Financing Professional Sports Facilities

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January 2011

COLLEGE OF THE HOLY CROSS, DEPARTMENT OF ECONOMICS
FACULTY RESEARCH SERIES, PAPER NO. 11-02*

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Abstract

This paper examines public financing of professional sports facilities with a focus on both early and recent developments in taxpayer subsidization of spectator sports. The paper explores both the magnitude and the sources of public funding for professional sports facilities.

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JEL Classification Codes: L83, O18, R53, J21

Keywords: Stadiums, arenas, sports, subsidies

This paper was prepared for publication in *Financing for Local Economic Development, 2nd ed.*, Zenia Kotval and Sammis White, eds., (NewYork: M.E. Sharpe Publishers). The authors wish to thank the editors for their kind invitation and helpful comments.

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Introduction

The past 20 years have witnessed a massive transformation of professional sports infrastructure in the North America and the rest of the world. In the United States and Canada alone, by 2012, 125 of the 140 teams in the five largest professional sports leagues, the National Football League (NFL), Major League Baseball (MLB), National Basketball Association (NBA), Major League Soccer (MLS), and National Hockey League (NHL), will play in stadiums constructed or significantly refurbished since 1990. This new construction has come at a significant cost, the majority of which has been borne by taxpayers. Construction costs alone for major league professional sports facilities have totaled in excess of $30 billion in nominal terms over the past two decades with over half of the cost being paid by the public. See Tables 1 through 5 for lists of newly constructed or refurbished stadiums in various American sports leagues. It should be noted that these figures understate the total level of public subsidies directed towards spectator sports, as they exclude subsidies not directly related to infrastructure and also ignore minor league and collegiate sports as well as other popular professional sports such as golf, tennis, or auto racing.

North America is not alone in its largesse directed to sports facilities. South Africa spent $1.3 billion on building and upgrading 10 soccer stadiums for the 2010 World Cup following on the heels of Germany's 2.4 billion euro investment in stadiums and general infrastructure for the 2006 edition of the event. The Summer Olympic Games require the greatest financial commitment of all the mega-sports events with the typical outlay in the neighborhood of $10 billion, but in some instances the sums have far surpassed that amount (Preuss, 2004). China reportedly incurred costs in excess of $58

billion to host the event in 2008 (Upegui, 2008). Such sums of direct public investment to build infrastructure for private businesses or events are generally rare in other sectors of the economy. For this level of public investment, it is reasonable to ask the extent to which professional sports serve to promote local economic development.

Professional Sports as a Mirror of Economic Development

Organized sports are as old as history itself. Typically, however, the construction of sports stadiums and the creation of professional sports franchises have served as a reflection of economic development rather than a means to it. The grandeur of the Roman Colosseum is a clear testament to the wealth and engineering skills of the Roman Empire, but it was certainly not designed to enhance local incomes. Roman poet Juvenal coined the phrase "bread and circuses" in circa 100 A.D. to describe the use of food subsidies and lavish entertainment to distract and pacify the masses. This term has come to symbolize the decline of civic duty in the Roman Empire in favor of frivolity and shallow desires. According to Juvenal, Roman politicians decided that the most effective way to ascend to power was to buy the votes of the poor by giving out cheap food and entertainment, i.e. bread and circuses (Sperber, 2001). Under the Roman emperors, the Colosseum was simply another way, albeit a costly one, to limit public dissent. There is no evidence that it was expected to promote local economic growth.

Rome was not alone in its pursuit of spectator sports. Ball games were played in ancient Egypt, the Greeks created the now famous Olympic Games in 776 B.C., and Native Americans played handball in the Mayan empire and the forerunner of lacrosse in what is now the northeastern portion of the United States. Although many ancient sports

such as archery, chariot racing, horseback riding, and wrestling can be seen as offshoots of professional military training, typically participants would have been considered amateur athletes. While contestants in these games may have been rewarded by government, religious leaders, or the spectators themselves for superior athletic performance, the rise of the truly professional athlete did not come about until the late 1800s (Matheson, 2006).

The first sport in the U.S. to give rise to fully professional athletes was baseball. Following the codification of the rules by Alexander Cartwright in 1845, baseball grew in popularity both as a spectator and participatory sport. While some players on particular teams received compensation for their play, it was not until 1869 that the Cincinnati Red Stockings formed the first team comprised entirely of professional players. Their success on the field led other teams to adopt their strategy. By 1871, the National Association was formed with 9 teams, including the Boston Braves, the forerunner of today's modern Atlanta Braves.

Not surprisingly, the rise of the professional athlete occurred during the time of the industrial revolution, which provided substantial increases in income for the average worker. As the country grew wealthier, spectator sports rose in popularity, as people both had both higher incomes to pay for these activities and an increased availability of leisure time. In addition, improvements in transportation allowed for the formation of intercity sports leagues.

Early stadium construction in the U.S. reflected the economic landscape. Playing facilities were located in the major population centers in the east. They offered few amenities compared to modern stadiums, reflecting the lower income of the fan base and the concentration of population and economic power in the Midwest and Northeast. For fifty years between 1903

and 1953, all 16 teams in Major League Baseball were located east of St. Louis and north of St. Louis and Washington, D.C. Similarly, except for a single season by a Los Angeles club, all 56 teams that played at least one season in the National Football League between its founding in 1920 and 1945 were located in the industrial Midwest or the Northeast corridor.

Large stadiums, or course, were constructed during the early 20th century to accommodate the growing number of fans of baseball, football, and other sports. While the franchises that these old stadiums served still exist to this day, most succumbed to physical and economic obsolescence. Fans of the Boston Red Sox and Chicago Cubs, however, can watch their home games in the last two remaining professional baseball facilities from that era, Fenway Park and Wrigley Field, built in 1912 and 1914, respectively. In addition, several college football stadiums from that time period are also still in current use, including Harvard Stadium (1903), Yale Bowl (1914), Rose Bowl (1922), and Los Angeles Coliseum (1923).

The relocation and expansion of sports leagues into the southern and western United States reflects the growing importance of these regions in the overall American economy. After half a century of stability, in the 1950s MLB franchises relocated from major cities on the east coast to destinations far distant from the old centers of economic influence – the Philadelphia A's moved to Kansas City and then Oakland, the Brooklyn Dodgers and New York Giants headed west to Los Angeles and San Francisco, respectively, the Boston Braves went to Milwaukee and then south to Atlanta. Similarly, league expansion in the 1960s and 1970s created franchises in areas that had experienced rapid economic growth over the past half century, such as Southern California, Seattle, and Texas. The most recent wave of expansion in the 1990s brought new teams into the fast-growing Sunbelt regions of Florida and Arizona. Just as efficient railroad service allowed for travel between cities in the East, the advent of widespread passenger air service allowed for the development of truly nationwide sport leagues. Although this discussion has concentrated on the history of professional baseball, similar patterns of relocation and expansion can be observed in all of the other major sports. Again, stadium construction and

franchise relocation reflected economic development in the country rather than the other way around.

Baade (2010) noted that geographic considerations were not the only factor in the construction of new sports facilities. Economy-wide fluctuations during the last century clearly influenced sports facility construction. Except for Yankee Stadium in New York and Soldier Field in Chicago, virtually no new stadiums were constructed between World War I and 1946, a time dominated by the Great Depression and World War II. The pace of stadium construction accelerated from the 1950s through the mid-1970s, as growing prosperity and technological development enabled the construction of steel-and-concrete playing facilities during the ten years from 1965 through 1975, replacing many existing facilities.

Sports remain a very clear indicator of economic development to this day. Studies investigating national success at international sporting events such as the Olympics and World Cup suggest that economic factors play clear roles. For example, Bernard and Busse (2004) find that all other things equal, a 1% increase in GDP per capita compared to the world average will increase the number of Olympic medals won by roughly the same amount. Similar results are found in other sports, for example, men's and women's international football (Hoffmann, Lee and Ramasamy, 2002; Hoffmann, et al., 2006). In all cases, higher income is presumed to affect sporting success by providing athletes with better sports infrastructure, better access to specialized training, and more leisure time to pursue their athletic endeavors.

For individual professional teams local market income is also an important factor in predicting both franchise location and team success. For professional leagues without significant limitations on team payrolls, such as Major League Baseball and most European soccer leagues, successful teams tend to be located in large metropolitan areas with high incomes. It comes as no surprise that MLB's New York Yankees, who reside in the country's largest and richest metropolitan area, have an unprecedented record of success over the past century. Similarly,

English Premier League teams Arsenal and Chelsea, both of which call London home, are perennial contenders for their league's title. Wealthy, populous hometowns provide teams with a large potential revenue stream necessary for purchasing talented players.

While local economic development is clearly a factor in both the emergence of professional sports as well as sports success, from a public policy standpoint it is important to ask whether the reverse is also true. Does a healthy spectator sports environment lead to local economic development, or is it simply a byproduct of normal economic development? The answer to such a question provides guidance on whether public subsidies for professional sports facilities are a wise investment. This question will be examined in the next section.

Economic Development Effects of Sports Leagues, Teams, and Events

If one believes the boosters, sports teams and so-called "mega-events" bring a substantial economic windfall to host cities. Promoters envision hoards of wealthy sports fans descending on a city's hotels, restaurants, and businesses, and injecting large sums of money into the cities lucky enough to host these teams and events. In terms of one-off events, for example, the NFL typically claims an economic impact from the Super Bowl of around $400 to $500 million (NFL, 1999; W.P Carey Business School, 2008), and Major League Baseball (MLB) attaches a $75 million benefit to the All-Star Game (Selig, et al., 1999) and up $250 million for the World Series (Ackman, 2000). Multi-day events such as the Summer or Winter Olympics or soccer's World Cup produce even larger numbers. For example, consultants placed a $12 billion figure on the 2010 World Cup in South Africa (Voigt, 2010) and estimated an economic impact of over $10 billion Canadian for the 2010 Winter Olympics in Vancouver (InterVISTAS Consulting, 2002).

See Table 6 for a list of published *ex ante* economic impact estimates for a variety of large sporting events.

Regular season games and year-round franchises also prompt eye-popping estimates of potential benefits. The St. Louis Regional Chamber and Growth Association estimated that the St. Louis Cardinals baseball team brought $301 million in annual economic benefits to the region on top of another potential $40 to $48 million in gains from a post-season appearance (St. Louis Regional Chamber and Growth Association, 2000). The New Orleans Saints of the NFL generated an estimated $402 million impact on the state of Louisiana in 2002 (Ryan, 2003) while the NBA's Seattle Supersonics claimed that they pumped $234 million into the area's economy annually prior to their move to Oklahoma City (Feit, 2006).

Of course, as noted by Baade, Baumann, and Matheson (2008), "leagues, team owners, and event organizers have a strong incentive to provide economic impact numbers that are as large as possible in order to justify heavy public subsidies." Sports leagues frequently utilize rosy economic impact statements and dangle mega-events such as the Super Bowl and baseball's All-Star Game in front of cities in order to encourage otherwise reluctant city officials and taxpayers to provide significant public funding for new stadiums to the benefit of existing owners.

Unfortunately, the methodology used to formulate estimates of economic impact is fatally flawed, resulting in a consistent bias toward large, but unrealized, impacts. Economic impact predictions are done in a reasonably straight-forward fashion. In the case of either an event or a franchise, the total number of visitors to the event or the team is estimated along with an average level of spending for each sports fan. The number of

fans multiplied by the average spending results in an estimate of direct economic impact. Once the direct economic impact is determined, a multiplier is applied, which accounts for money re-circulating in the local economy. For most sports-related spending a multiplier around two is used, roughly doubling the direct economic impact.

Although this methodology is easy to understand, typically researchers point to three primary flaws in most economic impact studies. The first common error is the failure to account for the substitution effect. While it is undeniable that sports fans around the country and around the world spend significant sums on spectator sports, in the absence of such entertainment opportunities, their spending would be directed elsewhere in the economy. A night at the ballpark means more money in the players' and team owner's pockets, but it also means less money in the pockets of local theater or restaurant owners. Most economists not associated with teams or event organizers advocate that any spending by local residents on local sporting events be eliminated from economic impact analyses.

The next common criticism is crowding out. The crowds and congestion associated with major sporting events tend to reduce other economic activity in the local area, as sports fans displace other individuals. As with the substitution effect, sports tend to affect the allocation of economic activity across businesses and different sectors of the economy but not the total amount of activity that occurs. As a case in point, while Olympic visitors flocked to Beijing for the 2008 Summer Games, other visitors stayed away in droves. The number of tourist arrivals to the city in August 2008, the month of the Games, was the same as the number of visitors the previous year and total visitor arrivals for the entire year was significantly lower than the previous year. Crowding out

effects are clearly visible for major sporting events held in Hawaii as well. An analysis of flight arrival data by Baumann, Matheson, and Muroi (2009) shows that sporting events like the Honolulu Marathon and NFL Pro-Bowl, both of which attract tens of thousands participants and spectators, lead to only small increases in the total number of tourists to the islands as the athletes and fans displace other vacationers.

Finally, money spent in local economies during either regular season games or special events may not stay in the local economy. The nature of professional sports is that the athletes generally command as wages a large share of revenues generated by sporting events. However, the athletes themselves are typically unlikely to live in the metropolitan area in which they play. (Siegfried and Zimbalist, 2002). Therefore, the income earned by athletes is not likely to re-circulate in the local economy, leading to a lower multiplier effect. In the extreme, spending at a sporting event could actually reduce local incomes, as money is diverted from an activity with a high multiplier, for example a dinner at a locally owned and operated restaurant, towards sports, an activity with high leakages.

Researchers who have gone back and looked at economic data for localities that have hosted mega-events, attracted new franchises, or built new sports facilities have almost invariably found little or no economic benefits from spectator sports. Typically, *ex post* studies of the economic impact of sports have focused on employment (Baade and Matheson, 2002; Feddersen and Maennig, 2009), personal income (Baade and Matheson, 2006a), personal income per capita (Coates and Humphreys, 1999; 2002), taxable sales (Porter, 1999; Coates and Depken, 2009; Baumann, Baade, and Matheson, 2008), or tourist arrivals (Lavoie and Rodriguez, 2005; Baumann, Matheson, and Muroi, 2009). These studies and a multitude of others generally find that the actual economic impact of

sports teams or events is a fraction of that claimed by the boosters, and in some cases actually show a reduction in economic activity due to sports. See Table 7 for a list of published *ex post* economic impact estimates for a variety of large sporting events.

Even if the immediate direct economic impact of spectator sports is negligible, proponents of sports-based economic development suggest that the long-term effects may be large. Mega-events "put cities on the map," and new stadiums can serve as anchors in dilapidated areas to promote local growth. Here too, however, the data are not convincing. While tourists may flock to host cities during major sporting events, the surge in visitors tends to be short-lived. As noted by Matheson (2009), "in Sydney, the host of the 2000 Summer Olympics, foreign tourism actually grew at a slower rate than in the rest of the Australia in the three years following the Games. Lillehammer, Norway, the site of the 1994 Winter Olympics experienced a wave of bankruptcies in the years following their moment in the spotlight, as 40% of the full-service hotels in the town went bankrupt."

At least in part, a portion of the blame for the poor, long-term benefits of spectator sports is the fact that the capital used in staging sporting contests is not easily convertible to other uses. While the construction of general infrastructure, such as modern airports, highways, and mass transit systems, provides economy-wide benefits, such architectural and technological marvels as Beijing's "Water Cube," the 17,000 seat state-of-the-art swimming facility built for the 2008 Summer Olympics, has little use following the Games. The facility is now open to the general public for free swimming, making it the world's most expensive lap pool. Similarly, in South Korea most of the new stadiums built for the 2002 World Cup sit unused today.

Giesecke and Madden (2007) have quantified the effects of infrastructure spending in Sydney for the 2000 Summer Olympics and have concluded that the "redirection of public money into relatively unproductive infrastructure, such as equestrian centers and man-made rapids, has since cut A$2.1 billion from public consumption."

While the long-run benefits of sporting events and stadium construction may never arrive, the debts that localities incur in hosting professional sports must still be paid. Montreal was still paying off its debts from the 1976 Olympics three decades later, and the Astrodome in Houston still carried millions of dollars of debt despite being vacant for a nearly a decade.

Perhaps the most tragic tale is that of Greece, which suffered massive financial setbacks in 2010. Greece's federal government had historically been a profligate spender, but in order to join the euro currency zone, the government was forced to adopt austerity measures that reduced deficits from just over 9% of GDP in 1994 to just 3.1% of GDP in 1999, the year before Greece joined the euro. But the Olympics hosted by Athens broke the bank. Government deficits rose every year after 1999, peaking at 7.5% of GDP in 2004, the year of the Olympics, thanks in large part to the 9 billion euro price tag for the Games. For a relatively small country like Greece, the cost of hosting the Games equaled roughly 5% of the annual GDP of the country.

Unfortunately, as has been seen in other cases, the Olympics didn't usher in an economic boom. Indeed, in 2005 Greece suffered an Olympic-sized hangover with GDP growth falling to its lowest level in a decade. While it's hard to place all of the blame for

the 2010 Greek meltdown on the Olympics, the lingering debts from the Games undoubtedly exacerbated an already difficult situation.

Even if commercial sport does induce an increase in economic activity, the efficacy of sport as a developmental tool needs to be considered. The litmus test arguably should not be whether sport induces an increase in economic activity, but rather is it the most efficient method for improving the economy. Focusing on employment, Baade and Sanderson (1997) observed that the cost of creating a full-time equivalent job through sports subsidies far exceeds the cost of job creation through other subsidies. More specifically, it was noted that the cost of job creation through sports is far greater than jobs created through the Public Works Capital Development and Investment Acts of the 1970s or Alabama's much maligned subsidies to convince Mercedes-Benz AG to locate some of their manufacturing in that State. It is also important to note that as many as 98 percent of the jobs created through sports subsidies are in the relatively low-paying, non-manufacturing sector.

Numerous funding mechanisms have been used by local authorities for funding stadium construction. Table 8 shows the funding mechanisms for NFL stadiums built between 1992 and 2006. While a variety of revenue sources are used for football stadium construction, three types are most common: personal seat licenses (PSLs), excise taxes on hotels or rental cars, and general funds including sales taxes.

Personal seat licenses (PSLs) involve a payment by a prospective season ticket buyer to the stadium builder in exchange for the purchaser gaining the right to buy a seat ticket in the new stadium. Personal seat licenses are a source of public works revenue unique to the sporting world, and they serve several purposes. First, they turn consumers'

future willingness to pay for tickets into an immediate source of capital that can be used to defray current construction costs. Second, they allow teams to avoid revenue sharing agreements with the rest of the league. In the NFL, teams are required to share 40% of gate revenues with visiting teams while other revenue sources, such as PSLs, are not subject to the revenue sharing arrangement. All things equal, PSLs should raise non-shared revenue and lower ticket prices reducing overall revenue sharing payments to the rest of the league. The other major sports leagues in the U.S. have lower revenue sharing percentages, and therefore PSLs are much less common in other sports. Finally, PSLs satisfy the "user pays" principle of public finance. A stadium financed by PSLs is a stadium that is financed by the very people who will be using the stadium and benefitting from the new team the stadium is designed to attract or from the enhanced amenities that new stadiums provide.

Other funding mechanisms used to finance events and stadium construction, however, more often violate commonly held principals of public finance. Taxes on rental cars, hotels, and central-city restaurants, the second common tool used to repay stadium bond issues, while seemingly shifting the expense of the stadium to out-of-town visitors, in fact, simply make those revenue sources unavailable for use elsewhere in the city. Furthermore, only a tiny fraction of the hotel rooms or rental cars used in a city over the course of a year are purchased by visitors engaging in sports tourism. Thus, restaurant goers, for example, may serve to simply subsidize better seating for football fans.

The use of general sales taxes or lottery proceeds, the third common source of funding for sports infrastructure, violates most people's notions of vertical equity by placing an undue burden on poorer residents. Both revenue sources are strongly

regressive while the benefits provided by subsidized stadium construction accrue primarily to the wealthy. Live attendance at major sporting events is dominated by wealthy individuals, and the revenue generated by sporting events for the most part ends up in the pockets of millionaire players and billionaire owners.

Even tax increment financing or ticket taxes or surcharges are not without their critics, as few other businesses are allowed to use taxes collected on their customers to pay for their own capital expenditures (Baade and Matheson, 2006b).

The Final Justification: Quality of Life

If sports teams and events bring little in the way of direct economic benefits, do potential indirect benefits exist? Here the evidence is much more favorable to athletic supporters. Clearly sports are an entertainment option favored by many. Although the professional sports industry in the United States is only roughly the same size as the cardboard box industry, cardboard boxes don't warrant multiple channels on cable television, have a dedicated section in most newspapers, and are not the focus of frequent discussions around the office water cooler. Sports serve as a municipal amenity that can create social capital and improve the quality of life.

Obviously, estimating a more esoteric measure such as societal well-being is more difficult than analyzing more concrete data such as employment or government revenues. Still, the data hint at clear quality of life benefits from sports. For example, the 2008 Olympics instilled a sense of pride in the Chinese people. Some 93% of the Chinese citizens surveyed by the Pew Research Center thought that the Games would improve the country's image (Matheson, 2009). Similarly, Maennig's (2007) ex-post analysis of the

2006 World Cup in Germany concludes that claims of ‘‘increased turnover in the retail trade, overnight accommodation, receipts from tourism and effects on employment [are] mostly of little value and may even be incorrect. Of more significance, however, are other (measurable) effects such as the novelty effect of the stadiums, the improved image for Germany and the feelgood effect for the population’’ (Maennig, 2007, p. 1).

Numerous scholars, starting with Carlino and Coulsen (2004), have used hedonic-pricing techniques to attempt to quantify the quality of life aspects of sports. If the presence of an NFL franchise, for example, is a vital cultural amenity for residents in the area then the value of the franchise to local citizens should be reflected in a higher willingness to pay for living in a city with a team. Carlino and Coulsen (2006), for example, find that rental housing in cities with NFL franchises command 8% higher rents than units in other metropolitan areas after correcting for housing characteristics. Others such as Feng and Humphreys (2008) and Tu (1995) find localized effects of stadiums and arenas on housing prices but also that these effects fade quite quickly as the distance from the stadium grows. Conversely, Coates, Humphreys, and Zimbalist (2006) find that Carlino and Coulsen’s results are highly dependent on model specification. Kiel, Matheson and Sullivan (2010) find that the increase in housing costs does not extend to owner-occupied housing and also find that the presence of stadium subsidies lowers housing values, a finding also uncovered by Dehring, Depken, and Ward (2007).

Other researchers have employed contingent-valuation methods to attempt to determine the “feel-good” effect that residents derive from spectator sports. While the existence of positive benefits from sports teams and events are more commonly identified in the contingent valuation literature than in the *ex post* examination of direct economic

impact, here too the assessed value of sports tends to be smaller than the public subsidies that are handed out to professional sports (Johnson, Groothuis, and Whitehead, 2001).

Improving citizens' quality of life is clearly an important goal for public policy makers, and there is evidence that sports are a valued amenity for local communities. Evidence of significant direct economic benefits from sporting events, franchises, and stadiums is lacking, however. While public-private partnerships can be justified on quality of life grounds, voters and public officials should not be deluded by over-optimistic predictions of a financial windfall. Sports may make a city happy, but they are unlikely to make a city rich.

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Table 1: New NFL Stadiums since 1990

Team	Stadium	Built	Cost (000s) (Nominal)	Public Cost	Public Percent
New Orleans	Superdome (repair and rehab)	2011	$ 505	$ 490	97%
Giants/Jets	New Meadowlands Stadium	2010	$ 1,600	$ -	0%
Kansas City	Arrowhead Stadium (rehab)	2010	$ 375	$ 250	67%
Dallas	Cowboys Stadium	2009	$ 1,150	$ 325	28%
Indianapolis	Lukas Oil Stadium	2008	$ 720	$ 720	100%
Arizona	University of Phoenix Stadium	2006	$ 71	$ 267	72%
Philadelphia	Lincoln Financial Field	2003	$ 285	$ 228	80%
Green Bay	Lambeau Field	2003	$ 295	$ 251	85%
Chicago	Soldier Field	2003	$ 600	$ 450	75%
New England	Gillette Stadium	2002	$ 325	$ 33	10%
Houston	Reliant Stadium	2002	$ 300	$ 225	75%
Detroit	Ford Field	2002	$ 300	$ 219	73%
Seattle	Qwest Field	2002	$ 300	$ 201	67%
Pittsburgh	Heinz Field	2001	$ 230	$ 150	65%
Denver	Invesco Field	2001	$ 365	$ 274	75%
Cincinnati	Paul Brown Stadium	2000	$ 400	$ 400	100%
Cleveland	Browns Stadium	1999	$ 283	$ 255	90%
Tennessee	LP Field	1999	$ 290	$ 220	76%
Buffalo	Ralph Wilson Stadium (rehab)	1999	$ 63	$ 63	100%
Baltimore	M&T Bank Stadium	1998	$ 220	$ 176	80%
Tampa Bay	Raymond James Stadium	1998	$ 169	$ 169	100%
San Diego	Qualcomm Stadium	1997	$ 78	$ 78	100%
Washington	FedEx Field	1997	$ 250	$ 70	28%
Oakland	Oakland Coliseum (rehab)	1996	$ 200	$ 200	100%
Carolina	Bank of America Stadium	1996	$ 248	$ 52	21%
Jacksonville	Everbank Field	1995	$ 121	$ 121	100%
St. Louis	Edward Jones Dome	1995	$ 280	$ 280	100%
Atlanta	Georgia Dome	1992	$ 214	$ 214	100%
	29 of 32 teams		$10,537	$6,380	61%

Table 2: New MLB Stadiums since 1990

Team	Stadium	Built	Cost (000s) (Nominal)	Public Cost	Public Percent
Miami	Marlins Field	2012	$ 525	$ 370	70%
Minnesota	Target Field	2010	$ 544	$ 392	72%
NY Mets	Citi Field	2009	$ 600	$ 164	27%
NY Yankees	Yankees Stadium	2009	$ 1,300	$ 220	17%
Kansas City	Kaufmann Stadium (rehab)	2009	$ 250	$ 175	70%
Washington	Nationals Park	2008	$ 611	$ 611	100%
Cardinals	Busch Stadium	2006	$ 365	$ 45	12%
San Diego	PETCO Park	2004	$ 457	$ 304	66%
Philadelphia	Citizens Bank Park	2004	$ 346	$ 174	50%
Cincinnati	Great American Ball Park	2003	$ 325	$ 280	86%
Pittsburgh	PNC Park	2001	$ 262	$ 262	100%
Milwaukee	Miller Park	2001	$ 400	$ 310	78%
Detroit	Comerica Park	2000	$ 300	$ 115	38%
Houston	Minute Maid Park	2000	$ 265	$ 180	68%
San Francisco	AT&T Park	2000	$ 357	$ 15	4%
Seattle	Safeco Park	1999	$ 518	$ 392	76%
Arizona	Chase Field	1998	$ 349	$ 238	68%
Los Angeles Angels	Angel Stadium (rehab)	1998	$ 118	$ 30	25%
Tampa Bay	Tropicana Field	1997	$ 208	$ 208	100%
Atlanta	Turner Field	1997	$ 235	$ 165	70%
Oakland A's	Oakland Coliseum (rehab)	1996	$ 200	$ 200	100%
Denver	Coors Field	1995	$ 215	$ 168	78%
Cleveland	Progressive Field	1994	$ 175	$ 91	52%
Texas Rangers	Ballpark at Arlington	1994	$ 191	$ 135	71%
Baltimore	Camden Yards	1992	$ 110	$ 100	91%
Chicago White Sox	U.S. Cellular Field	1991	$ 167	$ 167	100%
	26 of 30 teams		$ 9,393	$ 5,511	59%

Table 3: New MLS Stadiums since 1990

Team	**Stadium**	**Built**	**Cost (000s) (Nominal)**	**Public Cost**	**Public Percent**
Houston	Dynamo Stadium	2012	$ 110	$ 50	45%
San Jose	Earthquakes Stadium	2012	$ 60	$ 0	0%
Kansas City	Wizards Stadium	2011	$ 160	$ 80	50%
Portland	PGE Park (rehab)	2011	$ 31	$ 31	100%
Vancouver	BC Place Stadium	2011	$ 365	$ 365	100%
New York	Red Bull Arena	2010	$ 190	$ 90	47%
Philadelphia	PPL Park	2010	$ 120	$ 77	64%
Salt Lake	Rio Tinto Stadium	2008	$ 115	$ 16	14%
Colorado	Dick's Sporting Goods Park	2007	$ 131	$ 66	50%
Toronto	BMO Field	2007	$ 63	$ 63	100%
Chicago	Toyota Park	2006	$ 98	$ 98	100%
Montreal	Saputo Stadium	2006	$ 14	$ 0	0%
Dallas	Pizza Hut Park	2005	$ 80	$ 80	100%
L.A. Galaxy/Chivas	Home Depot Center	2003	$ 150	$ 0	0%
New England	Gillette Stadium	2002	$ 325	$ 33	10%
Seattle	Qwest Field	2002	$ 300	$ 201	67%
Columbus	Columbus Crew Stadium	1999	$ 29	$ 0	0%
	17 of 18		$ 2,340	$1,249	53%

Table 4: New NBA Arenas since 1990

Team	**Stadium**	**Built**	**Cost (000s) (Nominal)**	**Public Cost**	**Public Percent**
Orlando	Amway Center	2010	$ 480	$ 430	90%
Brooklyn Nets	Barclays Center	2010	$ 637	$ 150	24%
Charlotte	Time Warner Cable Arena	2005	$ 265	$ 265	100%
Memphis	FedEx Forum	2004	$ 250	$ 250	100%
Phoenix	U.S. Air (construction and rehab.)	1992/ 2004	$ 157	$ 157	100%
Houston	Toyota Center	2003	$ 235	$ 192	82%
San Antonio	AT&T Center	2002	$ 186	$ 158	85%
Oklahoma City	Ford Center	2002	$ 89	$ 89	100%
Dallas	American Airlines Center	2001	$ 420	$ 210	50%
Toronto	Air Canada Centre	1999	$ 265	$ -	0%
Indianapolis	Conseco Fieldhouse	1999	$ 183	$ 183	100%
Atlanta	Philips Arena	1999	$ 214	$ 63	29%
Denver	Pepsi Center	1999	$ 160	$ 35	22%
Lakers/Clippers	Staples Center	1999	$ 375	$ 59	16%
New Orleans	New Orleans Arena	1999	$ 114	$ 114	100%
Miam	American Airlines Arena	1998	$ 213	$ 213	100%
Washington	Verizon Center	1997	$ 260	$ 60	23%
Golden State	Oracle Arena (rehab)	1997	$ 121	$ 121	100%
Philadelphia	Wells Fargo Center	1996	$ 206	$ -	0%
Boston	TD Garden	1995	$ 160	$ -	0%
Portland	Rose Garden	1995	$ 262	$ 35	13%
Seattle	Key Arena (rehab)	1995	$ 75	$ 75	100%
Cleveland	Quicken Loans Arena	1994	$ 152	$ 152	100%
Chicago	United Center	1994	$ 175	$ -	0%
New York	Madison Square Garden (rehab)	1991	$ 200	$ -	0%
Salt Lake City	EnergySolutions Arena	1991	$ 93	$ -	0%
Memphis	Memphis Pyramid	1991	$ 65	$ 65	100%
Minneapolis	Target Center	1990	$ 104	$ 52	50%
	27 out of 30		$ 6,115	$ 3,126	51%

Table 5: New NHL Arenas since 1990

Team	Stadium	Built	Cost (000s) (Nominal)	Public Cost	Public Percent
Pittsburgh	Consol Energy Center	2010	$ 321	$ 130	40%
New Jersey	Prudential Center	2008	$ 375	$ 210	56%
Phoenix	Jobing.com Arena	2003	$ 180	$ 180	100%
Dallas	American Airlines Center	2001	$ 420	$ 210	50%
Columbus	Nationwide Arena	2000	$ 175	$ -	0%
Minnesota	Xcel Energy Center	2000	$ 130	$ 130	100%
Toronto	Air Canada Centre	1999	$ 265	$ -	0%
Atlanta	Philips Arena	1999	$ 214	$ 63	29%
Denver	Pepsi Center	1999	$ 160	$ 35	22%
Los Angeles	Staples Center	1999	$ 375	$ 59	16%
Carolina	RBC Center	1999	$ 158	$ 98	62%
Ft. Lauderdale	BankAtlantic Center	1998	$ 212	$ 185	87%
Washington	Verizon Center	1997	$ 260	$ 60	23%
Nashville	Bridgestone Arena	1997	$ 144	$ 144	100%
Philadelphia	Wells Fargo Center	1996	$ 206	$ -	0%
Ottawa	Scotiabank Place	1996	$ 188	$ 6	3%
Buffalo	HSBC Arena	1996	$ 128	$ 55	43%
Tampa Bay	St. Pete Times Forum	1996	$ 160	$ 120	75%
Montreal	Le Center Bell	1996	$ 230	$ -	0%
Vancouver	Rogers Arena	1996	$ 160	$ -	0%
Boston	TD Garden	1995	$ 160	$ -	0%
Chicago	United Center	1994	$ 175	$ -	0%
St. Louis	Scottrade Center	1994	$ 170	$ 35	20%
Anaheim	Honda Center	1993	$ 123	$ 123	100%
San Jose	HP Pavillion	1993	$ 163	$ 133	82%
NY Rangers	Madison Square Garden (rehab)	1991	$ 200	$ -	0%
	26 out of 30		$ 5,451	$ 1,974	36%

Table 6: Examples of Mega-Event *ex ante* Economic Impact Studies

Event	Year	Sport	Impact	Source
Super Bowl (Miami)	1999	Football	$393 million	Sports Management Research Institute, NFL (1999)
Super Bowl (San Diego)	2003	Football	$367 million	Marketing Information Masters, NFL (2003)
Super Bowl (Arizona)	2008	Football	$501 million	W.P. Carey Business School (2008)
MLB All-Star Game	1999	Baseball	$75 million	Selig, et al. (1999)
MLB World Series	2000	Baseball	$250 million	Comptroller of New York City, Ackman (2000)
NCAA Men's Final Four (St. Louis)	2001	Basketball	$110 million	St. Louis Convention and Visitor's Bureau, Anderson (2001)
U.S. Open	2001	Tennis	$420 million	Sports Management Research Institute, U.S. Tennis Assoc. (2002)
World Cup (Japan)	2002	Soccer	$24.8 billion	Dentsu Institute for Human Studies, Finer (2002)
World Cup (South Korea)	2002	Soccer	$8.9 billion	Dentsu Institute for Human Studies, Finer (2002)
World Cup	2010	Soccer	$12 billion	Grant Thornton South Africa, Voigt (2010)
Summer Olympics (Atlanta)	1996	Multiple	$5.1 billion 77,000 jobs	Humphreys and Plummer (2005)
Winter Olympics (Vancouver, BC)	2010	Multiple	$10.7C billion 244,000 jobs	InterVISTAS Consulting (2002)

Source: Matheson (2011)

Table 7: Examples of Mega-Event *ex post* Economic Impact Studies

Event	Years	Variable	Impact	Source
MLB All-Star Game	1973-1997	Employment	down 0.38%	Baade and Matheson (2001)
Super Bowl	1973-1999	Employment	537 jobs	Baade and Matheson (2000a)
Summer Olympics (Atlanta)	1996	Employment	293,000 jobs	Hotchkiss, et al. (2003)
Summer Olympics (Atlanta)	1996	Employment	3,500 - 42,000 jobs	Baade and Matheson (2002)
Summer Olympics (Atlanta)	1996	Employment	Approx. 75,000	Feddersen and Maennig (2009)
World Cup	2006	Employment	Not statistically significant	Allmers and Maennig (2009)
Super Bowl	1970-2001	Personal Income	$91.9 million	Baade and Matheson (2006a)
MLB playoffs and World Series	1972-2000	Personal Income	$6.8 million/game	Baade and Matheson (2008)
NCAA Men's BB Final Four	1970-1999	Personal Income	down $44.2-$6.4 million	Baade and Matheson (2004a)
World Cup	1994	Personal Income	down $4 billion	Baade and Matheson (2004b)
World Cup	2006	Personal Income	Not statistically significant	Allmers and Maennig (2009)
Multiple Events	1969-1997	Personal Income/capita	Not statistically significant	Coates and Humphreys (2002)
Daytona 500	1997-1999	Taxable Sales	$32 - $49 million	Baade and Matheson (2000b)
Super Bowl	1985-1995	Taxable Sales	no effect	Porter (1999)
Multiple Events (Florida)	1980-2005	Taxable Sales	down $34.4 million (avg.)	Baade, Bauamann, Matheson (2008)
Multiple Events (Texas)	1991-2005	Gross Sales	Varied - pos. and neg.	Coates (2006)
Multiple Events (Texas)	1990-2006	Sales Tax Revenue	Varied - pos. and neg.	Coates and Depken, (2009)
NFL Pro-Bowl	2004-2008	Tourist arrivals	6,726 visitors	Baumann, Matheson, and Muroi (2009)
NHL regular season games	1990-1999	Hotel Occupancy	Slight increase	Lavoie and Rodriguez (2005)

Source: Matheson (2011)

Table 8: Sources of Public Funds for NFL Stadium Construction, 1992-2006

	Year Built	Public Contribution	Referendum	Public funding source
Atlanta	1992	100%	No	2.75% Hotel tax
Jacksonville	1995	100%	No	Sales tax, hotel tax, ticket charge, general funds
St. Louis	1995	100%	No	2.5% hotel tax, general funds ($257 mil.)
Carolina	1996	21%	No	Personal Seat License (PSL)
Oakland	1996	100%	No	PSL
Washington	1997	28%	No	
Baltimore	1998	80%	No	Lottery
Tampa Bay	1998	100%	Yes	0.5% sales tax
Buffalo	1999	100%	No	General funds
Cleveland	1999	90%	Yes	Hotel tax, car rental tax, sin taxes, PSL
Tennessee	1999	76%	Yes	Hotel tax, PSL ($72 mil.)
Cincinnati	2000	200%	Yes	0.5% sales tax, ticket charge, PSL ($25 mil.)
Denver	2001	75%	Yes	Sales tax
Pittsburgh	2001	65%	No	Ticket charge ($14 mil.), PSL ($42 mil.), other
Detroit	2002	73%	Yes	1% hotel tax, $2 car rental tax
Houston	2002	75%	Yes	Hotel tax, car rental tax, ticket charge, sin taxes, PSL
New England	2002	10%	No	
Seattle	2002	67%	Yes	Sales tax, 2% hotel tax, 10% ticket charge, lottery, PSL ($17 mil.)
Chicago	2003	75%	No	2% hotel tax, PSL ($60 mil.)
Green Bay	2003	85%	Yes	0.5% sales tax, ticket charge ($92.5 mil.)
Philadelphia	2003	80%	No	
Arizona	2006	72%	Yes	1% hotel tax, $3.50 car rental tax

Source: Baade and Matheson (2006b)