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**Public Funding for Major League Sports Facilities Data Series (5):
A History of Public Funding, 1890 to 2005**

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This working paper is drawn from data contained in the author's doctoral dissertation, *Full Count: The Real Cost of Public Funding for Major League Sports Facilities*, (Harvard University, 2002) and is protected by the fair use provisions of US copyright law. Comments, corrections, and additional data are most welcome!

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- (1) Major League Baseball, Facilities in-use at 2001
 - (2) National Football League, Facilities in-use at 2001
 - (3) National Basketball Association, Facilities in-use at 2001
 - (4) National Hockey League, Facilities in-use at 2001
 - (5) A History of Public Funding for Major League Sports Facilities, 1890-2005
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- (1) Major League Baseball, 1890-2005
 - (2) National Football League, 1920-2005
 - (3) National Basketball Association, 1949-2005
 - (4) National Hockey League, 1920-2005

Introduction

This paper examines the nature and magnitude of public funding for major league sports facilities, from the earliest days of dedicated ballparks in the late 19th century up to the present day. Drawing on an original database that includes 215 facilities in-use for the “big four” major leagues sports from 1890 to 2005, I identify three distinct phases of funding: 1) the 100% privately funded facilities of the early 1900s, 2) the 100% publicly funded facilities prevalent from the 1930s to the 1970s, and 3) the public-private partnerships of the 1990s, where industry advocates report the average share of private funding to be 57% (Table 1).

My findings are generally consistent with most existing studies of trends in public funding, but differ on two important points. First, I argue that throughout the past century, the real cost of public funding has been underestimated due to the routine omission of land cost write-downs, infrastructure grants, and lease give-backs, often obscured by complex development and leasing agreements. Second, by correcting and extending the underlying dataset to include all facilities due to open by 2005, I show that the trend toward increased *private* contributions for sports facility construction – a gesture often necessary to navigate the increasingly treacherous public review process – is reversing.

A Note on Measures and Data Sources

I measure public funding in two ways. First, I measure the *level* of public funding, defined as the total public dollars spent adjusted to 2001 dollars. Second, I measure the *share* of public funding defined as the percentage of total costs paid by the

Table 1
Capital Cost and Public Share of Funding for New Major League Sports Facilities
By Decade, Facility Type, and League (Millions, 2001 Dollars)

	2000-05	1990-99	1980-89	1970-79	1960-69	1950-59	1940-49	1930-39	1920-29	1910-19
All Facilities										
Number New Built	20	52	14	28	25	6	0	3	7	11
Avg. Total Cost (m)	314	226	157	132	126	51		108	186	32
Avg. Public Share	67%	57%	66%	89%	78%	100%		67%	29%	0%
Stadiums										
Number New Built	15	22	4	16	11	4	0	2	2	10
Avg. Total Cost (m)	354	261	261	171	153	50		140	184	32
Avg. Public Share	68%	79%	50%	88%	86%	100%		100%	50%	0%
Arenas										
Number New Built	5	30	10	12	14	2	0	1	5	1
Avg. Total Cost (m)	197	201	111	77	85	55		75	157	n/a
Avg. Public Share	63%	42%	72%	91%	71%	100%		0%	20%	0%
MLB-Only Stadiums										
Number New Built	7	10	1	4	4	1	0	0	1	9
Avg. Total Cost (m)	330	281	599	158	128	53			76	28
Avg. Public Share	66%	76%	52%	81%	60%	100%			0%	0%
Joint MLB-NFL Stadiums										
Number New Built	0	2	2	4	7	2	0	1	0	1
Avg. Total Cost (m)	171	163	217	167	70			140		49
Avg. Public Share	91%	43%	100%	100%	100%			100%		0%
NFL-Only Stadiums										
Number New Built	8	10	1	8	0	1	0	1	1	0
Avg. Total Cost (m)	374	258	120	153		8		n/a	293	
Avg. Public Share	69%	80%	61%	85%		100%		100%	100%	
NBA-Only Arenas										
Number New Built	1	9	8	5	7	2	0	0	0	0
Avg. Total Cost (m)	275	200	94	73	40	55				
Avg. Public Share	58%	62%	65%	100%	100%	100%				
Joint NBA-NHL Arenas										
Number New Built	1	11	1	3	4	0	0	0	0	0
Avg. Total Cost (m)	380	227	151	53	107					
Avg. Public Share	33%	20%	100%	67%	25%					
NHL-Only Arenas										
Number New Built	3	10	1	4	3	0	0	1	5	1
Avg. Total Cost (m)	145	172	191	101	78			75	158	n/a
Avg. Public Share	67%	48%	100%	100%	94%			0%	20%	0%

Notes:

1. Number built includes new construction and major renovations (over \$50m).
2. Facilities are included only if built primarily to host a major league team. University facilities are not included, nor are those built for other purposes, then later used to host a major league team.
3. Facilities are classified by leagues and single- versus joint-use based on the intent at the time of construction.
4. Facilities built for teams in other leagues (AAFL, WHA, ABA) that were eventually absorbed by the major leagues are treated as built for major league team(s) provided that the merger occurred within one decade.
5. Costs are adjusted to 2001 using the Construction Cost Index. Costs in the early 1930s were lower than in the 1920s.

public sector. Each measure is important: *level* reveals magnitude while *share* reveals relative responsibility.

The findings in this paper are based on cost and public funding information for the 215 stadiums and arenas ever in-use for MLB (1890-)¹, the NFL (1933-), the NBA (1949), and the NHL (1917-), for those teams still operating in the 2001 season (facilities used by defunct teams are not included). Table 2 lists each facility by location, name, date of opening, facility cost at opening, facility cost adjusted to 2001, public funding at opening, public funding adjusted to 2001 dollars, and public share of facility costs.

There is no single source of facility data across all four sports that include those built before 1950, so I compiled much of this data myself. For each facility, I cross-referenced data from different sources, including industry², academic³, and general

¹ MLB originated in 1876, but because of the frequent—virtually annual--movement of teams among cities, as well as the rudimentary and temporary nature of many ballparks, I include only those facilities in-use from 1890 onward, and only for those franchises still operating in 2001.

² Industry publications are the most comprehensive source of data for facilities currently in-use, notably *Inside The Ownership of Professional Sports* (Team Marketing Report 2001), *The Stadium Game* (Greenberg 2000), and the *ULI Guide to Sports, Convention, and Entertainment Facilities* (Petersen 1996). While industry publications are generally good sources for ownership, capacity, and market data, they are less reliable for specific cost and public share information, and tend not report historical data. The exception is the *ULI Guide*, which provides good cost and public share data, but unfortunately for this study, covers a relatively small number of major league facilities currently in-use.

³ Academic publications often fill this gap by providing cost (and sometimes public cost) data for large samples of sports facilities, most notably *Pay Dirt* (Quirk and Fort, 1992), *The Stadium as a Municipal Investment* (Baim 1994), and *Sports Pork: The Costly Relationship Between Major League Sports and Government* (Keating 1999). Quirk and Fort (1992) present a table listing the cost of all major league facilities in-use at 1991, however they do not provide public share data, and often do not provide sources. Baim (1994) provides total cost and public share data for 14 older stadiums, with additional cases covered in his doctoral dissertation (1988). Baim's work has the virtue of citations from primary source materials. Keating (1999) provides the most comprehensive list, including cost and public share data for 167 facilities built from 1887 to 1999. While not a completely comprehensive listing (some 50 facilities are not included), Keating does provide sources for his data, but in many cases, the references are problematic; for example he cites Quirk and Fort (1992) who in turn, do not provide sources. Finally, there are a number of excellent single-facility or single-city case studies, such as those found in Euchner (1993), Noll and Zimbalist (1997), Rosentraub (1997a), and Rich (2000), that provide superior cost data, and are sourced to academic standards.

Table 2
Facilities in-use for the "Big Four" Major Leagues
MLB (1900+), NFL (1920+), NBA (1950+), NHL (1920+), (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost	Public Cost	Public Source
					Nominal / 2001	Nominal / 2001	Share	
1	2004	Phoenix/Scottsdale	Phoenix Coyotes	New Coyotes Arena	NHL	172.0	163.3	TMR (2001), Team website, Local Media
2	2003	Cincinnati	Cincinnati Reds	Great American Ballpark	MLB	344.0	321.1	91%
3	2003	Green Bay	Green Bay Packers	New Lambeau Field	NFL	295.0	275.4	TMR (2001), Team website, Local Media
4	2002	Boston	New England Patriots	CMG! Field	NFL	430.0	415.5	56%
5	2002	Detroit	Detroit Lions	Ford Field	NFL	303.0	288.9	TMR (2001), Team website, Local Media
6	2002	Houston	Houston Texans	Reliant Stadium	NFL	402.0	388.4	83%
7	2002	San Antonio	San Antonio Spurs	SBC Center	NBA	175.0	169.1	TMR (2001), County website, Resp. for overruns not decided
8	2002	San Diego	San Diego Padres	New Ballpark	MLB	411.0	397.1	84%
9	2002	Seattle	Seattle Seahawks	New Stadium	NFL	430.0	415.5	TMR (2001), City website, Local Media
10	2001	Dallas	Dallas Mavericks	American Airlines Center	NBA	380.0	360.0	TMR (2001), Local media, Appendix C, Table C.74
11	2001	Denver	Denver Broncos	New Mile High Stadium	NFL	510.0	510.0	TMR (2001), Local media, Appendix C, Table C.40
12	2001	Milwaukee	Milwaukee Brewers	Milwaukee Park	MLB	357.0	357.0	SWP/BFD Website, Appendix C, Table C.15
13	2001	Pittsburgh	Pittsburgh Pirates	PNC Park	MLB	261.6	261.6	PSFA website, Forsyth (2000), Appendix C, Table C.20
14	2001	Pittsburgh	Pittsburgh Steelers	Rooney Field	NFL	233.0	233.0	PSFA website, Forsyth (2000), Appendix C, Table C.50
15	2000	Cincinnati	Cincinnati Bengals	Paul Brown Stadium	NFL	453.0	452.9	TMR (2001), Appendix C, Table C.37
16	2000	Columbus	Columbus Blue Jackets	Nationwide Arena	NHL	150.0	151.6	0%
17	2000	Detroit	Detroit Tigers	Comerica Park	MLB	361.0	364.8	Team Marketing Report (2001), Appendix C, Table C.87
18	2000	Houston	Houston Astros	Enron Field	MLB	266.0	268.8	Team Marketing Report (2001), Appendix C, Table C.11
19	2000	Minneapolis/St. Paul	Minnesota Wild	Xcel Energy Center	NHL	130.0	131.4	Team Marketing Report (2001), Appendix C, Table C.91
20	2000	San Francisco	San Francisco Giants	Pacific Bell Park	MLB	338.8	342.4	Team Marketing Report (2001), Appendix C, Table C.21
21	1999	Atlanta	Atlanta Hawks & Flames	Philips Arena	NBA/NHL	204.3	222.2	Team Marketing Report (2001), Appendix C, Table C.71
REN	1999	Buffalo	Buffalo Bills	Rich/Ralph Wilson Stadium (Ren)	NFL	63.2	150.3	Keating (1989), Appendix C, Table C.34
22	1999	Cleveland	Cleveland Browns	Cleveland Browns Stadium	NFL	320.7	333.0	Team Marketing Report (2001), Keating (1989), Appendix C, Table C.38
23	1999	Denver	Denver Nuggets & Avalanche	Pepsi Center	NBA/NHL	180.0	186.8	Team Marketing Report (2001), Local media, Appendix C, Table C.75
24	1999	Indianapolis	Indiana Pacers	Conseco Fieldhouse	NBA	232.6	241.4	Team Marketing Report (2001), Local media, Appendix C, Table C.60
25	1999	Los Angeles	L.A. Lakers, Clippers, Kings	Staples Center	NBA/NHL	400.0	418.0	Team Marketing Report (2001), Local media, Appendix C, Table C.77
26	1999	Miami	Miami Heat	American Airlines Arena	NBA	213.0	225.1	Team Marketing Report (2001), Local media, Appendix C, Table C.61
27	1999	Nashville	Tennessee Titans	Adelphi Coliseum	NFL	272.0	282.2	Team Marketing Report (2001), Local media, Appendix C, Table C.47
28	1999	Raleigh	Carolina Hurricanes	Raleigh Sports Arena	NHL	154.8	160.6	Team Marketing Report (2001), Local media, Appendix C, Table C.97
29	1999	Seattle	Seattle Mariners	SafeCo Field	MLB	517.0	537.6	Quirk and Fort (1999), TMR (2001), Appendix C, Table C.22
30	1999	Toronto	Toronto Raptors & Maple Leafs	Air Canada Center	NBA/NHL	208.6	216.4	Team Marketing Report (2001), Local media, Appendix C, Table C.81
REN	1998	Anaheim/Los Angeles	Anaheim Angels	Edison Field (Ren)	MLB	124.2	131.9	Team Marketing Report (2001), Local media, Appendix C, Table C.1
31	1998	Baltimore	Baltimore Ravens	PSNet Stadium	NFL	285.5	282.9	Team Marketing Report (2001), Local media, Appendix C, Table C.32
32	1998	Miami	Florida Panthers	National Car Rental Arena	NHL	212.0	225.2	Team Marketing Report (2001), Appendix C, Table C.90
33	1998	Phoenix	Arizona Diamondbacks	Bank One Ballpark	MLB	354.0	376.0	Quirk and Fort (1999), Sherman (1998), Appendix C, Table C.19
34	1998	Tampa Bay	Tampa Bay Buccaneers	Raymond James Stadium	NFL	168.5	179.0	Team Marketing Report (2001), Appendix C, Table C.54
35	1998	Tampa/St. Petersburg	Tampa Bay Buccaneers	Tropicana Field (Ren of 1990)	MLB	222.3	236.1	Pietersen (1996), TMR (2001), Appendix C, Table C.24
36	1997	Atlanta	Atlanta Braves	Turner Field	MLB	248.5	268.3	Team Marketing Report (2001), Appendix C, Table C.3
37	1997	Nashville	Nashville Predators	Gaylord Entertainment Center	NHL	144.0	155.4	Team Marketing Report (2001), Appendix C, Table C.93

Table 2
Facilities In-use for the "Big Four" Major Leagues
MLB (\$900.), NFL (\$920.), NBA (\$950.), NHL (\$980.), (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost Nominal	Total Cost 2001	Public Cost Nominal	Public Cost 2001	Source
REN	1997	Oakland	Golden State Warriors	The New Arena in Oakland (Ren)	NBA	143.5	161.6	148.5	161.5	Keating (1999), Appendix C, Table C.64
REN	1997	San Diego	San Diego Padres & Chargers	Jack Murphy/Qualcomm (Ren)	MLB/NFL	91.6	106.7	79.6	87.3	100% Keating (1999), Appendix C, Table C.64
38	1997	Washington	Washington Redskins	FedEx Field	NFL	251.5	270.4	70.5	76.1	82% Official NFL Guide (1976), TMR (2001), Appendix C, Table C.30
39	1997	Washington	Washington Wizards & Capitals	MCI Center	NBA/NHL	260.0	280.7	59.0	63.7	28% Team Marketing Report (2001), Appendix C, Table C.65
40	1996	Buffalo	Buffalo Sabres	HSBC Arena	NHL	122.0	136.5	53.7	60.1	44% Team Marketing Report (2001), Appendix C, Table C.85
41	1996	Charlotte	Carolina Panthers	Ericsson Stadium	NFL	243.0	280.2	61.0	71.0	25% Team Marketing Report (2001), Appendix C, Table C.35
42	1996	Montreal	Montreal Canadiens	Le Centre Molson	NHL	161.0	180.1	0.0	0.0	0% Team Marketing Report (2001), Appendix C, Table C.92
REN	1996	Oakland	Oakland Athletics & Raiders	Network Associates Coliseum (Ren)	MLB/NFL	215.9	234.3	19.7	234.3	100% Team Marketing Report (2001), Appendix C, Table C.28
43	1996	Ottawa	Ottawa Senators	Corel Center	NHL	145.6	162.9	0.0	0.0	0% TMR (2001), Local media, Appendix C, Table C.95
44	1996	Philadelphia	Philadelphia 76ers & Flyers	First Union Center	NBA/NHL	217.5	242.4	32.0	35.6	15% Keating (1999), Appendix C, Table C.79
45	1996	Tampa Bay	Tampa Bay Lightning	Ice Palace	NHL	130.0	161.6	86.0	100.0	62% TMR (2001), Local media, Appendix C, Table C.100
46	1995	Boston	Boston Celtics & Bruins	Fleet Center	NBA/NHL	160.0	185.2	16.0	19.7	10% TMR (2001), Local media, Appendix C, Table C.72
47	1995	Denver	Colorado Rockies	Coors Field	NFL	215.5	249.2	19.7	249.2	100% Rosenthal (1997), Appendix C, Table C.10
48	1995	Jacksonville	Jacksonville Jaguars	AllTEL Stadium	NFL	144.5	166.1	144.5	166.1	100% Team Marketing Report (2001), Appendix C, Table C.45
49	1995	Portland	Portland Trail Blazers	Rose Garden	NBA	262.0	301.1	34.5	39.7	13% Team Marketing Report (2001), Appendix C, Table C.66
REN	1995	Seattle	Seattle SuperSonics	Key Arena (Ren)	NBA	119.0	136.8	74.5	85.6	63% Keating (1999), Appendix C, Table C.70
50	1995	St. Louis	St. Louis Rams	Trans World Dome	NFL	280.0	321.8	280.0	321.3	100% Team Marketing Report (2001), Appendix C, Table C.53
51	1995	Vancouver	Vancouver Grizzlies & Canucks	General Motors Place	NBA/NHL	112.0	128.7	0.0	0.0	0% Team Marketing Report (2001), Appendix C, Table C.82
52	1994	Arlington/Dallas	Texas Rangers	Ballpark at Arlington	NFL	193.8	226.3	167.8	195.1	87% Rosenthal (1997), Appendix C, Table C.2
53	1994	Chicago	Chicago Bulls & Blackhawks	United Center	NBA/NHL	205.0	238.4	30.0	34.9	15% Badde and Sanderson (1997), Appendix C, Table C.73
54	1994	Cleveland	Cleveland Indians	Jacobs Field	NFL	282.0	327.9	259.1	301.3	92% Rosenthal (1997), Appendix C, Table C.9
55	1994	Cleveland	Cleveland Cavaliers	Gund Arenas	NBA	183.0	212.0	155.0	179.4	85% Rosenthal (1997), Appendix C, Table C.57
56	1994	St. Louis	St. Louis Blues	Kel/Savvis Center	NHL	170.0	197.7	34.5	40.1	20% TMR (2001), Local media, Appendix C, Table C.99
57	1993	Anaheim/Los Angeles	Mighty Ducks of Anaheim	Airrowhead Pond	NHL	120.0	144.8	0.0	0.0	0% Rosenthal (1997), Appendix C, Table C.80 (Operator servicing bonds)
58	1993	San Antonio	San Antonio Spurs	Alamodome	NBA	186.0	224.5	186.0	224.5	100% Team Marketing Report (2001), Appendix C, Table C.69
59	1993	San Jose	San Jose Sharks	San Jose Arena	NHL	162.5	196.1	132.5	159.3	82% Keating (1999), Appendix C, Table C.98
60	1992	Atlanta	Atlanta Falcons	Georgia Dome	NFL	214.0	271.4	214.0	271.4	100% Petersen (1996), Appendix C, Table C.31
61	1992	Baltimore	Baltimore Orioles	Oriole Park	NFL	171.5	216.3	202.5	275.1	95% Petersen (1996), Appendix C, Table C.4
62	1992	Phoenix	Phoenix Suns & Coyotes	America West Arena	NBA/NHL	96.0	118.2	35.0	48.8	41% TMR (2001), Appendix C, Table C.30
63	1991	Chicago	Chicago White Sox	New Comiskey Park	NFL	187.0	243.2	187.0	243.2	100% Petersen (1996), Appendix C, Table C.7
REN	1991	New York	New York Knicks & Rangers	Madison Square Garden (Ren)	NBA/NHL	200.0	260.1	0.0	0.0	0% TMR (2001), Appendix C, Table C.78
64	1991	Salt Lake City	Utah Jazz	Delta Center	NBA	102.6	129.7	24.6	28.2	22% Keating (1999), Appendix C, Table C.68
65	1990	Minneapolis	Minnesota Timberwolves	Target Center	NBA	125.1	163.4	75.7	97.3	60% Quirk and Font (1992), Appendix C, Table C.53
66	1989	Orlando	Orlando Magic	TD Waterhouse Center	NBA	110.0	149.9	110.0	149.3	100% Quirk and Font (1992), Appendix C, Table C.65
67	1988	Phoenix/Tempe	Arizona Cardinals	Sun Devil Stadium	NFL	12.0	91.6	0.0	0.0	0% Part of University of Arizona
68	1989	Toronto	Toronto Blue Jays & Raptors	SkyDome	NFL	439.6	595.0	229.6	312.3	52% Rosenthal (1997), Appendix C, Table C.25
69	1988	Charlotte	Charlotte Hornets	Charlotte Coliseum	NBA	56.0	80.7	58.0	80.7	100% Keating (1999), Appendix C, Table C.56
70	1988	Detroit/Auburn Hills	Detroit Pistons	The Palace of Auburn Hills	NBA	70.0	97.4	0.0	0.0	0% TMR (2001), Keating (1999), Appendix C, Table C.58
71	1988	Miami	Miami Heat	Miami Arena	NBA	52.5	73.1	52.5	73.1	100% Team website, Local media

Table 2
Facilities In-use for the "Big Four" Major Leagues
MLB (1986-), NFL (1920), NBA (1950), NHL (1920-). (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost	Public Cost	Public Share	Source
					Nominal	2001	Nominal	2001	
72	1988	Milwaukee	Milwaukee Bucks	Bradley Center	NBA	105.5	146.1	25.5	29.3 20%
73	1988	Sacramento	Sacramento Kings	Arco Arena	NBA	40.0	55.7	0.0	0.0 0%
74	1987	Miami	F.L.A. Marlins & Miami Dolphins	Pro Player Stadium	MLB/NFL	126.1	185.6	7.1	10.1 5%
75	1983	Calgary	Calgary Flames	Canadian Airlines Saddledome	NHL	125.2	190.5	123.2	190.5 100%
76	1983	Indianapolis	Indianapolis Colts	RCA Dome	NFL	77.3	119.5	47.3	73.1 61%
77	1983	Seattle	Seattle SuperSonics	Key Arena	NBA	n/a	n/a	n/a	n/a 100% Part of Worlds Fair Complex
78	1982	Minneapolis	MN Twins, Vikings & T-wolves	H.H.H. Metrodome	MLB/NFL	84.0	140.6	68.0	111.8 80%
79	1981	East Rutherford	New Jersey Nets & Devils	Birnbaum/Continental Airlines Arena	NBA/NFL	85.0	151.2	85.0	151.2 100%
80	1980	Dallas	Dallas Mavericks	Raunion Arena	NBA/NHL	27.0	52.4	27.0	52.4 100%
81	1979	Detroit	Detroit Red Wings	Joe Louis Arena	NHL	27.0	56.5	27.0	56.5 100%
82	1976	Denver	Colo Rockies & Denver Broncos	Mile High Stadium (Ren 1948)	MLB/NFL	25.0	65.5	25.0	65.5 100% Official NFL Guide (1976)
83	1976	East Rutherford	New York Giants & Jets	Giants Stadium	NFL	68.0	178.1	68.0	178.1 100% Quirk and Fort (1992), Appendix C, Table C.27
84	1976	Montreal	Montreal Expos	Olympic Stadium	MLB	539.0	1411.6	269.5	705.8 50%
85	1976	Seattle	Seattle Mariners & Seahawks	KingDome	MLB/NFL	67.0	175.5	67.0	175.5 100% Official NFL Guide (1976)
86	1976	Toronto	Toronto Blue Jays	Exhibition Stadium	MLB	176.0	46.1	17.6	46.1 100% Quirk and Fort (1992), Appendix C, Table C.88
87	1975	Denver	Denver Nuggets	McNichols Arena	NBA/NHL	130.0	37.0	13.0	37.0 100% Official NFL Guide (1976)
88	1975	Detroit	Detroit Lions	Pontiac SilverDome	NFL	56.0	159.2	56.0	159.2 100% Official NFL Guide (1976), Appendix C, Table C.41
89	1975	Hartford	Hartford Whalers	Hartford Civic C.Center Arena	NHL	35.0	99.5	35.0	99.5 100% Keating (1999)
90	1975	Houston	Houston Rockets	Compadre Center	NBA	180.0	51.2	51.2	51.2 100% Keating (1999), Appendix C, Table C.59
91	1975	New Orleans	New Orleans Saints	Louisiana Superdome	NFL	163.0	463.4	163.0	463.4 100% Official NFL Guide (1976)
92	1974	Cleveland	Cleveland Cavaliers	Cleveland/Richfield Coliseum	NBA	45.0	140.1	45.0	140.1 100% Keating (1999)
93	1974	Edmonton	Edmonton Oilers	Northlands/Edmonton/Skyreach	NHL	47.6	148.2	47.6	148.2 100% Team Marketing Report (2001), Appendix C, Table C.89
94	1974	Indianapolis	Indiana Pacers	Market Square Arena	NBA	16.0	49.8	16.0	49.8 100% Keating (1999)
95	1974	Kansas City	Kansas City Kings	Kemper Arena	NBA	22.0	68.5	22.0	68.5 100% Keating (1999)
96	1974	New York	New York Yankees	Yankee Stadium (Ren)	NFL	98.8	308.9	99.8	308.9 100% Petersen (1996), Team handout, Appendix C, Table C.48
97	1973	Buffalo	Buffalo Bills	Ritch/Ralph Wilson Stadium	NFL	22.0	73.0	22.0	73.0 100% Official NFL Guide (1976)
98	1973	Kansas City	Kansas City Royals	Kauffman Field	NFL	36.8	118.6	28.0	89.5 75% Petersen (1996), Appendix C, Table C.13
99	1973	Washington	Washington Wizards & Capitals	Capital Center/U.S Air Arena	NBA/NHL	18.0	59.7	0.0	0.0 0%
100	1972	Atlanta	Atlanta Hawks & Braves	The Omni	NBA/NHL	17.0	61.0	17.0	61.0 100% Keating (1999)
101	1972	Kansas City	Kansas City Chiefs	Arrowhead Stadium	NFL	33.3	115.0	28.0	96.2 84% Petersen (1996), Appendix C, Table C.46
102	1971	New York/Uniondale	New York Islanders	Nassau Veterans Memorial Coliseum	NHL	26.0	100.4	28.0	100.4 100% Quirk and Fort (1992), Appendix C, Table C.94
103	1971	Boston/Foxboro	New England Patriots	Foxboro/Schaefer Stadium	NFL	6.7	26.6	0.0	0.0 0% Baim (1994), Appendix C, Table C.33
104	1971	Dallas/Fring	Dallas Cowboys	Texas Stadium	NFL	35.0	139.2	30.0	119.3 86% Official NFL Guide (1976), Appendix C, Table C.39
105	1971	Philadelphia	Philadelphia Phillies & Eagles	Veterans Stadium	MLB/NFL	46.0	190.9	48.0	190.9 100% Official NFL Guide (1976)
106	1970	Cincinnati	Cincinnati Reds & Bengals	Riverfront/Cengergy Field	MLB/NFL	56.9	249.3	56.9	249.3 100% Petersen (1996), Appendix C, Table C.8
107	1970	Pittsburgh	Pittsburgh Pirates & Steelers	Three Rivers Stadium	MLB/NFL	55.0	250.4	55.0	250.4 100% Official NFL Guide (1976)
108	1969	Phoenix	Phoenix Suns	Veterans Memorial Coliseum	NBA	n/a	n/a	n/a	n/a 100% On Arizona State Fair grounds
109	1973	Salt Lake City	Utah Jazz	Salt Palace	NBA	17.0	56.4	n/a	n/a 1972 Salt Lake Olympic bid package (U Utah)
109	1969	Montreal	Montreal Expos	Jarry Park	NFL	n/a	n/a	n/a	n/a Retrotted for expansion Expos, Redendaugh (1987)

Table 2
Facilities In-use for the "Big Four" Major Leagues
MLB (1900-), NFL (1920-), NBA (1950-), NHL (1920-), (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost Nominal	Public Cost Nominal	Public Share
110	1968	New York	New York Knicks & Rangers	Madison Square Garden	NBA/NHL	135.0	724.1	0.0
111	1968	San Antonio	San Antonio Spurs	HemisFair Arena	NBA	n/a	n/a	0%
112	1967	Los Angeles	Los Angeles Lakers & Kings	Great West Forum	NBA/NHL	160	93.7	0.0
113	1967	Minn/Bloomington	Minnesota North Stars	Metropolitan Sports Center	NHL	6.3	35.1	100%
114	1967	Philadelphia	Philadelphia 76ers & Flyers	The Spectrum	NBA/NHL	120	70.3	0.0
115	1967	San Diego	San Diego Padres & Chargers	Jack Murphy Stadium/Qualcomm	MLB/NFL	280	163.9	28.0
116	1967	Tampa Bay	Tampa Bay Buccaneers	Houlihan's/Tampa Stadium	NFL	4.5	26.9	4.6
117	1967	Vancouver	Vancouver Canucks	Pacific Coliseum	NHL	6.0	35.1	29.3
118	1966	Anaheim/Los Angeles	Anaheim/Los Angeles	Anaheim Stadium	MLB/NFL	250	154.3	50.0
119	1966	Oakland	Golden State Warriors, CA Seals	Oakland Arena	NBA	25.5	157.4	25.5
120	1966	Oakland	Oakland Athletics & Raiders	Oakland-Alameda County Coliseum	MLB/NFL	300	185.1	61.7
121	1966	San Diego	San Diego (Houston) Rockets	San Diego Sports Arena	NBA	6.5	40.1	6.5
122	1966	St. Louis	St. Louis Cardinals	Busch Memorial Stadium	MLB	260	160.4	6.0
123	1965	Arlington/Dallas	Texas Rangers	Arlington Stadium	MLB	1.9	12.3	100%
124	1965	Atlanta	Atlanta Braves & Falcons	Atlanta Fulton County Stadium	MLB/NFL	185	119.8	100%
125	1965	Houston	Houston Astros & Oilers	Astrodome	MLB/NFL	380	246.1	246.1
126	1964	New York/Uniondale	New York Mets & Jets	Shea Stadium	MLB/NFL	240	161.2	67.1
127	1963	Baltimore	Baltimore Bullets	Baltimore Arena	NBA	n/a	n/a	n/a
128	1962	Los Angeles	Los Angeles Dodgers	Dodger Stadium	MLB	267	165.8	6.7
129	1961	Detroit	Detroit Pistons	Cobo Arena/Civic Center	NBA	n/a	n/a	n/a
130	1961	Pittsburgh	Pittsburgh Penguins	Civic Arena/Mellon Arena	NHL	22.0	163.3	22.0
131	1961	Washington	Wash. Senators (E) & Redskins	RFK Memorial Stadium	MLB/NFL	220	163.3	22.0
132	1960	Portland	Portland Trail Blazers	The Memorial Coliseum	NBA	n/a	n/a	n/a
133	1960	San Francisco	San Francisco Giants & 49ers	Candlestick Park/3Com Park	MLB/NFL	110	126.0	41.5
134	1959	Los Angeles	Los Angeles Clippers	LA Memorial Sports Arena	NBA	7.0	156.2	7.0
135	1957	Boston/Foxboro	N.E. (Boston) Patriots	BC Alumni Stadium	NFL	n/a	n/a	n/a
136	1957	Green Bay	Green Bay Packers	City Stadium II/Lambeau	NFL	1.0	8.4	1.0
137	1956	Atlanta	Atlanta Hawks	Alexander Memorial Coliseum	NBA	16	20.5	0.0
138	1956	Minn/Bloomington	Minnesota Twins & Vikings	Bloomington Metropolitan Stadium	MLB/NFL	85	77.2	8.5
139	1953	Baltimore	Baltimore Orioles & Colts	Baltimore Memorial Stadium II	MLB/NFL	6.0	62.9	6.0
140	1953	Milwaukee	Milwaukee Brewers	Milwaukee County Stadium	MLB	5.0	52.4	5.0
141	1952	Fort Worth	Fort Worth (Detroit) Pistons	Fort Wayne Memorial Arena	NBA	n/a	n/a	n/a
142	1950	Milwaukee	Milwaukee Bucks & Hawks	Milwaukee Arena (The Mecca)	NBA/NHL	n/a	n/a	n/a
143	1950s	Philadelphia	Phil. Wariors (Golden State)	Philadelphia Convention Hall	NBA	n/a	n/a	n/a
144	1949	Cincinnati	Cincinnati Royals	Cincinnati Gardens	NBA	3.0	39.5	0.0
145	1949	Quebec City	Quebec Nordiques	Quebec Colisee	NHL	n/a	n/a	n/a
146	1941	San Francisco	Golden State Warriors	Cow Palace	NBA	n/a	n/a	n/a
147	1940	Buffalo	Buffalo Sabres	Memorial Auditorium	NHL	27	70.2	2.7
148	1938	Miami	Miami Dolphins	Orange Bowl	NFL	0.3	8.7	8.7

Keating (1999), Check source: \$133m high for 1968
 Ricid public and private funding, Facility website
 Keating (1999)
 Double-check no public, part of complex
 Official NFL Guide (1976)
 Official NFL Guide (1976)
 Official NFL Guide (1976)
 Official NFL Guide (1982)
 Ridenbaugh (1987), Appendix C, Table C.1
 Gershman (1993), Lomry (1986)
 Lipsitz (1984), Appendix C, Table C.23
 Lipsitz (1984), Hines (1982), Appendix C, Table C.14
 Team website, Local media
 Keating (1989), Team website, Local media
 Part of Boston College
 Team Marketing Report (2001), Appendix C, Table C.96
 Official NFL Guide (1976)
 Quirk and Fort (1982), Appendix C, Table C.17
 Lipsitz (1984), Hines (1982), Appendix C, Table C.14
 Team website, Local media
 Keating (1989), Team website, Local media
 Part of Georgia Tech
 Official NFL Guide (1976), Appendix C, Table C.51
 Lipsitz (1984), Hines (1982), Appendix C, Table C.14
 Team website, Local media
 Part of Boston College
 Team Marketing Report (2001), Appendix C, Table C.43
 Official NFL Guide (1976)
 Part of Georgia Tech

Table 2
Facilities In-use for the "Big Four" Major Leagues
MLB (1900+), NFL (1920s), NBA (1950s), NHL (1920s) (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost	Public Cost	Public Share
					Nominal	2001 Nominal	2001	Share
149	1937	Buffalo	Buffalo Bills	War Memorial Stadium	NFL	3.0	80.3	3.0
150	1934	St. Louis	St. Louis (Atlanta) Hawks	Municipal Auditorium	NBA	4.1	127.0	4.0
151	1932	Cleveland	Cleveland Indians & Browns	Cleveland Municipal Stadium	MLB/NFL	3.5	140.2	3.5
152	1931	Green Bay	Green Bay Packers	City Stadium I	NFL	n/a	n/a	100% Official NFL Guide (1976)
153	1931	San Francisco	San Francisco Giants	Seals Stadium	MLB	n/a	n/a	Team website, Local media
154	1931	Toronto	Toronto Maple Leafs	Maple Leaf Garden	NHL	2.2	74.7	0.0
155	1930	Dallas/FtW	Dallas Cowboys	Cotton Bowl	NFL	0.3	10.2	0.0
156	1929	Chicago	Chicago Bulls & Blackhawks	Chicago Stadium	NBA/NFL	7.3	212.6	0.0
157	1929	St. Louis	St. Louis Blues	St. Louis Arena	NHL	2.3	60.8	0.0
158	1928	Boston	Boston Celtics & Bruins	Boston Garden II	NBA/NHL	100	303.8	0.0
159	1927	Detroit	Detroit Pistons & Red Wings	Olympia Arena	NBA/NHL	2.5	76.3	0.0
160	1926	Montreal	Montreal Canadiens	Montreal Forum	NHL	1.2	36.3	0.0
161	1926	New Orleans	New Orleans Saints	Tulane Stadium	NFL	n/a	n/a	0% Keating (1999)
162	1926	New York	New York Knicks & Rangers	Madison Square Garden III	NBA/NHL	n/a	n/a	0% Keating (1999)
163	1925	Los Angeles		Wrigley Park	MLB	n/a	n/a	0% Double-check, seems high
164	1925	Pittsburgh	Pittsburgh Steelers	Pittsburgh Stadium (U Pitt)	NFL	n/a	n/a	0% Keating (1999)
165	1924	Chicago	Chicago Bears	Soldier Field	NFL	100	222.5	10.0
166	1923	Kansas City	Kansas City Royals & Chiefs	Kansas City Municipal Stadium	MLB/NFL	0.4	11.8	0.0
167	1923	Los Angeles	Los Angeles Raiders & Dodgers	L.A. Coliseum	MLB/NFL	1.0	28.0	1.0
168	1923	New York	New York Yankees & NFL Giants	Yankee Stadium	MLB/NFL	2.5	76.4	0.0
169	1923	Philadelphia	Philadelphia Eagles	Franklin Field (Penn)	NFL	n/a	n/a	0% Part of University of Pennsylvania
170	1922	Baltimore	Baltimore Colts	Baltimore Memorial Stadium I	NFL	n/a	n/a	0% City built, Team website
171	1922	San Francisco	San Francisco 49ers	Kezar Stadium	NFL	0.3	10.8	0.0
172	1920	Seattle	Seattle Seahawks	Husky Stadium (U Wash)	NFL	n/a	n/a	0% Part of University of Washington
173	1920s	Philadelphia	Phil. Warriors (Golden State)	Philadelphia Arena	NBA	n/a	n/a	No available source
174	1915	Boston	Boston Braves	Braves Field	MLB	n/a	n/a	0% Team (Gainey) built Reidenbaugh '1987
175	1914	Chicago	Chicago Cubs	Wrigley Field	MLB	0.3	17.7	0.0
176	1913	Brooklyn/New York	Brooklyn Dodgers	Ebbets Field	MLB	0.8	47.2	0.0
177	1912	Boston	Boston Red Sox	Fenway Park	MLB	0.4	29.0	0.0
178	1912	Cincinnati	Cincinnati Reds	Crosley Field	MLB	0.2	15.5	0.0
179	1912	Detroit	Detroit Tigers	Tiger Stadium/Briggs/Navin	MLB	n/a	n/a	0% Team built, Reidenbaugh (1987)
180	1911	New York	New York/SF Giants/NYY/Yankees/Mets	Polo Grounds IV	MLB	n/a	n/a	0% Team built, Reidenbaugh (1987)
181	1911	Toronto	Toronto Maple Leafs	Mutual Street Arena	NHL	n/a	n/a	0% Facility website
182	1911	Washington	Washington Senators & Redskins	Griffith Park II	MLB	n/a	n/a	0% Team built, Reidenbaugh (1987)
183	1910	Chicago	Chicago White Sox & Cardinals	Comiskey/White Sox Park	MLB/NFL	0.75	49.1	0.0
184	1910	Cleveland	Cleveland Indians	League Park II	MLB	n/a	n/a	0% Team built, Reidenbaugh (1987)
185	1909	Boston	Boston Bruins	Boston Arena/Mathews	NHL	n/a	n/a	0% Team built, used by Northeastern Univ
186	1909	Philadelphia	Phil. Phillies, A's & Eagles	Shibe Park/Connie Mack Stadium	MLB/NFL	0.5	31.6	0.0
197	1909	Pittsburgh	Pittsburgh Pirates & Steelers	Forbes Field	MLB/NFL	20	138.2	0.0

Table 2
Facilities In-use for the "Big Four" Major Leagues
MLB (1900-), NFL (1920+), NBA (1950+), NHL (1920+) (Millions)

#	Year	Location	Franchise	Facility	Type	Total Cost Nominal	2001 Nominal	Public Cost	Public Share
198	1903	New York	New York Yankees	Hilltop Park	MLB	n/a	n/a	n/a	0%
199	1902	Cincinnati	Cincinnati Reds	Palace of the Fans	MLB	n/a	n/a	n/a	0%
200	1901	Boston	Boston Red Sox	Huntington Avenue Grounds	MLB	n/a	n/a	n/a	0%
201	1901	Chicago	Chicago White Sox	South Side Park	MLB	n/a	n/a	n/a	0%
202	1901	Detroit	Detroit Tigers	Bennett Park	MLB	n/a	n/a	n/a	0%
203	1901	Philadelphia	Philadelphia Athletics	Columbia Park	MLB	n/a	n/a	n/a	0%
204	1894	Boston	Boston Braves	South End Grounds III	MLB	n/a	n/a	n/a	n/a
205	1893	Chicago	Chicago Cubs	West Side Grounds	MLB	n/a	n/a	n/a	0%
206	1892	St. Louis	St. Louis Cardinals	Robson Field	MLB	n/a	n/a	n/a	0%
207	1891	Cleveland	Cleveland Indians	League Park / Dunn Park	MLB	n/a	n/a	n/a	0%
208	1891	New York	New York/San Francisco Giants	Polo Grounds III	MLB	n/a	n/a	n/a	0%
209	1891	Washington	Washington Senators	Griffith Park I	MLB	n/a	n/a	n/a	0%
210	1887	Philadelphia	Philadelphia Phillies & Eagles	Baker Bowl/Huntington Grounds	MLB/NFL	n/a	n/a	n/a	0%
211	1886	Chicago	Chicago Cubs/Colts/White Stockings	West Side Park	MLB	n/a	n/a	n/a	0%
212	1884	Cincinnati	Reds/Red Stockings	Redland Field	MLB	n/a	n/a	n/a	0%
213	1883	Brooklyn/New York	Brooklyn Dodgers	Washington Park	MLB	n/a	n/a	n/a	0%
214	1877	Chicago	Chicago Cubs/Colts/White Stockings	Lakefront Park	MLB	n/a	n/a	n/a	0%
215	1876	St. Louis	St. Louis Cardinals & Browns	Sportsman's Park -I/II/Old Busch	MLB	0.5	14.6	0.0	0%

Notes:

1. Public Share is defined as the public cost of development divided by the total cost of development. Least costs (per Appendix C) are not included.

2. Eight (8) facilities are entered twice because of subsequent major renovations (\$50m+). Buffalo's Rich Stadium, Anaheim Stadium/Edison Field, Oakland Arena, Oakland Coliseum, San Diego Jack Murphy Qualcomm, Seattle's Key Arena, New York's Madison Square Garden, and New York's Yankee Stadium.

3. Older facilities renovated for the arrival of a major league team, such as Denver's Mile High Stadium and Tropicana Field, are listed at the date of renovation, rather than the original opening date.

3. Costs adjusted to 2001 using the Construction Cost Index (CCI) from the Engineering News Record. Costs in the early 1930s were generally lower than those in 1920s.

4. Canadian dollar is exchanged at \$0.65 to \$1 US dollars

5. Sources indicating Appendix C are referring to the original dissertation. These tables can be found in the corresponding data series used in the front matter to this report.

interest publications⁴. When industry, academic and general interest sources were not available, I compiled data using primary sources including newspapers, magazines, industry newsletters, and where appropriate, team and fan websites.

Regardless of the source, I present cost data that is unquestionably conservative. For the older facilities, accurate cost data is often unavailable as there were few public records for these predominantly private facilities, and the data that is available does not take into account the many subsequent renovations. For facilities built mid-century, the availability of cost data improves because city and county governments kept public records of the projects, but their reported figures often do not include land and infrastructure costs, or subsequent renovations. For the newest facilities, despite increased media scrutiny, the real cost of public funding is obscured by complex development agreements, the omission of land and infrastructure costs, incremental renovations, and public participation in lease expenses.

Notwithstanding these limitations, the compilation of the database is significant in itself. It is the first comprehensive presentation of this data, thus it eliminates the need for future researchers to replicate its construction. I welcome future refinements and improvements that were not within the scope of this study. Moreover, this database is a step toward basic information consistency among the actors involved in making decisions about public funding for sports facilities.

⁴ General-interest publications are also a source of facility cost and public cost data, but since they are written for the lay audience they have little need for cost precision, so this data can be unreliable. Additionally, most of these publications are dedicated to ballparks, notably *Green Cathedrals* (Lowry 1986), *Take Me Out to the Ball Park* (The Sporting News 1987), *Ballparks of North America* (Benson 1989), and *Diamonds: The Evolution of the Ballpark* (Gershman 1993). There are no such general interest publications for football stadiums, basketball and hockey arenas.

The Three Phases of Public Funding

That governments spend a lot of money on major league sports facilities is hardly breaking news. Analyses of public funding for sports facilities are ubiquitous in both industry and academic circles, and many offer the same conclusion: spiraling costs.⁵ By the year 2001, the public sector – federal, state, county, and local governments – had paid a staggering \$16B to participate in the construction of the 100 major league ballparks, stadiums, and arenas currently in-use in cities across North America.

How did this dramatic commitment of public funds arise? To answer these question, I begin with an overview of public funding history, organized into three boom periods in new facility construction: 1) the “entrepreneurial” period from 1890-1930 when the public share of cost was typically 0%, 2) the “civic infrastructure” period from 1950 to 1979 when the public share was typically 100%, and 3) the “public-private partnership” period starting in the 1980s, when the public share of costs reportedly averaged about 50%. Because public sector funding is typically negotiated immediately prior to facility construction, it follows that major changes in public funding patterns follow these cycles of facility construction. Table 1 summarizes facility cost and public funding data by decade.

Before 1910, the only type of facility expressly built for professional sports was the baseball stadium. A few football stadiums and hockey arenas were built, but these were generally intended to host amateur, varsity, and professional team sports, as well as non-sports events. Professional ballparks were built by enterprising businessmen who were sometimes team owners, but often not. Park ownership was a less-attractive

⁵ Academic surveys of facility cost data include Quirk and Fort (1992), Petersen (1996), Greenberg (1996), Danielson (1997), Noll and Zimbalist (1997), Rosentraub (1997a), Keating (1999), and Seigfried and Zimbalist (2000).

prospect for team owners because they wanted to be able to relocate if team fortunes changes. In this era, entrepreneurial owners would charge the teams rent, and collect admissions, concessions, and later, parking revenue. On occasion, public lands might be rented for baseball uses, but otherwise there was minimal government involvement in the process.

In the 1910s and 1920s, the majority of new facilities were privately built. As MLB and the NHL stabilized, teams became permanent fixtures in their host cities, and prominent industrialists began to purchase teams and built substantial new stadiums and arenas, including Wrigley Field, Comiskey Park, the Montreal Forum and Boston Garden. Also during this period, the first examples of public funding for major league sports facilities emerge. They were 100% financed by city governments and marketed as essential pieces of a new civic infrastructure, some under the auspices of Roosevelt's New Deal. In three cases, new stadiums were built with public funds as part of bid packages for the 1932 Olympic Games, including Chicago's Soldier Field, Cleveland's Municipal Stadium, and the Los Angeles Coliseum. The impact of these 100% publicly-funded facilities was to raise the average public share of funding from 0% during the 1910s to 67% at 1939, representing an average public cost of \$72m per facility based on a total facility cost of \$108m (2001 dollars) (Table 1).⁶

During the Great Depression and WWII, there was a lull in new facility construction. Following the war, unprecedented population growth and prosperity unleashed great demand for new forms of leisure, including professional sports. Team

⁶ Because costs are inflated using the Construction Cost Index (Engineering News Record) there is a notable, counterintuitive difference between costs adjusted from the 1920s versus those of the 1930s. This is explained by the reduction in labor and material costs during the Great Depression. As a result, construction costs in the 1920s were higher than those in the 1930s.

owners were anxious to capture this new demand by increasing the capacity of their facilities. Renovation of the older, urban facilities was possible, but logically, teams wanted to follow their audiences who were moving in record numbers to the suburbs. The problem was that in this pre-television era, team owners often could not afford to finance new facilities themselves, even with the larger capacities they envisioned. The solution came in the form of rapidly growing suburban cities and counties anxious to attract major league teams, and team owners found themselves in a strong position to negotiate public funding for new facilities. In this era, sports facilities were commonly perceived as civic infrastructure, like spending on education, municipal services and highways. Voters consistently approved bond issues to pay 100% of costs for new sports facilities throughout the 1960s and 1970s. In urban areas, the federal government also decreed that sports facilities –arenas mainly – constituted civic infrastructure, permitting their financing and construction under the urban renewal program.

Consequently, during the 1960s and 1970s, the majority of new facilities were 100% publicly financed, although there were a few exceptions, notably Los Angeles' Dodger Stadium (22% public), St. Louis' Busch Stadium II (23% public), Boston's Schaefer/Foxboro Stadium (0% public), and New York's Madison Square Garden (0% public). By 1979, the average public share of costs was 89% or \$117m per facility based on an average total cost of \$132M (in 2001 dollars) (Table1).

As facility developers, governments were able to achieve some efficiencies of construction, mainly by encouraging the design of joint-use facilities: stadiums to accommodate football and baseball, and arenas for basketball and hockey. These new facilities were built with few amenities: perhaps a few luxury suites for the team owner,

but otherwise only the most basic physical plant. At the time, this made sense because cities and counties typically operated their own facilities, and there was little drive for profitability. Unfortunately for taxpayers, these efficiencies would soon become liabilities, stimulating a whole new round of construction far in advance of any signs of physical decay in the existing facilities.

By the mid-1980s, MLB was leading the charge for new facilities, as the teams were no longer willing to play in stadiums designed for football. NFL, NBA, and NHL teams were quick to follow suit, all wishing to profit from new facilities with expanded capacity for premium seating (generally protected from league revenue-sharing agreements), and technical advances in broadcasting and advertising. Provisioning for this unprecedented level of amenities was very expensive, and for cities replacing one multi-purpose facility with two new single-use facilities, the cost more than doubled.

But governments were less willing to foot the bill as they had done in the past, especially in light of soaring franchise values, lucrative broadcast and naming-rights deals, and the unprecedented relative size of salaries for professional athletes. In addition, team owners were finding it more difficult to market sports facilities as elements of civic infrastructure, as they had done in the 1960s and 1970s. Academics, and soon taxpayers, rejected the notion that public funding for sports facilities could be rationalized as a pure public good akin to traditional infrastructure. They failed the two critical tests: they are neither non-rivalrous in consumption, nor are they non-excludable.

Subsidy advocates – team owners, and associated industry interests including the news media, construction labor unions, and local business interests – then turned to economic development theory to sustain public funding for sports facilities. They argued

that the benefits flowing back to the public—namely new jobs, and new tax revenues—would be many times the up-front cost, so facilities would “pay for themselves.” This argument found a receptive audience among local governments and growth machines armed with discretionary federal funds and an agenda to revitalize declining urban areas. Upon closer examination, however, academics found the economic forecasts to be absurdly optimistic, and argued that most sports facilities provided little or no new economic benefits to its host city, once substitution effects were accounted for.

By the mid-1990s, amidst increasing public awareness of these flaws in the infrastructure and economic development arguments, subsidy advocates were forced to find a different strategy to secure public funds. Capitalizing on what little good news there was to offer taxpayers, they shifted public attention away from the increasing *level* of public spending, and instead emphasized the evidence that the public *share* of funding was decreasing, falling to 57% in the 1990s from 89% in the 1970s (Table 1). On the surface, this argument was sound: over the past 50 years, the share of facility costs paid for by public dollars has decreased from an average of 100% in 1950, to 57% in 1999. In short, advocates argued, the private sector is paying more to finance facilities than it ever has.

It appears that the strategy has paid off: the perception of increased participation by team owners, whether by up-front cash payments or through revenue sharing with a public landlord⁷, has smoothed the approval process for a number of recent deals by

⁷ In previous decades private funding implied, more or less, cash from a team owner or from another private party. Today, private funding implies any number of sources, including private equity, public equity (stock), and private debt, and trusts, structured as different subsidiaries of larger corporations. The goal is to distance the team owner from facility-related risks, while maintaining the most favorable tax position. As evidence, teams are increasingly in corporate ownership instead of traditional personal or family ownership to reduce direct liability (the NFL is the only league that currently does not allow

suggesting that teams and governments share benefits, costs, and risks. Instead of public share outcomes of either 0% or 100%, there was far more variation in public share of costs across locations, such as a 44% public share for Buffalo's HBSC Arena, and a 61% public share for Indianapolis' RCA Dome. By 1999, the average public share of costs was 57% – down from the 89% share estimated in 1979 – or \$129M per facility based on an average total cost of \$226M (Table 1). These 1990s figures are the basis of claims by subsidy advocates that the private sector had stepped up to the plate, and has paid its share of new facility costs.

Are the 1990s indicative of the future of public funding for sports facilities? Can taxpayers really expect to pay less? My data suggest that this trend toward increased private funding will be short-lived. For the 20 new facilities built or to be built between 2000 and 2005, the public share of funding will increase to 67% – up from the 57% share in 1999 – or \$210m per facility based on an average total cost of \$314m (Table 1). In part, the increase in private funding during the 1990s can be explained by the fact most of the new facilities built were arenas, rather than stadiums. Arenas generally receive less public funding because they cost less to build, and are inherently more profitable than stadiums, primarily due to year-round climate control, hence greater flexibility for major league, other sport, and non-sport events. In the early 2000s, the majority of facilities built will be NFL stadiums, which are inherently the least profitable facility due to a relatively low number of major league event days, combined with climate and capacity constraints.

corporate ownership). Moreover, it is likely that corporate ownership will increase as the advantages of corporate and multiple-team ownership become clear, particularly for entertainment conglomerates looking to vertically integrate teams as content providers, such as News Corp., Disney, and Turner.

Furthermore, the public share data on which subsidy advocates make this claim is underestimated. The real cost of public funding should include the facility, as well as land, infrastructure, and lease-based expenses. In the majority of cases, the public cost of land and infrastructure are inconsistently reported, and lease-based expenses (net of revenues) are rarely reported. Lease-based costs are particularly important, because teams often recoup their up-front capital contributions through lease negotiations with public landlords. As a result, the real cost of public funding is likely to be underreported for the majority of cases, as is the public share of funding.

For example, land is typically sold by the city to the facility developer for a nominal amount (\$1) instead of at market value. If the site area was 20 acres, and the market value at time of construction was \$500,000 per acre, then the true public subsidy is \$10M higher than reported. Using the 1999 public funding data from Table 1, if the total cost of the facility is \$226m, and the public share is 57% or \$129m, then the effect of the \$10m land subsidy is to increase the total cost to \$236m, the public cost to \$139m, and the public share to 62%. Next suppose that there was \$5m in infrastructure funding that should have been attributed to the facility, and that the public landlord agreed to compensate the team for ticket sales that fell beneath a specified threshold, at an anticipated cost of \$20M, present value, over a 30-year lease. At final tally, the public share of funding is \$164m, based on a total development cost of \$241m, for a public share of 68%. Correcting for these types of omissions is the subject of my doctoral dissertation, and its key findings are summarized in the *Journal of Sports Economics* article entitled “Full Count: The Real Cost of Public Funding for Major League Sports Facilities” (May, 2005).

Factors Influencing Public Funding Outcomes

What factors explain the evolution of public share outcomes from 0% in 1910, to 67% in 1939, to 89% in 1979, and back to 67% by 2005? The prevailing theory is that more cities wanted major league teams than there were teams available. As a result, cities were increasingly involved in the provisioning of new facilities to make themselves more attractive hosts for scarce expansion and relocation teams. Of course, there are nuances to this simple demand-exceeds-supply argument, three of which are the subject of the following discussion: increasing demand for major league teams, regulation of the supply of teams by leagues, and facility obsolescence.

Increasing Demand for Major League Teams

Major league sports are an increasing presence in North American cities. In 1950 there were 38 teams playing in 30 facilities across 21 cities in the United States and Canada (Tables 3 and 4); by 2001, these figures had increased to 121 teams playing in 100 facilities across 57 host cities. Most of this growth occurred between 1949 and 1979, when 59 new teams were added to the major leagues. From 1980 to 2001, slower, but significant league growth occurred, with 21 new teams created, 16 of which were added during the 1990s. If one considers the creation of other sports leagues, including recent start-ups like the Arena Football League (AFL), it seems clear that Americans' interest in professional sports continues to grow.

Why did the number of major league teams grow so quickly – almost tripling their size in 50 years? The simple answer is that expansion teams could be most profitable in cities where market conditions were “favorable;” generally defined as a sufficiently large

Table 3
Number of Major League Franchises: Total, Expansion, and Relocation
By League and Decade, 1950 to 2005

		Current 2001	Pre-1950	1950-59	1960-69	1970-79	1980-89	1990-99	Projected 2005
MLB									
Total	30	16	16	24	26	26	30	30	30
Expansion	0	0	0	8	2	0	4	0	0
Relocations	0	0	5	2	2	0	0	0	0
NFL									
Total	31	9	12	16	28	28	31	32	32
Expansion	0	0	3	4	12	0	3	1	1
Relocations	0	1	0	1	2	3	4	0	0
NBA									
Total	29	7	8	14	22	27	29	29	29
Expansion	0	0	1	6	8	5	2	0	0
Relocations	0	0	3	4	3	2	0	0	0
NHL									
Total	30	6	6	12	21	21	28	30	30
Expansion	2	0	0	6	9	0	7	0	0
Relocations	0	0	0	0	3	2	4	0	0
All Major Leagues									
Total	120	38	42	66	97	102	118	121	121
Expansion	2	0	4	24	31	5	16	1	1
Relocations	0	1	8	7	10	7	8	0	0

Notes:

1. As of this writing, one new expansion team is anticipated prior to 2005, the NFL Houston Texans, expected to start play in the 2002 season.

Table 4
Number of Major League Host Cities, Metropolitan Areas, and States
By League and Decade, 1938 to 2005

	<i>Current 2001</i>	<i>Pre-1950</i>	<i>1950-59</i>	<i>1960-69</i>	<i>1970-79</i>	<i>1980-89</i>	<i>1990-99</i>	<i>Projected 2005</i>
MLB								
Cities	29	11	15	23	25	25	29	29
Metro Areas	26	10	14	19	22	22	26	27
States	20	8	12	16	17	17	20	20
NFL								
Cities	30	11	11	16	28	27	30	31
Metro Areas	28	10	10	15	23	24	27	28
States	25	9	9	14	20	20	24	24
NBA								
Cities	28	7	8	14	22	26	28	28
Metro Areas	27	7	8	14	20	24	26	27
States	21	5	7	12	18	21	19	23
NHL								
Cities	30	6	6	12	21	21	28	30
Metro Areas	27	6	6	12	20	19	25	28
States	22	6	6	11	17	16	20	22
All Major Leagues								
Cities	57	21	19	29	44	52	55	57
Metro Areas	44	19	18	25	37	40	43	42
States	31	14	11	20	30	31	30	30
Ratios								
Number of Teams	120	38	42	66	97	102	118	121
Teams per City	2.11	1.81	2.21	2.28	2.20	1.96	2.15	2.12
Teams per Metro Area	2.73	2.00	2.33	2.64	2.62	2.55	2.74	2.88
Teams per State	3.87	2.71	3.82	3.30	3.23	3.29	3.93	4.03

population to support the sale of tickets, advertising, and broadcast rights. After WWII, an increasing number of cities met the population threshold for a “major league city” and combined with high levels of economic prosperity and increasing demand for leisure activities, these growing cities created ideal conditions for the expansion of professional sports.

A quick review of cities that have hosted major league teams confirms the importance of large markets. Major league host cities are, with few exceptions, very large cities. Of the 57 cities hosting major league franchises in 2000, 43 are among the 50 largest cities in the United States; all Canadian franchise hosts are among the 10 largest cities in Canada. In addition, most of these markets were sufficiently large to host more than one major league team, especially if teams were from different leagues with complimentary schedules. The largest markets host a “full house”—a team from each of the four major leagues. Three of the largest of the large metropolitan areas, New York, Los Angeles and Chicago, host nine, six, and five franchises respectively.

How do leagues determine how many teams a host city can support? In terms of market saturation, the average major league city hosts two or more teams, a measure that has remained relatively stable since 1950 (Table 4). After adjusting this figure to compensate for the fact that some host cities fall within the same metropolitan area (Los Angeles/Anaheim, Washington/Baltimore, and San Francisco/Oakland), the average number of major league teams per metropolitan host has increased from 2.00 in 1950 to 2.88 in 2005. Given that most metropolitan areas have experienced rapid population growth during this period, it makes sense that they can accommodate more major league teams. From a facility perspective, the immediate implication is the improved potential

for facility sharing in such markets. However, the numbers points to the contrary: by 2005 more major league teams will be playing in single-use facilities, a trend largely attributable to MLB and the NFL, where sight-line incompatibility still stymies joint-facility development (Table 5).

League Expansion and Relocation Policy

The increasing demand by cities for expansion teams after WWII ushered in a new era for professional sports. Earlier in the century, before the big four major leagues had emerged, the fledgling leagues were eager to enter new markets, and thus had liberal expansion and relocation policies. By mid-century, the major leagues had gained prominence and were attracting competition. At that time, expansion activity was focused on acquiring competitive leagues. Once consolidation was taken care of, the major leagues were the most powerful players in the professional sports market, and quickly came to recognize the advantages of regulating the supply of teams.

Major League Baseball (MLB) was effectively able to set the ground rules for supply restriction, because although the league operates as a monopoly, it is exempt from federal antitrust laws. The market “fails” because MLB erects barriers to entry into their league, which allows them to control the supply of teams, keeping the number of teams in the league below the number of cities that could feasibly support one. As a result, the “price” or subsidy that cities must pay to attract a major league team is forced upward, and MLB captures sizeable surplus profits.⁸ Since the late 1980s, this surplus has

⁸ Most research on this subject makes reference to the monopoly and anti-trust exemption issues, which for the sake of brevity, are presented only in their simplest terms here. For a more advanced discussion of the topic, see Noll and Zimbalist (1997), and Danielson (1997).

Table 5
Number of 'In-use' Major League Sports Facilities: Total, Single-use, and Joint-use
By League and Decade, 1950 to 2005

	Current 2001	Pre-1950	1950-59	1960-69	1970-79	1980-89	1990-99	Projected 2005
MLB								
Total	30	16	24	26	25	30	30	
MLB Only	25	9	15	12	13	22	27	
Joint MLB/NFL	5	7	8	9	14	12	8	3
NFL								
Total	30	12	16	28	28	30	31	
NFL Only	25	5	4	7	14	16	22	28
Joint MLB/NFL	5	7	8	9	14	12	8	3
NBA								
Total	28	7	14	22	27	28	28	
NBA Only	15	5	5	9	14	20	15	15
Joint NBA/NHL	13	2	3	5	8	7	13	13
NHL								
Total	30	6	6	12	21	21	28	30
NHL Only	17	4	3	7	13	14	15	17
Joint NBA/NHL	13	2	3	5	8	7	13	13
All Major Leagues								
Total	100	32	31	52	75	82	95	103
Joint MLB/NFL	5	7	8	9	14	12	8	3
Joint NBA/NHL	13	2	3	5	8	7	13	13
Ratios								
Number of Teams	120	38	42	66	97	102	118	
Teams per Facility	1.20	1.19	1.35	1.27	1.29	1.24	1.24	1.17

manifested itself primarily in the form of substantially subsidized new ballparks and lucrative operating leases.

Many academics suggest that, theoretically, governments could restore competition by rescinding MLB's antitrust exemption⁹. However, since the three other major leagues (NFL, NBA, and NHL) collude without exemptions from federal anti-trust laws and still gather substantial operating profits, its significance as a policy solution is not clear. Further, since the team owners who comprise the leagues form a very powerful interest group, it is also uncertain whether sufficient political impetus exists to dismantle the monopoly status afforded to MLB. Thus it appears unlikely that the legal context for professional sports is unlikely to change in the near future.

In effect, leagues set the price of expansion teams by maintaining scarcity, and at the same time, give their existing owners the option to be the first to move into a new market, or under certain circumstances, to move out of troubled ones. And move they do – sometimes with the approval of the league and sometimes not. Teams move in search of better markets and/or lucrative public funding packages. Teams generally move with population growth trends: from north to south, east to west, from declining markets to growing markets, from shared markets to unshared markets, and in some cases from one market to another, and back again.

⁹ Yet, in reality, the solution is not so straightforward. On one hand, it is clear that the “big four” leagues control the market for professional sports, and as such, each may be considered a monopoly within its own sport. On the other hand, since there is no legal barrier to the emergence of competing leagues, it may be anticipated that the presence of monopoly profits might encourage the formation of new leagues. In fact, several new leagues have been initiated, but they have either failed, or have been absorbed into the existing leagues. The “big four” leagues have gained power largely due to the structural characteristics of professional sports (scheduling and revenue sharing) that require collusion among teams in order for the league to function. The very necessity of collusion has, in the case of major league baseball, led to exemptions from federal anti-trust laws. Of course, once permitted to collude on these issues, teams also cooperate on issues that are less essential to the league’s basic operation, and more geared to increasing profits, such as controlling the supply of teams.

These relocations were profitable for the teams, but heartbreakng for fans – like the Brooklyn Dodgers move to Los Angeles in 1957 – and sometimes even notorious – like the midnight move of the Baltimore Colts to Indianapolis. The Colts move in 1983 was particularly telling for the future of public funding. Not only did Indianapolis provide a new stadium for the NFL team, but they also guaranteed to make up any shortfalls in ticket sales beneath a certain cap—one of the earliest examples of public funding aimed at minimizing operating risk. As a result, the Colts went from the least profitable franchise in the NFL to the one of the most profitable, virtually overnight.

There is some recent evidence that contradicts the fundamental appeal of large markets as the main source for host city competition. For example, teams have relocated from large markets to small markets (the NFL Houston Oilers to Nashville, and the NFL Los Angeles Rams to St. Louis). Other leagues have expanded into small markets (the NHL Columbus Bluejackets, and the NHL Nashville Predators). Finally, and perhaps most surprising, some large markets have not been able to attract teams (Los Angeles lost the bid for the NFL's 32nd team to Houston). While MLB and the NBA have been relatively stable, NFL owners can potentially make more money in a new stadium in a small market than in an old stadium in a large market, because new stadiums maximize luxury suites, and the NFL does not require sharing of premium seating revenue with visiting teams. In the NHL, the expansion into small markets has less to do with arena issues and is instead part of a league strategy to bolster its declining market share among the big four sports.

Smaller markets become more attractive because of the availability of public funding. If competition for new teams among large markets is waning – because of

market saturation or increased scrutiny of public funding deals – then it is obviously in the best interest of the major leagues to stimulate competition by considering these smaller markets. A significant piece of the future profitability of the major leagues, by way of new franchise fees and/or increased likelihood of public funding, relies on it.

Facility Obsolescence

When is a sports facility obsolete? In the early part of the century, facilities were only rebuilt if they had burned down; otherwise they were constantly renovated to add seating, roofs, lights and other amenities. During and after WWII, there was little investment in sports facilities, and by the 1950s, many were in need of repair. However, since audiences were migrating to the suburbs, owners of facilities in urban locations had had little incentive to make these repairs. Downtown locations were not only difficult to get to, but for many northeastern and mid-western cities, they also implied safety concerns, particularly for evening games.

New facilities in the suburbs also meant that team owners could capitalize on the burgeoning popularity of major league sports by substantially increasing game-day capacity. When the major league associations adopted standards to regularize playing surfaces across their franchises, in some cases they also set capacity requirements. For example, The NFL set minimum capacities at 55,000 during the 1960s, and 70,000 during the 1970s and 1980s¹⁰. In effect, any city that wanted an expansion team was required to build a stadium that complied with the league's capacity guidelines.

¹⁰ In the NFL, team owners not only have an interest in their own gate revenue, they also have an interest in that of other teams in their league. This is due to a revenue sharing agreement that awards 60% of gate to the home team, and 40% to the visiting team (not including premium seating). Thus, it was the interest of all owners to establish minimum capacity arrangements across the league.

During the 1960s-70s boom, many cities and counties were happy to comply with league requests. Not only were teams and facilities considered to be an important amenity for new suburban residents, but there was also a good supply of public funds with which to build them. As facility owners, city and county governments also maintained control of facility operations, and typically made profits on parking and non-major league events. Significantly, they also aimed for cost efficiency, building joint baseball and football stadiums to save public funds. Consequently, in the 1960s-70s boom, the majority of the construction was joint-use MLB/NFL stadiums, and separate NBA and NHL arenas. The fact that there was not yet substantial facility sharing among the NBA and NHL is explained by the regional distribution of franchises: in the 1970s, there was more interest in basketball expansion teams in the South and West, and more interest in hockey teams in the Northeast and Midwest.

Ironically, the cost efficiency of building joint MLB-NFL facilities proved to be the cause of premature obsolescence for many facilities built in the 1960s-70s. Joint MLB-NFL facilities proved far more amenable to football, providing a poor atmosphere for baseball because of sub-optimal sightlines and excessive capacity. It also proved difficult to retrofit these no-frills facilities to accommodate the private boxes and club seats that were becoming an increasingly important part of unshared franchise revenues. Moreover, by the mid-1980s, some older facilities were suffering from structural deterioration of varying degrees. As a result, baseball franchise owners went on a major campaign in the late 1980s and early 1990s to return to baseball-only facilities. And they have succeeded: 17 new MLB-only stadiums have been built since 1990, with at least six more under discussion.

An important aspect of the facility obsolescence discussion is, of course, when will the next construction boom take place? When will these new facilities become obsolete, and why? Thirty years into the future one might speculate that the “big four” major league sports will be supplanted by other sporting events, including the increasingly popular NASCAR circuit, and “extreme” sports. Even if major leagues sports are still popular, the rapid pace of broadcast innovation suggests that the current crop of state-of-the-art facilities may become nothing more than super-size television studios.

Conclusion

The history of public funding for sports facilities is one of increasing cost and increasing variation in the public’s share of costs across cities. In general, my findings are in keeping with existing academic studies, indicating that the average public share of facility costs has fluctuated from 29% at the end of “entrepreneurial” period from 1890 to 1930, to 89% during the “civic infrastructure” period from 1950 to 1970, to 57% during the “public-private partnership” period from 1980 to 2001. However, my findings indicate that by correcting and extending the underlying dataset, the public share of costs will *increase* from 57% at 2000 to 67% by 2005. Therefore, my study refutes claims of increasing private funding, even *before* correcting for land, infrastructure, and operating cost omissions. Furthermore, I argue that the real cost of public funding is far higher than commonly reported. Most important, the degree of variations in public share across locations is far more pronounced in the recent “public-private partnership” period from 1980 to 2005. However, since land, infrastructure, and operating costs are reported

inconsistently across observations, it is impossible to make valid comparisons across locations. Correcting for these errors and omissions is the subject of my doctoral dissertation; its findings are summarized in an article published by the Journal of Sports Economics entitled “Full Count: The Real Cost of Public Funding for Major League Sports Facilities” (May 2005), as well as the other articles and working papers listed in the front matter of this report.

References

- Andelman, B. 1992. *Stadium for rent: Tampa Bay's quest for major league baseball.* New York: McFarland and Company.
- Baade, R.A. 1987. *Is there an economic rationale for subsidizing sports stadiums?* Chicago: Heartland Institute.
- _____. 1994. *Stadiums, professional sports, and economic development: assessing the reality.* Chicago: Heartland Institute.
- _____. 1996a. Professional sports as catalysts for metropolitan economic development. *Journal of Urban Affairs*, 18 (1): 1-17.
- _____. 1996b. Stadiums subsidies make little economic sense for cities, a rejoinder. *Journal of Urban Affairs*, 18 (1): 33-37.
- Baade, R.A. and R.E. Dye. 1988. Sports stadiums and area development: a critical review. *Economic Development Quarterly*, August: 265-275.
- _____. 1990. The impact of stadiums and professional sports on metropolitan area development. *Growth and Change*, Spring: 1-14.
- Baim, D. 1985. *Comparison of privately- and publicly-owned stadiums and arenas.* Chicago: Heartland Institute.
- _____. 1990. *Sports stadiums as "wise" investments: an evaluation.* Chicago: Heartland Institute.
- _____. 1994. *The sports stadium as a municipal investment.* Westport, CT: Greenwood Press.
- Benson, Michael. 1989. *Ballparks of North America: a comprehensive historical reference to baseball grounds, yards, and stadiums, 1845 to present.* Jefferson, NC: McFarland.

Danielson, M. N. 1997. *Home team: professional sports and the American metropolis*. New Jersey: Princeton University Press.

Euchner, C. 1999. "Tourism and sports: the serious competition for play." In Judd, D. and S. Fainstein, eds. *The Tourist City*. New Haven: Yale University Press.

_____. 1993. *Playing the field: why sports teams move and cities fight to keep them*. Baltimore: Johns Hopkins University Press.

Fort, R. D. and J. Quirk. 1995. Cross-subsidization, incentives, and outcomes in professional team sports leagues. *Journal of Economic Literature*, vol. 33 (September): 31-54.

Friedman, A. and P. J. Much. 1996. *Inside the ownership of professional sports teams: the complete directory of the ownership and financial structure of pro sports*. Chicago: Team Marketing Report, Inc.

Gershman, M. 1993. *Diamonds: the evolution of the ballpark*. Boston: Houghton Mifflin.

Greenberg, M. J. and J.T. Gray. 1996, 2000. *The stadium game*. Milwaukee, WI: National Sports Law Institute, Marquette University.

Keating, R. 1999. *Sports pork: the costly relationship between major league sports and government*. The Cato Institute, Policy Analysis 339.

Lowry, P. J. 1992. *Green cathedrals: the ultimate celebration of all 27 major league, Negro league ballparks, past and present*. Reading, MA: Addison-Wesley Publishing Co., Inc.

Noll, R.G. 1974. *Government and the sports business*. Washington, D.C.: Brookings Institution.

Noll, R.G. and A. Zimbalist. 1997. *Sports, jobs, and taxes*. Washington, D.C.: Brookings Institution Press.

- Okner, B.A. 1974. 1974. Taxation and sports enterprises. In Noll, R., ed. *Government and the sports business*. Washington, D.C.: The Brookings Institute, 159-184.
- _____. 1974. Subsidies of stadiums and arenas. In Noll, R., ed. *Government and the sports business*. Washington, D.C.: The Brookings Institute, 325-349.
- Petersen, D. C. 1996. *Sports, convention, and entertainment facilities*. Washington, D.C.: The Urban Land Institute.
- Quirk, J. and R.D. Fort. 1992, 1997. *Pay dirt: the business of professional team sports*. Princeton, N.J.: Princeton University Press.
- Rich, W., ed. 2000. *The economics and politics of sports facilities*. Westport, CT: Quorum Books.
- Rosentraub, M.S. 1997. *Major league losers: the real cost of sports and who's paying for it*. New York: Basic Books, Harper Collins.
- _____, 1996. Does the emperor have new clothes? A reply to Robert A. Baade. *Journal of Urban Affairs*, 18(1):1-23.
- _____, and S. Nunn. 1997. Sports wars: suburbs and center cities in a zero sum game. *Journal of Sport and Social Issues* 21, no. 1.
- _____, et al. 1994. Sport and downtown development strategy: if you build it, will jobs come? *Journal of Urban Affairs*, vol. 16(30):221-239.
- Siegfried, J. and A. Zimbalist. 2000. The economics of sports facilities and their communities. *Journal of Economic Perspectives*, Summer.
- Team Marketing Report. 1998, 2000. *Inside the ownership of professional sports teams*. Chicago: Team Marketing Report, Inc.
- USA Today. 1996. *Fodor's the complete four sport stadium guide*. New York: Balliett & Fitzgerald.

- Zimbalist, A. 1992. *Baseball and billions: a probing look inside our national pastime*. New York: Basic Books.
- _____. 1999. *Unpaid professionals: commercialism and conflict in big-time college sports*. Princeton, N.J.: Princeton University Press.
- Zimmerman, D. 1991. *The private use of tax-exempt bonds: controlling public subsidy of private activities*. Washington, DC: Urban Institute Press.
- _____. 1996. *Tax exempt bonds and the economics of professional sports stadiums*. Washington, DC: Congressional Research Service Report 96-460E.