "Professional Sports as Catalysts for Metropolitan Economic Development." *Journal of Urban Affairs.* 18(1): 1-17.
- Baade, Robert A. and Richard F. Dye. 1990. "The Impact of Stadiums and Professional Sports on Metropolitan Area Development." *Growth and Change.* 21(2): 1-14.
- Baade, Robert A., and Allen R. Sanderson. 1997. "The Employment Effect of Teams and Sports Facilities," in Roger G. Noll and Andrew Zimbalist eds. *Sports, Jobs, and Taxes: The Economic Impact of Sports Teams and Stadiums.* Washington, D.C.: Brookings Institution Press. pp. 92-118.
- Berument, Hakan, and Eray M. Yucel. 2003. "Long Live Fenerbahce: Production Boosting Effects of Soccer in Turkey," Unpublished mimeo.
- Blair, John P. and David W. Swindell. 1997. "Sports, Politics, and Economics: The Cincinnati Story," in Roger G. Noll and Andrew Zimbalist eds. *Sports, Jobs, and Taxes: The Economic Impact of Sports Teams and Stadiums.* Washington, D.C.: Brookings Institution Press. pp. 282-323.
- Brown, Clyde. and David M. Paul. 1999. "Local Organized Interests and the 1996 Cincinnati Sports Stadium Tax Referendum." *Journal of Sport and Social Issues*, Vol. 23, No. 2 (1999), pp. 218-238.
- Carlino, Gerald and N. Edward Coulson. 2002. "Compensating differentials and the social benefits of the NFL." Federal Reserve Bank of Philadelphia working paper no. 02-12/R.
- Coates, Dennis and Brad R. Humphreys. 2003. "The Effects of Professional Sports on Earnings and Employment in the Retail and Services Sector of U.S. Cities." *Regional Science and Urban Economics.* 33(2): 175-198.

----. 2002a. "The Spatial Economic Impact of Stadiums and Arenas." paper presented at the Southern Economic Association Meetings, New Orleans, LA.

----. 2002b. "The Economic Impact of Postseason Play in Professional Sports." *Journal of Sports Economics*. 3(3): 291-299.

----. 2002c. "Voting on Stadium and Arena Subsidies." Paper presented at the Public Choice Society Meetings, San Diego, CA.

----. 2001a. "The Economic Consequences of Professional Sports Lockouts and Strikes." *Southern Economic Journal*. 67(3): 737-747.

----. 2001b. "Professional Sports and Metropolitan Economies: Evidence from Microeconomic Data." Paper presented at the Western Economic Association annual meetings, San Francisco, CA.

----. 1999. "The Growth Effects of Sports Franchises, Stadia and Arenas." *Journal of Policy Analysis and Management*. 14(4): 601-624.

Crompton, John L. 1995. "Economic Impact Analysis of Sports Facilities and Events: Eleven Sources of Misapplication." *Journal of Sport Management*. 9: 14-35.

Fort, Rodney. 1997. "Direct Democracy and the Stadium Mess," in Roger G. Noll and Andrew Zimbalist eds. *Sports, Jobs, and Taxes: The Economic Impact of Sports Teams and Stadiums*. Washington, D.C.: Brookings Institution Press. pp. 146-177.

----. 1999. "Stadium Votes, Market Power, and Politics." *University of Toledo Law Review*. 30(3): 419-441.

Hotchkiss, Julie L., Robert E. Moore, and Stephanie M. Zobay. 2003. "Impact of the 1996 Summer Olympic Games on Employment and Wages in Georgia." *Southern Economic Journal*. 69(3): 691-704.

Humphreys, Jeffrey F., "The Economic Impact of Hosting Super Bowl XXVIII on Georgia." *Georgia Business and Economic Conditions*, Vol. 54, No. 3, pp. 18-21.

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Johnson, Bruce K. and John C. Whitehead. 2000. "Value of Public Goods from Sports Stadiums: The CVM Approach." *Contemporary Economic Policy*. 18(1): 48-58.

Johnson, Bruce K., Peter A. Groothuis, and John C. Whitehead. 2001. "The Value of Public Goods Generated by a Major League Sports Team: The CVM Approach." *Journal of Sports Economics*. 2(1): 6-21.

Noll, Roger G. and Andrew Zimbalist. 1997. *Sports, Jobs, and Taxes: The Economic Impact of Sports Teams and Stadiums*, Roger G. Noll and Andrew Zimbalist eds., Washington, D.C.: Brookings Institution Press.

Porter, Phillip K. 1999. "Mega-sports Events as Municipal Investments: A Critique of Impact Analysis," in J. Fizel, E. Gustafson, and L. Hadley (eds.), *Sports Economics: Current Research*, Westport, CT: Praeger.

---- and Deborah K. Fletcher. 2002. "Capacity Constraints Limit the Economic Impact of Sporting Events: Lessons from the Olympic Games," paper presented at the Southern Economic Association Meetings, New Orleans, LA.

Rosentraub, Mark S. and David Swindell, "Just Say No? The Economic and Political Realities of a Small City's Investment in Minor League Baseball," *Economic Development Quarterly*, Vol. 5, No. 2 (May 1991), pp. 152-167.

Rosentraub, Mark S., David Swindell, Michael Przybylski, and Daniel R. Mullins. 1994. "Sport and Downtown Development Strategy: If You Build It, Will Jobs Come?" *Journal of Urban Affairs*. 16(3): 221-239.

Siegfried, John and Andrew Zimbalist. 2000. "The Economics of Sports Facilities and Their Communities." *Journal of Economic Perspectives*. 14(3): 95-114.