Lead Article

Who Benefits from the Presence of Professional Sports Teams? The Implications for Public Funding of Stadiums and Arenas

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Governments have become increasingly responsible for financing arenas and stadiums. It has now become commonplace to use broad-based or special taxes to build or operate these facilities with teams retaining most or all of the revenues. Some communities have invested more than $500 million in such facilities.

To justify the use of tax dollars proponents point to economic and intangible benefits. This study reviews the economic benefits from teams and analyzes, for the first time, the intangible benefits. The results indicate that fans, players, and owners are the prime beneficiaries of a team's presence. As a result, investments by the public sector in facilities should rely on a special user tax district that insures that those who benefit from the facilities bear the cost. A financing plan is presented that any city or county could follow to fund an arena or stadium.

State and local governments have become increasingly responsible for financing many of the new arenas and stadiums demanded by professional sports teams (Olbermann, 1997). While local officials have a long history of efforts to attract teams to their communities, the task of securing the funds needed to build the required playing facilities is relatively new. During the early years of professional sports through the 1950s, most teams played their home games in a privately owned stadium or arena. Team owners wanted little involvement from the public sector in their business affairs. Later, when publicly funded facilities became more common, the teams and other users paid rental fees that helped offset the public sector's capital and operating costs for the facilities (Swindell, 1996).

It has now become commonplace for cities, counties, and states to use a combination of broad-based taxes (e.g., sales and property taxes) or special taxes (e.g., taxes on alcohol and tobacco consumption, hotel rooms, and car rentals) to help build or operate these facilities. In most cases, team owners receive the vast majority, if not all, of the revenues produced by each facility. There are some privately built arenas and stadiums, but these are the exception. Arenas and stadiums have become large capital responsibilities for most of the governments that host one of North America's major sports franchises; several local governments now have invested more than $500 million in these facilities.

With more than 50 of North America's metropolitan regions hosting at least one of the 134 big league franchises, few urban residents are unfamiliar with the arguments that advocates use to attract electoral support to raise taxes to build a facility. Mayors and governors argue that teams and the facilities they use (1) generate economic growth through high levels of new spending in a region, (2) create a large numbers of jobs, (3) revitalize declining central business districts, and (4) change land-use patterns. Proponents also focus attention on intangible benefits, including civic pride, a high-profile image and identity and national and even international publicity. Advocates for the building of facilities frequently note that the image of many cities is frequently defined by high-profile teams and sporting events. The celebratory atmosphere created in a city when a team wins is another "intangible" benefit even for people who do not attend games. In a society where sports are a dominant cultural icon, teams do create a level of recognition that generates pride for residents of a community (Kotler, Haider, and Rein, 1993; Baade, 1996a, 1996b; Rosentraub, 1996; Danielson, 1997).

As both the number of publicly subsidized facilities and the scale of public-sector expenditures have increased, policy analysts have evaluated the expected economic benefits. Such analysis has shown projected economic returns to be greatly exaggerated, overly optimistic, or simply incorrect. For example, many economists note that most of the expenditures by fans are merely a transfer of their discretionary recreational dollars from other activities (Baade and Dye, 1988; Baade, 1994; Rosentraub, 1997a; Noll and Zimbalist, 1997). Baade's work suggests that expenditures for sports facilities are not associated with regional growth, and Rosentraub's studies illustrate the small scale of the returns to cities and downtown areas from investments in sports facilities. Although the building of many new facilities in downtown areas has attracted millions of visitors to areas previously avoided by most residents, there is no evidence that these facilities have significantly changed employment or residential location patterns. Employers still seek more suburban locations for their businesses, and their employees still prefer outlying areas to inner-city locations for their residences (Rosentraub, 1997b). This is not to suggest that growth and development do not occur in downtown areas. Rather, more growth occurs elsewhere, and the overall distribution of jobs and residences has been virtually unaffected by the presence of sports facilities.

If the economic returns from teams and their facilities cannot justify the rather large investments made by the public sector for sports facilities, can the *intangible* rewards from the presence of teams warrant the investment of public resources? Civic pride, reputation, and image certainly are important factors for a city's overall development. Sports teams could make a substantial enough contribution to the quality of life and people's perceptions of their community to justify the use of tax money to build or maintain the facilities that attract teams. Although there is an abundance of data analyzing the direct and indirect economic impacts of teams, there is very little information that permits public leaders to quantify their intangible benefits.

Using a survey administered to more than 1,500 respondents in the Indianapolis metropolitan area, we were able to measure the extent of these intangible benefits and identify who receives them.

The information presented here describes the recipients of the intangible benefits from teams and provides insight into alternative financing arrangements that public officials should consider when deciding how to pay for the public sector's share of the costs for building facilities.

This particular survey was designed to measure the intangible benefits of the Indiana Pacers, the Indianapolis Colts, the Indianapolis 500, the local museums, and other civic assets in the Indianapolis area. There is little reason to believe that the impact of such facilities in other communities would be significantly different. Indeed, Irani (1997) suggests that there is a great deal of similarity across communities in fans' enjoyment of sports. The information presented here describes the recipients of the intangible benefits from teams and provides insight into alternative financing arrangements that public officials should consider when deciding how to pay for the public sector's share of the costs for building facilities. This plan could help public officials respond to team owners' appeals for tax assistance based on the benefits teams actually generate and the facilities they use. Before turning to the survey results and the alternative financing model, we will first review the factors that have led to the recent level of public participation in the financing of sports facilities and the studies that indicate that teams generate few direct economic benefits.

Why Do Sports Teams Receive Locational Incentives?

Providing locational incentives to businesses is a long-standing practice of state and local governments. Tax abatements, low-interest loans, job training, and facility and infrastructure development have been some of the incentives offered to influence the locational decisions of firms (Kantor, 1995). With professional sports teams now a coveted asset, the size and scope of public subsidies are escalating (Rosentraub, 1997a). The owners of sports franchises can demand public assistance because the number of regions that want teams has dramatically outstripped the supply of franchises. The increase in the nation's population and wealth has led many economists and students of professional sports to conclude that as many as 25 additional franchises could be created by the leagues given the financial performance of existing teams (Ahmad-Taylor, 1995). However, because the four principal leagues are able to constrain the supply of teams, a virtual bidding war between cities for these scarce assets has broken out.

Even though team owners sometimes acknowledge that the subsidies they receive are related to the scarcity of franchises, owners' demands for public assistance is more often framed in terms of the fiscal pressures that have changed the economics of professional sports. For example, player salaries have escalated rapidly as a result of athletes earning the right to sell their services to the highest bidders (free agency). Frequently, these high bids come from

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teams in the largest markets (New York, Los Angeles, Chicago, etc.). Since the leagues protect the power of teams in these markets to veto the creation of new franchises or the movement of existing teams into their market areas, the owners of these highly coveted franchises amass large revenue bases and can thus afford the best players. To offset the advantages of large market teams, owners in smaller regions seek public subsidies that will permit them to earn revenues similar to those of the teams in the biggest markets.

Despite increasing costs, bitter political battles over tax support of facilities, and escalating salaries of players, the number of individuals willing to buy teams has not increased (Zimmerman, 1996). The cost of owning a franchise has escalated steadily. For instance, the Los Angeles Dodgers were recently sold for more than $300 million, and when the new owners of any franchise invest that much capital, they frequently want to increase dramatically their access to revenues produced at stadiums. The increased costs of ownership, then, have also been shifted to the public sector and fans in the form of demands for more tax subsidies, higher ticket prices, and higher prices for food, beverages, souvenirs, and other amenities available at stadiums and arenas.

Few would argue with the logic of charging fans, or the users, for the cost of securing a winning team or of bringing a franchise to a community. There is clear logic in charging beneficiaries for a good or service. But, with teams demanding public-sector participation in the financing of facilities to permit them to increase their revenues, how are these public investments (or subsidies) to be justified?

The Benefits from a Professional Sports Team

Traditionally, justification for the use of public funds to produce a particular good or service is based on the concept of market failure. Prices cannot be charged nor markets established for goods or services (1) that can be consumed at the same time by more than one person and (2) for which it is impossible or inefficient to exclude nonpaying users. Government intervention into the free market is necessary to ensure production of these goods and services (e.g., public safety, roads, parks, etc.). Public goods are financed with taxes to maintain equity and prevent free-riding by those who would not voluntarily pay for the collective good. A public good, as described by economists, political scientists, and public choice theorists, then, has two fundamental characteristics. First, public goods generate benefits that can be enjoyed by more than one user without decreasing the satisfaction received by the initial user. Second, the benefits from public goods cannot easily be restricted to those who paid for the service.

Are professional sports a public good? No. Although someone watching a game in a stadium does not take away from someone else's enjoyment of the game (joint consumption), it *is* possible to "package" the good, attach a price to this benefit, which becomes a consumption charge (ticket price), and exclude those unwilling to pay it. Teams play in facilities for which admission is charged (preventing nonattendees from enjoying the benefit of the game) and in which excess crowding would indeed reduce the benefits enjoyed by individuals who paid for the privilege of attending the game. Even those fans who watch games on television (or listen on the radio) are "charged" for this privilege through the commercials that are part of most broadcasts or the fees they pay for cable or satellite transmission services (pay-per-view is another extension of this service). Rather than being a public good, sports are similar to a toll good that can be produced in a private market. (Concerts are another example of a toll good.)

Some goods and services have a characteristic that might justify public support or government subsidies. Some goods generate unintended costs or benefits that spill over and affect those who are not direct consumers. Investments in sports facilities have the potential for generating spillover effects. As already noted, some advocates for public-sector investments in facilities have argued that there are tangible economic spillover benefits such as new job generation, revitalized downtown areas, and improved land-use patterns, as well as intangible spillover benefits such as an enhanced civic image and identity. These benefits are in addition to the basic entertainment made available to the payers of admission fees.

If spillover benefits exist and market efficiencies are to be encouraged, there is clear justification for public activity to ensure that the benefits continue to be produced. That is, it is justifiable for those who enjoy the spillover benefits to help pay for the good that generates them. For instance, if a community benefits from the economic resurgence of a downtown area that follows a sports investment, the community should be taxed to sustain the team's presence. If sports are a toll good but can be shown to have these spillover effects (direct economic returns) or generate intangible benefits, then there is a clear justification for supporting team owners through public investments and the imposition of taxes. In the following sections we look for evidence of spillovers both in terms of economic benefits as well as social/psychological or intangible benefits associated with sports.

The Economic Value of Teams and Facilities

Though communities across North America continue to invest substantial amounts of tax dollars in the facilities used by professional sports franchises, there is little disagreement among policy analysts on the economic benefits from the presence of a sports facility and a team. Across three decades, a small group of scholars has concluded that neither teams nor the facilities they use are a source of substantial or even meaningful economic development (Okner, 1974; Noll, 1974; Rosentraub, 1988; Quirk and Fort, 1992; Johnson, 1993, Baade, 1996a; Rosentraub, 1997a; Nunn and Rosentraub, 1997). Some elected officials, team owners, league administrators, consultants, and sports advocates still prefer to ignore the conclusions from these studies. However, this research has gained a level of acceptance among some of the larger

consulting firms that cities retain to analyze the benefits from teams. In a report for the city of Indianapolis regarding the economic impact of the Indianapolis Colts, Coopers and Lybrand noted (1996, 3):

> Adjustments must also be made to direct spending to reflect the fact that much of the economic activity associated with the Colts *would likely impact the area economy in another form* had the NFL game not taken place.... For example, an individual attending an NFL game at the RCA Dome may instead go to a movie had the Colts' franchise not hosted a game at the RCA Dome [emphasis added].

In the absence of a professional sports team, people still spend money for other recreational activities. Adding a team does not necessarily enhance the quality of life in a region, but merely changes the mix of recreational options competing for consumers' discretionary income. Baade provides perhaps the best summary of the potential of sports teams and their facilities to generate economic development (1996a, 16):

> the results from this study do not support a positive correlation between professional sports and job creation...professional sports realign economic activity within a city's leisure industry rather than adding to it. These results are at odds with what has been promised....These results suggest that professional sports have been oversold by professional sports boosters as a catalyst for economic development.

Many analysts have examined the impact of sports teams and facilities on the economies of cities and metropolitan regions. With only the most successful teams currently enjoying gross revenues over $100 million, it is perhaps not surprising that even they cannot influence development at the city, county, or regional level. However, some advocates justify public investment in new facilities because they will contribute to downtown redevelopment. The record of success for these efforts is also a bit discouraging, although sporting facilities do have the potential for attracting a large number of visitors. For example, Indianapolis did not build a facility for a single team, but embarked on a sports strategy for changing its image and rebuilding its downtown. After more than a decade of building and programs:

> the best that can be said for Indianapolis's sports strategy is that it was marginally successful in creating...a number of service sector and hotel jobs.... This important outcome must be contrasted with other stark realities. The Indianapolis metropolitan area grew faster than the city in terms of new jobs created and total payroll growth. Overall, average salaries in Indianapolis declined in comparison to salaries in many of the cities with which Indianapolis's leadership believes it competes. Indianapolis slipped from having the second highest average salaries among those ten communities in the 1970s to fourth or fifth, depending on whether the basis for the comparison is the city or the metropolitan region (Rosentraub, 1997a, 237).

Cleveland's Gateway project, consisting of Jacobs Field (major league baseball's Indians) and Gund Arena (basketball's Cavaliers), was designed, in part, to stimulate job growth in one part of the city's downtown area. Two years after both facilities opened, approximately 1,300 jobs have been added in the Gateway area, and more than $700 million has gone into other major developments in downtown Cleveland since 1991. To create these jobs, however, the public sector invested almost $300 million in the sports complexes—over $200,000 per job (Austrian and Rosentraub, 1997). Though more jobs may be created in the future, the initial impact of the Gateway project indicates that sports facilities are extremely expensive job creation programs.

Not only are sports facilities poor generators of new jobs, they have little impact on locational decisions of other employers or homeowners and renters. Suburbanization trends in terms of both residential and business development are virtually unaffected by efforts to concentrate sports facilities in downtown areas (Rosentraub, 1997a). A recent analysis of the Cincinnati area's investment of $300 million in sports facilities suggests that the $6 million in new spending generated by the new facilities would create only 400 new jobs (Swindell and Blair, 1997). Finally, commenting on where firms locate and the importance of teams for the locational decisions of businesses, Robert Ady, of PHH Fantus, a leading business location firm, concluded:

> I must tell you now that it is not the presence of a professional sports team—it is in fact the availability of a qualified workforce. In today's competitive and ever-changing environment, companies are locating where they feel assured of securing such a workforce (quoted in Rosentraub, 1997a, 171).

These data and studies then lead to the inescapable conclusion that the direct and indirect economic impact of sports teams and the facilities they use is quite small. New facilities do not engender substantial job creation or economic development regardless of whether the frame of reference is a downtown area, a city, a county, or a region. In addition, placing facilities in downtown locations to influence overall development patterns seems to have no significant impact. Business location decisions are not made on the basis of the presence of a team. Thus, the *economic* spillovers resulting from a team's presence are minimal and do not provide the return necessary to justify the public's investment.

Measuring the Social Spillover Benefits of Sports Teams

In societies as sports-conscious as the nations of North America and Western Europe, the potential for intangible benefits from teams cannot be regarded lightly by public officials or dismissed in a cavalier fashion by the academic community. Indeed, several recent books discussing the "place wars" between regions have underscored the pressures encountered by community leaders in their efforts to establish an identity for their region. For public officials and urban constituencies, sports teams and the facilities they use are important components of the efforts to establish regional identities (Danielson, 1997; Shropshire, 1995; Kearns and Philo, 1993).

Data for the assessment of social spillover benefits were gathered through a telephone survey of residents of the Indianapolis region. Like many other cities that are home to a National Basketball Association (NBA) team, Indianapolis was recently confronted

Table 1
Measures of Civic Pride and Identity (in percentages)

Asset or Event	Civic Pride	National Reputation	Others Mention	Visitors See	Loss Hurts Reputation
Auto Racing	3.94	4.49	31.7	14.5	85.1
Black Expo	3.17	3.55	0.8	2.1	36.8
Colts (NFL)	4.07	4.33	10.5	4.3	74.9
Ice (IHL)	3.22	--	0.2	0.4	--
Indians (AAA)	3.65	--	0.5	1.1	--
Museums	4.27	4.29	2.3	6.6	68.3
Music	4.02	4.03	0.4	3.2	59.4
Other Sports	3.98	4.17	1.1	2.4	59.5
Pacers (NBA)	4.26	4.47	15.5	5.0	81.1
Shopping	4.00	3.87	1.5	3.5	58.8

with a demand for a new arena. Market Square Arena, which had opened in 1974 as home to the Indiana Pacers, lacked luxury suites, club seats, and the restaurant facilities that small market teams need to generate the revenues required to meet current costs. The Indianapolis market area, with fewer than two million residents, is one of the smallest areas with an NBA franchise. The team had long complained about its revenue situation before demanding a new arena. The low level of Pacer revenues relative to the levels generated by other NBA teams was described by Scully (1995) in his analysis of league economics long before the team presented its demands to the city of Indianapolis.

While the Pacers' owners were discussing their need for additional revenues, the city's National Football League (NFL) team also presented demands for a renegotiated lease for the use of the RCA Dome. The agreement between the city of Indianapolis and the Colts was signed in 1984 when the team relocated from Baltimore. The lease initially gave the vast majority of income from the rental of luxury suites to the public sector. Even though this arrangement was adjusted in the 1990s to provide the team with half the revenues, the city still received all revenues from the operation of the facility, including all advertising and naming rights and profits from the sale of food and beverages. The Colts, pointing to leases that secured far more income for other NFL teams in other cities, wanted revenues from the stadium's operations.

Part of Indianapolis's evaluation of the need for a new arena and a lease for the Colts involved an assessment of the importance of the teams to residents. In May 1996, after the conclusion of the Pacers' season, a telephone survey of 1,536 randomly selected households was performed.[1] Measuring cultural identity and civic pride is a difficult task. Therefore, we used five different indicators to measure the intangible value and provide a view of the social spillover benefits respondents received from the Pacers, the Colts, and numerous other regional assets.

Sports, Civics Assets, and the Pride Generated for Residents

In order to determine the value placed on sports vis-á-vis other cultural amenities, metropolitan respondents were asked how important the various sports teams, sports events, other events, museums, performing arts, and cultural amenities were in making them feel proud to be a resident of the Indianapolis region. Responses were coded with a high of five if they designated an asset as very important to a low of one if they designated it as very unimportant. Respondents also were permitted to indicate that they were unsure. Such responses were coded with a value of three. The results of the civic pride measure are presented in the first column of Table 1.

Sports teams are clearly critical in establishing the sense of pride respondents have in living in Indianapolis. Although museums generated the most pride, professional sports teams ranked second and third. Indeed, the Pacers virtually tied the museums as a source of pride for community residents. Other sports (e.g., the RCA tennis tournament, golf tournaments, etc.) ranked in the middle of the list (sixth) whereas the minor league Indians (baseball) and Ice (hockey) were eighth and ninth, respectively, suggesting that they are considered less important.

Respondents were also asked to describe the importance of these assets and events in defining Indianapolis's national reputation using the scale from the civic pride question. Interesting differences emerged. For instance, auto racing (the Indianapolis 500) is ranked highest in defining the area's reputation, though it ranks only seventh in generating civic pride (see Table 1). This is the result of different dimensions of pride and identity. The greater importance of an amenity in the everyday life of individuals and families can account for a higher ranking on a question focusing on pride associated with living in an area. The length of the Indiana Pacers' season also might explain the higher profile it has on the issue of pride relative to auto racing or the Indianapolis Colts. Auto racing is clearly thought to be very important for the area's reputation, but the Pacers score nearly as high. Even though respondents rank museums first in creating local pride, they do not think museums play as important a role in establishing the region's reputation, ranking them only fourth on this variable.

Respondents were also asked: "When you tell people who do not live in the Indianapolis region that you live here, what organization or event do you hear them mention when you say Indianapolis?" Each respondent could list up to four events or organizations. The results presented in Table 1 show the percentages of all responses. The percentage is almost identical to the national reputation question: auto racing, the Pacers, the Colts and museums, in that order, were the most frequently noted assets.

All respondents were asked what activities, events, or amenities in Indianapolis brought friends and family members to the region. Respondents were not asked where they took visitors, but what amenities, if any, brought their out-of-town family and friends to Indianapolis. The percentages of responses related to each of the assets and events are presented in Table 1. Again, the pattern is generally consistent with the previous indicators. Most often, visitors requested to visit the Indianapolis 500 racetrack; however, the Pacers and Colts fall to third and fourth places behind museums. Auto racing is a major draw for out-of-town guests; museums and professional sports teams are not perceived to be as valuable (though they are still ahead of the remainder of the assets and events in the list).

The final indicator we used to measure civic pride and identity asked respondents to report whether or not the loss of a given asset or event would hurt the reputation of the community. The percentage of respondents reporting that a loss would hurt the community is reported in the final column of Table 1. Again, auto rac-

Table 2
The Importance of Different Assets in Establishing Pride in Living in Indianapolis by Attendance (5 = Very Important, 1 = Very Unimportant)

Asset or Event	Mean Score	Attended	Did Not Attend	t-test[a]
Museums	4.27	4.42	3.97	7.3
Indiana Pacers	4.26	4.65	4.01	12.3
Indianapolis Colts	4.07	4.54	3.86	12.6
Music	4.02	4.30	3.71	10.2
Auto Racing	3.94	4.40	3.62	12.4
Indianapolis Indians	3.65	4.19	3.46	12.3
Indianapolis Ice	3.22	3.95	3.08	11.3

a All statistical tests exhibit significance ($p < 0.0001$).

Table 3
Correlations of Civic Pride with Attendance Levels

Asset or Event	Number of Times Attended[a]
Museums	.19
Indiana Pacers	.18
Indianapolis Colts	.22
Music	.20
Auto Racing	.11
Indianapolis Indians	.17
Indianapolis Ice	.19

a Statistically significant at the 0.001 level.

ing, professional sports, and museums ranked highest. In fact, the ranking pattern is identical to the national reputation question (column 2). Given that these two questions were not asked consecutively during the survey, the consistency of the rankings adds a degree of reliability to the findings. Furthermore, the generally consistent results across all five measures suggest that the questions are measuring the same concept and that only one is necessary. To simplify the remainder of the analysis, we will focus on the civic pride measure.

The results from Table 1 add support to the argument that residents enjoy substantial social spillover benefits related to the presence of the Pacers and the Colts. However, just as important as the individual scores are for understanding the feelings of pride generated by each asset, so are the values placed on each asset by different groups of respondents. In other words, who enjoys the benefits the most, or is enjoyment evenly distributed across the population? The data indicate that there are very distinct patterns in the pride respondents derive from different assets.

The most consistent set of differences was related to attendance or "direct consumption" of an asset. This issue is particularly important when considering civic pride since sports proponents have argued that people receive a sense of pride or enjoyment from teams even if they do not attend games or events. For example, respondents who lived in households where at least one member had attended a Pacers game within the last 12 months gave the team a rating of 4.65 in terms of its importance in making them feel proud to be a resident of the area. If no one in the household had been to a game, the team's rating declined to 4.01 (see Table 2). If someone in the household had been to a Colts game, the importance of the team rose from an average of 4.07 to 4.54. In households where people did not attend a game, the importance of the team to a person's pride in living in Indianapolis declined to 3.86. The relationship between frequent contact with an asset and a respondent's sense of its importance is probably best underscored by the different ratings accorded to auto racing. If people had attended the Brickyard 400 or the Indianapolis 500 the importance of auto racing in establishing their pride as a resident increased from a rating of 3.94 to 4.40.

The overall pattern that attendance increased an event's importance in establishing pride is consistent across each asset for which specific attendance questions were asked.[2] The differences are statistically significant. For several of the regional assets, there is also a linear effect. As the directions of the correlations in Table 3 show, the more times an asset was used or an event was attended, the higher its rating. In addition, the magnitude of the correlations indicates that attendance is an important element in determining pride.[3] Respondents who did not use an asset or attend an event did not derive as much pride from it as those who did. These correlations suggest that financing mechanisms should place more of the burden of paying for an asset on those who attend than on the general public. With regard to professional sports, for instance, it is justifiable to make users pay at the door and treat these assets in large part as toll goods. Perhaps not all the costs should be assessed at the door, however, since non-users still clearly receive some social spillover benefits from a teams presence. Therefore, the question of financing becomes one of identifying the best mechanism to support the public's investment to secure the social spillover benefits for nonusers.

Each community that evaluates a public-sector investment in a facility for a professional sports team must confront the issue of choosing the appropriate tax to generate the funds. Survey respondents were asked to evaluate four of the taxes commonly used: a tax on food and beverages consumed at restaurants and bars, an increment to the sales tax, taxes on alcohol and tobacco products (the so-called sin taxes), and a tax on hotel rooms and short-term car rentals. Not surprisingly, support was greatest for the sin taxes and the hotel and car rental taxes. Many people view these taxes as exportable to tourists and nonresidents, who pay for benefits that local residents enjoy. Respondents who believed that the teams were important civic assets gave greater support for taxes of any

Table 4
Support for Tax Proposals by Attendance (10 = High Support, 1 = Low Support)

Proposal	Indiana Pacers				Indianapolis Colts			
		Attended	Did Not			Attended	Did Not	
	Mean	Games	Attend Games	t-test[a]	Mean	Games	Attend Games	t-test[a]
1% Food and Bev. Tax	5.1	6.1	4.4	10.0	4.8	5.9	4.3	9.6
1% Sales Tax	4.5	5.3	4.0	7.8	4.0	4.8	3.7	7.0
20-Year "Sin" Tax	5.9	6.7	5.4	6.6	5.8	6.4	5.6	4.2
20-Year Hotel/ Rental Tax	5.1	6.1	4.5	9.8	5.1	6.0	4.8	6.9

a All statistical tests are significant at the 0.001 level.

Table 5
State and Local Income Taxes Paid by Athletes (Averages Based on Figures for 19 States)

Sport	Average Annual Taxes Collected	Average Player Salary	Average Team Salary
Football	$1,922,917	$603,057	$34,294,135
Basketball	$1,992,814	$2,057,725	$28,897,619
Hockey	$883,989	$966,631	$24,331,667
Baseball	$1,819,553	$1,194,675	$29,866,868

sort. The greatest level of support for higher taxes to help support the location of the teams in Indianapolis came from those who had attended games (see Table 4).

Spillover Benefits and the Public Sector's Investments in Professional Sports

Although there clearly are intangible benefits from the presence of a team in a community, those who attend games receive more of these benefits. The consumer surplus from sports teams occurs more for fans who attend games than for people who do not attend or are not sports fans at all. When these results are combined with findings that demonstrate little economic benefit from teams and their facilities, one would expect financing plans for facilities to place the burden of costs on direct users following the benefits principle. Given the monopolistic strength of the major sports leagues, a useful starting point for public officials developing a plan for financing a facility would be to determine how the costs of construction could be supported by beneficiaries.

Sports Tax Districts and a Benefit Principle Approach for Financing Facilities

If the users of facilities and sports fans are to be charged for the benefits generated by a team's presence in a community, then a sports tax district that surrounds sports venues should be used. In these districts, user charges, fees applied to concessionaires, fees assessed for the broadcast of games, and income taxes paid by those employed by teams or earning income from activities in the facilities would ensure that the principal beneficiaries from the presence of facilities and teams would pay for the benefits generated. Could such a district help generate sufficient funds to pay for a facility needed by a team? A model developed for the state of Texas illustrates the options available to public administrators through an application of a benefit principle approach.[4]

The revenues raised within this tax district should be compared to the resources needed to build a facility. For example, if 25-year financing were acceptable, a $200 million facility, at an interest rate of 7 percent, would require annual payments of approximately $17.2 million. Arenas for hockey and basketball teams can be built for less (typically $150 to $175 million; $12.9 million to $15 million per year). A more expensive open-air stadium, costing approximately $250 million, requires an expenditure of $25.7 million per year.

Table 6
Needed Per Locker Fees To Offset The Revenues Foregone By States Without Income Taxes

Sport	Per Game and Per Player Locker Fee
Football	$2,000
Basketball	$1,600
Hockey	$ 650
Baseball	$ 898

Table 7
The Revenue Potential from Per-Ticket Charges for Facility Construction and Maintenance

Team	Recent Attendance Level	Per Ticket Facility Cost Charge $2.00	$3.00	$4.00
Dallas Mavericks	678,433	$1,356,866	$2,035,299	$ 2,713,732
Dallas Stars	401,499	802,998	1,204,497	1,605,996
Texas Rangers	2,889,020	5,778,040	8,667,060	11,556,080
Dallas Cowboys	527,368	1,054,736	1,582,104	2,109,472
Houston Rockets	732,825	1,465,650	2,198,475	2,931,300
Houston Astros	1,975,888	3,951,776	5,927,664	7,903,552
Houston Oilers	254,600	509,200	763,800	1,018,400
San Antonio Spurs	920,413	1,840,826	2,761,239	3,681,652

Direct beneficiaries from the existence of a facility include the players, team owners, fans, concession operators, and the media. The financing options proposed here involve user charges or other assessments that would affect each group of beneficiaries. The concluding section summarizes the fees that could be collected and compares these total revenues to the cost of building facilities.

Income Taxes or User Charges from Players

Currently, 19 states collect income taxes from players.[5] Local governments in these states collect income taxes from the athletes as well. The taxes apply to players from both the home teams and the visiting teams (commuters' income tax). The imposition of these taxes has not discouraged the location of teams; they are collected in states with some of the most valuable and popular franchises. The leagues have expanded into states that collect these taxes (e.g., Arizona, North Carolina, and Ohio), and teams have relocated to states that tax the income of players (Arizona and Maryland).

We calculated the income tax paid by players by creating a data base consisting of every player's salary and then applying these salaries against the various tax rates used in the states and communities with teams that administer income taxes. The taxes paid by both visiting and home team players were tabulated based on schedules for the most recent season completed. Table 5 lists both the average annual taxes paid (by players from both home and visiting teams) and the average annual salaries of the individual players and teams in states where taxes are collected.

States that do not collect income taxes could collect a locker room fee equal to the average collected by the 19 states (and their communities that administer income taxes) to be sure that they do not forego this source of income to offset capital construction costs (see Table 6).

Charging the Fans Who Attend Games for the Cost and Maintenance of Facilities

User charges should be assessed on tickets purchased. Although this has been done in many instances, the funds are frequently col-

lected by the teams to offset the owner's investment (or as a revenue enhancement). The public sector should also have the ability to assess a per-ticket charge to defray its investment costs in a facility's construction and operations (maintenance).

Table 7 provides the attendance levels for each of the major sports franchises that are located in Texas (the latest available attendance figures were used in this example from the 1995 or 1996 season). We also tabulated the total revenue raised through a ticket charge of varying amounts. The per-ticket charges selected were representative of what some team owners have used to offset their investment. These fees are relatively similar to the charges assessed by ticket services that sell tickets to fans and visitors. These fees, then, are routinely paid to private businesses and have not had any appreciable impact on attendance or the demand for tickets.

These per-ticket charges represent a tax on the team; in the absence of the charge the teams would still charge the higher price to maximize their revenues. As a result, the fans are not paying this charge because they would pay the same price for the ticket regardless of the existence of the fee. Irani's (1997) work suggests that these prices would have virtually no effect on consumption levels.

Table 8
Anticipated Revenues from the Broadcast of Games Involving Professional Teams in Texas (Note: Market Size and Viewers In Number of Households)

Team	Television Season Revenue Total: Average Rating	Market Size	Consumers	Games	Fee Per Household Per Game: $.50/Game Revenue	$.40/Game Revenue	$.30/Game Revenue
Mavericks	3.5	1,763,400	61,719	30	$ 925,785	$ 740,628	$ 555,471
Stars	2.0	1,763,400	35,268	30	529,020	423,216	317,412
Rangers	6.0	1,763,400	105,804	81	4,285,062	3,428,050	2,571,037
Cowboys	42.0	1,763,400	740,628	8	2,962,512	2,370,010	1,777,507
Rockets	17.0	1,452,000	246,840	30	3,702,600	2,962,080	2,221,560
Astros	8.0	1,452,000	116,160	50	2,904,000	2,323,200	1,742,400
Oilers	15.0	1,452,000	217,800	4	435,600	348,480	261,360
Spurs	4.5	584,900	26,321	30	394,808	315,846	236,885
Radio					$.25/Game Revenue	$.20/Game Revenue	$.15/Game Revenue
Mavericks	1.2	1,763,400	21,161	41	216,898	173,519	130,139
Stars	2.4	1,763,400	42,322	41	433,796	347,037	260,278
Rangers	3.2	1,763,400	56,429	81	1142,683	914,147	685,610
Cowboys	8.2	1,763,400	144,599	8	289,198	231,358	173,519
Rockets	4.5	1,452,000	65,340	41	669,735	535,788	401,841
Astros	2.5	1,452,000	36,300	81	735,075	588,060	441,045
Oilers	3.5	1,452,000	50,820	8	101,640	81,312	60,984
Spurs	2	584,900	11,698	41	119,905	95,924	71,943

Potential Media Revenue That Could be Raised by Team	Fee Combinations, TV/Radio: $.50/.25	$.40/.20	$.30/.15
Mavericks	$1,142,683	$ 914,147	$ 685,610
Stars	962,816	770,253	577,690
Rangers	5,427,745	4,342,196	3,256,647
Cowboys	3,251,710	2,601,368	1,951,026
Rockets	4,372,335	3,497,868	2,623,401
Astros	3,639,075	2,911,260	2,183,445
Oilers	537,240	429,792	322,344
Spurs	514,712	411,770	308,827

Source: Allyn and Company, Dallas, Texas

Assessing Fees for the Broadcast and Telecast of Games

Fans enjoy games on television and radio in the same way as those who attend the games. The broadcast and telecast of games create substantial revenues and profits for teams, players, the stations involved, and advertisers. Cities could assess a fee based on the number of households that watch and listen to games. These charges would lead to higher advertising costs or additional commercials, but there would be no additional fees to the fans.

To illustrate the revenue potential from these fees for stadium and arena construction, we calculated a per-household charge. The charge would be assessed against the stations broadcasting games based on the actual rating levels achieved by Texas's major league teams. Households' exposure (points) is the way in which advertisers pay for their commercial time. Several different combinations of charges are illustrated in Table 8; the highest charge is $.50 cents per household for televised games and $.25 cents for games broadcast by radio stations. The market share data were the latest available from advertising companies. The games broadcast refers to home games only and uses numbers to reflect current practices (games televised). For example, it was assumed that an NFL team in Houston would televise only four games whereas the Texas Rangers would continue to televise all of their home games.

Franchise Fees for In-Stadium and In-Arena Advertising and Concessions

New facilities provide substantial opportunities for income from advertising and the sale of food, beverages, and souvenirs. An option for all communities that build facilities is to administer a 10 or 15 percent concession fee or tax on sales and advertising. This rate is larger than those some cities propose for other businesses.

Table 9
Potential Revenue from Concession Fees at Stadiums and Arenas in Texas

Team	Facility Revenue	Concession Fee Rate: 10%	15%
Dallas Cowboys	$ 43,700,000	$4.4 mil.	$6.6 mil.
Texas Rangers	22,800,000	$2.3 mil.	$3.4 mil.
Houston Astros	16,800,000	$1.7 mil.	$2.5 mil.
Houston Rockets	7,000,000	$0.7 mil.	$1.1 mil.
Dallas Mavericks	5,300,000	$0.5 mil.	$0.8 mil.
San Antonio Spurs	7,900,000	$0.8 mil.	$1.2 mil.
Dallas Stars	4,200,000	$0.4 mil.	$0.6 mil.
Cleveland Cavaliers	17,600,000	$1.8 mil.	$2.6 mil.

Source: Some of the data in this table is extracted from Financial World magazine.

Table 10
Annual Revenues from Selected Fees (in Millions of Dollars)

Team	Locker Fee	$3 Ticket Charge	Media Income	Concession Fee, 15%	Annual Income
Dallas Cowboys	$1.9	$1.6	$3.3	$6.6	$13.4
Texas Rangers	$1.8	$8.7	$5.4	$2.3	$18.2
Houston Astros	$1.8	$5.9	$3.6	$2.5	$13.8
Dallas Mavericks	$2.0	$2.0	$1.1	$2.6	$7.7
Dallas Stars	$0.7	$1.2	$1.0	$2.6	$5.5
Houston Rockets	$2.0	$2.2	$4.4	$2.6	$11.2
San Antonio Spurs	$2.0	$2.8	$0.5	$2.6	$7.9

(e.g., car rental, hotels, etc.) when they seek to tax tourists to build sports facilities, but this tax is focused on the direct consumers of sporting events. To provide a valid estimate of the revenue potential from a new arena for the Spurs, Rockets, Mavericks, and Stars, the income realized by the Cleveland Cavaliers at their new home, Gund Arena, is included in Table 9. Any sales taxes collected on the purchase of products (food, beverages, and souvenirs) would be in addition to the concession fees. Those receipts could provide additional revenue to support a stadium or arena.

The Revenue That a Community Could Generate to Finance a Facility Without Taxes

The data in Table 10 summarize the total for some of the revenue that could be raised for sports facilities in Texas through a variety of user charges. It should be noted that other revenue sources could be used including parking taxes and fees. However, in planning for the development and operation of a successful facility, the public sector needs to ensure that revenues will be adequate to pay players and to enable owners to earn a fair return on their investment.

For multi-use arenas that serve as home to more than one team, the projected annual incomes would be added together. For instance, if the NBA Mavericks and the NHL Stars share a new arena, their shared facilities revenues under these fees would total approximately $13.2 million. There would also be substantial income from hosting other events since the teams would need the facility for no more than a maximum of 100 dates. This creates the potential for substantial revenue and income. That additional income, when added to the income from the sale of luxury seating and the increased value of the franchises, would mean that the public sector's investment would not require additional taxes for a facility located in Houston, Dallas, or San Antonio.

Conclusions

Sports teams and the facilities they use produce very limited economic benefits. In addition, the intangible benefits are valued the most by fans. As a result, investments by the public sector in stadiums and arenas should rely on a special tax district that includes only the area immediately adjacent to a sports facility. Within this district, businesses, fans, players, and other employees that benefit from the presence of teams should be charged taxes or user fees that would permit governments to build facilities without broad-based taxes, sin taxes, taxes on tourists, or taxes on unrelated activities. Under programs of this nature, team owners would still retain the income from luxury seating, the appreciated value of the team, and other revenues from the operation of the facility. All food and beverage consumption, souvenir purchases, and advertising would be taxed at a sufficiently high rate to help build the needed facilities.

The fees described as examples here would be sufficient to build a $200 million stadium for the Texas Rangers without an investment by the team's owners. Similarly, if a new arena for the Stars and Mavericks cost $175 million, team owners would need to invest just $1.8 million. They would then be able to host concerts and other events that would offset this investment. For the Dallas Cowboys a new stadium would require an investment of less than $4 million by team owners. Given that team's total revenues including its share of a national television contract, this is a relatively modest commitment.

These financing plans would also mean that taxpayers who do not want to help pay for the facilities could avoid all fees by simply never attending an event or buying anything within these very small tax districts. As a result it would be easy to build most of the desired facilities without the conflict that has dominated most discussions of subsidies for facility construction. A benefit principle approach to stadium and arena financing could save public officials and administrators the concerns raised by taxpayers in virtually every city that builds a facility for the home team.

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Notes

1. The survey was weighted to adjust for racial distribution, resulting in a sample of 1,536 households. The majority of the individuals interviewed lived in the city of Indianapolis (52.2 percent). The sampling procedures were designed to ensure the inclusion of a sufficient number of respondents from each of the counties in the metropolitan area to permit valid comparisons, county-by-county analyses, and statistical tests for significant differences by numerous demographic characteristics. The sample, weighted by race, was composed of 186 African American households (African Americans account for approximately 12.5 percent of the region's population and were 12.2 percent of the sample). Slightly more than one-quarter of the sample was younger than the age of 30 with a similar proportion of the respondents at least 55 years of age to provide a balance between younger and older people. Approximately one-fifth of the sample lived in households that earned $20,000 per year or less, and more than one-quarter lived in households with an annual income of $60,000 or more. More than half of the sample had lived in Indiana for at least 20 years, and more than half the respondents reported they had lived in Indiana for their entire lives. Fewer than one in five respondents lived alone. Full demographic and socioeconomic information about the sample is available upon request.
2. In addition to the effects of attendance, we also examined the effects of gender, race, and residential location in the metro area on level of pride generated from the presence of each of the amenities. The results indicated few differences between males and females, whites and minorities, and those in the central county versus those in the suburban counties. The results are not presented here but are available from the authors upon

request.

3. We also did a regression analysis of each of the events and assets and found that level of attendance consistently explains the largest amount of variance in the civic pride measures from a group of independent variables including gender, race, distance, attendance, and income. Because of space limitations, the full regression results are not presented but are available upon request.
4. The benefit principle assigns the cost of a particular public-sector benefit to beneficiaries. This is particularly appropriate when the public-sector investment involves the production of goods and services with private benefits or benefit streams more similar to those produced through consumption of goods and services in a market context.
5. These include Arizona, California, Colorado, Connecticut, Georgia, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, and Wisconsin.

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