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An Analysis of Taxpayer Funded Pro Hockey Arenas & their Comparables

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The prevalence of taxpayer funded sports stadiums is a hot topic in today's sporting world. The goal is to look at the hockey arenas in the NHL and determine whether having taxpayer funded arenas are at all worth it for the city.

To accomplish this, we need to look at what the current trends are in regard to arena construction. Are the teams paying for the bulk of the cost or are the cities? Also, how does the arena situation in the NHL compare to that of the other major North American sports, the NFL, MLB and NBA. In doing so we get a greater understanding of what the market norm is and whether pro hockey is in line with, behind, or even surpassing the other sports regarding public spending.

In doing so, we gain a greater understanding of the issue that is the decision to fund, or not fund these arenas with public dollars. There is then a concise and detailed look at the possible merit of using public funds to build professional sports arenas.

At its conclusion, the paper provides a detailed look for both team leaders and the public alike to make an informed decision on whether they want their tax dollars going toward pro hockey arenas or if the money is better spent in other areas.

Keywords
Hockey Arena, Sports Venues, Public Funds, Analysis

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1 Introduction

In this paper we will analyse the arenas of the National Hockey League (NHL); their comparables, the National Football League (NFL), Major League Baseball (MLB), and the National Basketball Association (NBA) to make as close a comparison as possible; as well as to establish current trends regarding distribution of taxpayer funds when building arenas. The goal being to see if it's worth it for the public to fund the building of new venues. The thesis is broken up into sections. The first section will look at what the current research has to say about the topic of taxpayer funded arenas. The second section will briefly cover the exact aim of the thesis and the methods used to display the information and results. The third section will explain how we break down the situation with each NHL arena. The next section will explain how we analyse all the NFL, MLB and NBA stadiums. The fourth section will explain the steps regarding the comparison of the modern arenas from each of the three sports leagues; modern in this sense will be any stadium constructed within the past 20 years. Any stadium built from 1998 onward will be used as a comparable. The fifth section will cover the actual analysis itself. The final section will explain the results of the analysis and what issues were encountered with the research, what the results reveal about the topic, and what research could be done in the future to better understand the issue. The conversation about funding professional sports arenas is a hot topic, especially in the NHL, and greater analysis is needed to determine the merits of public funding.

2 Theoretical Background: The Debate about Taxpayer Funded Arenas

The goal of this section is to look at what the research done to this point has to say about the situation. While the body of work on this topic is largely unexplored, at least when it comes to a comprehensive look at the merit of using funds in just one particular sport, there are some good points that the research brings to the conversation that gives us a base of information on the supposed economic benefit that's associated with sport stadiums/arenas.

To start let's take a look at what the research says about the average amount of public funds used in sports thus far. A study by Fenn & Komisarchick (2017,10) found that public funds for sporting facilities is heavily sought after by franchises looking to build a new stadium/arena. They found that 94% of all ball parks are at least somewhat financed with public funds, as are 95% of NFL stadiums, 86% of shared NBA/NHL arenas, 94% of NBA arenas and 88% of arenas housing just the NHL. The trend of using public money has been increasing over the years. Statistics from the 1950's show public funds accounted for 12% of MLB stadiums, 46% of NBA arenas, 36% of NFL stadiums and virtually no proportion of NHL arena costs. However, by 1991 these percentages had risen to 80.5%, 65%, 65% and 93% respectively (Fenn & Komisarchick 2017,10). While the rate of public funds has been going up steadily, the NBA, NHL and shared NBA/NHL arenas are more likely to be funded using mostly private funds and have slightly higher private to public funding ratios (Fenn & Komisarchick 2017,10).

One interesting point in the debate is that only after 1989 did the construction costs of NFL and MLB stadiums consistently exceed those of NBA and NHL arenas, previously the costs were much closer (Fenn & Komisarchick 2017,14). The specific time frame where the rise in costs starts to occur is 1995 for NFL arenas, while MLB arenas show consistent growth in average costs only after 2000 (Fenn & Komisarchick 2017,15).

Moving forward, when it comes to the cost of building new arenas/stadiums, the NFL is continuing their trend to have the bulk of the financing rests upon public shoulders; however, the relative public contribution is starting to decline (Fenn & Komisarchick 2017,15). Meanwhile, the public share of MLB venue financing has remained above 50% with few exceptions. The public was expected to cover 65% of the cost for ballparks opening 2010-2015 (Fenn & Komisarchick 2017,15). Looking at the NBA, public funds accounted for 60% of arena financing between 1995 and 2009; historically the public portion of financing

has averaged 38% before 1995. Currently the public will finance only 24% of planned NBA facilities (Fenn & Komisarchick 2017,16).

Now, the main argument used to get public funds is that it helps the city's economy. When lobbying for public money to build their new arena the Edmonton Oilers ownership group claimed that a mix of public and private investment in sports arenas is viable with the main principle being that a new arena will generate a significant increase in local employment during and after construction (Katz Group 2010). Now cities use any number of ways to help finance an arena, the most common methods being bond issuance, sales taxes, excise taxes, commemorative license plate sales, diversion of cable bill revenues, PILT payments, general fund appropriations, lotteries and ticket sale revenue sharing (Fenn & Komisarchick 2017,12). Also used are taxes on: rental cars, hotels, casinos, restaurants, player wages, property, tourism, alcohol, tobacco and entertainment facilities (Fenn & Komisarchick 2017,12). So, the cities aren't just throwing millions of dollars toward an arena without replenishing those funds. The amount that cities end up putting forward varies between stadiums and arenas due to the fact that the public share is likely highly sensitive to the bargaining skills and efforts of the public officials involved (Coates 2007,567).

When it comes to the initial claim that a new arena will generate a significant increase in local employment during and after construction many economic impact studies, in almost every case, suggest that there are large benefits from stadium and arena construction. However, the general consensus of the ex post studies is that there is little convincing evidence for large income and job creation benefits attributed to stadiums; rather the evidence largely points to there being none of those benefits. (Coates 2007,567)

Now a lot of critics against the use of public funds for stadiums, or more specifically the claim that there is any amount of sustained economic benefit outside an initial boost during construction, have consistently argued that a city or a metropolitan area that builds a new stadium is simply moving income around (Coates 2007,568). For instance, Coates (2007,571) provides a key example where the Dallas Cowboys' announcement of their plan to build a new stadium raised property values in one area of Dallas while reducing them in other areas. From this perspective, the stadium construction is less about economic development than it is about redistribution (Coates 2007,571). When it comes to judging the positive effects on local economies, evidence that exists tends to focus on one small specific geographic area. Instead the outcome doesn't appear to be evidence of development effects, rather the results indicate a simple redistribution from one area to an-

other within a region. (Coates 2007,575) In an article posted on the *Canadian Broadcasting Corporation* site, Victor Matheson a professor of economics at the College of the Holy Cross in Worcester, Ma., who has been looking at the economics of sports, made some comments about the validity of the wealth distribution argument:

"When a city with a major league franchise goes through a period without a team — due to a league lockout, for example, or when a team such as the Winnipeg Jets leaves — it "had no statistically significant impact" on the hotel occupancy rates in that city." (Ligaya 2013)

This likely points to the fact that overall a new stadium isn't helping tourism but just shifting where the money is spent in the city. Likewise, in the same CBC article Richard C. Powers from Rotman School of Management at the University of Toronto mentioned that studies have shown only 20 per cent of the sporting event tickets are bought by people who live elsewhere (Ligaya 2013). Meaning that most of the tickets are being bought by people who live and work in the city. It mentioned that most people don't have unlimited funds and sports is just one spot they might spend their money, which leads to redirecting the wealth into a certain area (Ligaya 2013).

At this point the research seems to be fairly clear regarding economic benefit to building a new stadium. There is a quick boost due to the construction and then it tapers off. Depending on where the new arena is constructed it seems then that the city's economic income is just redistributed, and that the team itself doesn't make much of a contribution in the city's income. Which makes the discussion on funding new arenas all the more interesting.

3 The Process

3.1 Research Objective/Aim

The aim of analysing NHL arenas, as well as their comparables in the other three major North American leagues, is to take a look at how the cost of these stadiums is distributed, and if possible, how the deals themselves are actually structured. The point being to determine if there is any benefit at all to having pro sports subsidized by the taxpayer.
There are three major questions that need to be analysed before the worth of funding can be determined:

- How are pro hockey arena deals structured (NHL)?
- How much taxpayer money is used in the other major sports leagues past and present?
- What is the current trend for cost distribution in modern arenas?

By answering these questions, we gain a deeper knowledge of the situation and are able to determine if there is any benefit to funding these arenas, and if so, how much funding is acceptable based on what the market norm is.

The outcome of the analysis should then provide enough information to determine how much more research, if any, needs to be carried out and what specific areas need to be looked at in greater detail before there is a definitive answer to the merit of taxpayer funded arenas.

3.2 Methodology

There are two key methods that will be used to provide answers to the objectives. The first being the use of bullet point summarization, this allows a clear and concise list of the information that needs to be stated. The second being the analysis of tables, which allows for a clear representation of numbers that can be looked at to determine trends and patterns in the use of funds.

These methods allow for the presentation information to be clear without the possibility of the information being misconstrued. The result is that the answer to the objectives are easily obtained without having to make many guesses or leaps in determining the final outcome.

4 Current NHL Arena Situation

When it comes to the NHL arena situation we breakdown the information of how each arena is set up/operated for all 30 NHL franchises (Las Vegas excluded because arena info hasn't been released). The basic information given in this section is the cost of the arenas and if it was private or publicly funded. If available, the information of where the public money came from is included, which is a key point in understanding the merit in building with public funds. All information in the breakdown, *unless otherwise stated*, is from a paper prepared for the city of Glendale, Arizona by TLHockey & Associates LLC that was meant to compare arena costs. Arena names have been updated to avoid confusion, since naming rights change frequently.

Looking at this info allows us to get a detailed look at how public money is used in the NHL, as well as who owns and operates the arenas. This breakdown also gives us an idea where the tax money actually comes from, whether it be hotel tax or a rise in property tax, etc. The breakdown can be found in *section 7.1*.

5 NFL, MLB & NBA Stadium Situations

In this section we will break down the funding of NFL (Football), MLB (Baseball) and NBA (Basketball) stadiums. First, the info provided is the team name, arena name, arena construction date, private funds used, public funds used and public contribution. Any stadium that has been built where the bulk of the funding is (>=55%) has been highlighted to make it easier to distinguish. Any team with a new stadium being built, or where the stadium info isn't available, has been omitted due to cost breakdown not being available at this time. All the stadium names have been updated from the original data to reflect their current rights holders. Any number with an asterisk beside it is an approximation, as the exact numbers aren't public info. The last 20 years will be used as a guide to determine difference in historical trend.

Although we don't have as detailed info for these three leagues as we do for the NHL, the basic information we get at least gives us a good sense of how much public money is used in each of the stadiums. This gives us a general comparison of the three leagues and how they match up against each other and the NHL. The analysis can be found in *section 7.2.*

6 Modern Arena Comparison (NHL, NFL, MLB, NBA)

In this section we will briefly explain what the Modern Arena Comparison entails. Modern in this analysis is any stadium/arena that has been built in 1998 or later. The point of the analysis is to compare the four major sports leagues that have arenas/stadiums for their teams to see if there has been any similar spending of taxpayer dollars, or if certain leagues have spent way more or way less. This will show us how the leagues compare to each other. For the comparison we'll distinguish stadiums built pre-2000 and post-2000 to get a better idea in the shift of how much public money is used or not used in modern arenas, as well as what the newest arenas in each league show about where the trends are heading. Below is a summary of which teams will be a part of this analysis. The actual analysis is in *section 7.3.*

NHL Teams & Arenas

- Carolina Hurricanes-PNC Arena (1999)
- Colorado Avalanche-Pepsi Center (1999)
- Columbus Blue Jackets-Nationwide Arena (2000)
- Dallas Stars-American Airlines Center (2001)
- Detroit Red Wings-Little Caesars Arena (2017)
- Edmonton Oilers-Rogers Place (2016)
- Florida Panthers-BB&T Center (1999)
- Los Angeles Kings-Staples Center (1999)
- Minnesota Wild-Xcel Energy Center (2000)
- Nashville Predators-Bridgestone Arena (1998)
- New Jersey Devils-Prudential Center (2007)
- New York Islanders-Barclays Center (2015)
- Pittsburgh Penguins-PPG Paints Arena (2010)
- Toronto Maple Leafs-Air Canada Centre (1999)

NFL Teams & Arenas

- San Francisc0 49'rs-Levi's Stadium (2014)
- Cincinnati Bengals-Paul Brown Stadium (2000)
- Denver Broncos-Sports Authority Field at Mile High (2001)
- Cleveland Browns-First Energy Stadium (1999)
- Tampa Bay Buccaneers-Raymond James Stadium (1998)
- Arizona Cardinals-University of Phoenix Stadium (2006)
- Indianapolis Colts-Lucas Oil Stadium (2008)
- Dallas Cowboys-AT&T Stadium (2009)
- Philadelphia Eagles-Lincoln Financial Field (2003)
- Atlanta Falcons-Mercedes-Benz Stadium (2017)
- New York Giants & New York Jets-MetLife Stadium (2010)
- Detroit Lions-Ford Field (2002)
- New England Patriots-Gillette Stadium (2002)
- Baltimore Ravens-M&T Bank Stadium (1998)
- Seattle Seahawks-CenturyLink Field (2002)
- Pittsburgh Steelers-Heinz Field (2001)
- Houston Texans-NRG Stadium (2002)

- Tennessee Titans-Nissan Stadium (1999)
- Minnesota Vikings-U.S. Bank Stadium (2016)

MLB Teams & Stadiums

- Houston Astros-Minute Made Park (2000)
- Atlanta Braves-SunTrust Park (2017)
- Milwaukie Brewers-Miller Park (2001)
- St. Louis Cardinals-Busch Stadium (2006)
- Arizona Diamondbacks-Chase Field (1998)
- San Francisco Giants-AT&T Park (2000)
- Seattle Mariners-Safeco Field (1999)
- Miami Marlins-Marlins Park (2012)
- New York Mets-Citi Field (2009)
- Washington Nationals-Nationals Park (2008)
- San Diego Padres-Petco Park (2004)
- Philadelphia Phillies-Citizens Bank Park (2004)
- Pittsburgh Pirates-PNC Park (2001)
- Tampa Bay Rays-Tropicana Field (1998)
- Cincinnati Reds-Great American Ball Park (2003)
- Detroit Tigers-Comerica Park (2000)
- Minnesota Twins-Target Field (2010)
- New York Yankees-Yankee Stadium II (2009)

NBA Teams & Stadiums

- Los Angeles Clippers-Staples Center (1999)
- Grizzlies-FedEx Forum (2004)
- Atlanta Hawks-Philips Arena (1999)
- Hornets-Spectrum Center (2005)
- Kings-Golden 1 Center (2016)
- Lakers-Staples Center (1999)
- Magic-Amway Center (2010)
- Mavericks-American Airlines Center (2001)
- Nets-Barclays Center (2015)
- Nuggets-Pepsi Center (1999)
- Pacers-Bankers Life Fieldhouse (1999)
- Pelicans-Smoothie King Center (1999)
- Pistons-Little Caesars Arena (2017)
- Raptors-Air Canada Centre (1999)
- Rockets-Toyota Center (2003)
- Spurs-AT&T Center (2002)
- Thunder-Chesapeake Energy Arena (2002)

7 Results

In this section we have the analysis of the topics touched on previously in the thesis. Those being the Current NHL Arena Situation; NFL, MLB, NBA Arena Situations; and the Modern Arena Comparison.

7.1 Analysis: Current NHL Arena Situation

Atlantic Division

Boston Bruins/TD Garden (1995)

- Owned by Delaware North Companies Inc.
- Built for approx. $160 million USD.
- Arena was privately financed, also privately operated.
- Naming rights agreement commits $8 million USD to arena improvements over a 20-year period and $5 million USD for community improvements or tickets for underprivileged kids.

Buffalo Sabres/KeyBank Center (1996)

- Opened at a cost of $122 million USD, $67 million of which was privately funded.
- The state of New York invested $20 million USD; Eerie county $20 million USD, and the City of Buffalo $10 million USD.
- City of Eerie agreed to build a parking structure at the cost of $7 million USD.
- The private sector is responsible for Operation and Maintenance.

Detroit Redwings/Little Caesars Arena (2017)

- Owned by the Detroit Downtown Development Authority (Slowly 2017).
- Operated by Olympia Development/Redwings Ownership (TheStadiumBusiness, 2017).
- Final cost approx. $863 million USD (Slowly 2017)
- State and local government have invested $324 million USD into the arena (Slowly 2017).
- Red Wings ownership has provided the rest of the funds; $539 million USD (Slowly 2017).

Florida Panthers/BB&T Center (1998)

- Opened at a cost of $212 million USD.
- Owned by Broward County and Operated by Spector Management Group World.
- Funding came from mostly the public sector at the amount of $184.7 million USD, with the remaining balance payed for by Wayne Huizenga (Initial Owner).

- Broward County financed the arena costs using a 2% hotel tax and with support from a state sports rebate program.
- The Panthers are responsible for an annual debt service payment of $5.2 million USD.
- The team, arena, and land were all sold in 2009 for $240 million USD to Sports Properties Acquisitions Group.

Montreal Canadiens/Bell Centre (1996)

- Owned and Operated by the Molson Brothers.
- Sold to Molson for reportedly more than $550 million CAD.
- Arena opened at a cost of $198.2 million CAD and was privately financed by Molson Co. Ltd.

Ottawa Senators/Canadian Tire Centre (1996)

- Owned and operated by Capital Sports Properties and Live Nation Canada respectively.
- Opened at a cost of $146 million CAD, including $27 million CAD in infrastructure improvements.
- Funded through a couple different types of loans, as well as through suite sales & fees.

Tampa Bay Lightning/Amalie Arena (1996)

- Owned and operated by Palace Sports and Entertainment.
- Opened at a cost of $139 million USD.
- Public sector was responsible for 62% of the cost.

Toronto Maple Leafs/Air Canada Centre (1999)

- Owned and operated by Maple Leaf Sports & Entertainment.
- Was built at a cost of $250 million CAD.
- The arena was completely privately financed.

Central Division

Chicago Blackhawks/United Center (1994)

- Owned and operated by Rocky Wirtz and Jerry Reinsdorf's United Center Joint Venture Corporation.
- Opened for $175 million USD which was privately financed.
- The City of Chicago helped with some of the infrastructure cost and reduced certain property tax payments.
- The arena is managed by a company owned by the Chicago Bulls(NBA) and the Blackhawks(NHL), of which is responsible for maintenance.

Colorado Avalanche/Pepsi Center (1999)

- Owned and operated by Kroenke Sports.
- Constructed at a cost of $180 million USD.
- Was privately financed, however the public sector provided help through construction sales tax rebates ($2.25 million USD) and with reduced annual property tax payments valued at $2.1 million USD.
- The City of Denver provided $4.5 million USD for infrastructure enhancements as well.

Dallas Stars/American Airlines Center (2001)

- Estimated to have cost $400 million USD and is the home of the Dallas Stars(NHL) and Dallas Mavericks(NBA).
- The original cost was funded by the public sector with an investment of $125 million USD, with an additional $30 million USD for infrastructure. The remaining amount was provided by the two tenants.
- The public sector uses a hotel and rental car tax to repay the bonds issued to finance the arena.
- The teams pay $3.4 million USD a year and have a 30-year lease agreement.
- A management firm owned by the two teams operates and maintains the facility and receives all revenue from the area.

Minnesota Wild/Xcel Energy Center (2000)

- Owned by the City of St. Paul and Operated by Minnesota Sports and Entertainment.
- Built at a cost of $130 million USD.
- The Wild provided $35 million USD for construction costs, while a sales tax accounted for $30 million USD.
- The State of Minnesota gave out an interest free loan of $65 million USD to be repaid with sales tax and agreed to waive $17 million USD worth of the debt if the building was made available for 50 days of public events.
- The city is responsible for maintenance costs, but the team does pay rent.

Nashville Predators/Bridgestone Arena (1998)

- Shared ownership by the Sports Authority of Nashville as well as Davidson County.
- Operated by a Predators subsidiary.
- Built at a cost of $144 million USD.
- Arena was publicly financed through bonds.
- Powers Management pays maintenance fees up to $1 million USD, City covers any overages.

St. Louis Blues/Scottrade Center (1994)

- Owned by the City of St. Louis
- Opened at a cost of $170M USD
- Operated by Sports Capital Partners
- Public funds account for $34.5M USD of the cost
- Remainder of cost came from the private sector, and operating company

Winnipeg Jets/BellMTS Place (2004)

- Owned and operated by True North Sports & Entertainment LTD.
- Opened at a cost of $135 million CAD.
- Taxpayer funding accounted for $40.5 million CAD (Van Rassel 2015).

Metropolitan Division

Carolina Hurricanes/PNC Arena (1999)

- Owned by Centennial Authority & Operated by Gale Force Sports and Entertainment.
- Built for $158 million USD and is shared with North Carolina State University.
- Publicly and privately funded, with public funding making up 84% of the total cost.
- North Carolina University supplied $28 million USD, Wake County provided $70 million USD, and the Sate of Carolina provided $22 million USD.
- The remaining amount came from the Hurricanes ($5 million USD) and by a sales tax refund.
- The public sector is responsible for 100% of the maintenance costs.
- The Hurricanes pay $3 million USD in rent but receives all revenue generated in the arena.

Columbus Blue Jackets/Nationwide Arena (2000)

- Originally owned and operated by Nationwide Insurance Company and Spector Management Group but was recently sold to Franklin County Convention Facilities for $42 million USD. Ohio State University was hired to operate the facility.
- Nationwide will invest $52 million USD into the team and take a 30% interest.
- Opened at a cost of $150 million USD. Was privately financed by Nationwide Insurance and Dispatch, at a 90/10 split respectively.

New Jersey Devils/Prudential Center (2007)

- Opened at a cost of $375 million USD.
- Financing was from both the city and team. The city spent $275 million USD while the team spent $100 million USD (Fenn & Komisarchick 2017).
- The city receives 11% of revenues, while the team receives the rest.
- The building is operated by AEG.

New York Islanders/Barclays Center (2015)

- Arena owned by Russian Billionaire, and owner of the Brooklyn Nets, Mikhail Prokhorov (Saraceni 2017).
- Final Cost of Arena is $1 Billion USD, payed with tax free bonds, and over $200 million USD put forward by Mikhail Prokhorov (Robbins 2012).
- Lease agreement with Islanders that has Barclays Center pay a reported $50 million USD annually to the islanders; In exchange the Arena group gets all revenue from ticket sales, suite sales, sponsorships, marketing, and promotions (Hackel 2015).

New York Rangers/Madison Square Garden (1968)

- Owned and operated by Madison Square Garden Inc (MSG).
- Opened at a cost of $123 million USD.
- Was renovated with private funding in 1990 at a cost of $200 million USD.
- Underwent a 3-year $1 billion USD renovation that finished in 2013 (Best 2015).
- MSG is responsible for maintenance and operation of the arena.

Philadelphia Flyers/Wells Faro Center (1996)

- Owned by Comcast Spectacor L.P. and operated by Global Spectrum.
- Built for $210 million USD.
- Almost entirely privately funded, with only $35.5 million USD provided by the City of Philadelphia and the State of Pennsylvania.

Pittsburgh Penguins/PPG Paints Arena (2010)

- Opened in 2010 at a cost of $321 million USD (PittsburghHockey 2017).
- Is owned by the Sports & Exhibition Authority of Pittsburgh.
- The hockey team was responsible for 38% of the total cost while the remainder was provided by the State of Pennsylvania using gaming license fees from a casino.
- The team oversees maintenance up to $400’000 USD from parking fees.

Washington Capitals/Capital One Arena (1997)

- Owned and operated by Monumental Sports & Entertainment.

- Was built at a cost of $260 million USD.
- The arena was mostly financed privately, with only $60 million USD coming from the public sector for infrastructure improvements.

Pacific Division

Anaheim Ducks/Honda Center (1993)

- Owned by the City of Anaheim, California.
- Opened at a cost of $123 million USD.
- Publicly financed with bonds issued by the city, that Ogden Entertainment pays over a 30-year agreement.
- In 2003 city made agreement with Anaheim Arena Management to give them operation duties.
- Prior to deal, city spent $40.2 million USD more than it received in revenue.

Calgary Flames/Scotiabank Saddledome (1983)

- Owned by the City of Calgary.
- Opened at a cost of $97.7 million CAD.
- The Province and City each kicked in $31.5 million, the Canadian government gave $29.7 million, and the 1988 Olympic Committee chipped in $5 million.
- In 1994 management duties were transferred to the Calgary Flames Limited Partnership. Previously duties were the public sectors responsibility.

Edmonton Oilers/Rogers Place (2016)

Info provided from: *City of Edmonton: The Agreement*

- Owned by the City of Edmonton & operated by the Edmonton Arena Corporation (Oilers Ownership).
- Built for $483.5 million CAD.
- The team ownership is paying $132.5 million CAD, $112.8 million of that is being payed as rent for 35 years, while the remainder is payed to the city in cash.
- The City of Edmonton is providing $226 million CAD through the CRL (Community Revitalization Levy).
- $125 million CAD will be collected through a ticket surcharge.

Florida Panthers/BB&T Center (1998)

- Opened at a cost of $212 million USD.
- Owned by Broward County and Operated by Spector Management Group World.
- Funding came from mostly the public sector at the amount of $184.7 million USD, with the remaining balance payed for by Wayne Huizenga (Initial Owner).

- Broward County financed the arena costs using a 2% hotel tax and with support from a state sports rebate program.
- The Panthers are responsible for an annual debt service payment of $5.2 million USD.
- The team, arena, and land were all sold in 2009 for $240 million USD to Sports Properties Acquisitions Group.

Los Angeles Kings/Staples Center (1999)

- Owned by the Los Angeles Arena Company and Operated by AEG Worldwide.
- Built at a cost of $375 million USD.
- The public sector's commitment only accounts for $38.5 million USD of the total cost.
- Parts of financial reserves from the Los Angeles Convention Center ($420 million USD) were also used.
- AEG Worldwide is also responsible for any maintenance costs.

San Jose Sharks/SAP Center (1993)

- Owned by the City of San Jose and operated by Sports Capital Partners.
- Was built for $170 million USD; Only $35.5 million of which came from the city.
- Remainder of the cost came from the private sector and management company (operating company).

Vancouver Canucks/Rogers Arena (1995)

- Owned and operated by Canucks Sports & Entertainment.
- Opened at a cost of $116 million CAD.
- Arena was completely privately funded.

7.2 Analysis: NFL, MLB & NBA Stadium Situations

NFL Stadium Breakdown

Team	Stadium	Year Built	Cost	Private	Public	Public %
49rs	Levi's Stadium	2014	$1.2B USD	$873M USD	$114M USD	27.25%
Bears	Soldier Field	1924	$10M USD	N/A	$10M USD	100%
Bengals	Paul Brown Stadium	2000	$450M USD	$25M USD	$424M USD	94.2%
Broncos	Sports Authority Field at Mile High	2001	$364.2M USD	$91.05M USD	$273.15M USD	75%
Browns	First Energy Stadium	1999	$290M USD	$71M USD	$210M USD	72.4%
Buccaneers	Raymond James Stadium	1998	$168.5M USD	N/A	$168.5M USD	100%
Bills	New Era Field	1973	$22M	N/A	$22M USD	100%
Cardinals	University of Phoenix Stadium	2006	$455M USD	$169M USD	$285M USD	62.6%
Chiefs	Arrowhead Stadium	1972	$43M USD	N/A	$43M USD	100%
Colts	Lucas Oil Stadium	2008	$720M USD	$108M USD	$612M USD	85%
Cowboys	AT&T Stadium	2009	$1.15B USD	$675M USD	$325M USD	28.3%
Dolphins	Hard Rock Stadium	1987	$115M USD	$103.5M USD	$11.5M USD	10%
Eagles	Lincoln Financial Field	2003	$518M USD	$330M USD	$188M USD	36.6%
Faclons	Mercedes-Benz Stadium	2017	$1.6B USD	$1.4B USD	$200M USD	12.5%

Giants	MetLife Stadium	2010	$1.6B USD	$1.6B USD	N/A	0%
Jaguars	EverBank Field	1995	$121M USD	$17M USD	$102M USD	84.3%
Jets	MetLife Stadium	2010	$1.6B USD	$1.6B USD	N/A	0%
Lions	Ford Field	2002	$430M USD	$210.7M USD	$219.3M USD	51%
Packers	Lambeau Field	1957	$0.96M USD	N/A	$0.96M USD	100%
Panthers	Bank of America Stadium	1996	$248M USD	$198M USD	$50M USD	20.2%
Patriots	Gillette Stadium	2002	$325M USD	$325M USD	N/A	0%
Raiders	Oakland Coliseum	1968	$25.5M USD	N/A	$25.5M USD	100%
Ravens	M&T Bank Stadium	1998	$220M USD	$22M USD	$198M USD	90%
Redskins	FedEx Field	1997	$250.5M USD	$180M USD	$70.5M USD	28.1%
Saints	Merdcedes-Benz Superdome	1975	$134M USD	N/A	$134M USD	100%
Seahawks	CenturyLink Field	2002	$360M USD	$108M USD	$251M USD	69.7%
Stealers	Heinz Field	2001	$281M USD	$109.2M USD	$171M USD	60.9%
Texans	NRG Stadium	2002	$449M USD	$256M USD	$194M USD	43.2%
Titans	Nissan Stadium	1999	$290M USD	$70.5M USD	$219.5M USD	75.5%
Vikings	U.S. Bank Stadium	2016	$1.027B USD	$529M USD	$498M USD	48.5%

Table 1. NFL Stadium Breakdown (Fenn & Komisarchick 2017,21; City of San Diego 2015; Murphy 2016; deMause 2017; Wikipedia 2017)

When looking at Table 1, the NFL's stadium situation, we can see that more than half (17/30) of the stadiums have been built with the bulk of the cost coming from the taxpayers. Ten of these stadiums have been built in the last twenty years where the average contribution of tax dollars put toward a stadium was 78.53% (Table 1). That's a humongous amount of money being spent on just one sport/activity in any city; looking at it in dollars that's approximately $2.81B USD committed to ten sports teams by cities over that twenty-year span (Table 1).

There are only seven teams pre-1998 where the bulk of construction dollars came from taxpayers. Those seven teams over a seventy-one-year span had cities spending approximately $0.337B USD which even if you were to adjust for inflation is a far cry from the $2.81B spent in the modern era of sports (Table 1). In the end that works out to taxpayers funding 97.7% of the stadiums built during that period, which makes the astounding total spent in the modern period seem even greater (Table 1).

Now if we look at the teams where the bulk of the funding came from the private sector over the modern twenty-year time span, that gives us a total of ten teams as well. With the taxpayers picking up an average 24.7% of the total construction cost; in dollars it amounts to approximately $1.74B USD being spent by cities (Table 1). That's still a massive amount of money even though the cities weren't on the hook for most of it. Now, there are only three teams pre-1998 that were built with mostly private funds over a ten-year span. The amount cities spent during that time comes to $0.132B USD; over this period taxpayers funded 19.4% of the three stadiums built (Table 1).

MLB Stadium Breakdown

Team	Stadium	Year Built	Cost	Private	Public	Public %
Angles	Angel Stadium	1966	$24M USD	N/A	$24M USD	100%
Astros	Minute Made Park	2000	$250M USD	$85M USD	$180M USD	72%
Athletics	Oakland Coliseum	1968	$25.5M USD	N/A	$25.5M USD	100%
Blue Jays	Rogers Centre	1989	$500M CAD	$185M CAD	$315M CAD	63%
Braves	SunTrust Park	2017	$682M USD	$230M USD	$392M USD	63%
Brewers	Miller Park	2001	$382M USD	$90M USD	$252.12M USD	66%
Cardinals	Busch Stadium	2006	$344M USD	$302.72M USD	$41.28M USD	12%
Cubs	Wrigley Field	1914	$0.03M USD	$0.03M USD	N/A	0%
Diamondbacks	Chase Field	1998	$354M USD	$102.66M USD	$251.34M USD	71%
Dodgers	Dodger Stadium	1962	$23M USD	$23M USD	N/A	0%
Giants	AT&T Park	2000	$306M USD	$291M USD	$15M USD	15%
Indians	Progressive Field	1994	$175M USD	$38.5M USD	$136.5M USD	78%
Mariners	Safeco Field	1999	$517M USD	$144.76M USD	$372.24M USD	72%
Marlins	Marlins Park	2012	$639M USD	$124M USD	$515M USD	80.6%
Mets	Citi Field	2009	$632M USD	$528M USD	$164.4M USD	26%
Nationals	Nationals Park	2008	$611M USD	N/A	$611M USD	100%
Orioles	Camden Yards	1992	$110M USD	$4.4M USD	$105.6M USD	96%
Padres	Petco Park	2004	$449.4M USD	$146M USD	$303.4M USD	67.5%
Phillies	Citizens Bank Park	2004	$458M USD	$229M USD	$229M USD	50%
Pirates	PNC Park	2001	$216M USD	$40M USD	$151.2M USD	70%
Rangers	Globe Life Park	1992	$191M USD	$38.2M USD	$152.8M USD	80%
Rays	Tropicana Field	1998	$115M USD	N/A	$115M USD	100%
Red Sox	Fenway Park	1912	$0.65M USD	$0.65M USD	N/A	0%
Reds	Great American Ball Park	2003	$320M USD	$57.6M USD	$262.4M USD	82%
Rockies	Coors Field	1995	$215M USD	$53M USD	$162M USD	75.3%
Royals	Kauffman Stadium	1973	$43M USD	N/A	$43M USD	100%
Tigers	Comerica Park	2000	$300M USD	$111M USD	$189M USD	63%
Twins	Target Field	2010	$545M USD	$195M USD	$350M USD	64.2%
Whitesox	Guaranteed Rate Field	1991	$150M USD	N/A	$150M USD	100%
Yankees	Yankee Stadium II	2009	$1.6B USD	$800M USD	$220M USD	13.8%

Table 2. MLB Stadium Breakdown (Fenn & Komisarchick 2017,22; Klepal 2014; Hawthorn 2015; Ballparks of Baseball 2017)

Looking at Table 2, the MLB stadiums, is interesting because almost all the ball parks have been financed with mostly tax payer dollars. To be exact, twenty-two of the thirty teams have had their ballparks mostly payed for. Thirteen of the teams have ball parks built within the last twenty years, with an average taxpayer share of 74.5%. In terms of dollars MLB cities have spent $3.94B USD over the twenty-year period. In the MLB's case they have a greater number of newer stadiums which is where the huge amount of money spent comes into play. (Table 2)

There are only nine teams pre-1998 in the MLB that are funded mostly by the taxpayer. These stadiums were built over an almost thirty-year span, where a total of $0.95B USD

was spent; in terms of what the cities average share in these parks are, the nine teams have covered an average of 88% of the cost to build their parks (Table 2). For only a thirty-year span that's a large investment on all the cities parts.

Looking at stadiums where the private sector was responsible for much of the cost, there are only five teams that have provided the majority of the funds needed for their stadiums to be built over the twenty-year span. During this span taxpayers only covered 23.4% of stadium costs, which works out to approximately $0.67B USD (Table 2). That's a good amount of money spent by only five cities over a short period of time. In the MLB there are only three teams pre-1998 that covered most of the cost of building their stadiums. Out of those three cities, taxpayers were on the hook for none of the cost; these three stadiums were built with only private funds (Table 2).

NBA Stadium Breakdown

Team	Stadium	Year Built	Cost	Private	Public	Public %
76'rs	Wells Fargo Center	1996	$210M USD	$174.5M USD	$35.5M USD	16.9%
Bucks	BMO Harris Bradley Center	1988	$90M USD	$90M USD	N/A	0%
Bulls	United Center	1994	$175M USD	$175M USD	N/A	0%
Calveliers	Quicken Loans Arena	1994	$152M USD	$79.04M USD	$72.96M USD	48%
Celtics	TD Garden	1995	$160M USD	$160M USD	N/A	0%
Clippers	Staples Center	1999	$375M USD	$336.5M USD	$38.5M USD	10%
Golden State Warriors	Oracle Arena	1966	$25.5M USD	N/A	$25.5M USD	100%
Grizzlies	FedEx Forum	2004	$250M USD	$20.06M USD	$228M USD	91.2%
Hawks	Philips Arena	1999	$213.5M USD	$20.25M USD	$193.25M USD	90.5%
Hornets	Spectrum Center	2005	$265M USD	N/A	$265M USD	100%
Jazz	Vivint Smart Home Arena	1991	$94M USD	$94M USD	N/A	0%
Kings	Golden 1 Center	2016	$534.6M USD	$279.6M USD	$255M USD	47.7%
Knicks	Madison Sqaure Garden	1968	$123M USD	$123M USD	N/A	0%
Lakers	Staples Center	1999	$375M USD	$336.5M USD	$38.5M USD	10%
Magic	Amway Center	2010	$480M USD	*$160M USD	*$320M USD	*66.6 %
Mavericks	American Airlines Center	2001	$400M USD	$245M USD	$155M USD	38.75 %
Nets	Barclays Center	2015	$1B USD	*$200M USD	*$800M USD	*80%
Nuggets	Pepsi Center	1999	$180M USD	$180M USD	N/A	0%
Pacers	Bankers Life Fieldhouse	1999	$183M USD	$95M USD	$88M USD	48.1%
Pelicans	Smoothie King Center	1999	$84M USD	N/A	$84M USD	100%
Pistons	Little Caesars Arena	2017	$863M USD	$539M USD	$324M USD	47.5%
Raptors	Air Canada Centre	1999	$250M CAD	$250M CAD	N/A	0%
Rockets	Toyota Center	2003	$235M USD	N/A	$235M USD	100%
Spurs	AT&T Center	2002	$186M USD	N/A	$186M USD	100%
Suns	Talking Stick Resort Arena	1992	$90M USD	$54.9M USD	$35.1M USD	39%
Trail Blazers	Moda Center	1995	$262M USD	$46M USD	$216M USD	82.4%

Thunder	Chesapeake Energy Arena	2002	$89M USD	N/A	$89M USD	100%
Timberwolves	Target Center	1990	$104M USD	N/A	$104M USD	100%
Wizards	Capital One Arena	1997	$260M USD	$200M USD	$60M USD	23.1%

Table 3. NBA Arena Breakdown (Fenn & Komisarchick 2017,23; Kasler 2016; Muret 2010)

After analysing the info in Table 3, of the major three North American sports the NBA has the lowest number of arenas built with public funds. What makes this interesting is that after comparison with the NHL situation there are ten arenas that are shared between the leagues; so, in theory, they would be able to split the cost to build the arena between each other, assuming they have separate ownership. Regardless, when it comes to shared facilities almost no public funds are used. Only five of them use public funds, with the greatest share being under 50% (Table 3).

There are only twelve NBA arenas that have been built with mainly taxpayer funds, nine of which have been built in the past 20 years. Those nine cities had public funds cover an average of 92% of the total cost of the arena (Table 3). In dollars those nine cities spent $2.4 Billion USD which is the lowest of the major three sports (Table 3). While that's still a great amount of money spent, it's nowhere near the amount spent by the other sports. The low cost is likely because of the size of the venues; the capacity of NBA arenas are similar to the NHL, with about eighteen to twenty thousand. While the other two sports would be upward of thirty thousand (Fenn & Komisarchick 2017).

Only three stadiums have been built pre-1998 that are built with mostly public funds, averaged out they covered 94.1% of their stadiums cost (Table 3). The three cities together only spent about $345.5 Million USD (Table 3). It's somewhat surprising that there are only three arenas built before the modern era that used public funds, none of which are shared with another team. That could point to having teams in the same city share facilities as an advantage for the taxpayers.

There are eight NBA arenas where private funds accounted for the majority of the budget that were built in the past twenty years. Those eight cities spent a total of $899 Million USD combined, in terms of overall percentage of build cost it works out to an average of 25.25% on the cities behalf (Table 3). Out of the other two major sports the NBA has spent the least when helping to cover a portion of modern arena costs. Again, the fact that five of the arenas house two teams could be a contributing factor for the lowered cost of these facilities. Now there are nine stadiums that were built pre-1998, that use mostly private funds, five of these arenas house two teams. The nine city's combined spending on their arenas totalled $77.9M USD, with an average build share of 14.1% (Table 3).

7.3 Analysis: Modern Arenas (NHL, NFL, MLB, NBA)

Team	Stadium	Year Built	Cost	Private	Public	Public %
Hurricanes (NHL)	PNC Arena	1999	$158M USD	$25.5M USD	$132.72M USD	84%
Avalanche (NHL)	Pepsi Center	1999	$180M USD	$180M USD	N/A	0%
Blue Jackets (NHL)	Nationwide Arena	2000	$150M USD	$150M USD	N/A	0%
Stars (NHL)	American Airlines Center	2001	$400M USD	$245M USD	$155M USD	38.75%
Red Wings (NHL)	Little Caesars Arena	2017	$863M USD	$539M USD	$324M USD	37.5%
Oilers (NHL)	Rogers Place	2016	$483.5M CAD	$132.5M CAD	$351M CAD	72.6%
Panthers (NHL)	BB&T Center	1998	$212M USD	$27.3M USD	$184.7M USD	87.1%
Kings (NHL)	Staples Center	1999	$375M USD	$336.5M USD	$38.5M USD	10.3%
Wild (NHL)	Xcel Energy Center	2000	$130M USD	$35M USD	$95M USD	73.1%
Predators (NHL)	Bridgestone Arena	1998	$144M USD	N/A	$144M USD	100%
Devils (NHL)	Prudential Center	2007	$375M USD	$100M USD	$275M USD	73.3%
Islanders (NHL)	Barclays Center	2015	$1B USD	*$200M USD	*$800M USD	*80%
Penguins (NHL)	PPG Paints Arena	2010	$321M USD	$121.98M USD	$199.02M USD	62%
Leafs (NHL)	Air Canada Centre	1999	$250M CAD	$250M CAD	N/A	0%

Table 4.1 NHL Modern Arena's (TLHocking and Associates 2012; Slowly 2017; City of Edmonton 2017; Robbins 2012; PittsburghHockey 2017)

Represented in Table 4.1 is the NHL, there are fourteen NHL arenas that have been constructed in the modern era. Almost half were built before the year 2000 and looking at the numbers it's interesting to see that there are two arenas that the public had no contribution toward, and one that had almost no contribution; those three being Colorado, Toronto, and Los Angeles (Table 4.1). The other three built before 2000 were almost completely built using taxpayer funds; the teams being Nashville, Florida and Carolina (Table 4.1). What's interesting about the vast difference in taxpayer fund usage among the six teams is that the cities that didn't provide a ton of money had teams who were established and were successful, whereas the other three teams were expansion or relocation teams who are in markets where it's tough for hockey to compete with the other sports. It will be interesting to see down the line, if and when those teams need a new arena, if the city or the team covers the bulk of the cost.

Now, there are eight NHL teams with arenas built in the year 2000 or later. The times in which they are built give us a good idea as to how taxpayer usage in the NHL has evolved. There are three teams who built in the 2000-2001 range; those being the Blue Jackets, Stars and Wild. Again, they are all quite different, the Jackets used no taxpayer funds, the Stars used about 37% and the Wild used 73%. (Table 4.1) There is an interesting shift that happens, these three teams are expansion and relocation teams as well; however, they use considerably fewer taxpayer dollars. That could be in part due to the fact that the Stars share their arena with an NBA team, so the two teams could contribute more than a single team can. The other five arenas built in the modern era are arenas that have been built very close to now, the oldest of those being built in 2007 and the newest opening in 2017. What's interesting about these teams is that taxpayer funds account for most of their funds used in construction. Only one team, the Detroit Red Wings, covered the bulk of the costs; however, due to the enormous cost of their building, the City of Detroit's contribution matches or exceeds the contribution of other cities toward their teams. (Table 4.1)

Going off the numbers it's safe to say that in the NHL the current trend is leaning toward having your arena built with taxpayer funds. Whether it's from the humongous cost of arenas now or the games popularity in their region, owners are not wanting to foot the bill to give their teams new arenas. The cities where these teams are located are seemingly willing to spend hundreds of millions to keep the team playing there.

Team	Stadium	Year Built	Cost	Private	Public	Public %
49rs (NFL)	Levi's Stadium	2014	$1.2B USD	$873M USD	$114M USD	27.25%
Bengals (NFL)	Paul Brown Stadium	2000	$450M USD	$25M USD	$424M USD	94.2%
Broncos (NFL)	Sports Authority Field at Mile High	2001	$364.2M USD	$91.05M USD	$273.15M USD	75%
Browns (NFL)	First Energy Stadium	1999	$290M USD	$71M USD	$210M USD	72.4%
Buccaneers (NFL)	Raymond James Stadium	1998	$168.5M USD	N/A	$168.5M USD	100%
Cardinals (NFL)	University of Phoenix Stadium	2006	$455M USD	$169M USD	$285M USD	62.6%
Colts (NFL)	Lucas Oil Stadium	2008	$720M USD	$108M USD	$612M USD	85%
Cowboys (NFL)	AT&T Stadium	2009	$1.15B USD	$675M USD	$325M USD	28.3%
Eagles (NFL)	Lincoln Financial Field	2003	$518M USD	$330M USD	$188M USD	36.6%
Faclons (NFL)	Mercedes-Benz Stadium	2017	$1.6B USD	$1.4B USD	$200M USD	12.5%

Giants (NFL)	MetLife Stadium	2010	$1.6B USD	$1.6B USD	N/A	0%
Jets (NFL)	MetLife Stadium	2010	$1.6B USD	$1.6B USD	N/A	0%
Lions (NFL)	Ford Field	2002	$430M USD	$210.7M USD	$219.3M USD	51%
Patriots (NFL)	Gillette Stadium	2002	$325M USD	$325M USD	N/A	0%
Ravens (NFL)	M&T Bank Stadium	1998	$220M USD	$22M USD	$198M USD	90%
Seahawks (NFL)	CenturyLink Field	2002	$360M USD	$108M USD	$251M USD	69.7%
Stealers (NFL)	Heinz Field	2001	$281M USD	$109.2M USD	$171M USD	60.9%
Texans (NFL)	NRG Stadium	2002	$449M USD	$256M USD	$194M USD	43.2%
Titans (NFL)	Nissan Stadium	1999	$290M USD	$70.5M USD	$219.5M USD	75.5%
Vikings (NFL)	U.S. Bank Stadium	2016	$1.027B USD	$529M USD	$498M USD	48.5%

Table 4.2 NFL Modern Stadiums/Arenas (Fenn & Komisarchick 2017,21; City of San Diego 2015; Murphy 2016; deMause 2017; Wikipedia 2017)

When you look at Table 4.2, the situation with the stadiums/arenas in the NFL, you see that there have been a lot of stadiums built in the past twenty years. A total of twenty NFL stadiums/arenas have been built in what we're considering to be the modern era. Only four were built before the year 2000; those being the Browns, Buccaneers, Ravens and Titans. What's interesting is all of them used mostly tax dollars to pay for their venues; in fact, all four are at almost have 75% of the cost covered with tax dollars and range from just under $170M USD to $219M USD in taxpayer funds (Table 4.2).

Teams built in the year 2000 or later account for most of the NFL stadiums/arenas, with a total of sixteen being completed since then. Six of these stadiums were built with most funds coming from the public sector; those being the Bengals, Broncos, Cardinals, Colts, Seahawks and Steelers (Table 4.2). The cities that house these teams covered as little as 60% and as much as 94% of the total cost; in dollars between $170M USD and $612M USD were spent on the stadiums (Table 4.2). The oldest of the stadiums was built in 2000 and the newest of these was built in 2008, so what's interesting is the range of money being spent in just an eight-year period. As you get closer to the current date the total cost of stadiums being built are increasing enormously, and cities are committing

substantial funds to have the best venue. Which is what makes the remaining nine stadiums situation interesting. The remaining teams left are the 49ers, Cowboys, Eagles, Falcons, Giants & Jets, Lions, Patriots, Texans and Vikings. Four of the stadiums were built before 2005, while the remaining were built in 2009 or later. What might be a surprise is that two of these stadiums were built with no public funds at all, both of which are relatively new. The other teams covered anywhere from 12.5% to 51%, which is surprising considering the cities where newest stadiums were built contributed the least percentage wise and nearly the least dollar wise. (Table 4.2) The teams seem to be willing to pay for their stadiums or maybe now the cities are less willing to do so.

It's clear that in the NFL today the teams seem to be taking greater responsibility when it comes to covering the costs associated with building these giant billion-dollar stadiums. It is unclear whether this is due to cities no longer being willing to cover such a large percentage of the stadiums, or the teams themselves wanting to be the owners of their own buildings and avoid the bargaining on payments and other expenses. But, the result is the same; public funds are being used at a decreasing rate.

Team	Stadium	Year Built	Cost	Private	Public	Public %
Astros	Minute Made Park	2000	$250M USD	$85M USD	$180M USD	72%
Braves	SunTrust Park	2017	$682M USD	$230M USD	$392M USD	63%
Brewers	Miller Park	2001	$382M USD	$90M USD	$252.12M USD	66%
Cardinals	Busch Stadium	2006	$344M USD	$302.72M USD	$41.28M USD	12%
Diamondbacks	Chase Field	1998	$354M USD	$102.66M USD	$251.34M USD	71%
Giants	AT&T Park	2000	$306M USD	$291M USD	$15M USD	15%
Mariners	Safeco Field	1999	$517M USD	$144.76M USD	$372.24M USD	72%
Marlins	Marlins Park	2012	$639M USD	$124M USD	$515M USD	80.6%
Mets	Citi Field	2009	$632M USD	$528M USD	$164.4M USD	26%
Nationals	Nationals Park	2008	$611M USD	N/A	$611M USD	100%
Padres	Petco Park	2004	$449.4M USD	$146M USD	$303.4M USD	67.5%
Phillies	Citizens Bank Park	2004	$458M USD	$229M USD	$229M USD	50%
Pirates	PNC Park	2001	$216M USD	$40M USD	$151.2M USD	70%
Rays	Tropicana Field	1998	$115M USD	N/A	$115M USD	100%
Reds	Great American Ball Park	2003	$320M USD	$57.6M USD	$262.4M USD	82%
Tigers	Comerica Park	2000	$300M USD	$111M USD	$189M USD	63%
Twins	Target Field	2010	$545M USD	$195M USD	$350M USD	64.2%
Yankees	Yankee Stadium II	2009	$1.6B USD	$800M USD	$220M USD	13.8%

Table 4.3 Modern MLB Stadiums/Arenas (Fenn & Komisarchick 2017,22; Klepal 2014; Hawthorn 2015; Ballparks of Baseball 2017)

Looking at Table 4.3, Major League Baseball's stadium/arena situation, there are eighteen stadiums that have been built in the modern era; six built in the year 2000 or earlier and twelve built after 2000. From the stadiums built in 2000 or earlier, all but one has been built with mostly taxpayer funds; that team being the Giants, who's stadium used public funds accounting for only 15% of the total cost (Table 4.3). The remaining five teams being the Astros, Diamondbacks, Mariners, Rays and Tigers have all had their stadiums built with the bulk of funds coming from the public sector. These five teams are all similar in the percentage of taxpayer dollars used ranging from 63%-100%, with two of the teams being in the 70% range (Table 4.3). The lowest amount contributed by one of these cities is $115M USD, while the highest amount contributed is $372M USD. So, while the percentages aren't all over the map, it's clear that the cost of MLB stadiums varied greatly in just a few years' time (Table 4.3).

Now when it comes to the twelve stadiums built after the year 2000 only four have been built without the bulk of funds coming from the public. Those four being the Cardinals, Mets, Phillies and Yankees. The Phillies split the cost 50/50 with public and private funds, while the other three teams used a contribution of 26% or less. (Table 4.3) The years when these stadiums were constructed range from 2004-2009 and are clearly outside the norm when it comes to using public funds from 2000 onward. The remaining eight teams built their stadiums in a period between 2001-2017; two of them being built in 2001 while the remainder range from 2004 onward. The range of public contributions is 63%-100%, now this is interesting as this happens to be the same range as the stadiums built before 2000 (Table 4.3). So, while the amount of dollars being spent is much higher, the cities' contributions are staying similar, so the dollar amount is coming from the rising cost of creating state of the art stadiums.

It's clear that when it comes to the MLB the trend is having the bulk of the stadium costs covered by the taxpayers. The overall percentage of taxpayer contributions however has not gone up in the modern era of stadiums. It is possible that the average has decreased over the years since the year 2000 and earlier; however, there is just a small sample size from this period.

Team	Stadium	Year Built	Cost	Private	Public	Public %
Clippers (NBA)	Staples Center	1999	$375M USD	$336.5M USD	$38.5M USD	10%
Grizzlies (NBA)	FedEx Forum	2004	$250M USD	$20.06M USD	$228M USD	91.2%
Hawks (NBA)	Philips Arena	1999	$213.5M USD	$20.25M USD	$193.25M USD	90.5%
Hornets (NBA)	Spectrum Center	2005	$265M USD	N/A	$265M USD	100%
Kings (NBA)	Golden 1 Center	2016	$534.6M USD	$279.6M USD	$255M USD	47.7%

Lakers (NBA)	Staples Center	1999	$375M USD	$336.5M USD	$38.5M USD	10%
Magic (NBA)	Amway Center	2010	$480M USD	*$160M USD	*$320M USD	*66.6%
Mavericks (NBA)	American Airlines Center	2001	$400M USD	$245M USD	$155M USD	38.75%
Nets (NBA)	Barclays Center	2015	$1B USD	*$200M USD	*$800M USD	*80%
Nuggets (NBA)	Pepsi Center	1999	$180M USD	$180M USD	N/A	0%
Pacers (NBA)	Bankers Life Fieldhouse	1999	$183M USD	$95M USD	$88M USD	48.1%
Pelicans (NBA)	Smoothie King Center	1999	$84M USD	N/A	$84M USD	100%
Pistons (NBA)	Little Caesars Arena	2017	$863M USD	$539M USD	$324M USD	47.5%
Raptors (NBA)	Air Canada Centre	1999	$250M CAD	$250M CAD	N/A	0%
Rockets (NBA)	Toyota Center	2003	$235M USD	N/A	$235M USD	100%
Spurs (NBA)	AT&T Center	2002	$186M USD	N/A	$186M USD	100%
Thunder (NBA)	Chesapeake Energy Arena	2002	$89M USD	N/A	$89M USD	100%

Table 4.4 Modern MLB Stadiums/Arenas (Fenn & Komisarchick 2017,23; TLHocking and Associates 2012; Slowly 2017; Kasler 2016; Muret 2010)

After analysing Table 4.4, The National Basketball Association's stadium/arena situation, there are seventeen stadiums that have been built in the modern era; seven that have been built in the year 2000 or earlier and ten built after 2000. Looking at the stadiums built in 2000 or earlier, only two of the stadiums have been built with mostly taxpayer funds; the two teams being the Hawks and Pelicans, who contributed an average of 95.25% toward the total build cost (Table 4.4). The five teams remaining from this period; the Clippers, Lakers, Nuggets, Pacers and Raptors have all had their stadiums built with the majority of funds coming from the private sector. In the case of these teams the average percentage of contribution is 13.62%. However, most of the cities contributed almost nothing with the greatest contribution dollar wise at $88M USD (Table 4.4). It's clear at this point that spending before the year 2000 is low. Part of this can be attributed to the fact that four of the teams are dual use facilities.

Now there are ten stadiums built after the year 2000; only three have been built without the bulk of funds coming from the public. Those three being the Kings, Mavericks and Pistons. One interesting point to note is that two of these are dual-sport facilities. The greatest contribution from a city to construction is by Detroit who houses the Pistons and Red Wings (NHL) and comes in at $324M USD (Table 4.4). The highest contribution percentage wise comes from Sacramento, where the Kings reside, at 47.7% (Table 4.4). The remaining seven teams being the Grizzlies, Hornets, Magic, Nets, Rockets, Spurs and Thunder all used mostly public funds to build their stadiums. The total contribution ranges from anywhere between $89M USD and $800M USD; percentage wise the average contribution is about 91% (Table 4.4). It's interesting to see just how much the contribution has jumped in a short period of time, however, there are still several teams where their buildings aren't heavily reliant on publics funds.

It's clear that when it comes to the NBA, the turn of the century brought an increase in the use of public money, but as we get closer to the current date the amount of tax payer funded arenas is starting to decrease (Table 4.4). The big question now is if in the future more multi-sport facilities will house NBA teams as there seems to be a much lower public cost associated with that set up.

8 Discussion

8.1 Conclusion of Work

The results of the data we looked at provides us with a very good idea of how public funds have been used and how they might be used in the future. In addition, we have a much better understanding of where exactly the public funds come from when building these arenas/stadiums. If we go back to the three fundamental issues the thesis was meant to answer and give perspective on we analysed:

- How are pro hockey arena deals structured (NHL)?
- How much taxpayer money is used in the other major sports leagues past and present?
- What is the current trend for cost distribution in modern arenas?

Starting with the first question, we looked at how exactly the arena deals are structured in pro hockey, in this case the model is the NHL. Now, a common perception could be that it comes from some sort of pool of funds the city has for certain projects, or a city might take a loan and raise taxes to pay it off over a certain period. However, what was interesting was how complicated some of the deals are; some of the deals are structured very creatively so that the cost to the average taxpayer is minimized, or outright absent in a few cases. A few of the common ways cities payed for these arenas were through some form of bond that needed to be payed within so many years; some of these were taken on by the city, the state/province, or sometimes both. Also, some sort of unspecified taxes were used in a lot of the cases, whether or not property tax is used is unclear; however, an increase in sales tax is one certain way to recoup some of the dollars spent. (TLHocking and Associates 2012) In some cases cities will have a fund used for public development and that money is used to help fund arena construction, as is the case in Edmonton, which usually has some stipulation where the arena is then owned by the city or receives the revenue from naming rights (City of Edmonton). Some of the more creative ways to pay for arenas is through hotel taxes or rental car taxes, which are put toward paying off loans taken out for construction (TLHocking and Associates 2012). Other times, municipalities will take advantage and use an extra tax on gas or add a surcharge to game tickets for the same purpose (City of Edmonton). What ends up happening in these cases is that visitors to the city or those who are actually attending the games end up paying for the public's share, instead of by individual tax payers. The goal moving forward if public funds are to be used is to get creative with how the money is repaid, that way the blow to the city and taxpayers is lessened in the long run.

The second question, on taxpayer usage in the other three leagues, needs to be answered by looking at each sport individually. In the case of the NFL we gathered all the data into Table 1 and analysed it; what was found is that pre-1998 the amount of taxpayer funds used was $0.337B USD, while this no small amount, when you look at the amount spent moving onward it is relatively insignificant. The amount of money spent after 1998 totals $2.81B USD; However, the stadiums built pre-1998 had on average a higher rate of cost being covered than after 1998. So, the huge leap in funds spent can be attributed to soaring build cost.

In Table 2 we have the data gathered on MLB teams and what was discovered from that section was that cities that spent funds on stadiums before 1998 totalled $0.95B USD and covered an average 88% of the total build costs. Anywhere from 1998 and later cities spent $3.94B USD. What's interesting is that the average percentage of the total cost is lower and comes in at 74.5%. Again, the case is that build costs rose while contribution from cities dipped slightly.

Finally, we analysed the NBA arenas, which was covered in Table 3. What was interesting about the spending with this league compared to the others is that there are many dual-sport facilities that are shared between the NBA/NHL and the amount of public funds used was much lower. Before the year 1998, cities where an NBA team was present contributed $345.5M USD and averaged 94.1% of the total cost; granted the low cost comes from the fact that only three stadiums in use were built in this period. After 1998, NBA cities spent $2.4B USD and covered an average of 92% build cost. What's interesting here is that unlike the other two sports the amount of contribution to the arenas hadn't changed much, just the frequency of projects and rise in cost had increased.

The final question regarded looking at what the current trends are today when it comes to public funds being used, the arenas looked at were built anywhere from 1998 until now. Again, it's better to look at each sport individually than as a whole. Starting with the NHL, Table 4.1 showed that before the year 2000, there were six arenas that were built. Three of the arenas used little to no public funds, while the other three used mostly public funds to build their arenas. The early 2000's doesn't appear to have much consistency when building arenas, meaning the amount contributed by the public is all over the place. Whether this is because of more expansion teams joining the mix is unclear. As we move closer to the present what we find is that taxpayer funds account for most of the funds used in construction, the Detroit Red Wings being the only team that covered the bulk of the costs percentage wise. It's clear that the current trend in the NHL is to try and use public money to cover the cost of new arenas.

When it comes to the NFL, Table 4.2 proved that before the year 2000 all of the teams used public money to a great extent to build their arenas. The early and mid-2000's appear to be more of the same, sometimes cities would spend less. However, the newest NFL stadiums have the bulk of their costs covered with private funds, which is a departure from the status quo. It will be interesting to see if this is the new norm moving forward or if public money starts to be used again.

The third sport looked at was Major League Baseball, and the results are fairly interesting when compared to the other two sports. In Table 4.3 we again analysed the teams where stadiums were built before the year 2000 and then the teams after. The interesting bit is that public funding, percentage wise, has pretty much stayed the same from before 2000 and with the stadiums built very recently. Now there are of course some outliers, but the range and rate has largely stayed the same. The big difference between the early built stadiums and the new ones is the cost, so while cities housing an MLB team are covering the same percentage of new stadiums they are spending more. Whether the rise in cost is proportional to the rise in money made in these stadiums is unknown.

The final league looked at was the NBA, and the results from analysing Table 4.4 show that before the year 2000 most of the arenas built were done with private funds. The public in these cases did not make much contribution at all. After the year 2000 public funds are heavily relied on which is quite the departure in such a short time; there were only three teams that didn't use mostly public funds out of the ten arenas that were built. What's interesting is that two of the three arenas house two teams. It's tough to say with certainty what the trend is, the existence of the multi-sport arenas skews the results a bit. What is clear though is that almost all the arenas built recently, that aren't multi-sport, have heavily used public money.

8.2 Research Problems & Recommendations

First, I'd like to start with some of the issues faced during the research and writing of the thesis. There were really two big issues that came up when researching, the most obvious issue was that the topic itself hasn't been explored very deeply over the years. There are a few studies that have come out that are very general and usually include information about all the leagues. While that gives you some decent overall statistics to create a foundation, it makes it very difficult to get a very detailed analysis of each sport individually. This is important because there needs to be plenty of info to make any comparison amongst the sports. Another key issue faced is the fact that the data and information that has been collected isn't the most detailed or is sometimes missing some numbers here or

there which causes you to possibly have multiple sources for one little section of information. It also makes it difficult to then compare in certain instances if there is a lot of information about one sport and not much about another. It would have been nice if there were some studies, similar to the TLHocking and Associates commission on NHL operations, for the other sports. That way you would get a more detailed look into the differences of how they are owned and operated. As far as other issues faced there weren't many other ones, but the two major ones were enough that it added a considerable amount of work just sorting through what there was, so I could make a solid comparison and analysis.

When looking at the results of the thesis I think there are a few points that stand out. One being that the information regarding how the NHL arenas are funded and set-up is more complicated than one might think if taxpayers were to hear that their city is funding their team's new arena. It's not as simple as a property tax raise, or simply taking money out of a city projects fund, a lot of the time if cities and clubs are willing to sit down there are a lot of ways both parties seem to come away happy. Also, it's not as simple as saying in some cases public funding for pro hockey is bad or good, whether or not it's a viable situation seems to strongly depend on a number of factors that need to be explored further. Another point is that there needs to be a greater amount of detailed information on the other four major leagues and their stadiums; this way there is a possibility for a much deeper comparison looking at if the different leagues use different funds or taxes to get the stadiums/arenas built. This would improve accuracy since you aren't simply looking at dollar amounts but where exactly the dollars are coming from. It would be beneficial to have all of this information comprised in one location moving forward for public and private reference. One more point regarding the results is that when looking at the current trends it was interesting to see that there isn't really any overall trend when you combine all the sports. One league starts using more public funds, one starts using more private funds, another uses generally the same amount as they have the past twenty years, and one is somewhere in the middle by having some that use mostly private and some see a leap in amount of public funds. What that seems to indicate, is that in the future, the sports need to just compare using their own league, instead of comparing them to all the others.

I think while there is a solid base I would have liked to have had some deeper information available to draw from. Moving forward I think there needs to be a lot more work put in to the topic before the debate on taxpayer funded arenas is over. One piece of data that needs to be examined in the future is all the information on how all the arenas currently housing teams are operated and owned, as well as how the deals themselves are constructed. That way there is an easily accessible look at how the funds are used in all the

sports; right now, there isn't a fully complete look into all these. Building off of that there needs to be some kind of study that looks at the trend in the use of public funds. Not just the increase in percentage of the public funds, because there is already enough on that, but then tracking the increase in profits over the years. To say whether or not public financing is worth it for sure you need to see how the profits have increased for both the city and the team. While it's unlikely teams or cities would be willing to release that information over such a long period of time, it would add a lot to the debate in that you can then see if the owners are making way more money every year than they ever have should the city then need to help out. Likewise, if the team isn't making much money they may be in need of public funds to stay in their current market. Another key aspect that needs to be addressed is the difference in state or provincial taxes and if that has any bearing on the decision to use public funds. Certain states or provinces will have different property tax rates and rules for commercial businesses; and to know if this makes an impact on teams use of public funds could go a long way to saving municipalities money. If all this information is recorded, then the only doubt left would be what do the numbers say? At that point the cities and the public would have all the information they could need to make an informed decision.

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