

Summer 2000

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Recommended Citation

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The Economics of Sports Facilities and Their Communities

John Siegfried and Andrew Zimbalist

Forty-six major league stadiums and arenas were built or renovated for teams in the four principal professional U.S. sports leagues between 1990 and 1998. As of the end of 1999, an additional 49 professional sports facilities were either under construction or in the planning stages.¹ At the turn of the millennium there were a total of 115 teams in the National Hockey League (NHL), the National Basketball Association (NBA), the National Football League (NFL) and Major League Baseball (MLB) combined. In several cases teams share the same facility (for example, the Los Angeles Lakers, Clippers and Kings all play in the new Staples Arena). Thus, by 2005 the vast majority of professional sports teams will play their home games in facilities built after 1990.

More than \$21.7 billion will be spent on these 95 stadiums and arenas built or planned since 1990. Public coffers will contribute close to two-thirds of this amount. Table 1 provides historical evidence on expenditures on new sports facilities and the level of public support, while Table 2 reports expenditures on refurbished sports facilities. The building boom initiated during the 1990s reflects a sports facility construction cycle. It follows the 1960–75 cycle of cookie-cutter stadiums. Since sports facilities seem to exhibit a useful economic life of around 30 years, we can anticipate the beginning of a new cycle around the year 2020.

Taxpayers were not always called upon to pay for the venues where profit-

¹ Unless otherwise noted, figures on the number and costs of facilities come from Keating (1999). In addition, 80 new minor league ballparks were built during the 1990s (Smothers, 1999, p. 15). According to one estimate, colleges and universities will spend between \$800 million and \$1 billion on new athletic facilities between 1999 and 2005 (Suggs, 1999, p. 22).

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Table 1

Expenditures on New Sports Facilities for Professional Teams by Decade

<i>Decade (No. Built)</i>	<i>Millions of Nominal Dollars</i>	<i>Millions of Constant 1997 Dollars</i>	<i>Public Share of Total Spending</i>
1910–1919 (7)			
Mean	\$0.46	\$7.65	
Total	\$3.22	\$53.53	0%
1920–1929 (8)			
Mean	\$4.23	\$39.58	
Total	\$33.86	\$316.65	23.5%
1930–1939 (6)			
Mean	\$1.91	\$19.06	
Total	\$11.45	\$114.39	34.5%
1940–1949 (1)			
Mean	\$0.25	\$1.72	
Total	\$0.25	\$1.72	0%
1950–1959 (7)			
Mean	\$3.84	\$22.65	
Total	\$26.87	\$158.51	100%
1960–1969 (21)			
Mean	\$24.46	\$120.92	
Total	\$513.69	\$2,539.39	63.2%
1970–1979 (25)			
Mean	\$70.65	\$215.76	
Total	\$1,766.15	\$5,394.10	94.6%
1980–89 (14)			
Mean	\$103.25	\$143.77	
Total	\$1,445.50	\$2,012.73	78.6%
1990–98 (32)			
Mean	\$200.16	\$211.73	
Total	\$6,405.10	\$6,775.21	55.3%
1999 ^a (41)			
Mean	\$374.89	\$275.25	
Total	\$15,370.50	\$11,285.40	73.4%

^a Under construction or being planned as of October 1999.

Source: Keating (1999).

making, privately-owned sports franchises played. Indeed, with the exception of the Los Angeles Coliseum (1923), Chicago's Soldier Field (1929) and Cleveland's Municipal Stadium (1931), which were all built with the intention of luring the Olympic Games, all major league facilities were constructed exclusively with private funds until 1953. In that year, the first team movement in Major League Baseball occurred since 1903 when the Boston Braves became the Milwaukee Braves, lured by the new County Stadium built for \$5 million (in 1953 dollars) of public funds.

The move by the Braves ushered in an era of itinerant franchises. With new metropolitan markets in the western United States opened by jet travel, the new possibilities of television and the baby boomers coming of age, the monopoly sports leagues encountered significant excess demand for their franchises from prospective host cities. Leagues expanded the number of teams slowly, mostly after being

Table 2

Expenditures on Refurbished Sports Facilities for Professional Teams by Decade

<i>Decade (No. Built)</i>	<i>Millions of Nominal Dollars</i>	<i>Millions of Constant 1997 Dollars</i>	<i>Public Share of Total Spending</i>
1920–1929 (1)	\$0.50	\$4.59	0%
1930–1939 (1)	\$0.95	\$10.01	100%
1940–1949 (0)	0	0	NA
1950–1959 (1)	\$2.50	\$14.97	100%
1960–1969 (4)			
Mean	\$3.25	\$15.50	
Total	\$13.00	\$62.01	93.4%
1970–1979 (9)			
Mean	\$42.54	\$120.76	
Total	\$382.90	\$1,086.88	100%
1980–89 (8)			
Mean	\$21.21	\$32.17	
Total	\$169.70	\$260.43	98.8%
1990–98 (13)			
Mean	\$79.96	\$83.53	
Total	\$1,039.42	\$1,085.93	78.8%

Source: Keating (1999).

challenged by rival leagues. The result was that cities bid against one another for the scarce teams, each offering more attractive facilities and lease deals than the next. The average cost of facility construction in current dollars rose from \$3.8 million in the 1950s, to \$25 million in the 1960s, \$71 million in the 1970s, \$103 million in the 1980s and to \$200 million from 1990 through 1998.

This boom in stadium and arena construction, along with the rise in public support for such facilities, generates many questions for economists to consider. Why do public subsidies arise? Why do the subsidies take the form of new facilities instead of transfer payments? Are the public investments financially attractive? Do new facilities promote economic development? Are there sufficient benefits to fans who attend games or other local residents to justify the subsidies for new stadiums and arenas?

Public Provision of Stadiums and Arenas

Several forces propel the trend toward public provision of facilities for use by privately owned professional sports franchises. During the 1990s, 48 new sports facilities were constructed (or refurbished for over \$100 million) while only 16 expansion teams opened for business in the four major professional leagues. Two-thirds of the new facilities and all of the refurbishments are to replace the

existing facilities of established teams. The first step toward a new facility usually is a team's claim that its existing facilities are "inadequate." The inadequacy commonly pertains not to seating capacity, structural integrity, or sightlines to the action, but rather to the fact that the stadiums built more than a decade ago do not include the luxury boxes, club seats, catering facilities, and advertising opportunities that generate substantial cash flow from high income fans. In other words, although the existing facilities are not physically obsolete, they are economically obsolete.

Private investors and team owners have rarely found a new stadium to be an attractive investment. Since revenues from the existing facility are largely spoken for (for player salaries, organizational expenses, and so on), new stadiums would have to generate incremental revenues over and above those of the facilities they replace to attract private investors, so as to cover their entire construction cost plus a suitable return. While new facilities invariably contain amenities that offer additional revenue sources, and ticket prices usually increase with the opening of a new stadium or arena, new facilities also cause other costs to rise. Because players' salaries depend on their estimated marginal revenue products and are roughly proportional to team revenues, much of the additional revenue from a new stadium goes toward payroll. The result is that seldom does enough incremental revenue survive to cover facility construction costs. If the financial responsibility for new facilities were left to team owners alone, or to other private investors, surely fewer and more modest facilities would be constructed.

The financial attractiveness of a new playing facility is largely irrelevant, however, if a team can persuade someone else to pay for the facility. Most professional sports franchises find themselves in precisely such an enviable position today. They have lured state and local government officials into a frantic competition to build stadiums and arenas with tax or lottery revenues, requiring the teams to pay virtually no rent, while retaining all or nearly all of the revenues the facility generates. Why do local governments agree to do this?

The key to team owners' negotiating power is their status as members of the premier league in their sport. The premier leagues in all four sports control the geographic mobility of established franchises as well as the authority to anoint new franchises with "major league" status. This gives the sports leagues monopoly power over the placement of premier league franchises in their sport, enabling these franchises to extract subsidies from communities that might otherwise enjoy considerable surplus from hosting a franchise at a competitive price.²

The professional sports leagues expand at a rate fast enough to deter the formation of new rival leagues, yet sufficiently slowly to insure that threats by existing franchises to relocate from current host cities are taken seriously. This rate of expansion involves several delicate balancing acts. The leagues need to make clear that there are viable, vacant locations to which existing teams could move. For example, one reason that leagues hold exhibition games in other cities (and even

² Quirk and Fort (1999) is an entire volume about the monopoly power exercised by professional sports leagues.

other countries) is in part to increase the number of potential host cities in the future. Viable but “vacant” locations also can include large metropolitan areas, like New York, that host few teams relative to their population, if the leagues can compensate the incumbent teams for their loss of monopoly rents. Having two to four potential cities seems the right number in most leagues; for example, in the case of Major League Baseball the current potential cities would be Washington D.C., Las Vegas, Sacramento and Portland, Oregon. This number of locations is too few to attract competition from an entirely new league, but enough to create vigorous bidding for the marginal team. In the NFL, with only eight home regular season games each year (thus making it possible for a medium or smaller city to fill the seats) and extensive revenue-sharing among the teams, the number of prospective host cities is much larger than in the other leagues.

From the standpoint of individual teams, the costs of admitting an additional team are mainly the prospect of dividing national television revenues more thinly. The gains from bringing in additional teams include expansion fees paid by the new team to existing teams, potential growth in the league’s fan base and national television appeal, the ability to undermine the potential for competitive leagues, and a chance to appease vocal politicians who seek franchises for their communities.

The leagues can control the competition among established teams for attractive vacant locations by requiring that relocations be approved by a supra-majority of the existing teams in the league, and then can use this control as a negotiating tool. For example, owners can help a fellow team owner to negotiate an attractive subsidy from the current host city by threatening both to approve that team’s relocation if a sufficient subsidy is not forthcoming, and to rebuff any other team’s attempt to fill the void created if the team should depart. The effect of such threats is to create monopsony power for teams seeking stadium services.

It is clear why the leagues prefer to receive subsidies and how they go about enhancing their negotiating positions. But why are local and state governments willing to provide such subsidies? Do the economic benefits outweigh the subsidies?

First, if the demand for attendance at live sporting events is inelastic (if fans are fanatics), the consumer surplus can be substantial. In fact, if a relatively small proportion of high-visibility individuals each enjoy a substantial amount of consumer surplus, they may provide a sufficient base of intense support for a public subsidy to attract a team, even if the collective surplus created by the team falls short of the required subsidy.

Second, a local sports franchise may create external benefits for local residents who never attend games. Fans may follow the team in the newspaper and watch games on television, while never attending an event. A local team provides a topic for conversation around the water cooler at work. These benefits can be of value to many local residents and may provide broad political support for a public subsidy to a team.

Third, residents of many metropolitan areas appear to believe that premier league sports franchises validate the worth of the community as a “major league” city. They may view the local team as free advertising for their tourism industry or a basis for attracting industry and jobs. Such image enhancement has the charac-

teristics of a public good. Because it is impossible to exclude beneficiaries from enjoying it, image enhancement will be underprovided in the private sector. If the value of the image enhancement is large enough, it can justify a public subsidy.

None of these benefits identified above—consumer surplus to fans who attend games, external benefits to non-attenders, and public image enhancement—can be captured directly by a team through traditional revenue channels. The sum of these benefits in a community may approach or exceed the cost of constructing a new playing facility, however, making it worthwhile for communities to pay for sports facilities when such a facility is necessary to secure or retain a franchise. Thus is created a situation in which sports teams have the monopoly power to extract some of the consumer surplus, external benefits, and public image enhancement from their host communities, and the host communities (or at least their political leaders) believe that these benefits are sufficiently large to justify paying for a stadium or arena. A deal can be struck.

But why build a stadium or arena for a team rather than simply hand over a cash subsidy? First, constructing a facility may help to secure political support for the expenditure from local labor unions, contractors, property owners, and other interested parties.

Second, stadiums are likely to be more successful than a subsidy in tying a team to the city. Most leases on new facilities are for 20 to 30 years, although various lease provisions occasionally can provide an escape opportunity for the team.

Third, a stadium provides the team with potential rather than realized revenue, creating an ongoing incentive for the team to perform well and keep attendance high. Cash transfers from the city to the team would provide no incentive for team improvement. Of course, due to their relative revenue advantage, teams receiving new facilities in early phases of a stadium construction cycle (which repeat roughly every 30 years) benefit more substantially in competitive performance than teams receiving new facilities in the middle or end of the cycle.

Fourth, the 1986 Tax Reform Act prohibited using municipal bonds that are exempt from federal taxation to finance the construction of facilities if more than 10 percent of the facility's annual debt service is covered by facility-related revenues. Proponents of this provision intended to reduce the use of federally tax-exempt bonds for financing stadiums and arenas. Ironically, the provision has pushed many communities to pay a greater share of stadium costs in order to retain eligibility for tax-exempt bond funding, indirectly requiring taxpayers throughout the nation to increase their subsidization of local sports facilities. Regardless of the merits of the benefit/cost comparison on the local level, federal taxpayers as a group surely gain little from the construction of stadiums and arenas in selected communities.

Fifth, if cities communicate the notion that subsidies come only in the form of sports facilities, then other potential subsidy recipients who do not need a stadium or arena for their business may be deterred from asking.

Finally, direct cash subsidies delivered from government to wealthy team owners in full view of voters are unhealthy for local politicians.

The struggle over surplus created by professional sports teams is largely an

income distribution issue. The transfer of tax revenue to teams by providing them with free stadiums consists primarily of a transfer from taxpayers to players and owners. If all public subsidies to sports teams were eliminated, the existing teams could and would survive. Players' salaries would decline, perhaps substantially, and teams owners would earn lower profits and capital gains.

All kinds of taxes have been used to finance stadiums: general sales taxes, property taxes, hotel and motel taxes, personal and corporate income taxes, lotteries, and "sin taxes" on alcohol and cigarettes. The incidence of these taxes varies. Property taxes, hotel and motel taxes, and state personal income taxes are either proportional or mildly progressive. The incidence of corporate income taxes remains controversial. Sometimes user taxes (such as surcharges on tickets) are also employed, requiring some of the direct beneficiaries to pick up a greater share of the financial burden, and reducing their consumer surplus. However, most of the financing has relied upon sales taxes, sin taxes, and lotteries, all of which are generally viewed as regressive.

The income status of the beneficiaries of public stadium and arena subsidies—the players and team owners who together divide most of the teams' revenues—is easier to ascertain. Both players and team owners consist of very high income individuals (Siegfried and Peterson, 2000). Forty-five individuals from the *Forbes* magazine list of the wealthiest 400 Americans owned a direct interest in one of the 115 major league men's professional sports teams operating in 1999. Net assets exceeding half a billion dollars were required to make the *Forbes* list. If ownership by wealthy family groups is also included, the number grows further. Players are not nearly as flush as owners. The average income of players in the NBA, NHL, NFL, and MLB in 1999 was \$3.5, \$1.2, \$1.1, and \$1.7 million, respectively. Minimum salaries in the leagues were \$302,000, \$150,000, \$175,000, and \$200,000, respectively.³ While players' salaries are not in the stratosphere of the average team owner's wealth, even those premier league professional athletes scraping by at their sports' "minimum wage" earn numerous standard deviations of income more than typical Americans.

In addition to the revenues divided between players and owners, there are direct benefits that accrue to hometown fans who attend the games. To the extent that public subsidies are responsible for securing a new expansion team, a subsidy given to build a facility is at least partially responsible for this consumer surplus, because it makes it possible for the fans to purchase tickets or watch the home team on television. However, this argument does not apply to public subsidies for existing teams, since a public subsidy that causes the relocation of a franchise (or that prevents relocation) adds to surplus in one city while subtracting surplus in another—and a first approximation would be that the net effect on the overall public of both cities is zero.

To the extent that fans do enjoy consumer surplus as a result of subsidies,

³ The median salary of players in the NBA, NHL, NFL, and MLB in 1999 was \$2.2, \$0.8, \$0.6, and \$0.7 million, respectively. All salary data are from *Street and Smith's* 2000.

audiences for professional sports tend to be of higher-than-average income. The median income of all sports event ticket purchasers in 1994 was 84 percent above the overall median income level, according to evidence from the Consumer Expenditure Survey (Siegfried and Peterson, 2000). More specific evidence on particular sports and areas conveys the same general lesson. The average percentage of National Football League game attendees from households with annual income exceeding \$100,000 is 13 percent, while the percentage of all households with income above that threshold in the cities that host NFL teams is only 9 percent, according to Scarborough Research Corporation. The St. Louis Rams and Tampa Bay Buccaneers enjoy a fan base that includes twice the proportion of people from \$100,000-plus income families as prevails in their local areas (Lombardo, 1999, p. 36).

It appears that sports consumers have grown relatively more affluent over time. For example, data from the 1972–73 Consumer Expenditure Survey analyzed by one of us years ago indicated that the typical purchasers of season tickets to sporting events had median incomes 58 percent above the overall median at that time, while purchasers of single game tickets had median incomes just 10 percent above the overall median.

One vivid symbol of the increasing relative affluence of sports fans over time is the rise of the personal seat license, which is a method of extracting payments in excess of the face value of tickets from more enthusiastic fans. It works this way: Before one can buy a ticket for a certain seat, the would-be buyer must first own a personal seat license, which can range in price anywhere from several hundred to several thousand dollars depending on the league, the team, the time and the seat. Better seat locations command higher prices for a personal seat license. A personal seat license usually confers the right to purchase season tickets for up to 30 years. If the holder chooses not to buy a season ticket in any particular year, however, the license is forfeited (Noll and Zimbalist, 1997a). The price of personal seat licenses in the last decade or so makes it unlikely that a stadium crowd in the 1990s would consist of many people holding jobs that pay near the minimum wage, aside perhaps from some people in the bleacher seats of a baseball game, or the ushers and concession workers serving those in the club seats and luxury boxes.

Once one steps beyond owners, players, and fans who attend games, it is harder to talk about the size of public consumption benefits from a professional sports team, and how such benefits might be distributed across individuals of different income and wealth levels. It is easy to make casual references to the increased self-esteem enjoyed by residents who believe their public image is enhanced by living in a “big league city,” or to the psychic income from the proverbial discussions around the water cooler. But these effects are at a minimum hard to measure, and there are even legitimate questions as to whether they are benefits at all. After all, how do employers view those entertaining discussions around the water cooler? Is image enhancement a benefit if local residents are deluded into believing they are perceived as a “major league”

community by acquiring a sports team?⁴ Do people view Charlotte, Jacksonville and Nashville to be big-time locations and Los Angeles an also-ran place because the former have NFL teams, while the latter does not?

Despite claims of the existence of consumer surplus and externalities connected to sports teams, it has not always been a simple matter to generate political support for facility subsidies, especially as construction costs have escalated rapidly in the 1990s. A large proportion of voting residents does not perceive the alleged benefits as real. Even if a sports team has public good characteristics, like a park or museum, many want to know why the economic benefits that derive from public subsidies are privately appropriated in the case of sports teams. Indeed, the fact that stadium proponents find it necessary to argue that new sports facilities will also improve the local economy suggests that, on balance, the perception is that the value of consumer surplus and externalities falls short of the requested subsidy level. Thus, it is necessary to consider the economic impact of new sports teams and facilities on a metropolitan area.

The Economic Impact of Sports Facilities on Metropolitan Areas

Few fields of empirical economic research offer virtual unanimity of findings. Yet, independent work on the economic impact of stadiums and arenas has uniformly found that there is no statistically significant positive correlation between sports facility construction and economic development (Baade and Dye, 1990; Baim, 1992; Rosentraub, 1994; Baade, 1996; Noll and Zimbalist, 1997; Waldon, 1997; Coates and Humphreys, 1999).

These results stand in distinct contrast to the promotional studies that are typically done by consulting firms under the hire of teams or local chambers of commerce supporting facility development. Typically, such promotional studies project future impact and almost inevitably adopt unrealistic assumptions regarding local value added, new spending, and associated multipliers. They often use a regional input-output model that depends on outdated technical coefficients which are treated as invariant to shifts in supply and demand (Center for Economic and Management Research, 1991; Deloitte & Touche, 1994, 1996; KPMG, 1996; Economic Research Associates, 1996; KPMG, 1998; C.H. Johnson Consulting, 1999).

The academic work on the economic impact of sports facilities and teams does not rely upon projection. Rather, it compares the local economic performance of

⁴ Image enhancement may or may not be welfare-enhancing if it is based on ignorance, depending on standards used for accepting consumer sovereignty. Yet, if a delusion-based increase in the demand for franchises to promote a city's image drives expansion fees sufficiently high to induce the monopoly sports leagues to add new teams, the deadweight welfare loss caused by the contrived scarcity of teams may be reduced. Even if such a second-best rationale for image delusion prevails, however, there remains a massive transfer of wealth, because the price of new franchises then will be based on the delusion-based demand. Moreover, such reasoning could be used to justify false advertising in any industry that exercises monopoly power.

areas with and without stadiums, arenas, and teams, controlling for other variables that affect local economic conditions. Among cross-section studies, for example, Baade (1994) found no significant difference in personal income growth from 1958 to 1987 between 36 metropolitan areas that hosted a team in one of the four premier professional sports leagues and 12 otherwise comparable areas that did not. Looking at 46 cities over the 1990–94 period, Waldon (1997) found that higher high school graduation rates and more spending on police are what encouraged economic growth, while the presence of a major league sports team actually put a drag on the local economy. Both Baade and Waldon controlled for other factors affecting underlying trends in economic growth.

Time series studies confirm the cross-section results. Baade and Sanderson (1997), for example, found no perceptible net increase in economic activity or employment in 10 cities that acquired new sports teams between 1958 and 1993 after factoring out other economic trends affecting each area. They did observe a reordering of leisure expenditures within the cities that acquired new teams, but there was no evidence that the new sports teams brought output or employment growth to the local area. A more recent study, by Coates and Humphreys (1999), finds that new stadiums and sports teams actually reduce per capita income in the host communities. This result is consistent with a higher (negative) multiplier for the displaced leisure expenditures than for the expenditures on a new team or in a new stadium because the latter likely involve substantial leakages from the local economy to the remote residential locations of some players and team owners.

The conclusion that sports teams and facilities do not stimulate economic growth is surprising to many people. With live telecasting of games, daily coverage on television news and in the sports sections of newspapers, professional sports play a huge role in U.S. culture. Yet sports teams are small businesses. Yearly average team revenues in 1999 are around \$55 million in the NHL, \$75 million in the NBA, \$85 million in MLB and \$100 million in the NFL. For a medium-size city like St. Louis, the baseball team accounts for less than 0.3 percent of local economic activity; for a large city like New York, a baseball team contributes less than 0.03 percent of economic output.

Sports teams typically employ between 70 and 130 people in their front offices. Beyond this, they hire approximately 1000–1500 day-of-game personnel who work in unskilled, low wage, temporary, part-time jobs. An NFL team is assured of playing 10 home games a year (including preseason games). At four hours of work per game, an NFL team provides day-of-game employment for the equivalent of 20 to 30 full-time, year-round jobs. As we shall see, however, it is problematic to attribute even these jobs to the sports team.

Of course, the controversy about the economic impact of professional sports teams on their local economy is not just about the teams themselves, but also about how specific local restaurants, hotels, and other businesses might be affected. However, even if one assumes, optimistically, that on average people spend as much outside the sports facility as they do inside, the economic impact of sports teams in proportion to a typical metropolitan economy is diminutive.

Apart from their relatively small size, there are three key reasons why professional sports teams do not promote economic development: the substitution effect; extensive leakages; and the likely negative effect on local government budgets. The analysis of these three effects that follows describes the situation when a team or a facility is new to an area. Of course, in many cases the choice is whether or not to build a facility for a team that is already there. In such a case the incremental consumer surplus, external benefits or new spending will be considerably less. From the city's perspective, however, the opportunity cost of not building a facility with public funds may be perceived to be the loss of the team and all of its attendant benefits.

The Substitution Effect

The vast majority of consumers has a relatively inflexible leisure budget. If a sports team moves to town, the money one spends taking a family to a game typically is money that is not spent at a local bowling alley, golf course, restaurant or theater. The net effect on spending in the metropolitan area then is zero, or very close to zero. While sports teams may rearrange the spending and economic activity in an urban area, they are not likely to add much to it.

An important exception to this reasoning occurs when sports teams attract new money into an area. If it were true, as the Boston Red Sox claim, that 35 percent of the fans at a typical game in Fenway Park came from out of state, then each game would bring tens of thousands of dollars of new demand to the Boston metropolitan area.⁵

Several qualifiers should be noted, however. First, the experience of major league teams in the various sports suggests that the general range of fans from "out of the area" is from 5 to 20 percent (Noll and Zimbalist, 1997a, chs. 2, 15; Crompton, 1995). Of course, this range depends on how one defines "the area." A strict definition of urban limits and, hence, a smaller radius around the stadium or arena, implies a larger percentage from outside the area. A combined metropolitan statistical area which includes several counties implies a smaller proportion of fans from outside the area. Thus, the smaller the radius, the greater the amount of "new spending." Conceptually, the benefit principle of taxation would imply that the delineated area should coincide with the tax jurisdiction that supports the construction and operation of the facility.⁶

Second, there is considerable evidence that out-of-state fans at most sporting events do not come to town because of the game. Rather, they are in town for

⁵ This claim is cited and used uncritically by C.H. Johnson Consulting (1999) in its report on the economic impact of a new Fenway Park on the Boston economy. The methodology employed to arrive at the 35 percent estimate is not described. It is essential to understand the methodology used to determine the proportion of fans from outside the relevant area. Is there a booth set up at the ballpark that gives away free cooler bags if one stops to fill out a questionnaire asking about residency or is there a legitimate technique employed to enumerate a census or to draw a random sample?

⁶ Of course, sometimes a stadium is financed with a combination of city, county, state and private money. In such circumstances it is appropriate to count people in proportion to the share of finances each jurisdiction contributes.

business reasons, to see family or for other leisure activities. If they were not at the game, they would spend their money on other entertainment in the same city. Hence, their disbursements in and around the ballpark substitute for other local spending. Further, they may be guests of a local business or family who pays for the tickets and concessions, in which case there also is no new money attracted from outside of the area (Noll and Zimbalist, 1997b).

Some stadium proponents have also argued that the local sports team attracts visiting media personnel from other cities. This, of course, is as true for journalists as it is for television or radio reporters and team members themselves. But there is no net contribution here, because the inflow is offset by a similar outflow of team members and media personnel when the local team plays away games.

Finally, in addition to attracting some new spending from out-of-state fans coming to ball games, professional sports teams also receive distributions of national television contracts and other funds from their central league office. To the extent that these funds remain in the local economy, additional new local demand may be attributed to a sports team. As we shall see in the next section, however, certain substantial leakages retard this effect.

Leakages and the Multiplier

Approximately 55 to 60 percent of NHL, NBA, NFL and MLB team revenues go to player compensation. With some variation according to league payroll cap rules, when team revenues rise by \$10 to \$50 million after moving to new facilities, the majority of the added revenue goes to the players. The remaining 40 to 45 percent goes to the owners and to help defray additional costs, if any, associated with the new facility. The impact of this spending on local economies depends on how much of it is re-spent locally and how much leaks out to other areas.

First, with average incomes well over \$1 million, most players and owners face the top federal marginal tax rate (39.6 percent), plus an additional 1.45 percent Medicare tax.⁷ Thus, over 40 percent of their incremental income leaks directly from the local economy to Washington, D.C. Second, high incomes also lead to higher savings rates, especially for the players, whose incomes are sensibly viewed as transitory. Most of these savings leak out of the local economy and into the world's money markets. Third, more often than not, players do not live year-round in the local community, and frequently owners do not either. Their families and principal homes are elsewhere. Even if they do live locally, their high incomes often lead to extensive travel and multiple home ownership. Thus, a large share of their spending takes place outside of the team's host city. Fourth, prices for food items at a ballpark or arena are considerably higher than at alternative retail establishments, and a large part of this price differential is siphoned off by the facility concessionaire company, which more often than not is based elsewhere.

Contrast these leakages from sports expenditures to those which might occur

⁷ This rate is 2.9 percent on self-employment income.

if the entertainment dollar were spent at locally-owned businesses, such as bowling alleys, golf clubs or restaurants. The proprietor of such businesses likely faces a lower marginal tax rate than either owners or players, has a lower saving rate, and does the bulk of his or her spending in the local metropolitan area. To derive the multiplier for sporting events, we combine the concepts of new spending and leakages to derive:

$$\text{sports multiplier} = 1/[1 - \text{MPC}(1 - \text{MPI})(1 - t)],$$

where MPC is the marginal propensity to consume, MPI is the marginal propensity to import goods into the local economy (rather than produce and consume them locally), and t is the marginal tax rate. Using reasonable illustrative values of two-thirds for the marginal propensity to consume, one-half for the marginal propensity to import (that is, to spend outside the local area), and 0.4 as the marginal tax rate implies a sports multiplier of 1.25. To calculate the positive impact of new sports expenditures on the overall local economy, whether inside or outside of the sports facility, the sports multiplier must then be multiplied by the local net value added to the local economy resulting from any new local spending due to the sports team.⁸

The overall effect of a sports team on its local economy, however, depends both on a rearrangement of entertainment spending within the local area as well as on new spending attracted from outside that area. Thus, to derive the overall net effect of a sports team on a local area, it is necessary also to balance the contraction in the local economy caused by the diversion of spending from alternative local entertainment venues (the opportunity cost of local sports spending) against the expansion generated by the reallocated local spending on sports. The reallocated spending times the sports multiplier constitutes the team's positive contribution to the local economy from rearranging local spending. The reallocated spending times an analogous locally-owned entertainment venue multiplier reflects the sports team's internal drain on the local economy from rearranging local spending. The difference between them must be added to the net effect from new spending to derive the overall net effect on local economic activity.

For instance, consider an average baseball team with revenue of \$85 million. Approximately \$15 million of this comes to the team from MLB's Central Fund and is "new" to the local economy. Of the remaining \$70 million in revenues, assume that \$10 million (14.3 percent) comes from fans who reside "outside of the area." Thus, the total of new spending is \$25 million. If half of this is the local value added

⁸ Interestingly, when the analyst draws a smaller circle to differentiate new from substitute spending and thereby increases the economic impact, the smaller circle also means that fewer goods (or components of goods) sold at the stadium are produced in the relevant area. So a smaller circle increases new spending, but lowers the multiplier that should be applied to it. As difficult as it is to believe, some promotional studies use smaller circles to define new spending and larger circles to define area of production. See, for example, KPMG (1996).

from such spending, then the impact of new sports spending equals $(\$12.5 \text{ million})(1.25) = \15.625 million . Further suppose that for spending at locally-owned entertainment venues, the appropriate marginal propensity to consume is .8, the marginal propensity to import is .35 and the marginal tax rate is .35. Then, the locally-owned entertainment venue multiplier is 1.51, in contrast to the sports multiplier of 1.25.

If new spending is \$25 million, the remaining \$60 million of team revenue must be reallocated local spending. Applying the two multipliers to this \$60 million, we find that the foregone output generated by money that would have been spent at locally owned entertainment venues is \$90.6 million and the actual output generated by diverting the spending to the professional sports team venues is \$75 million. The difference of \$15.6 million must then be subtracted from the positive impact of new sports spending (\$15.625 million) to arrive at the estimated overall net impact of the sports team. Employing what appear to be reasonable parameter values, the net effect on output from the sports team is estimated to be virtually zero.

Budgetary Impact

Because sports facilities are not expected to generate additional net output in a metropolitan area and no systematic empirical analysis ever finds evidence that they do, sports facilities cannot be counted on to augment tax collections. Indeed, public expenditures occasioned by operating a sports facility generally exceed revenues generated by it. To assess the budgetary impact of a new facility, however, it is necessary to know the financing and lease terms.

If the financing burden is large and falls primarily on public coffers and if the lease terms are concessionary to the team, then the public obligation for debt service, infrastructure maintenance, environmental remediation, incremental sanitation and security expense, probable cost overruns, and subsequent facility enhancement is likely to generate a substantial budgetary hole in the municipal, county and/or state accounts. Such budgetary gaps must be filled either with decreased government services or with higher taxes; either will produce a drag on the local economy.

Unfortunately for host cities, the monopoly status of the major team sports leagues has enabled the teams to drive impressive bargains in negotiating financing and lease terms. Even as sports facilities have grown more and more expensive, in some cases costing over half a billion dollars, public contributions to construction costs have continued to average nearly 70 percent. Quirk and Fort (1992, pp. 170–171), after studying 25 facilities built between 1978 and 1992, concluded that the host cities provided on average a \$7 million per year operating subsidy to the team. In none of the cases did the host city receive a positive net operating income from the facility. The perverse influence of the 1986 Tax Reform Act on lease terms described above and the escalating costs of recent facility construction suggest that the size of these subsidies has only grown since 1992.

Promotional economic impact studies often claim that an additional positive economic stimulus is derived from the actual construction of the sports facility. The

problem with this contention is that the funds to build the stadium or arena have an opportunity cost. If the construction is funded by the city, then the city must raise the money via higher taxes or reduced services. Spending on construction thereby causes lower spending by the government in other areas or lower disposable household income. If stimulating a local economy were so simple, every municipal government could guarantee full employment with a public works program that hired workers to dig holes in the ground and then hired other workers to fill the holes. Only in the case where some of the funding comes from state or federal coffers can the city expect to experience a net job gain from facility construction, and in this case the gain comes at the expense of worker layoffs elsewhere in the state or country.

The logical implications of both multiplier and budget impact analysis are consistent with the results of empirical studies that fail to detect any discernible effects on local economic growth associated with a sports facility or a team.

Core Redevelopment

Even though it is difficult to justify new stadium construction on economic growth grounds, it is possible that such construction would facilitate efforts to redevelop an urban core. Many downtown areas in U.S. cities have been devastated by the suburbanization trend since the 1950s. In an effort to revitalize their central city and restore an aura of cultural vibrancy, many municipal governments subsidize efforts at economic development in the city's core. Sports facilities are often part of this strategy.

Since it is possible for sports facilities to reposition economic activity within a metropolitan area, such strategies contain a certain *prima facie* plausibility. The impact of the sports stadium alone on the rest of an urban core, however, is likely to be small. Neither a football stadium hosting ten games annually, nor a baseball park with 81 games, is likely to induce many rational independent retailers to invest in adjacent businesses. Among other things, the 1990s genre of sports facilities are designed like European walled cities, seeking to enclose all commercial activity and revenue flows within its confines—making the life of area retailers all the more tenuous. Only when a sports venue is complemented by a year-round business district or residential neighborhood will there be appreciable independent investment activity.

Big League City: Demonstration Effect

Another common contention is that sports facilities “put a city on the map.” With a major league team, your city is shown periodically on national or international television. The result, it is said, is increased tourism and business. While the claim is partially plausible, there is no empirical evidence to back it up.

The part of the contention that is not plausible is the notion that businesses will relocate to the city because it becomes “big league.” Sound businesses move in search of a more qualified or less expensive labor force, a convenient location for inputs or sales, a good infrastructure, a sound fiscal environment with amenable tax

policy, attractive government services, and appealing cultural opportunities. The latter may include the quality of the local theater, opera, symphony, parks, art museums, hospitals, public schools, universities or sports teams. If the first half dozen or so items are equivalent between two cities, then the business may look at cultural amenities and within them may consider sports. It does not seem plausible that the presence or absence of sports teams would be a decisive location factor for more than a few companies. There is no systematic evidence that business relocations follow sports teams.

So Why Do State and Local Governments Subsidize Sports Facilities?

Public subsidies for new stadiums and arenas are commonly justified on the basis of economic benefits they will confer on the local economy rather than on public consumption externalities or on the value of an enhanced community image. Yet there is virtually no evidence of any perceptible economic development benefits from sports teams or stadiums. How, then, have sports leagues been so successful in persuading government officials and voters to subsidize their industry when they seem to promote the losing argument?

Many referendums on using tax revenue to construct sports stadiums and arenas have been close (Fort, 1997). At the end of the controversy, however, almost all cities have contributed public funds to subsidize private, for-profit teams owned by some of the wealthiest individuals in the world. The close votes suggest that stadium proponents—team owners and players—have been quite sophisticated in their appeals. If the votes had been overwhelmingly in favor of the subsidies, the proponents probably sought too little. If the voters had not generally approved the subsidies, they asked for too much.

Part of the explanation for the success of subsidies for sports stadiums relies on the distribution of benefits and costs. Only a small proportion of people in any metropolitan area attend professional team sports contests. But those who do often are intensely interested. Thus substantial benefits accrue to some individuals, motivating them to become politically active in supporting the use of tax revenue to procure or retain a team. Team owners and players are also well organized and have low cost access to the media in their effort to promote subsidization.

In contrast, most voters do not find it in their interest to oppose actively a referendum that may cost them \$25 or \$50 per year in additional taxes. The issue is complex, the subsidies are indirect, and the proponents have almost all of the information. Those who are motivated to oppose the subsidies frequently are poorly funded, disorganized and politically naïve.

Misleading “economic impact statements” commissioned by the proponents of subsidization often confuse the public. As we have seen, these studies are fraught with methodological errors that may be easily overlooked for those not trained in

economics. Given the close votes, the studies can be enormously effective even if they deceive only 2 or 3 percent of the voters.

Policy Options

There are various ways to correct monopoly abuses, including government ownership, “public utility” type regulation, and injecting competition into the industry. Direct regulation has more appeal when there is a clear natural monopoly, which does not appear to be the case for professional sports. No one believes that two baseball teams in Chicago cause problems similar to those that would arise from duplicate water or electricity distribution systems. Direct regulation also risks the usual inefficiencies associated with political rather than economic motives, muting incentives for working, saving, investing and entrepreneurial activity.

New entry would introduce competition to the monopoly sports leagues, but it is unlikely. Many have tried, but few have succeeded (Quirk and Fort, 1992, chs. 8–9). The successes came primarily in the 1960s and 1970s, after a long period during which franchise expansion in the major sports leagues failed to keep pace with population growth, and in the midst of rapidly increasing demand for sports entertainment fueled by the coming of sports interest age of the post-World War II baby boomers and the expansion of access to television. Those were days before astronomical broadcast rights contracts and stadium subsidies had driven players’ salaries beyond the realm of normal incomes, and before the leagues realized that they could restrict the number of franchises so much as to attract an entire new league. Today it would be difficult, if not impossible, for a new league to successfully enter any of the four major team sports, and individual teams cannot enter without the cooperation of incumbents because they would have no one to play.

Unfortunately, the successful entrants three decades ago—the American Football League, the American Basketball Association and the World Hockey Association—all too quickly recognized their financial interest in joining rather than fighting the established leagues whose monopoly power they had challenged. In the case of football, in 1966 Congress even went so far as to pass special interest legislation that immunized the merger of the American and National Football Leagues from antitrust challenge.

One possible road to remedy would be for the U.S. Conference of Mayors and the National Governors’ Association to agree not to use publicly collected monies to finance the construction or maintenance of a sports facility for a privately-owned team (Rosentraub, 1997). While initiatives to this effect have been brought before these groups in the past, no action has ever been taken. The problem is that at any one point in time there are just a few cities or states affected by the demand for a new sports facility. Those mayors or governors not facing a threat are not inclined to alienate the professional leagues with whom they have or want a relationship. Moreover, the prospect of attracting a team with a subsidy may be too great a

temptation for any one community to resist, and there is virtually no cost to a community for cheating on such a voluntary agreement.

A variant of this scheme was proposed by U.S. Senator Daniel Patrick Moynihan, who proposed a bill that would have prohibited the use of the federal tax exemption on municipal bonds for sports facilities where privately-owned teams would play. Like many similar efforts, Moynihan's bill died in committee.

Divestiture may be the best remaining option. Each of the professional sports leagues is now approaching 30 teams. Dividing each sport into, say, four separate leagues could instill important elements of competition without destroying the value of a championship playoff. Competition could prevail in the market for players and, more importantly, in the market for team locations. Individual leagues might be exempted from antitrust prosecution for intra-league coordination, but coordination other than to arrange uniform playing rules and a championship playoff among the leagues would be prohibited. The National Collegiate Athletic Association (NCAA) provides an example of such an organization of leagues. Although the NCAA is intimately involved in the regulation of the player labor market, it does not constrain either the size of college sports leagues or team locations. The various leagues participate jointly in many national championship competitions.

Divestiture would solve many of the problems plaguing professional sports. The competitive imbalance problem would be ameliorated as teams with large revenue bases found their home territories invaded by entrants from smaller revenue bases in the other leagues. Such invasions would persist until revenue potential per team was approximately equal on the margin.

Cities that could financially support new franchises would find entry into one of the leagues easier and (much) cheaper as the leagues competed to add viable new locations. Attractive places for sports teams (like Los Angeles for football or Washington, D.C., for baseball) would find interest from currently struggling franchises and probably would not have to provide a free stadium or arena to procure a team. Television networks could play the competitive leagues off against each other in bidding for broadcasting rights, which would likely fall precipitously.

The most serious risk in a sports industry comprised of competing leagues is the possibility that one league will eventually be viewed as "better" than the others, and the weaker leagues will fail or be absorbed by the stronger leagues. Minimally, legislation would be needed to permit periodic divestiture if this should occur.

An alternative approach is to prohibit existing leagues from exercising collective control over team relocations. This approach would reduce the disparity in revenue potential because some teams from markets with lower revenue potential would invade the geographic territories of teams currently monopolizing the largest revenue potential markets. The result, for instance, could easily be more baseball teams in New York City and Los Angeles. Competitive team imbalance would decline because the revenue potential would equalize across teams as the geographic territories of current "haves" were invaded by current "have nots." Subsidies from cities to teams would shrink because leagues would be unable to prevent teams from competing to enter a city offering attractive market potential.

Player salaries also would decline because both local television revenues and government subsidies would decline.

Some cities would lose teams initially, but this would apply political pressure on the leagues to expand the number of franchises, thereby helping to attenuate the ultimate source of their market power. Franchise mobility may increase in the short run, but should stabilize once a balance between demand for and supply of teams is established. Introducing competition into the market for franchise locations could be accomplished by either congressional or judicial action.

Even with competitive leagues, existing teams would have some leverage in negotiating for publicly subsidized playing facilities because fans develop emotional ties to particular teams. The collection of such ties constitutes a sunk investment in a particular team for a community, and can rationalize subsidies to retain a particular franchise that would not be sensible if the identity of the service provider were of no concern to fans. A common solution to such contracting problems (similar to those which arise between a coal mine and a single purpose railroad spur to the mine) is common ownership—that is, vertical integration. In the context of professional sports, vertical integration would constitute common ownership of the team and the emotional investment in it—in short, team ownership by the municipal government. Unfortunately, at the top level none of the four major team sports leagues in the United States permit municipal ownership.⁹ This restriction is also subject to challenge under the Sherman Antitrust Act, but unless or until it is overturned, it is another way in which monopoly power stands in the way of economic efficiency in professional sports.

Implementing either divestiture or a competitive market for team relocations would be a substantial challenge. Either reform would make team owners and players worse off. Both groups are well organized and have powerful incentives to maintain any monopoly power that enhances team revenues. Taxpayers, in contrast, would end up better off as a result of either reform. We believe that potential gains to the winners exceed the likely burden on the losers because the reforms, which rely on competitive prices to shape the allocation of resources between the private and public sectors and within the public sector itself, should improve efficiency. However, because the winners are a diffuse group of numerous individuals with but modest individual incentives to press for reform, the prospects for change are grim.

■ *The authors thank Rob Baade, Ralph Bradburd, Malcolm Getz, Steve Marks, Allen Sanderson and the editors for comments on an earlier draft. The authors have consulted for and testified on behalf of cities in sports franchise relocation matters.*

⁹ Since the early 1920s the Green Bay Packers have been owned by restricted shareholders from the town (as opposed to the town itself owning the team). This ownership form is grandfathered by the NFL.

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