



## DO ECONOMISTS REACH A CONCLUSION?

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# Do Economists Reach a Conclusion on Subsidies for Sports Franchises, Stadiums, and Mega-Events?

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### ABSTRACT

State and local governments in the United States have long been called upon to subsidize the construction of stadiums and arenas. Indeed, the first wave of government subsidization dates to the years between 1917 and 1926, the first boom in stadium construction. Since then, one thing that has changed substantially is the rationale for public-sector support. In 1926, *The Playground* said the goal was for “the stadium to have as broad a use as possible.” It recommended the once-familiar horseshoe shape because it facilitated egress via the open end and included a long straightaway suitable for a procession. The implicit rationale was for the facility to serve the broad public interest by hosting pageants, parades, rallies, and festivals, as well as sporting contests of all sorts from track and field to football and baseball. Today, stadium subsidization focuses on a single use, namely, hosting professional sports franchises, which usually have substantial control over the facilities’ availability for other events.

The change from public provision of venues available for a wide array of events to public subsidization of largely privately controlled facilities is a fairly recent phenomenon. The change occurred gradually. The first steps may have occurred with baseball-franchise relocations—the Braves’ relocation in 1953 from Boston to Milwaukee, the Browns in 1954 from St. Louis to Baltimore, and the Athletics in 1955 from Philadelphia to Kansas City. In each case, new or recently renovated publicly owned facilities were made available to baseball franchises on quite generous terms. For example, *The New York Times* reported on March 15, 1953 that the Braves were offered a flat rental of \$1,000 for the first two years on the new County Stadium in Milwaukee.<sup>3</sup>

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<sup>3</sup> It may be that what has come to be known as the major league city argument for attracting a profes-

Ralph Wulz (1957) argued that public ownership of stadiums was justified if “private enterprise could not provide the service which the public demanded and at the same time realize an adequate profit on its investment.” However, Wulz did not foresee private businesses being subsidized in their use of these facilities, stating that subsidization might be suitable for “governmental activities and perhaps activities at which no admission is charged,” but that “commercial type activities pay the full cost of the services or facilities which are provided” (93).

Wulz’s (1957) discussion raises the question of the possible theoretical justification for the subsidies we see today. Subsidies can, in general, be justified either on efficiency or distributive grounds. For example, a subsidy could be justified if the unsubsidized market would supply too little of the good. This is the classic situation of positive externalities. The subsidy would induce greater provision. Alternatively, subsidies could be justified as a means of redistribution. For example, public education is paid for out of taxes, with wealthier individuals paying more in taxes than the cost of the services they receive and poorer individuals paying less than the full cost of the education. We will address each of these justifications for stadium and arena subsidies in turn.

To justify a stadium subsidy on efficiency grounds requires an explanation of how the market outcome will result in “too little” quantity. That is, one must explain how marginal social benefit from the stadium exceeds the marginal social cost. A difficulty in this case is that sports facilities are very lumpy; the debate often focuses on whether to build a facility, not about increasing the seating capacity by an additional seat. The market outcome, therefore, may be no construction of a stadium or an arena at all, and consequently no sporting events. This is the market failure justification implicit in the “build it and they will come” strategy of cities whose intent is to lure an existing franchise away from some other city or to induce a professional league to grant the city an expansion franchise. It is also the justification for a city to replace an existing facility to keep the current team or teams from moving.

A recent example from the NBA illustrates the kind of thing that often goes on now. The Seattle Supersonics were unhappy with their former home, KeyArena, and sought to have the city of Seattle build a new arena. Seattle refused and the team explored moving, which would require breaking their lease with the City of Seattle for KeyArena. A lawsuit ensued and they settled out of court, with the team moving to Oklahoma City, for the 2008-2009 season, and paying Seattle tens of millions of dollars to break the lease. Oklahoma City attracted the team by promising to spend \$100 million renovating its existing arena to bring it up to current NBA standards and an additional \$20 million to construct a practice facility. The existing arena in Oklahoma City was built without an occupant during the

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sional sports franchise came from Lou Perini, President of the Boston Braves, discussing his decision to move the team to Milwaukee. *The New York Times* article quotes him as saying “Maybe Milwaukee isn’t a major league city. I don’t know, but I feel it will become one.”

1990s as part of a downtown redevelopment plan. The Seattle-Oklahoma City case suggests relevant lessons: Professional sports leagues are able to restrict entry and play one city off against another to extract the best subsidy deal. In doing so, there is a significant positional element—one city’s fan-base loses, another gains. And teams exploit the cities where politics most effectively taps the taxpayers.

In this paper we examine the economic research on subsidies for sports franchises, stadiums, and mega-events. We ask whether economists who conduct such research reach a conclusion. Our investigation suggests that such economists largely agree that subsidization is undesirable. Before turning to the economic literature, we examine the results of a recent survey, and frame the issue in terms of economic intuition.

### THE AVERAGE ECONOMIST OPPOSES SPORTS SUBSIDIES

Survey evidence indicates that on some policy issues economists in general hold views different from those who specialize in the issue.<sup>4</sup> When it comes to sports subsidies, however, both sets of economists appear to agree. In a 2005 survey of a random sample of American Economic Association members, Robert Whaples (2006) asked of agreement with the following:

*Local and state governments in the U.S. should eliminate subsidies to professional sports franchises.*

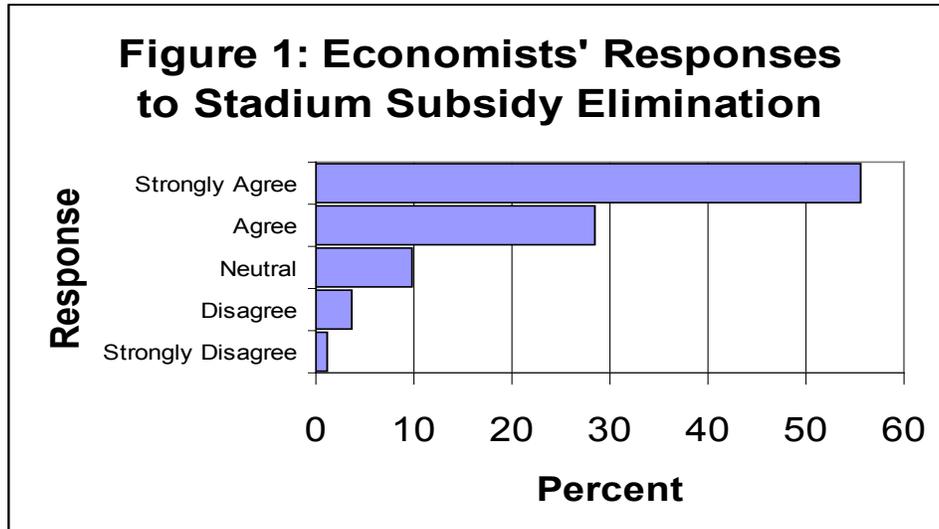
Possible responses were “Strongly Disagree,” “Disagree,” “Neutral,” “Agree,” and “Strongly Agree.” Figure 1 shows that 58 percent strongly agreed, and 28 percent agreed. About 10 percent were “neutral.” Only 5 percent disagreed. Sports subsidies was but one of about 20 policy issues included in the survey, but Whaples highlights this issue as one of exceptional consensus—the other standouts being free trade, outsourcing, and the elimination of agricultural subsidies. The sports question, in fact, received the largest “strongly agree” response in the entire survey.

Incidentally, similar economic intuition can be attributed to Adam Smith (1776). In writing of “public diversions,” meaning displays “to amuse and divert the people by painting, poetry, music, dancing; by all sorts of dramatic representations and exhibitions,” Smith favored the state’s “encouraging” such activities, but he specifically clarified what he meant by “encouraging”: “that is by giving entire liberty to all those who for their own interest would attempt without scandal or indecency” (796). Thus, where Smith specifically identified the form of encourage-

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4 For example, on rail-transit projects and subsidies, Balaker and Kim (2006) show that the specialist economists are mostly opposed, likely much more so than the “average” economist; on the pharmaceutical policies administered by the Food and Drug Administration, Klein (2008) indicates that the specialist economists are substantially more supportive of liberalization than the “average” economist.

ment, he spoke of liberty and made no mention of subsidization—whereas he did countenance subsidization when it came to the schooling of children (785, 815).



Source: Whaples (2006)

### THE ECONOMIC INTUITION BEHIND THE CASE AGAINST SPORTS SUBSIDIES

The consensus among economists on the question of sports facility subsidies likely stems from the basic economic intuition that government subsidies ought to address some “market failure,” and economists sense that there is no compelling case to be made for sports subsidies. The argument for a subsidy always comes from a local context, when a city wants to attract a new team or hold on to an existing one, and we address these local issues. But one can also assess the subsidy argument from a global perspective, which is where we begin.

The Seattle-Oklahoma City case described above is a perfect example of the global case against subsidies. Oklahoma City offered larger subsidies than Seattle was willing to make, so the basketball franchise left Seattle for Oklahoma City. Basketball fans in Seattle lose, basketball fans in Oklahoma City gain. Perhaps there are more fans in Oklahoma City than in Seattle or fans in Oklahoma have more intense preferences for NBA basketball than fans in Seattle, so there might be some slight gain in average welfare as a result of the franchise move. By and large, however, the franchise changing cities is a zero sum game for basketball fans. The team is enriched by the larger subsidy available in Oklahoma, but the move is clearly not a Pareto improvement in the allocation of resources. From a social perspective, a better approach to maximizing welfare might be for the NBA to expand the number of franchises so basketball fans across the country had their

own local team to cheer. That, of course, is not in the best interests of the current league members who derive substantial benefits, like the subsidies, from their restriction of supply.

Calls for subsidies at the local level come from interest groups and their consulting firms—which we call “promoters” of subsidization—who talk up local benefits of sports franchises, stadiums, and mega-events. As we shall see, promoters’ claims of such local benefits don’t hold up empirically. But such rationales can also be countered by simple economic intuition.

The promotional literature often suggests that if the city attracts or retains a sports franchise, its people derive specific economic benefits from the presence of the team, including more local jobs, higher local income, and increased local tax revenues. In addition, some promoters suggest that the presence of a franchise generates intangible economic benefits for the city. For example, promoters consistently argue that having major league sports raises the status of the city and brings added national and world recognition that enhances the business prospects and even the self-esteem of the community. For example, Oklahoma City’s quest to raise the sales tax by one cent to fund the improvements to its existing arena went by the name “Big League City” campaign. The prospect of a game being broadcast nationally or even internationally from the stadium or arena is touted as a wonderful advertisement of the city’s virtues. These benefits, which the teams cannot capture, are used to justify a local government subsidy for the construction of the facility.

The promotional literature suffers from a long list of methodological and theoretical problems, all of which have been well-documented in the literature. Economic intuition suggests several of these problems:

1. The redistributive implication of moving a franchise from one city to another also applies to the context of moving a stadium from one part of a city to another. If a new stadium is built in the downtown area to revitalize that section of town, then at least a portion of any such vitality naturally comes from the part of the city around the original stadium.
2. Much of the consumer spending associated with professional sports comes out of the entertainment budgets of local residents. When a new sports franchise appears in a city, local entertainment spending on sports increases and local entertainment spending on other activities like movies, bowling, etc. decreases. The effective “local spending multiplier” on activities like bowling and attending plays or concerts is higher than the multiplier on professional sporting events because the owners of bowling alleys, theatres, and restaurants, as well as the employees of these establishments, live in the community while the owners and highly paid players (who receive a majority of team’s expenditures) on

- professional sports teams generally do not. Since spending on professional sports teams substitutes for other local consumer entertainment spending and has a lower local spending multiplier, professional sports can reduce local income rather than increase it.
3. Sports are one of many cultural activities within the city. For every individual who derives enjoyment from the presence of the sports franchises in the community, there are likely to be other individuals who are uninterested in sports or even resent being taxed to subsidize an activity they have no use for. Others argue that sports culture diverts people from more socially beneficial interests and pursuits. Before accepting that sports teams generate external benefits, a careful and thorough look at “external costs,” and the alternative uses of resources devoted to subsidies—uses that might also have “external benefits”—is clearly warranted. Unfortunately, such debate quickly leads public discourse and policymakers into a briar patch of unpriced values that are easily misrepresented. Thus, economists generally urge that society steer away from government sponsorship of cultural activities not related to education.
  4. Government expenditures on stadium and arena subsidies carry opportunity costs which are never addressed. Tax collections used to pay stadium debt, for example, could have gone for other public projects with higher social rates of return than a stadium. One never knows what the returns to alternative uses of the funds might be because alternatives are never discussed. These alternative uses could be construction or maintenance projects, on highways, mass transit systems, hospitals, or schools. Or, the alternative could be to reduce taxes.
  5. Whatever inefficiencies might exist in a system without sports subsidies, economic intuition suggests that government subsidization introduces new distortions and imperfections, including the excess burden and administrative costs of raising and spending tax monies.

The Whaples survey did not ask economists the reasons for their views, so we cannot say that the foregoing points speak for economists in general. It seems clear enough, though, that economists are unlikely to warm to subsidies that do not plausibly foster a public good or serve redistributive goals. The case for sports subsidies is weak, *prima facie*. Further, sports subsidies do not do much to advance political identity, as it is not the polity but the sport, the league, the team and their multi-million dollar players and managers who soak up the attention and identification. It is plausible, for example, that some economists warm to rail-transit projects and subsidies for their political and symbolic aspects, but sports subsidies lack even this “benefit.”

Despite the strong intuitive case against stadium and arena subsidies, they exist and are valued in the billions of dollars. The local promoters have claimed

billions of dollars in benefits to the community and, apparently, their arguments have convinced many key local decision makers to give them access to the public purse. We turn now to the evidence on the local benefits from those subsidies.

### THE PROMOTIONAL LITERATURE VERSUS THE ECONOMISTS

The remainder of this paper surveys the literature on the subsidization of sports franchises through the provision of publicly financed stadiums and arenas to determine whether economists reach a conclusion on the efficacy of those subsidies as sources of economic development, income and tax revenue growth and job creation. This literature consists of two rather distinct types of analysis: analysis done largely by academics, mostly economists, but also regional scientists, urban affairs, and public policy scholars; and analysis done by consulting firms who may employ economists, accountants, or policy analysts. Work by this latter group is what we have referred to as the promotional literature.

Within the promotional literature, proponents of stadium subsidies argue that subsidies are warranted because of the local economic development benefits of building a stadium or arena, including the “big league city” benefits. They do not support subsidies based on the consumer surplus derived by game attendance nor from consumer external benefits from such activities as talking about the teams or following them through the print or broadcast media. The economic development benefits of interest to boosters are predominantly identified with income and job creation, and sometimes as increased tax revenue, and are generally called “tangible benefits” in the literature. Because the proponents of stadium subsidies focus on jobs, income, and tax revenue enhancement, the academic literature has focused its attention on these purported benefits as well until quite recently.

Some subsidy advocates have implicitly justified them as enhancing redistribution. This justification exists both in the promotional “economic impact” literature and in the academic literature, with most examples of the latter appearing recently. The justification is that building stadiums or arenas downtown, in the central city of metropolitan areas, will bring economic activity to those neighborhoods and aid in their revitalization. Downtown areas, especially in older cities, have become stagnant and decayed over time as people and businesses moved to the suburbs. Those older areas are, so the argument goes, deserving of assistance, even at the expense of the outlying areas. This justification rests on the downtown stadium or arena bringing new jobs and businesses into the downtown area.

We restrict our attention to the academic literature, much of which attempts to verify the claims of the promotional literature. Because several contributors to the literature do not hold a Ph.D. in economics, we have tried to distinguish “non-

economist” authors from authors who are economists. A necessary condition for being classified a non-economist is not holding a Ph. D. in economics. Absent information on the discipline of an author’s doctorate, we also report in footnotes whether the author in question does not work or has not worked in economics departments, and if one does not publish predominantly in economics journals. The individuals who either do not hold a doctorate in economics or have not worked in economics departments or whose research is published primarily in public policy or urban or regional science journals tend to reach conclusions generally at odds with “economist” authors—that is, those that hold a doctorate in economics, work or have worked primarily in economics departments, or publish predominantly in economics journals.

The literature initially examined data on local or regional output, income, and jobs for evidence of an impact from sports franchises and facilities. More recently, the search for economic effects of franchises and facilities has turned to tax revenues and effects on rents and property values. Researchers have looked for evidence of economic impact flowing from the operation of sports facilities and from the construction of these facilities. In addition, we address the extent to which subsidies to sports franchises and facilities are connected to the city being selected as host for a sporting mega-event, such as the Super Bowl or the Major League Baseball All-Star Game, and estimates of the subsequent benefits to the city from hosting these events.

Both academic economists and consultants reach a conclusion about the economic impact of professional sports franchises and facilities, but these two groups reach opposite conclusions. The clear consensus among academic economists is that professional sports franchises and facilities generate no “tangible” economic impacts in terms of income or job creation and are not, therefore, powerful instruments for fostering local economic development. The clear consensus among consultants who produce “economic impact studies” is that professional sports franchises and facilities generate sizable job creation, incremental income increases, and additional tax revenues for state and local governments. We will not discuss further the promotional economic impact studies but instead refer the reader to four excellent criticisms of those studies, namely, Noll and Zimbalist (1997c), Crompton (1995), Siegfried and Zimbalist (2000), and Hudson (2001). In particular, the book *Sports, Jobs and Taxes: The Economic Impact of Sports Teams and Stadiums* by Roger Noll and Andrew Zimbalist (1997a) brought together a series of papers that addressed teams and stadiums as economic development tools. The title of their introductory chapter, “Build the Stadium – Create the Jobs!” (1997b), indicates just how far the thinking about sports facilities has changed since the 1920s. Since the publication of *Sports, Jobs and Taxes*, a large literature has developed assessing the impact of stadiums and franchises on city economies.

Here, we review the existing literature on the tangible economic impact of professional sports franchises and facilities published in peer reviewed journals.

Although a small and growing literature exists which estimates the value of “intangible” economic benefits, we do not survey this literature.

### **THE FINDINGS OF PEER-REVIEWED ECONOMIC RESEARCH ON ECONOMIC IMPACTS**

The academic research on the economic impact of professional sports franchises and facilities, in general, comes from retrospective econometric research, though some case studies also exist. In the econometric research, researchers collect time series or panel data from Metropolitan Areas (MAs) or states that were home to professional sports franchises and facilities and estimate reduced form econometric models of the determination of various economic indicators, typically real income per capita or total employment. These analyses generate estimates of the impact of a sports franchise or facility on the economy. If the coefficient on a facility or franchise variable is statistically significant and positive, then statistically that sports variable is inferred to induce an increase in the dependent variable measuring economic activity. If the sports variable is not statistically significant or is significant and negative, then the inference is that the variable does not induce increases in economic activity or that it causes a decline in activity. When the variable is positive and statistically significant, the coefficient is assessed for economic significance by the researcher and compared to the claims of sports boosters. For example, boosters may claim that hosting the Super Bowl will generate \$300 million of new income, but the estimates associate the Super Bowl with only \$30 million dollars of activity. Academic economists interpret disparities between boosters’ findings and independent researchers’ results as evidence that sports led development is not efficacious.

#### *Professional Sports Franchises and Facilities*

There now exists almost twenty years of research on the economic impact of professional sports franchises and facilities on the local economy. The results in this literature are strikingly consistent. No matter what cities or geographical areas are examined, no matter what estimators are used, no matter what model specifications are used, and no matter what variables are used, articles published in peer reviewed economics journals contain almost no evidence that professional sports franchises and facilities have a measurable economic impact on the economy.

Baade and Dye (1988) examined the economic impact of professional sports on the determination of annual manufacturing employment, real value added in manufacturing, and new capital expenditure by manufacturing firms in eight metropolitan areas over the period 1965-1978. The source of their data was

the Annual Survey of Manufactures. Explanatory variables included the population of the metropolitan area (MA), a time trend, and indicators for a new or renovated stadium, a professional football franchise, and a professional baseball franchise. They found little evidence that variation in professional sports franchises or facilities explained observed variation in employment, value added, or capital expenditure. Only four of the parameters on the franchise/facility indicators were statistically significant at the 5% level; three were positive and one was negative. Interestingly, this is the only paper in the literature to make use of MA data from the Annual Survey of Manufactures. This survey contains detailed MA level data on the composition of businesses in the local economy and should be used more often when assessing the economic impact of professional sports.

Baade and Dye (1990) next examined the economic impact of professional sports on annual real MA personal income, and the ratio of MA personal income to regional personal income in nine MAs over the period 1965-1983. The explanatory variables were the same as in their earlier study and they found no evidence that variation in the presence of sports franchises and facilities explained any of the variation in the real personal income across MAs.

Baade (1996) examined the economic impact of professional sports on the determination of real per capita income and the metropolitan area's share of state employment in the Amusement and Recreation industry and the Commercial Sports industry in 48 metropolitan areas over the period 1957-1989. The dependent variable, real per capita income, in these reduced form regression models was transformed using a complex function of the average level of per capita income across the cities in the sample and first differences. The 48 metropolitan areas in the sample included both cities with professional sports teams and cities with no professional sports teams. Separate regressions were run for each metropolitan area. The explanatory variables included the number of sports franchises and the number of sports facilities less than ten years old in the metropolitan area. In general, the sports facility and franchise variables were not statistically significant, and the few that were significant displayed no consistent pattern of signs. Baade (1996) concluded that there was no evidence that professional sports franchises or facilities had a positive impact on real per capita income or employment in these two industry classifications that include sports franchises.

Baade and Sanderson (1997) examined the employment created by sports facilities. The authors used data on employment from the Amusements and Recreation, and Commercial Sports Industry classifications of the Standard Industrial Classification for ten cities and their states covering the years 1958 through 1993. They estimated separate regressions for each city, with the dependent variable either the city's share of state employment in the Amusements and Recreation or the city's share of state employment in Commercial Sports. They found very little effect of newly constructed stadiums or from having additional professional teams on employment shares. When new stadiums were significant, their effect

was to reduce the city's share of employment. An additional team statistically significantly raised the city's share in several cases, and reduced it significantly in one case. Thirteen of twenty coefficients for the number of teams were not statistically significant. Baade and Sanderson sum up their results by saying, "In general, the results of this study do not support a positive correlation between professional sports and job creation" (112).

Hudson (1999) examined the economic impact of professional sports on urban employment in 17 metropolitan areas over a twenty year period. This study used both the number of professional sports franchises in the metropolitan area and indicator variables for the presence of MLB, NFL, NBA and NHL franchises, as well as a variety of explanatory variables reflecting local wages, income, energy prices, population and taxes. None of the sports franchise variables were statistically significant, indicating that professional sports teams had no effect on employment in this sample of cities.

Coates and Humphreys (1999) examined the impact of professional sports on the level and growth rate of per capita income for all 37 metropolitan areas that had an NFL, MLB or NBA franchise over the period 1967-1994. This study included a vector of variables reflecting the "sports environment" in these metropolitan areas that included franchise indicator variables, new facility indicator variables, variables identifying the first ten years that a new franchise or facility was in a metropolitan area, stadium and arena capacities, and variables identifying periods after franchises left cities. The models contained metropolitan area fixed effects, a lagged dependent variable, and local population. Although few of the variables in the sports environment vector were individually significant, an F-test on the entire vector indicated that the variables were jointly significant, and the average effect on the level of real per capita income was negative. The sports environment vector was not significant in the regression that used the growth rate of real per capita income as the dependent variable. Coates and Humphreys (1999) concluded that professional sports had no positive effect on metropolitan area real per capita income and may have a negative effect.

Coates and Humphreys (2001) used sports strikes as a natural experiment to test for an economic impact of professional sports on the level of income per capita in urban areas.<sup>5</sup> The paper used the vector of "sports environment variables" from Coates and Humphreys (1999) and augmented this with indicator variables for five work stoppages in the NFL and MLB during the sample period. Work stoppages in professional sports leagues are useful for analyzing the economic impact of professional sports franchises because they represent periods when there are no sporting events to draw outside visitors to a city, the primary driver of economic impact in promotional economic impact studies, and they are

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5 Sociologist John F. Zipp, (1996) also examined the impact of the Major League Baseball strike in 1994.

unexpected, infrequent events. Coates and Humphreys found that real income per capita in metropolitan areas did not fall during work stoppages in professional sports leagues, supporting the emerging consensus in the literature that professional sports has no tangible economic impact on local economies.

Coates and Humphreys (2002) used a second natural experiment, playoff appearances by franchises, to measure the economic impact of professional sports on real per capita income in metropolitan areas. The sports variables used were the vector of “sports environment” variables used in their earlier studies (Coates and Humphreys 1999, 2001), augmented with indicator variables for various post-season appearances in Major League Baseball, the National Football League, and the National Basketball Association. The results indicate that real per capita income in metropolitan areas that are host to postseason games is identical to real per capita income in metropolitan areas that are not host to postseason games, disputing the idea in promotional economic studies that postseason games are an important source of economic impact. The results did suggest that the metropolitan area that is home to the Super Bowl winner had higher real per capita income in the following year than in other metropolitan areas, but this cannot be attributable to direct economic impact because the Super Bowl is played at a neutral site.<sup>6</sup> Hosting the Super Bowl also had no effect on real per capita income in the host metropolitan area.

Coates and Humphreys (2003) used the same approach as in their earlier work, but used the analysis to explain wages and employment in two sectors of the economy that are closely linked to activities in stadiums and arenas: the services and retail sectors. The services sector includes both hotels and amusements and recreation as sub-sectors, while the retail sector includes eating and drinking establishments. By looking at employment and earnings in these sectors rather than in the metropolitan area, their analysis is focused where sports-led development advocates contend much of the impact will be. Coates and Humphreys’ (2003) evidence suggests that positive effects in earnings per employee in one sector, Amusements and Recreation, are counterbalanced by negative effects on both earnings and employment in other sectors. Their evidence also suggests that professional sports reduce real per capita income in cities both because of substitution effects, where private expenditures are switched between sectors of the economy but are not increased, and in the creation of relatively low paying jobs.

Gius and Johnson (2001) also examined the effect of professional sports teams on per capita income in metropolitan areas. Gius and Johnson (2001) estimated the effect of sports franchises on the determination of per capita income using data from all cities with population over 25,000 that were included in the 1988 and 1994 City and County Data Books. The 1988 City and County Data

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<sup>6</sup> Matheson (2005) finds no effect on the victorious city from the Super Bowl. Davis and End (forthcoming) reach the opposite conclusion.

Books included calendar year 1985 data for 951 such cities; the 1994 City and County Data Books included calendar year 1990 data for 1,083 such cities. The paper used two sports indicator variables: an indicator variable for cities with one professional sports team (NFL, NBA, MLB and NHL) and an indicator for cities with two or more professional sports teams. Neither of the sports indicator variables was statistically significant at the 5% level or better, suggesting that real per capita income was not higher in cities of population over 25,000 with professional sports teams.

Miller (2002) examined the effects of two professional sports facility construction projects on employment in the construction industry in St. Louis, MO. Miller's empirical models controlled for factors that affect employment in the construction industry and accounted for the effects of wages on employment in construction. The sports variables used were indicator variables for the specific quarters in which the Kiel Center and TransWorld Dome were being built. The results indicate that the construction of these two sports facilities had no statistically significant effect on employment in the construction industry. This result rebuts the claim in promotional economic impact studies that the urban economy will experience significant increases in employment as a result of the construction of a sports facility.

Lertwachara and Cochran (2007) used an event study methodology to assess the impact of a new franchise, enticed into a city via subsidies, on the local economy. They look for a difference in the city or regional economy before and after expansion or relocation of a new franchise into the city. Their evidence includes new teams from each of the four major US professional sports leagues, MLB, NFL, NBA, and NHL. Their results are consistent with those in the literature and specifically with the findings of Coates and Humphreys (1999) that new teams "have an adverse impact on local per capita income for U.S. markets in both the short and long run" (244).

Rosentraub (1997) asked the question of whether stadiums and arenas can "reverse or slow the suburbanization trends so apparent in numerous urban areas" (180). Rosentraub identified two approaches or rationales for building stadiums downtown, revitalization and the creation of an export industry. Indianapolis followed an explicit, and aggressive, policy of developing an export-based sports program, while other cities followed the revitalization strategy. Rosentraub concludes, "In contrast to cities that did not build downtown sports facilities, the experience of cities with these assets is not encouraging" (205). He goes on to say that "this first view of the potential of downtown facilities to invigorate CBDs suggests that great caution should be used before spending substantial amounts of the public's resources on this tool for redesigning urban space" (206).

Two authors have concluded that sports and franchises are beneficial in

terms of income and job creation for the cities. Nelson<sup>7</sup> (2001) examined the effects of professional sports teams on the share of state personal per capita income attributable to metropolitan areas. Nelson (2001) estimated a reduced form model of the determination of the share of state personal income per capita that was accounted for by specific metropolitan areas. The paper used data from 43 metropolitan areas over the period 1969-1994. The empirical model contained indicator variables for both the number of professional sports franchises and facilities, as well as the location of the facilities relative to the Central Business District. The paper concludes that the share of real state personal income attributable to the cities in the sample was larger for cities with two or more sports facilities and teams located in the Central Business District relative to cities with one professional sports team, but that the share of real state personal income attributable to the cities in the sample was smaller for cities with two or more sports facilities and teams located in the suburbs relative to cities with one professional sports team.<sup>8</sup>

Similarly, Santo<sup>9</sup> (2005) examined the economic impact of professional sports on the local economy. He posited that:

Theoretically, a retro-style ballpark in a downtown or retail setting is likely to attract visitors from a wider area than its more utilitarian suburban counterpart, and is likely to induce longer stays and greater ancillary spending. If so, it is plausible that the new generation of sports facilities would have more favorable economic impacts than their predecessors. (Santo 2005, 180)

Santo utilized methods identical to Baade and Dye (1988) but extended the data through 2004 and dropped all data prior to 1984. His regressions explained variation in income, or the city's income as a share of regional income, using population, a time trend, and variables that indicated years following the construction of either a football only or baseball only stadium. Positive and significant coefficients on the stadium variables were interpreted as evidence of the importance of context.

While both Nelson and Santo conclude that downtown stadiums have beneficial impacts on their cities, few economists are convinced by their results. In both instances, demonstrating that a downtown stadium raises the share of state or region income that accrues downtown may be evidence that a sports facility redistributes income away from the rest of a state or region and concentrates it in the downtown area of a major city. Those who find no economic impact

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<sup>7</sup> We do not know Nelson's discipline. He is a Fellow of the American Institute of Certified Planners and a Professor of Urban Affairs and Planning.

<sup>8</sup> Wassmer (2001) suggests Nelson's results may indicate a healthy central city that helps build a healthy metropolitan area.

<sup>9</sup> Santo's Ph. D. is in Urban Studies and he is employed in a Department of City and Regional Planning.

of franchises and stadiums in the local economy argue that one explanation for those results is the redistribution of spending and income. Both Santo (2005) and Austrian and Rosentraub<sup>10</sup> (2002) indicate that pure redistribution effects from stadiums and arenas are, or should be, acceptable from a public policy perspective if the stadium or arena induces or enhances redevelopment of an area that needs redevelopment. They suggest, in fact, that the emphasis on improvements in general economic well-being from stadiums and arenas should be replaced by this redistributive focus despite the unclear welfare implications.

In addition, these studies suffer from methodological problems. First, identifying “downtown” and “suburban” sports facilities involves a great deal of researcher discretion, as the US Bureau of Economic Analysis ceased identifying the Central Business District in US cities in the early 1980s. Second, Coates and Humphreys (1999) pointed out the econometric problems inherent in transforming the dependent variable, rather than using additional control variables, to account for the presence of unobservable factors in reduced form models of local income or employment determination.

Recently, economists have turned to more disaggregated data on local tax revenues and hotel occupancy rates in their search for evidence that professional sports franchises and facilities generate positive economic benefits. Lavioe and Rodriguez (2005) examined monthly hotel occupancy rates in eight Canadian cities over the period 1990-1999 using univariate time series analytic techniques. Their paper contains weak evidence that hotel occupancy rates were lower during the 1994 NHL lockout, but this result is undermined by an estimated positive impact on hotel occupancy associated with the departure of an NHL franchise and a finding of no impact on hotel occupancy rates associated with the arrival of two new franchises in this group of Canadian cities.

### *Mega Events*

Much of the emphasis in the early work on the effects of stadiums and arenas on local economies was on their job and income creation effects, with the intent of assessing the value of subsidies for those facilities. A closely linked body of research addresses the impact of large, infrequent, events on the local economy. This mega-events literature attempts to measure the benefits to communities that host events such as the National Football League’s Super Bowl, Major League Baseball and National Basketball Association All-Star Games, National Collegiate Athletic Association basketball’s regional tournaments and the Final Four, and even the Olympic Games. The linkage of the stadium literature to this mega-event literature is two-fold. First, it has become common for the professional sports leagues to offer to cities the hosting of one of the premier events as an

<sup>10</sup> Austrian holds a Ph. D. in economics. Both Austrian and Rosentraub work primarily in Schools of Urban Affairs or Public Policy.

inducement to build a new facility for the local team. Second, promoters of these events tout the beneficial economic impact they will have on the host cities.

Porter (1999) may have been the first academic economist to carefully examine the effects of Super Bowls on local communities. His evidence, based on an analysis of Super Bowls in Florida and Arizona, indicated that hosting the Super Bowl had no detectable impact on the taxable sales of the host city. As previously mentioned, Coates and Humphreys (2002) also found no effect of hosting a Super Bowl on the level of real per capita personal income in a metropolitan area. Baade, Baumann, and Matheson (2008) examined taxable sales in Miami, Tampa, and Orlando, Florida for the effects of hosting Super Bowls and All-Star Games, and having local teams participate in the World Series or other league championships. The only event to have a consistent effect on taxable sales during their time period, 1980 through 2005, was Hurricane Andrew. The sporting mega-events had little effect on taxable sales, but on average may have reduced the sales.

Hotchkiss, Moore, and Zobay (2003) found that hosting the 1996 Summer Olympics boosted employment in Georgia counties where Olympic activities were held and in those counties close to the events. They conclude that evidence of wage increases is too weak to draw reliable inferences. Their estimates are, however, somewhat sensitive to the choice of when the Olympic effects begin. For example, do those effects begin as soon as Atlanta is announced as the host (September 1990), when the Olympics are held (August 1996), some time in between the announcement and the event, or do they begin only after the event? Their results are strongest if the Olympic effects are dated from 1994 for employment and 1995 for wages. Madden (2006) used a computable general equilibrium model to analyze the impact of the 2000 Summer Olympics in Sydney, Australia on the entire Australian economy. He finds that there may be a modest beneficial impact for the state hosting the games, which may come at the expense of the other states. Leeds (2007) examined the impact on Colorado ski resorts of the Salt Lake City Winter Olympics. His argument was that skiers whose access to Utah's ski resorts was blocked by the Olympic Games may have substituted trips to Colorado's nearby resorts. His evidence is consistent with some degree of substitution, suggesting that when one jurisdiction hosts a mega-event, that other jurisdictions may benefit from the displaced visits. In other words, the net gain to a host community may be smaller than is typically assumed. Porter and Fletcher (2008) studied the impact of the Salt Lake City Olympics. They found that, relative to the same time period in non-Olympic years, neither hotel occupancy rates nor the number of arriving air passengers exhibited any increase. Only the room rental rates at local area hotels were higher for the period of the Olympic Games.

Research also has turned to the examination of influences on tax collections. Coates (2007) analyzed monthly sales tax data for Houston, Texas over a period of about 15 years that included both the 2004 Super Bowl and the 2004

MLB All-Star Game. The results indicated that the Super Bowl did raise sales tax revenues in Houston, by about \$4 million, but that the MLB All-Star Game did not. Coates and Depken (2006) expanded the analysis to all the jurisdictions in Texas that hosted professional sports, football, basketball, baseball, hockey, soccer and auto-racing, Division I college football, and several professional and collegiate mega-events. Their analysis also finds a large sales tax revenue impact of the 2004 Super Bowl, but events like individual regular season games and even playoff and championship series games have modest or even negative effects on sales tax collections.

### CONCLUSION

We offer an argument against sports subsidies based on economic intuition, survey evidence that a majority of economists believe that sports subsidies are unwarranted, and a review of the existing literature on the economic impact of professional sports. Although the intuitive argument and survey evidence do not deny the possibility of certain local economic benefits from sports subsidies, the empirical findings also strongly reject sports subsidies on the grounds of a lack of economic benefits. The large and growing peer-reviewed economics literature on the economic impacts of stadiums, arenas, sports franchises, and sport mega-events has consistently found no substantial evidence of increased jobs, incomes, or tax revenues for a community associated with any of these things. Focusing our attention on research done by economists, as opposed to that of scholars from public policy or urban development and planning departments, we find near unanimity in the conclusion that stadiums, arenas and sports franchises have no consistent, positive impact on jobs, income, and tax revenues. If professional sports franchises and facilities do not have any important positive economic impact in the local economy, then subsidies for the construction and operation of these facilities are even more difficult to justify.

We have not discussed the growing literature that attempts to quantify supposed external or “intangible” benefits. For example, if a franchise provides a community with non-rival and non-excludable (public goods) consumption benefits, the value of those benefits may be reflected in local income or employment.<sup>11</sup> However, it is likely to show up in willingness to pay for homes and rents in the community in the same way that other amenities and disamenities are capitalized into fixed asset prices and rents. Consequently, researchers have turned to hedonic methods to determine the value of sports franchises to a community. In a similar vein, an active research agenda using contingent valuation methods to

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<sup>11</sup> However, Coates and Humphreys (1999) say one explanation for their finding of negative effects of the sports environment on personal incomes is that lower incomes are a compensating differential for access to professional sports.

analyze sports teams and stadium projects has recently emerged. In these studies, individuals are surveyed about their willingness to pay for hypothetical situations, such as purchase of a franchise or stadium renovation, and the survey answers used to estimate willingness to pay. Finally, researchers have estimated the consumer surplus from game attendance to assess the benefits of a stadium or arena. All these approaches address important dimensions of the benefits a community may attain from a sports franchise, or a new stadium or arena. These studies may shed light on the issue, but again, in our judgment, economic intuition provides a strong rationale that any supposed local external benefits would not justify sports subsidies.

We have seen that economists in general, as represented by Whaples's survey (2006), oppose sports subsidies. Economists reach the nearly unanimous conclusion that "tangible" economic benefits generated by professional sports facilities and franchises are very small; clearly far smaller than stadium advocates suggest and smaller than the size of the subsidies. The fact that sports subsidies continue to be granted, despite the overwhelming preponderance of evidence that no tangible economic benefits are generated by these heavily subsidized professional sports facilities, remains a puzzle.

Rent-seeking generates powerful incentives for people like professional sports team owners and professional athletes to divert public money into their pockets. Elected officials are especially susceptible to flattery from professional athletes, and these officials are also keenly aware of the political value of keeping the local team in town regardless of the underlying cost-benefit calculus. These explanations, along with simple collective foolishness when it comes to matters of the heart like sports, have considerable explanatory power. Moreover, the implicit and explicit anti-trust protection extended to North American professional sports leagues probably contributes to the ability of team owners to extract subsidies from local governments. At any rate, we seem to have reached the classic paradox in which economists reach a conclusion but are unable to make economic wisdom decisive in public policy decisions.

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