

Policy Forum: Economics of Sport

The Economic Impact of Sports Facilities, Teams and Mega-Events

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1. Introduction

The United States is in the last throes of a sports facility construction boom. Since 1990 more than 100 of the 122 premier level professional baseball, football, basketball and ice hockey teams have built or substantially renovated the facilities in which they play. Together more than US\$25 billion has been or will be spent on these facilities between 1990 and 2010. Billions more have been spent on minor league and university stadiums and arenas.

Depending on the details of one's accounting methodology, approximately 70 per cent of the funding for these new facilities has come from public coffers. Since professional sports teams in the United States are owned by private, and invariably extraordinarily wealthy, individuals, these public dollars amount to handsome subsidies to some of the richest Americans. The predominant method of financing these facilities is through sales taxes, which fall proportionately more heavily on lower income individuals.

The sports subsidy trend has also affected Australia, albeit not as intrusively as in the United States, perhaps because there is less private ownership of premier level sporting clubs in Australia,¹ and because the limited number

of capital cities in Australia undermines the threat to leave a large city barren of top level sporting competition. Of course, government investment in the 2000 Sydney Olympics was extraordinary, and South Australia lost the Formula One Grand Prix race to Victoria in 1996 as a result of a more favourable government subsidy. More recently, there has been economic competition among several states to host the next club added to the rugby union super league, and governments in Tasmania, the Australian Capital Territory and the Northern Territory have paid money to have Australian Football League (AFL) clubs play some home matches each year in their states. The magnitude of expected economic benefits from staging major sporting events has grown so much as to induce state governments to construct special event organisations to improve their competitive advantage (Gans 1996, p. 300). As recently as August 2006, a leading South Australian business executive publicly challenged the nation to bid for the rights to stage more glamorous international sporting events like the soccer, cricket and rugby world cups because of the alleged huge economic boost that would flow from the events (Malinauskas 2006).

These stark facts raise an important question. Why are sports facilities that generate revenues for private citizens and clubs being built mostly with public funds? The most common answer offered by politicians and business leaders is that teams and facilities provide a fillip to the local economy. Such a justification, however, has little empirical evidence to back it up.

* Portions of this article originally appeared in Siegfried and Zimbalist (2000), and are reprinted with permission of the American Economic Association. Ross Booth, Jeff Borland, Robert MacDonald, Richard Pomfret, David Round and Ross Williams provided helpful comments on an earlier version.

A more persuasive, yet incomplete, rationale is that sports teams and new facilities improve the quality of life in a community. In economic theory, the quality of life effect is captured by three types of benefits—none of which is registered directly in the marketplace. First is consumer surplus. If a fan attends a game and pays \$30 for a ticket, but the value to her of attending the game is \$50, she experiences a consumer surplus of \$20. This \$20 is a welfare or quality of life gain for local residents. Generally, sports teams have been successful in finding ways to capture some of this surplus for themselves. They do this by season ticket or group ticketing plans, by charging prices based on the opponent or day of the week, by selling the right to buy the same seats in successive years, by amenities charges for premium seating, and by excessive charges for concessions.

The second area is externalities. When one consumer benefits from an activity or good that he does not purchase, then he is enhancing his welfare or quality of life in a way that is not recorded in a market transaction. Thus, when a fan that learns that his local team beat the Yankees in the World Series gloats about the win with his co-workers in the office, he enhances his welfare without directly paying for it.

The third area is public goods. A public good has at least one of two characteristics. First, it is non-rival, meaning that one person's consumption of it does not diminish another person's ability to consume it. The marginal cost of such a good to an additional consumer is zero. To be sure, in the case of a professional sports team, the enjoyment of a team's presence by an additional person may even enhance the enjoyment of other consumers. Second, enjoyment is not only non-rival, it is synergistic. Moreover, it is non-exclusive, meaning that people cannot be excluded from or be charged for consuming it.

In the case of a professional sports team, externality and public good benefits overlap. A local team can provide a community with a sense of identity, commonality and spirit that few other goods are capable of producing. It can be, for instance, something that provides a common bond to an investment banker, a lawyer, a cleaner and a taxi cab driver in a city.

Because these quality of life benefits are not directly paid for in the marketplace, it is not a simple matter to quantify their value. Economists have employed three basic methodologies to estimate this value: demand curve analysis to gauge consumer surplus; compensating differentials analysis; and contingent valuation analysis.² For sports teams, the literature in all three methodologies is limited and still being developed. Thus, while there is agreement that professional sports potentially might enhance the quality of life, there is yet little agreement on the empirical dimensions of these benefits. There is a clear consensus, however, that a city should not anticipate a direct economic benefit from hosting a professional sports team.

2. The Economic Impact of Sports Facilities on Metropolitan Areas

Most empirical inquiries in economics generate ambiguous findings. In stark contrast, independent studies of the economic impact of sports stadiums and arenas uniformly detect no statistically significant positive relationship between sports facility construction and economic development (Baim 1992; Rosentraub 1994; Baade 1996; Noll and Zimbalist 1997a; Waldon 1997; Coates and Humphreys 1999, 2003a).

These results directly contradict the promotional studies that are typically done by consulting firms under hire by teams or local supporters of facility construction. Such promotional studies inevitably adopt unrealistic assumptions regarding local value added, new (as opposed to total) spending, and appropriate multipliers to project future economic impact.

Academic work on the impact of sports facilities and teams does not conduct *ex ante* projection. Instead, it compares the local economic vitality of areas with and without stadiums, arenas or teams, controlling for other effects on 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 top professional sports leagues and 12 otherwise comparable areas that did not.

Examining 46 cities from 1990 to 1994, Waldon (1997) found higher high school graduation rates and more spending on police encouraged economic growth, while the presence of premier league sports teams dragged down the local economy.

Time series studies confirm these results. Baade and Sanderson (1997) found no perceptible increase in economic activity in 10 cities that acquired new sports teams between 1958 and 1993 after controlling for other economic trends affecting each area. More recent studies, by Coates and Humphreys (1999, 2003b), have found that new stadiums and sports teams actually reduce per capita income in host communities. This result is consistent with a larger (negative) multiplier for the displaced leisure expenditures than for the expenditures on a new team or in a new stadium, because the latter likely experience substantial leakages from the local economy to the remote residential locations of some players and team owners, *inter alia*.

The conclusion that sports teams and facilities do not stimulate economic growth surprises many people. With live telecasting of games and daily coverage on television news and in newspapers, professional sports play a huge role in Western culture. Yet sports teams are small businesses. In 2003–04, for example, the average National Basketball Association (NBA) team generated approximately US\$84 million in revenue, less than one-fiftieth of 1 per cent of the disposable income of New York City. Teams typically employ fewer than 120 people in their business offices. Beyond this, they hire a large number of unskilled, low wage, temporary, part-time game-day personnel that add up to the equivalent of 20 to 150 (poorly paid) year-round jobs, depending on the sport. Although these jobs are of some value, especially if they are filled by otherwise unemployed individuals, their aggregate economic impact on the large cities that host teams is trivial.

Apart from their small size, there are three reasons why professional sports teams do not promote economic development: the substitution effect; leakages; and the likely budgetary gap created by public subsidisation of teams.

2.1 The Substitution Effect

Most families have a relatively fixed budget for leisure activities. If a family spends A\$200 to attend an AFL game, the family has A\$200 less to spend at local theatres, bowling alleys, golf courses or the opera. A good share of money spent at sporting contests is money not spent elsewhere in the local economy—one form of entertainment expenditure substituting for another. Thus, while sports teams may rearrange spending in an urban area, they do not add much to it.

An important exception to this reasoning occurs when sports teams attract new money that does not substitute for other local spending. The experience of major league teams in the various sports in the United States suggests that the general range of fans from ‘out of the area’ is between 5 and 20 per cent (Noll and Zimbalist 1997b, chs 2, 15; Crompton 1995). Of course, this range depends on how one defines ‘the area’. A smaller radius around the facility implies a larger percentage from outside the area, and, thus, more ‘new spending’.

Moreover, there is evidence that some fans at sporting events that hail from beyond the local area do not always come to town just *because of the match*. Rather, they are in town for business reasons, to see family or for other leisure activities. If they were not at the match, they would spend their money on other entertainment in the same city. Alternatively, even if they are at the match, they may be hosted by local business associates or relatives. In these cases, the spending at a sporting match does, in fact, substitute for other local spending.

2.2 Leakages and the Multiplier

When team revenues rise, the majority of the added revenue goes to the players in US sports leagues. The remainder goes to the owners and to help defray additional team operating costs. The impact of this spending by players, owners and teams on local economies depends on how much of it is spent locally and how much leaks out to other areas.

First, with high average incomes, most players and owners face high marginal tax rates.

Consequently, a high proportion of their added income goes directly to the government. Second, with short playing careers, most players sensibly view their high incomes as transitory. A high proportion of transitory income tends to be saved. Most saving leaks out of the local economy and into the world's money markets. Third, many players do not live year round in the local community where they play. Their families and principal homes are elsewhere. In an earlier study (Zimbalist and Siegfried 2002), we found that only 29 per cent of NBA players live in the metropolitan area of their team during the off-season. In the United States many professional athletes live in Florida and California. Thus, a large share of their spending takes place outside the team's host city.

Contrast these leakages from sports expenditures to those which might occur if the entertainment dollar were spent at locally owned businesses, such as pubs, tennis clubs or restaurants. The owners of such businesses usually face lower marginal tax rates than players, have lower savings rates, and do the bulk of their spending in the local area.

Measures of new spending and leakages are combined to calculate the sports multiplier. If we assume that 40 per cent of gross earnings are taxed, two-thirds of each additional after-tax dollar of earnings is spent on consumption, and half of that is spent locally, the appropriate multiplier would be 1.25, much lower than the multiplier used in virtually all team and facility impact studies. Indeed, Yale economist Ray Fair calculates from his macroeconomic model that the average multiplier for new spending in the entire US economy is only 1.4 (Case and Fair 2003, p. 164), and no league sports team has ever claimed a whole country as its 'local area'. The smaller the area, the greater are leakages, and the lower is the multiplier.³

The overall effect of a sports team on its local economy depends both on a rearrangement of entertainment spending within the local area as well as on new spending attracted from outside that area. To derive the overall net local impact of a sports team, it is necessary to balance the contraction in the local economy caused by the diversion of spending from alternative local entertainment venues against the expansion gen-

erated 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 (and likely larger) entertainment venue multiplier reflects the sports team's internal drain on the local economy from rearranging local spending. The difference between them should be added to the effect from new spending to derive the overall net effect on local economic activity. Employing what appear to be reasonable parameter values, the net effect on output from a sports team so estimated is virtually zero.⁴

2.3 *Budgetary Impact*

To assess the budgetary impact of a new sports facility, it is necessary to know the financing terms. If the financing burden is large and falls primarily on the public, and if the team pays little rent, then the public obligation for debt service, infrastructure maintenance, environmental remediation, incremental sanitation and security expense, possible cost overruns, and subsequent facility enhancement is likely to generate a substantial budgetary problem for the local government. Such budgetary gaps must be filled either by cutting other government services or increasing taxes; either will slow down the local economy.

The monopoly status of major team sports leagues in the United States has enabled teams in those leagues to drive impressive bargains in negotiating financing terms. Even as sports facilities have grown more expensive, in some cases costing nearly a billion dollars, public contributions to construction costs have continued to average about 70 per cent. Quirk and Fort (1992, pp. 170–1), after studying 25 facilities built between 1978 and 1992, concluded that the host cities provided on average a US\$7 million annual operating subsidy to the team in addition to their contribution to venue construction. In none of the cases did the host city receive a positive net operating income from the facility.

Promotional economic impact studies often claim that an additional one-off positive

economic stimulus is derived from the actual construction of the sports facility. The problem with this contention is that funds used to build the stadium or arena have alternative uses. If the local government funds construction, then the government 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.⁵

3. Big League City: Demonstration Effect

A common contention is that sports facilities and teams 'put a city on the map'. With a premier league team, the host city is shown periodically on national television. The result, it is claimed, is increased tourism and business relocation. While the claim is partially plausible in concept, there is no empirical evidence to back it up.

The implausible part is the notion that businesses will relocate to a city when it becomes 'big league'. The evidence is that businesses move in search of a more qualified or less expensive labour force, a convenient low-cost location for inputs and distribution, a solid infrastructure, a sound fiscal environment with favourable tax policy, and attractive government services and cultural amenities. Cultural amenities may include the quality of the local theatre, symphony, art museums, hospitals, public schools, universities or sports teams. If the first half dozen characteristics are equivalent between two cities, then the business may examine cultural amenities and within them may consider sports. It is not plausible that the presence or absence of sports teams would be a decisive location factor for more than a few companies, and there is no systematic evidence that, on average, business relocations follow sports teams. Neither Adelaide nor Perth displaced Melbourne as a commercial center when the Adelaide Crows and West Coast Eagles joined the AFL.

4. The Economic Impact of Mega-Events

Assessing the economic impact of mega-events requires further consideration. Mega-events

(for example, the World Cup, Olympics, America's Cup and the AFL Grand Final) attract many thousands of visitors to a city. The visitors generally bring 'new' money to the area, rather than just relocate spending within an area. To the extent that the visitors stay for longer periods of time and spend higher per diem, mega-events may benefit a local economy. From a broader (for example, country) perspective, however, there remains considerable expenditure switching, as tourism dollars generated by a popular event in one state often come at the expense of expenditures in other states (Mules 1995).

Mega-events also may substitute one type of visitor for another to a particular location. For instance, the National Football League's Super Bowl is usually held in a southern US city in early February. Such warm-climate cities attract northern golfers, swimmers, fishermen, tennis players and others during the winter months. It is possible that such holiday makers are repelled by the congestion and commotion of the Super Bowl. Indeed, research by Porter (1999) finds that retail sales and hotel occupancy rates in a city during the Super Bowl do not increase in a statistically significant way compared to similar dates in non Super Bowl years.

Similarly, local residents may decide to travel outside their city or to avoid shopping, eating or attending leisure events in the staging area during the invasion of mega-event visitors, as occurred frequently when Atlanta hosted the Olympics. Other Olympic host cities may have similar experiences. This is perhaps one reason there is little solid evidence that hosting the Olympics generates positive local economic returns. Preuss (2004, p. 277), for instance, estimates that the local organising committee of the Sydney Olympics in 2000 experienced losses of A\$45 million.⁶

5. So Why Do State and Local Governments Subsidise 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 subsidise their industry with a losing argument?

Although many referendums about using tax revenue to construct sports stadiums and arenas have been close (Fort 1997), almost all US cities have contributed public funds to subsidise private, for-profit teams. Part of the explanation for the public largesse for sports stadiums lies in the distribution of benefits and costs. Only a small proportion of residents of any metropolitan area attend professional team sports contests. But those who do often are intensely interested, and their numbers can be augmented by pricing tickets below the short-run profit-maximising level.⁷ Thus, substantial benefits accrue to some individuals, motivating them to lobby in support of using tax revenue to procure or retain a team. Furthermore, construction companies and their unions, architectural firms, investment bankers, lawyers and others stand to gain handsomely from stadium construction and are easily recruited into a pro-stadium coalition. Team owners and players too are well organised and have low-cost access to the media and to politicians in their effort to promote subsidisation.

In contrast, most voters do not find it in their interest to actively oppose a referendum that may cost them \$25 or \$50 per year (per voter) 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, disorganised and politically naive.

Misleading 'economic impact studies' commissioned by proponents of subsidisation often confuse the public. As we have seen, these studies are fraught with methodological errors that may easily be overlooked by those not trained in economics. Given the close votes, the studies can be enormously effective even if they deceive only 2 or 3 per cent of the voters.

6. Conclusion

Subsidising a sports stadium or arena with tax revenue in order to attract a new team or retain an existing one may generate consumer surplus for fans who attend the matches, external benefits for residents who follow the team in the newspaper or on television, and a sense of pride or community among local citizens who enjoy the recognition that accompanies life in a 'major league city'. It is inevitable that ex ante economic impact studies of proposed facilities executed under contract for sports teams, leagues, or special event organising committees will lead the local community to expect unrealistic economic development benefits. However, economic theory and empirical tests of such possible benefits unambiguously show that sports facilities cannot be expected to stimulate local economies. The lesson is clear: before agreeing to subsidise a sports facility with public funds, residents should ask themselves what they expect to receive in return, and realistically it cannot be a more vibrant local economy.

September 2006

Endnotes

1. The absence of residual claims on the excess of revenues over costs at member-owned or industry-owned clubs lowers the cost of seeking non-profit-maximising objectives (Booth 2006).
2. Compensating differentials analysis entails estimating whether a sports team or another desideratum results in lower wages or higher rents in an area. Contingent valuation analysis involves surveys that ask residents how much they would be willing to pay for a sports team in their community. See, for instance, Irani (1997), Alexander, Kern and Neill (2000), Johnson, Groothuis and Whitehead (2001), Carlino and Coulson (2004) and Coates, Humphreys and Zimbalist (2006).
3. When the analyst draws a smaller circle around the area to differentiate new from

substitute spending, new spending increases. While a smaller circle increases new spending, it also lowers the multiplier that should be applied to it. Unfortunately, some promotional studies use smaller circles to define new spending and larger circles to calibrate the multiplier. See, for example, KPMG (1996).

4. See Siegfried and Zimbalist (2000, pp. 107–8) for an illustrative calculation.

5. See Burns, Hatch and Mules (1986, p. 18) for a clear discussion of when expenditures are costs or benefits.

6. Also see Barros, Ibrahim and Szymanski (2002).

7. Porter and Thomas (2006) show that pricing event tickets in the inelastic region of demand can maximise long-run profits if doing so augments the number of voters who earn sufficient consumer surplus to exceed the tax burden implied by a referendum to subsidise a team. For this to occur, the difference between the consumer surplus and the tax burden must outweigh the short-run revenue sacrificed by pricing below the revenue-maximising level.

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