J.P.Morgan

EYE ON THE MARKET | SPECIAL EDITION

A Piece of the Action

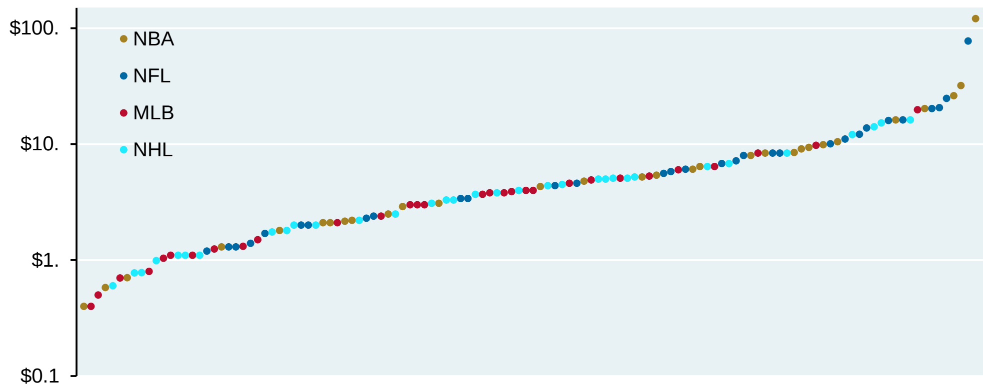
Investing in professional sports leagues and related businesses. As rules around private equity ownership of sports leagues expand, we review team valuations and profitability, emerging sports categories, streaming and broadcast revenues, the decline of regional sports networks, drivers and comparisons of league parity, relegation and financial pressures in the English Premier League, stadium subsidies, sports betting and other adjacent businesses, antitrust issues, the esports winter, the worst teams that money can buy and the best basketball players of all time.

By **Michael Cembalest** | Chairman of Market and Investment Strategy for J.P. Morgan Asset & Wealth Management

A piece of the action: investing in professional sports leagues and related businesses

I've never written on sports team ownership before. The simple reason: historically it has been confined to a small cohort of extremely wealthy individuals. The chart shows the estimated net worth of current control owners in basketball, football, baseball and hockey. The majority are individuals whose net worth ranges from $1 to $10 billion, and we had to use a log scale to capture the ones higher than that. In other words, sports team ownership has typically not been accessible to the average individual or diversified institutional investor.

Net worth of major league sports team control owners
US$, billions, log scale



Source: JPMAM, May 2024

Ownership rules have been changing. Most major US sports leagues now allow a select group of private equity funds to own minority stakes in individual teams, and for the same funds to own multiple stakes in multiple teams. The table shows the latest rules as we understand them. The ownership of minority stakes has become more popular in recent years; 45% of global sports deals in 2023 were minority investments, and ~60% of sports deals in the big four US sports were minority investments[1]. With the latest rule changes, select funds and their LPs can increasingly invest in franchise minority stakes alongside individuals.

North American leagues' private equity rules

	Year first allowed	Maximum private equity ownership of a single team across firms	Maximum private equity ownership of a team by a single fund	# of teams a fund can own	Sovereign Wealth Funds permitted?
NBA	2021	30%	20%	5	✓
MLB	2019	30%	15%	Unlimited	
NHL	2021	30%	20%	5	✓
MLS	2020	30%	20%	4	
NFL	Pending	Pending	Pending	Pending	

Source: Bloomberg, Sportico, 2024

Sports investing extends well beyond ownership of professional sport franchises and includes companies focused on real estate, media, operations, collectibles, personal fitness, player management, sports betting and more. This Eye on the Market special issue looks at valuations, team operating margins, drivers of league parity (revenue-sharing, salary caps), broadcast and streaming revenues, attendance and ticket prices, comparisons to European soccer, emerging sports leagues, the controversy around stadium subsidies, sports betting and other adjacent businesses, the esports winter, the worst teams money can buy and a trichotomy chart showing the best basketball players of all time.

Michael Cembalest
JP Morgan Asset Management

[1] "*Deloitte's 2024 Sports Investment Outlook*", Deloitte, March 2024. Currently, there are 24 minority owners in the MLB, 138 in the NBA and 90 in the NFL

Table of Contents

What are private equity funds planning on investing in and lending to?

The decision by US sports leagues to allow private equity ownership has prompted the creation of investment funds that include franchises along with sports-adjacent companies. The table outlines investment categories that some funds are contemplating. A few points:

- Investment firms are generally prohibited from buying minority stakes if any fund they control invests in sports gambling, player management or other businesses that represent players in some capacity
- If a control owner in a given league is also a private equity principal, that PE firm would be unable to invest in that league since the PE principal/sports owner would have access to confidential information
- There are a few sports teams that are publicly traded: Atlanta Braves, Manchester United and the New York Knicks/Rangers. Although the public can buy a stake in these franchises, voting power rests with control owners whose Class B shares entail 10 times the voting power of public Class A shares[2]
- Some sports businesses are subsidiaries and not accessible as pure play investments: ESPN (Disney), TNT Sports (WB Discovery), CBS Sports (Paramount), FOX Sports (Fox Corporation) and NBC Sports (Comcast)
- As a result, the ability to construct a diversified portfolio of professional sports and related investments might be greater in private markets than in public markets. Whether a traditional private equity holding period of 5-7 years is ideal for sports investing remains to be seen

Teams	**Collectibles**
Majority ownership in sport franchises**	Trading cards, memorabilia, NFTs
Minority ownership in sports franchises	Apparel
Players/Talent	**Real Estate**
Player performance related services*	Sports team and stadium financing
Sports analytics software	Arenas/tracks/golf courses
Sports agencies	Arena adjacent property developments
Underwriting player contracts	Sports adjacent fitness franchises
Media	**Operations**
Media rights and streaming	Venue mgmt (tickets, sponsors, concessions, etc.)
Social media/fan engagement	Equipment for arena, event operations and athletes
Media outlets that cater to sports fans	Third party ticketing apps
Leagues	**Betting**
Emerging sport leagues	Fantasy sports
Youth sport academies	Betting apps/sites
Summer camps	Live sports books
Video games	
E-sports (streaming, competitions)	
Sports video games	

*Includes player training, coaching and development; physical rehabilitation, biomechanics, nutrition, mental strategy, etc.

**While majority ownership by private equity funds is not currently permitted in the 4 largest US sport leagues, some emerging and international leagues permit it

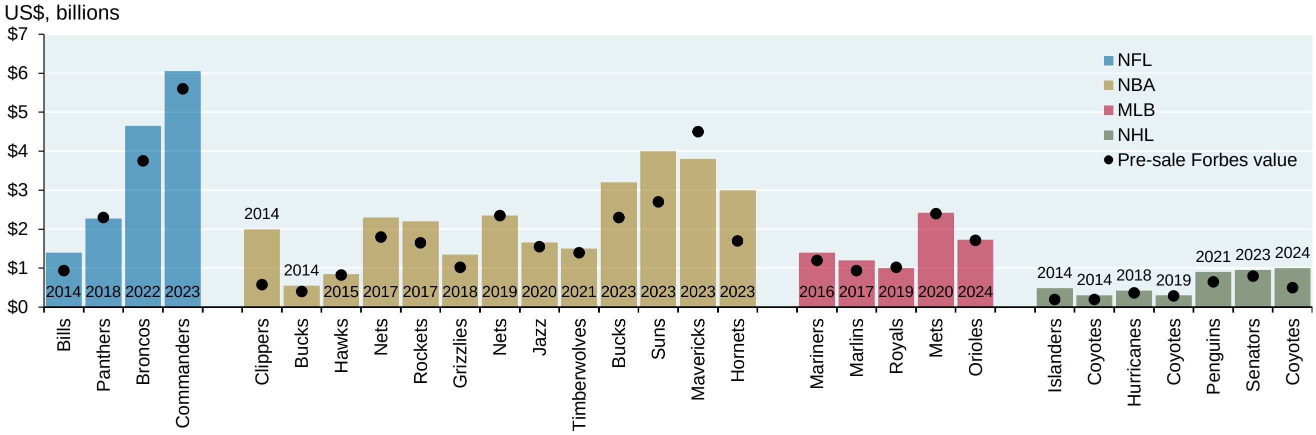
[2] John Malone controls ~50% voting power over the Atlanta Braves; the Glazer family controls 69% voting power over Manchester United; and the Dolan family controls 71% voting power over the Knicks and Rangers (MSGS)

Valuations, transactions, debt levels and operating margins for the four major US sports leagues

Owners of professional sports franchises have three different diversified sources of revenue: (a) shares of league distributions from revenue-sharing, (b) a protected marketing area in which to build a consumer brand and a premium live entertainment business, and (c) ancillary businesses related to the stadium, media and other operating assets. All US sports leagues essentially function as very lightly regulated monopolies under the Sherman Act (see Appendix I for more details), which is a substantial contributor to value creation as well.

The most frequently cited valuations for sports franchises come from Forbes and Sportico. The chart shows franchise sales since 2014; note how remarkably close actual sales prices (bars) were in most cases compared to Forbes' estimated pre-sale appraisals (dots).

NBA, NFL, NHL, and MLB sale values since 2014
US$, billions



Source: JP Morgan Sports Coverage Team, 2024

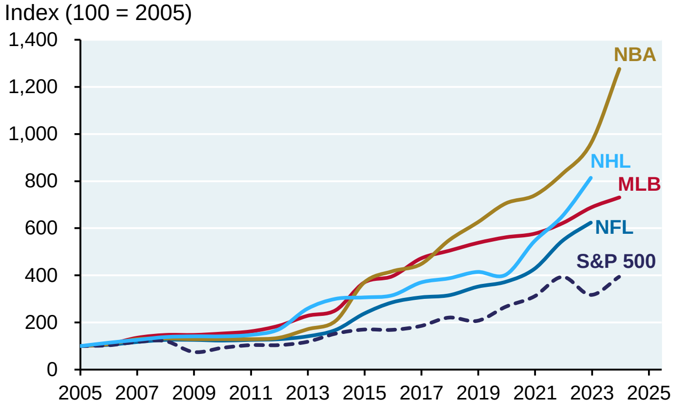
Actual sales transactions, 2022-2024

	NBA				NFL		NHL		MLB
Year	2023	2023	2023	2023	2023	2022	2024	2023	2024
Team	Suns	Hornets	Bucks	Mavericks	DC Comm	Broncos	Coyotes	Senators	Orioles
Value / Revenue	13.2x	11.2x	9.7x	8.9x	11.1x	9.4x	8.3x	6.1x	6.5x

Forbes also constructs a valuation index for each league. As shown below on the left, these indexes have substantially eclipsed the S&P 500 since 2005. To be clear, sports teams are *much* more expensive than equities: most teams are now valued at 5x-12x sales compared to ~3x sales for the S&P 500.

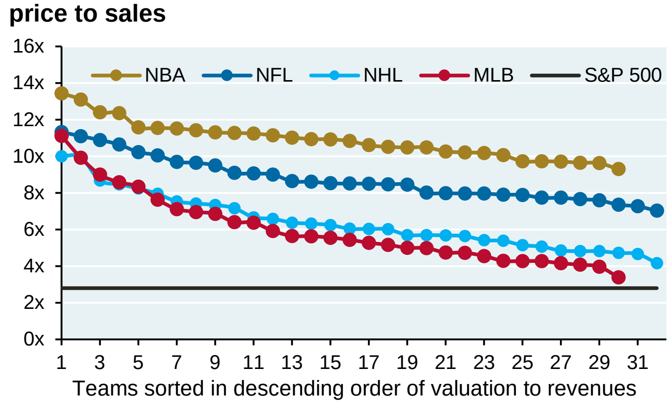
In the NFL and NHL, the valuation gap between the least and most valuable teams is ~2.5x compared to 3.2x in the NBA and 7.6x in the MLB. Less revenue-sharing, the lack of salary caps and higher exposure to local media rights are part of the reason why the MLB range is much wider; we review these topics later in this paper.

Sport team valuations vs equity markets
Index (100 = 2005)



Source: JP Morgan Sports Coverage Team, Forbes, Bloomberg, 2024

Valuation to revenues for major sports teams vs S&P 500 price to sales



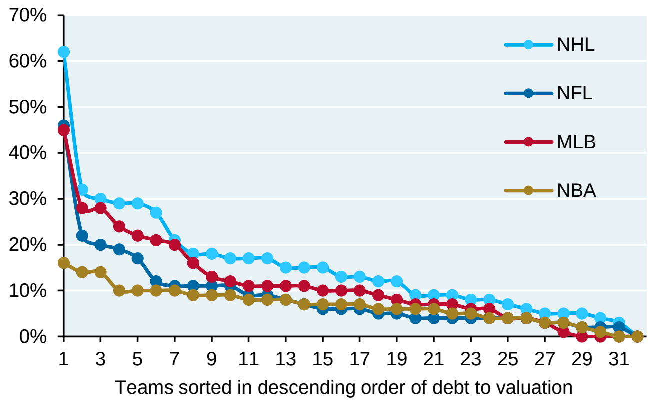
Source: Forbes, Bloomberg, JPMAM, 2024

Some general comments on sports ownership:

- *Valuations*: 50%-70% of NBA and NFL revenues are long-term contractual obligations of networks and other highly rated counterparties, some with escalator clauses. As a result, alternative valuation approaches apply investment-grade discount rates to contractual flows and value cyclical cash flows separately using equity multiples. Using this approach, valuation to revenue multiples would be lower than those on the prior page; but this presumes that owners are willing to value parts of their investment as a lower-risk annuity

- *Debt caps*. The NFL and NBA apply hard leverage caps to purchasers. The NFL debt cap is $1.4 billion for new acquisitions and $700 mm for existing owners. For the NBA, the debt cap is $325 mm. The MLB debt cap is based on a trailing cash flow multiple, and the NHL debt cap is discretionary. As shown below, with just three exceptions, leverage is low across all four major sports leagues

Debt to valuation for major sports teams



Source: Forbes, Bloomberg, JPMAM, 2024

High leverage exceptions

LA Rams, 46%: NFL owners approved a debt waiver to allow construction of SoFi stadium, allowing the team to exceed the debt cap

Miami Marlins, 45%: a reflection of very high levels of debt used by purchasers in 2017

Arizona Coyotes, 62%: a struggling franchise with the lowest valuation in the NHL which was recently sold and will be relocated to Utah next season

- *Cross ownership is more common*. Examples include Kroenke Sports & Entertainment (LA Rams, Denver Nuggets, Colorado Avalanche, Colorado Rapids; Arsenal); Harris Blitzer Sports (Philadelphia 76ers, NJ Devils, Washington Commanders, Crystal Palace); Monumental (Washington Capitals, Washington Wizards); Fenway Sports Group (Boston Red Sox, Liverpool, Pittsburgh Penguins). Also: eleven MLS owners have cross holdings in other leagues

- *Development*. For many decades, teams played in stadiums that were constrained by local surroundings or that were built in industrial locations far from residential and retail hubs. Beginning with redevelopment of Camden Yards in Baltimore, owners began redeveloping land surrounding stadiums. Additional examples include The Battery at Truist Park in Atlanta, the urban renewal of the Wrigley Field area, the revitalization of DC near the Capital One Arena and the creation of a new urban district at SoFi Stadium

- *Tax benefits*. Active control owners can depreciate sports team investments against related income, and/or against unrelated active income. Depreciable assets include player contracts, season ticket lists, stadium lease agreements, TV/radio contracts, concession contracts, luxury suites, etc. LPs actively involved in team management may have the same depreciation rights as active control owners. Subject to certain rules and limitations, passive LPs can typically offset investment income with related depreciation within a partnership and potentially use any excess losses to offset other passive unearned income. LPs should consult their own tax counsel to confirm tax treatment of any investment

- *Portfolios*. Some studies assert improved risk-adjusted returns by adding sports ownership to portfolios. However, most are highly reliant on infrequent appraisals or repeat sales methodology, both of which do a poor job of capturing risk in a mean-variance framework. Sports team ownership and private assets generally should be evaluated based on excess returns vs public equity markets using time-weighted return comparisons, as per our biannual Alternative Investments Review published last December

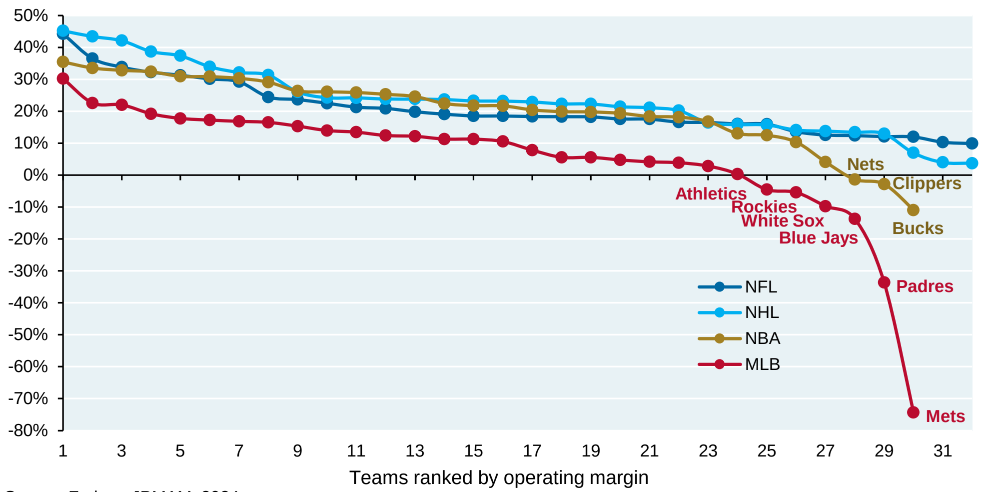
Operating margins

NFL, NHL and NBA teams benefit from rising broadcast revenues, league-imposed fiscal discipline, socialization of revenues and salary cap provisions. Operating margins in these leagues have generally improved over the last 20 years as salaries declined as a share of revenues (see chart, lower right). The lack of salary caps and fiscal discipline is more evident in the MLB where operating margins are generally lower, and in some cases negative.

The median NHL operating margin has tripled since 2018-2019 after the NHL signed seven-year deals with both Disney and Turner Sports in 2021, averaging a total of $635 mm per year. Another interesting development in the NHL: teams from low tax states have an advantage recruiting players vs high tax states and Canadian provinces, particularly given just a cumulative 2.4% increase in the NHL salary cap since 2020. Since that year, 11 of 20 teams that made it to the conference finals came from Texas, Florida or Nevada (i.e., no state tax)[3].

To be clear, operating income excludes interest on debt, taxes, capital projects and other costs. As a result, operating income is not a proxy for whether a team has positive cash flow or not. For valuations, revenues, debt, operating income and related ratios by team and league, see Appendix IV.

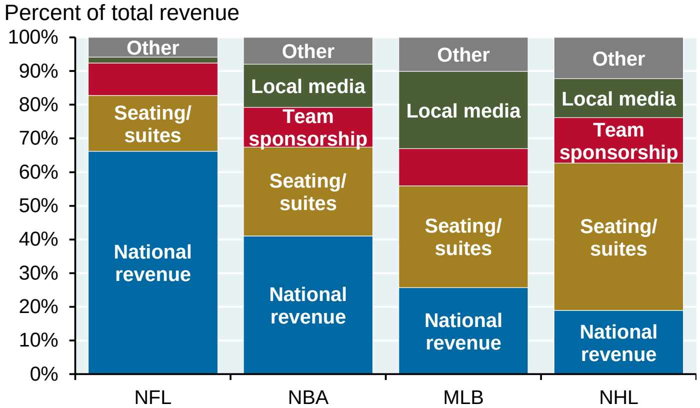
Operating income margin by team and league
Operating margin



Source: Forbes, JPMAM, 2024

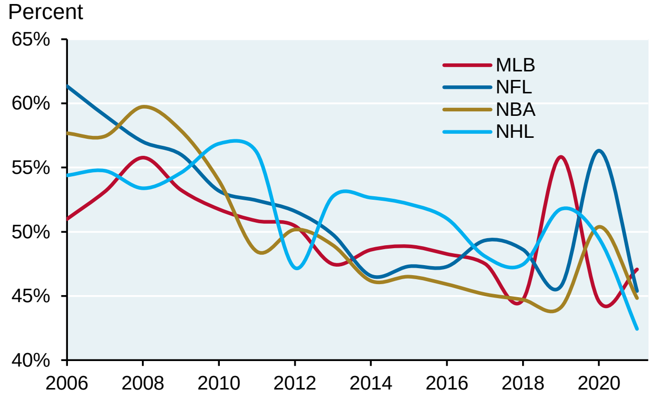
Over the next few pages we analyze major components of league revenue which drive these operating margins. We start with national broadcast and streaming revenue given its importance; then we discuss the timely issue of local media rights given the bankruptcy of Diamond Sports and its impact on the MLB (and NBA/NHL as well). We follow up with a look at in-person attendance trends and ticket prices.

League revenue by type
Percent of total revenue



Source: Sportico, February 2024

Player expenses as a percentage of revenue
Percent



Source: Forbes, JPMAM, 2024

[3] Professional athletes owe taxes in every jurisdiction where they work, but the bulk of their salary is taxed at the rate of their home state. Assume a $3mm NHL contract: state taxes in Texas $0, California $371k.

The streaming wars and the decline of regional sports networks

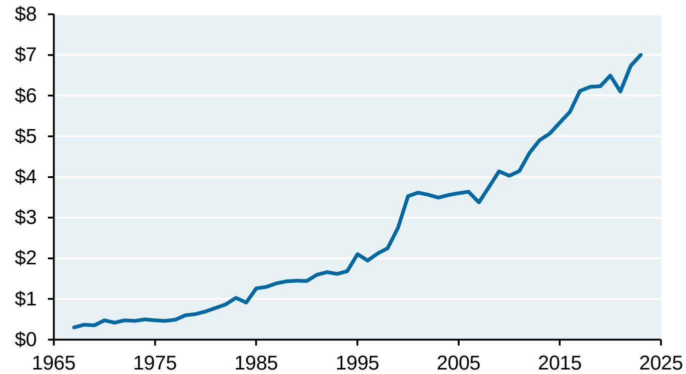
It's critical to understand broadcast and streaming demand for professional sports, particularly since three of the four major sports leagues receive 50%-70% of their revenue from national and local broadcasting rights (the NHL is the exception at 30%), and in all four leagues these national revenues are shared among teams. This was not always the case; a few decades ago, the primary value of a sports franchise was based on in-person attendance; in 1946, radio and TV contracts only accounted for 3% of MLB revenue.

Global sports media contracts were worth $24.5 billion in 2011 and are worth over $62.4 billion today, according to Forbes. Examples of the increasing value of media rights appear in the table. A new NBA deal is expected to be announced this week with a reported value of $76 bn over 11 years with NBC, Amazon and ESPN; that would represent a 2.6x increase in annual contract value over the 2016-2025 deal with ABC/ESPN/TNT/TBS.

League	Broadcaster	Deal start	Deal end	Increase in contract value at deal start
MLB	FOX / TBS / ESPN	2022	2028	1.3x
NFL	CBS / FOX / NBC / ESPN	2023	2033	1.8x
NHL	ABC / ESPN / TNT	2021	2028	2.1x
NBA	ABC / ESPN / TNT / TBS	2016	2025	2.9x
NBA	ABC / ESPN / TNT / TBS	2025	2036	2.6x

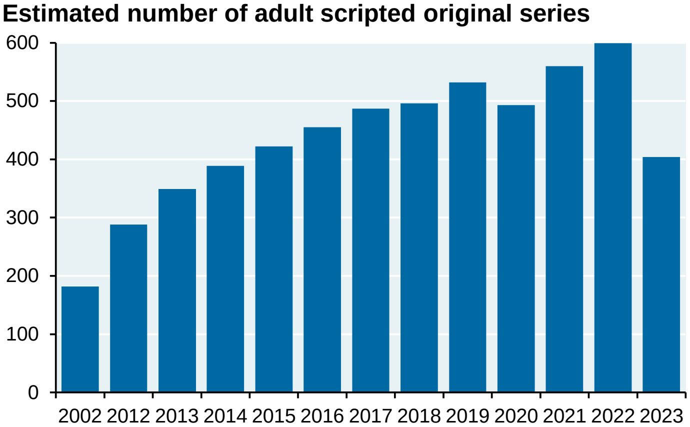
Source: JPMAM, 2024

Price of a 30-second Super Bowl commercial
Real 2023 US$, millions



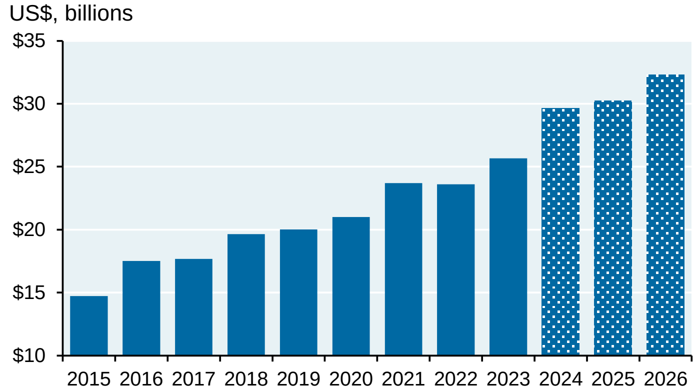
Source: Nielsen Ratings, Bloomberg, JPMAM

Estimated number of adult scripted original series



Source: FX Research, 2023

US sports media rights payments
US$, billions



Source: S&P Global, March 2023

Other examples of consumer demand for sports content:

- Over 30% of adults in the US and UK have purchased at least one pay-per-view sports event in the last 12 months, mostly UFC and boxing[4]. Boxing makes up 4 out of the 5 most watched PPV events of all time
- In 2023, the NFL accounted for 93 of the 100 most-watched TV broadcasts, up from 82 in 2022 and 61 in 2018 according to a Sportico study using Nielsen data. Within the top 50 most viewed broadcasts, 48 were NFL games alongside the State of the Union address and the Macy's Thanksgiving Day Parade
- Eight of the top ten most-watched events in US TV history were Super Bowls
- The inflation-adjusted cost of a 30-second Super Bowl commercial has doubled since 2005, and also doubled in the 20 years before that

[4] "*Sports M&A: Coming for your team*", Deutsche Bank, April 8, 2024

The streaming wars

As shown above, while scripted dramatic series developed for streaming and other distribution channels declined last year, sports media rights payments continued to increase. Streaming services may view sports as a way to acquire customers in hard-to-reach markets and to generate more demand for core services/products:

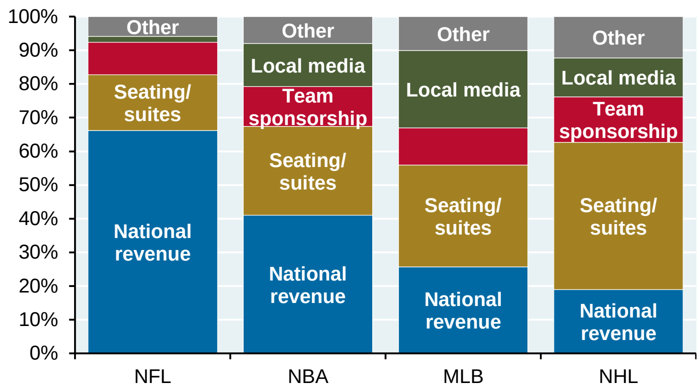
- In January 2023, the NFL wild card game between the Chiefs and Dolphins aired exclusively on **Peacock**, NBC's streaming service. Peacock paid $110 mm for exclusive media rights and drew 23 million viewers
- **Netflix** will stream at least one NFL game on Christmas Day for the next three years. As part of the deal, Netflix paid the NFL $150 mm to stream two Christmas Day games in 2024. Whether Netflix's experiment to acquire new customers is successful remains to be seen; however, media analysts estimate that Peacock retained over two-thirds of its 3 million new subscribers following their NFL wild card game stream[5]
- **Amazon** is paying the NFL $1 billion per year to air Thursday night NFL games on a digital-only basis. These games have a reputation of poor play/poor matchups in some circles but not in others[6]
- **Google/YouTube** signed a 7-year deal to pay $2 billion per year to the NFL for its "Sunday Ticket" games, which includes regular season Sunday afternoon out-of-market games, including games not shown nationally or within viewer local area broadcasts
- **Peacock** signed a 5-year deal @$200+ mm per year with the WWE in 2021; audiences have since doubled
- ESPN holds exclusive rights for UFC events and rights to distribute residential pay-per-view events; the agreement was announced in May 2018 at $150 mm per year, now ~$200 mm per year. The deal consists of 30 UFC Fight Night events per year: 10 on regular cable-based ESPN and 20 on **ESPN+** streaming service
- **Apple** signed a 10-year deal @$250 mm per year with the MLS; a 7-year deal @$85 mm per year with the MLB to broadcast two Friday Night baseball games each week; and is reportedly considering a $2 billion annual contract with F1 racing which would double what the league now brings in[7]

Netflix, Amazon, Apple etc will be able to recoup some costs via advertising since there are natural breaks in the action at sporting events. So, even though legacy Netflix customers won't have to pay to watch games, Netflix will still earn ad revenues based on total viewers. Furthermore, Netflix can create customized ads at the individual customer level, creating "closed-loop attribution" (i.e., demonstrating a link between advertising and subsequent consumer purchases) which brands may value more highly than traditional cable advertising.

As shown above, the streaming wars greatly benefit leagues like the NFL. However: while the MLB, NBA and NHL may benefit as well, they also rely on local media rights (green segments in chart), a topic we discuss next given the bankruptcy of one of the largest owners of regional sports networks.

League revenue by type

Percent of total revenue



Source: Sportico, February 2024

[5] *"Do NFL Sign-ups Stick Around?"*, Antenna, March 21, 2024

[6] Thursday night NFL games. **Pro**: "*Thursday Night Football: Better Than You Think*", Harvard Sports Collective, May 2021; **Con**: "*The Existential Horror of Thursday Night Football*", NYT, October 19 2022

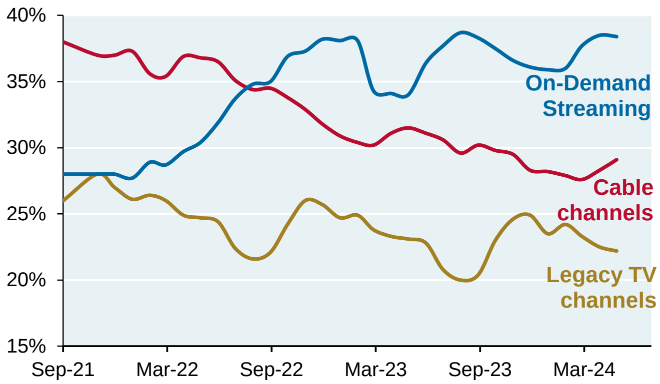
[7] "*Apple Reportedly Making Push For Global Formula 1 Rights*", Front Office Sports, April 15, 2024

The decline of regional sports networks: the short version

- Traditional cable subscriptions are declining as a share of consumed content, particularly among people aged 18-29; in this age group only 31% have cable TV, down from 64% in 2015
- Declining cable subscriptions result in lower payments to highly leveraged regional sports networks (RSNs) which had entered into long term broadcast agreements with MLB teams and NBA/NHL teams as well. The second chart is a proxy for the pressure RSNs are facing. Sinclair purchased 21 RSNs from Disney in 2019, as Disney had been forced by the DoJ to divest RSNs when acquiring 21st Century Fox. Sinclair's subsidiary Diamond Sports Group operates Bally Sports, which became the obligor on Sinclair's RSN contracts. Diamond Sports is now undergoing chapter 11 bankruptcy proceedings
- Some RSNs defaulted on MLB contracts after which the MLB reassumed these rights, producing their own content. Legacy RSNs are no longer paying to broadcast Colorado, Arizona, Houston, San Diego, Pittsburgh and Seattle. In other cases, Diamond Sports defaulted on the rights contract and negotiated smaller interim payments with the team
- While Apple signed a contract with the MLB to air Friday Night games, **the restructuring of many long-term RSN rights agreements for baseball is still an open item**. Amazon reportedly has interest in a distressed investment in Bally, but it's unclear if this can be negotiated to the satisfaction of all interested parties
- The NBA and NHL have been affected as well. RSNs are no longer paying to broadcast the Utah Jazz, Phoenix Suns and Houston Rockets; and they are no longer paying to broadcast the Seattle Kraken, the Vegas Golden Knights and Pittsburgh Penguins
- While the NBA is exposed to the RSN issue, it is less exposed than the MLB since demand for NBA content is higher. In other words, should an RSN stop paying on an NBA broadcast agreement, the NBA is more likely to be able to replace RSN revenue with streaming revenue than the MLB
- The NFL is not exposed to the RSN issue since it offers content distributors a national package of games (there are no previously negotiated regional broadcast agreements which would limit this)

Consumed content by origin

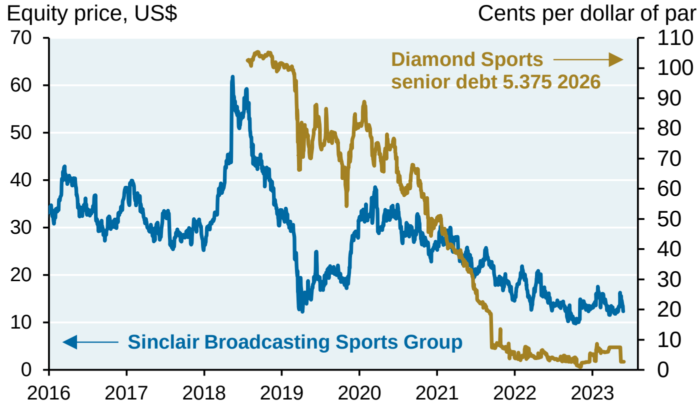
Percent



Source: Nielsen Ratings, April 2024

Proxy for RSN distress: Diamond Sports bankruptcy

Equity price, US$ Cents per dollar of par

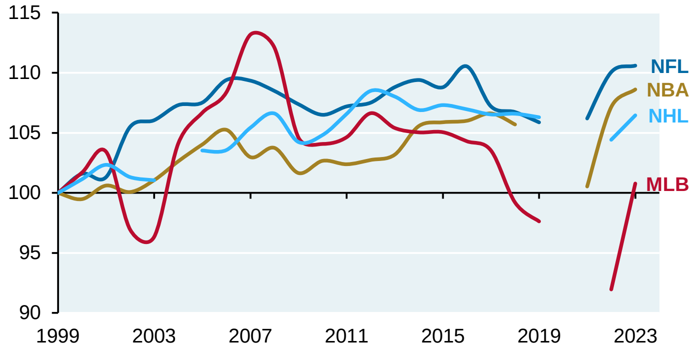


Source: Bloomberg, JPMAM, May 27, 2024

In-person attendance trends and ticket price inflation

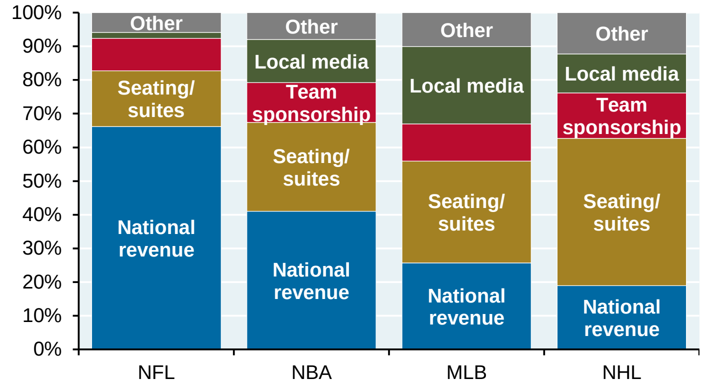
In-person attendance for the NFL, NBA and NHL has been stable or rising by a small amount compared to pre-COVID levels. As shown on the right, in-person attendance (seating and suites) is of varying importance as a share of league revenues. In addition, there's only so much that attendance can increase for teams which sell out: in the NFL, NBA and NHL, 97%+ of available seats were sold in the most recent season[8]. The MLB has been the exception with ~70% of seats sold for the average game. MLB attendance weakened from 2016 to 2019, although the latest season has seen a rebound. There's a cottage industry of sports analysts writing about the reasons for baseball's declining relative popularity vs other sports which I will not get into here.

Attendance per game by league
Index (100 = 1999)



Source: NBA, Pro Football Reference, Baseball Reference, NHL, JPMAM, 2024. Seasons with attendance significantly impacted by COVID are excluded

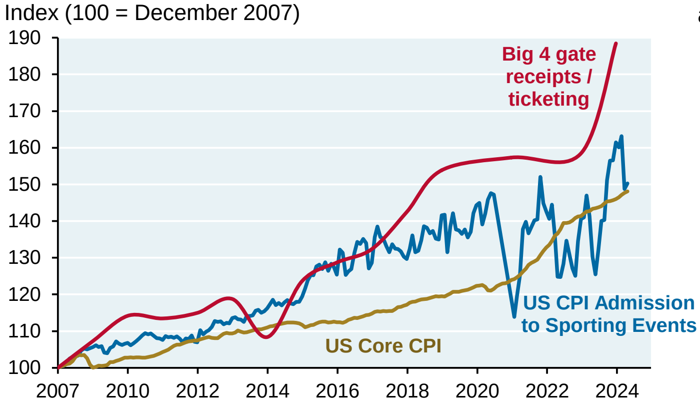
League revenue by type
Percent of total revenue



Source: Sportico, February 2024

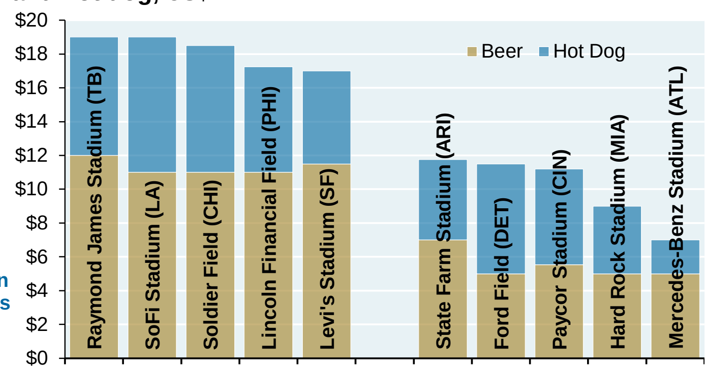
Stable attendance does not imply that stadium-related revenues are flat. On the contrary: according to Forbes, gate receipts for the big four sports leagues have risen much faster than core inflation, and faster than the "admission to sporting events" category in the CPI report. The reason: Forbes includes the value of suites and luxury boxes. The chart on the right shows the lowest and highest cost NFL stadiums for a beer and a hot dog.

Ticket inflation outpacing core CPI
Index (100 = December 2007)



Source: Bloomberg, Forbes, JPMAM, April 2024

The most expensive and cheapest NFL stadiums for a beer and hot dog, US$



Source: WhiskeyRiff, September 2023

[8] *"NFL grows viewership, attendance in strong year"*, SBJ, Jan 15, 2024; NBA and NHL press releases, April 2024

League parity benefits owners in US sports leagues, but not in Europe

A notable aspect of US sports leagues is parity, particularly compared to European soccer[9]. This parity is an asset for league owners since the likelihood of winning is not just the result of an "arms race" of who can deploy the most money into a team[10]. The benefits of parity have been empirically measured: a study of Australian football found that for a one standard deviation increase in game outcome uncertainty, attendance increases by 11%[11].

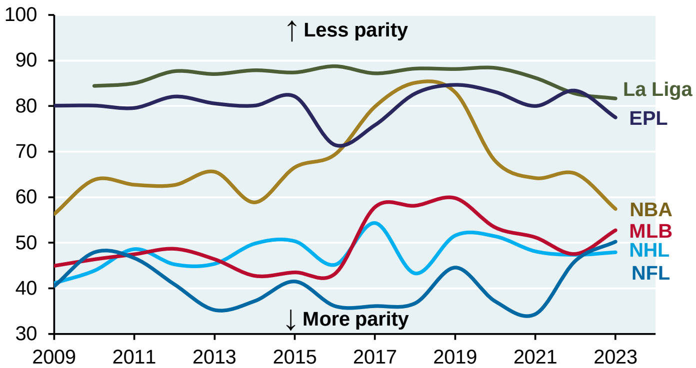
In this section we review evidence of US sports league parity compared to Europe. In the next section, we review the primary drivers of parity in US sports leagues.

Parity measure: preseason odds of winning

One way to measure parity involves preseason odds of winning from betting sites. The more concentrated these odds are amongst a small group of teams, the less parity the league exhibits. These odds can be converted into the equivalent of a Gini coefficient, which is normally used to measure concentrations of income or wealth. When applied to sports leagues, they measure the concentration of projected success. As shown in the chart, US sports leagues exhibit considerably greater odds-based parity than European soccer. The exception: the 2017-2019 Gini coefficient surge in the NBA, when the Golden State Warriors were given a 50%-60% chance of winning in the preseason (they won in 2017 and 2018 and lost in the finals in 2019 to the Toronto Raptors).

The problem: actual won-loss results may differ from preseason projections, and projected championship teams may change from year to year, in which case there would be parity. A better measure of parity would reflect what *actually* happened, which is what we compute next.

Parity of sports leagues based on preseason odds of winning the championship, Gini coefficient



Source: Sports Odds History, JPMAM, 2024

This analysis was adapted from an original article by the Harvard Sports Analysis Collective in 2016 which we updated to 2023

[9] In this piece we refer to "European soccer" rather than "European football" to avoid confusion when discussing American football. **Don't ping me about US-centrism: "soccer" is a thoroughly British word**. In the early 1800s in England, football and rugby existed as different variations of the same game. In 1863, the Football Association was formed to codify rules so that schools could play against one another. The shortened terms "rugger" and "soccer" were coined to differentiate between Rugby Football and Association Football.

[10] In European soccer, deep-pocketed Middle Eastern sovereign wealth funds now own franchises like Paris St-Germain, Manchester City and Newcastle United. And in a strange turn of events, the private capital firm **Oaktree Capital Management took control of Inter Milan** this month after its Chinese owners defaulted on a €400 mm loan. This occurred after Inter Milan won the Serie A title, which makes it all even stranger.

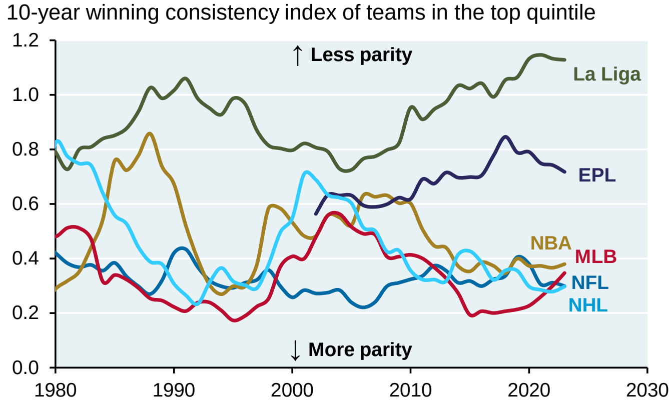
[11] *"The Effect of Outcome Uncertainty on Spectator Attendance in the Australian Football League"*, Ferguson and Lakhani, April 10, 2023

Parity measure: concentration of winning teams according to actual won-loss records

Here's what parity means to me: **do the same teams keep winning all the time?** To measure this, we developed an algorithm that computes the rolling consistency of the teams in the top quintile of league results. The higher the score, the more concentrated the list of top quintile teams; the lower the score, the more parity within that top quintile. Our methodology accounts for teams changing cities/names, relegation events in European soccer, the number of teams changing over time, etc.

As with the approach using preseason odds, **US leagues have more parity than Europe, particularly in the NFL**. Some departures from league parity: from 2001-2010, the NBA was dominated by the Spurs, Lakers, Pistons and Mavericks. And from 1992-2001, the NHL was dominated by Detroit, Colorado and New Jersey. In contrast, La Liga is consistently dominated by Real Madrid, Atletico Madrid and Barcelona while Arsenal, Chelsea, Man City and Man United have consistently dominated the English Premier League.

Concentration/parity scores by league
10-year winning consistency index of teams in the top quintile



Source: JPMAM, 2024

More evidence of low parity in European soccer: Bayern Munich was the Bundesliga champion for the last five years, and PSG was the Ligue 1 (France) champion for six of the past seven years

Another important parity statistic: market size is not a determinant of team success

Using census data for each team's associated city, we looked at the relationship between winning percentage and city population for all four major US leagues from 1980 to 2023. In the NFL, NBA and NHL, the average correlations between city size and team winning percentage were actually slightly *negative* over this period. In other words, market size does not automatically translate into success, and plenty of small market teams did well [any Knicks, Nets, Mets and Jets fan knows this]. The correlations were modestly positive for the MLB, which is consistent with the lack of an MLB salary cap. These findings confirm the importance and impact of revenue sharing provisions and other parity drivers in US major league sports.

Extreme parity: the most unexpected championship upsets based on preseason odds

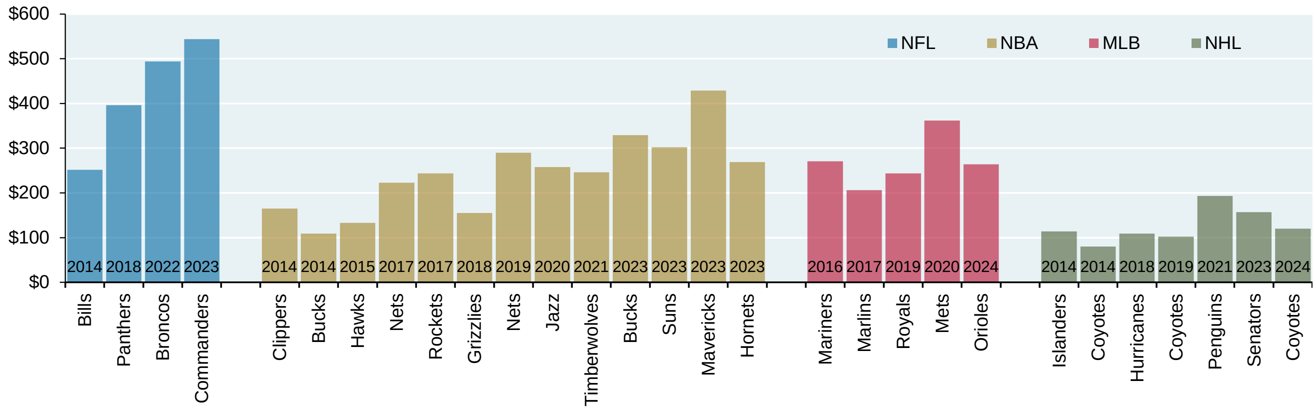
- In 2001, the preseason odds for the New England Patriots to win the Super Bowl were 60-1. The Patriots beat the Rams that year whose preseason odds were 4-1
- In 2007, the New York Giants (30-1) beat the New England Patriots (2.5-1) in the Super Bowl
- In 2002, the Anaheim Angels (40-1) beat the San Francisco Giants (12-1) in the World Series
- In 1991, the Minnesota Twins (80-1) beat the Atlanta Braves (200-1); in other words, both American and National League winners defied the odds of getting there
- In 1999, the St. Louis Rams (150-1) defeated the Tennessee Titans (30-1) in the Super Bowl
- In 1997, the Florida Marlins (100-1) defeated the Cleveland Indians (50-1) in the World Series; and in 2003, the Florida Marlins (75-1) defeated the NY Yankees (2-1)
- In 2015, Leicester City overcame 5,000-1 odds to win the English Premier League over Tottenham (105-1)

Other upset examples: Buster Douglas over Mike Tyson; US Olympic Hockey 1980 gold medal; NC State wins NCAA Tournament in 1983; Detroit Pistons over LA Lakers in 2004; NY Jets win Super Bowl III; Francesca Schiavone wins US Open in 2010 (100-1 odds); Upset beats Man o' War in 1919 (only horse ever to do so); Uruguay over Brazil in 1950 World Cup that was held in Rio

Primary drivers of professional sports parity: revenue-sharing, the draft and salary caps

A primary driver of sports parity is revenue-sharing. A look at revenue by team at time of sale across years and leagues indicates as much (the NFL jump is mostly related to the increase in media rights).

NBA, NFL, NHL, and MLB team revenue at time of sale
US$, millions

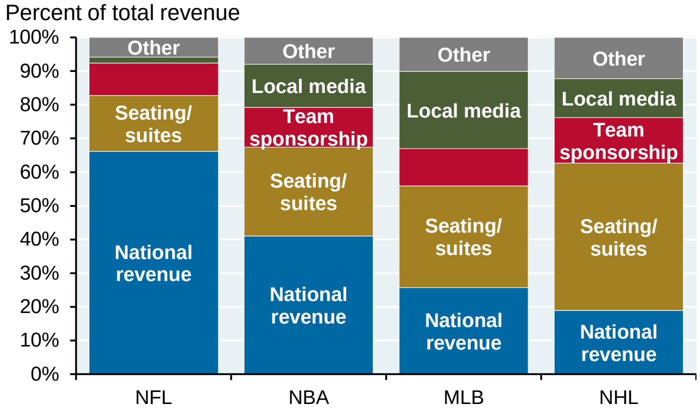


Source: JP Morgan Sports Coverage Team, 2024

Here's a brief summary of revenue-sharing arrangements by league:

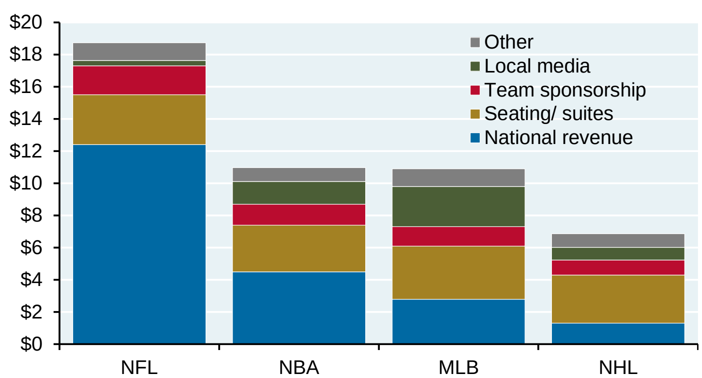
- **NFL**: National revenue (TV deals and merchandising/licensing contracts negotiated by the league) is divided evenly among all teams regardless of team performance. NFL ticket sharing agreements also require 34% of each team's ticket revenue to go toward a general pool that is shared equally[12]
- **NBA**: teams contribute an equal percentage of total "basketball related income" into a common pool split equally. The percentage of revenue that teams contribute is equal to the percentage of league revenues for player salaries (i.e., if player salaries are 50% of league-wide revenues, then each team would contribute 50% of its revenues to the pool)[13]
- **MLB**: teams pool 48% of the local revenue they earn; this amount is then split equally among the teams who also receive a share of national revenues[14]
- **NHL**: high-revenue teams pay into revenue sharing under a complicated formula that targets 6.05% of hockey-related revenue to be distributed to low revenue clubs. The pool is also supplemented with gate receipts from playoff games[15]

League revenue by type
Percent of total revenue



Source: Sportico, February 2024

League revenue by type
US$, billions



Source: Sportico, February 2024

12 "*How Sports Teams, Leagues and Owners Make Money*", Sportico, February 2024
13 "*NBA Salary Cap FAQ*", Larry Coon, Sports Business Classroom, November 2022
14 "*Revenue sharing*", Baseball Reference, 2020
15 "*National Hockey League Franchise Valuations*", Sportico, October 2021

The draft: evidence of parity contributions

Does the draft "work" by helping weaker teams? A meta-study published in 2021 analyzed 18 separate studies of professional drafts of college level players[16]. The goal of each study: **analyze the efficacy of each draft in predicting future success.** Success is measured at the player level (length of career, number of games played and likelihood of playing in the majors) and at the team level (change in winning percentage for the teams acquiring the players). In other words, if drafts are predictive of these outcomes, and since draft order is inversely related to team performance, the draft would be a contributor to league parity.

The meta-study concluded that first-round draftees in all four major sports go on to outperform their peers. However, these predictive effects dissipated with respect to later draft rounds. The text box includes some findings of individual studies.

Select findings from individual studies on pro sports drafts

- *Baseball*: being drafted does not guarantee major league playing time. From 1981 to 2010, only 18% of drafted players made it to the major leagues. For first-round draft picks, this number was 73%
- *Basketball*: draft order is a good predictor of future points, assists, rebounds, steals and turnovers but does not predict shooting percentage or blocks
- *Football*: quarterbacks and wide receivers selected in earlier rounds tend to have longer playing careers, and their performance stats are better than other players at that position
- *Hockey*: there's a significant correlation between draft order and lifetime games played

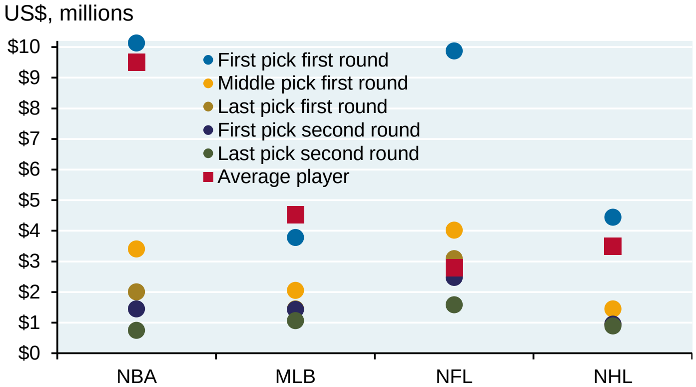
Other parity factors: rookie salary caps

In addition to the draft which benefits teams with fewer wins, rookie salary caps also help level the playing field by binding outperforming early-round draft picks to underperforming clubs. The chart below illustrates the economic benefits of rookie contracts to team owners, particularly those with more early-round draft picks.

The NBA is a good example: while the first pick of the draft (blue dot) makes roughly the same as the average NBA player (red square), by the middle of the first round there's a huge drop-off *below* the average salary. By the end of the second round, the gap gets bigger. In baseball, all draft picks are paid less than the MLB average, although gaps are smaller than the NBA. NHL rookie salaries vs the average player are similar to the MLB. In the NFL, the benefit of rookie salary caps are smaller with first round picks earning more than the average player; this may be the consequence of early round draft picks being tilted to more highly paid positions (i.e., QB, wide receiver, offensive and defensive tackles, cornerback and defensive ends which represented 29 of the top 32 picks last year) vs the league as a whole.

Rookie contracts vs average player contract

US$, millions



Source: Basketball Reference, Big Lead, Sportico, Spotrac, APNews, JPMAM, 2024

Rookie contracts

NBA: 4 year contracts, first two years guaranteed for first round picks with third and fourth year club options; fourth year at higher salaries

NFL: 4 year contracts; first round picks include a 5th year team option. Salary guarantees for injury, performance issues, etc are negotiated per player, with most first round picks receiving full guarantees

MLB: no set contract terms; most are three years with rookies making the league minimum plus a signing bonus

NHL: 3 year contracts; salary is capped at $950k but may include a signing/performance bonus

[16] *"To draft or not to draft?"*, Johnston et al, Scandinavian Journal of Medicine, Science and Sports, 2021

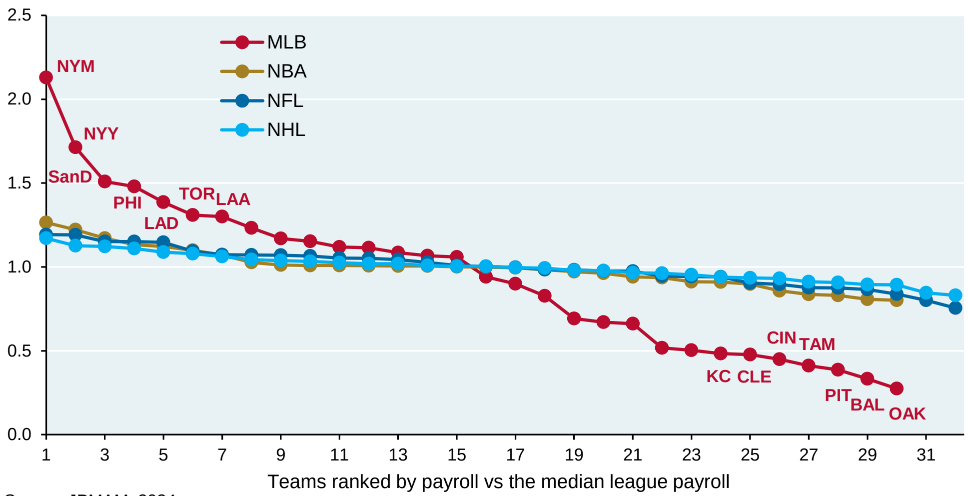
Team salary caps

Salary caps can be a powerful way of increasing league parity and preventing an arms race from occurring. The charts below show the four major US sports leagues and two European soccer leagues. The Y-axis shows each team's 2023 payroll divided by the median payroll in 2023 for that league. Example: the Phillies' payroll last year was 1.5x the MLB average.

The NFL and NHL have hard salary caps; the impact can be seen in the relative flatness of each league's payroll curve. There's some slippage in the NBA which has a soft cap due to salary cap exceptions which apply to qualifying veterans, rookies and traded players. The MLB has no salary cap, so payrolls reflect owner willingness to pay; payrolls above set thresholds trigger luxury tax payments to the league which are redistributed based on revenue sharing agreements. Another very important feature: the NFL, NBA and NHL salary caps are set as a function of aggregate league revenue, so if for some reason revenues declined, the caps would decline; this is not the case for the MLB. Even with salary caps in place, owners sometimes overspend: see Appendix II on the Worst Teams that Money Can Buy.

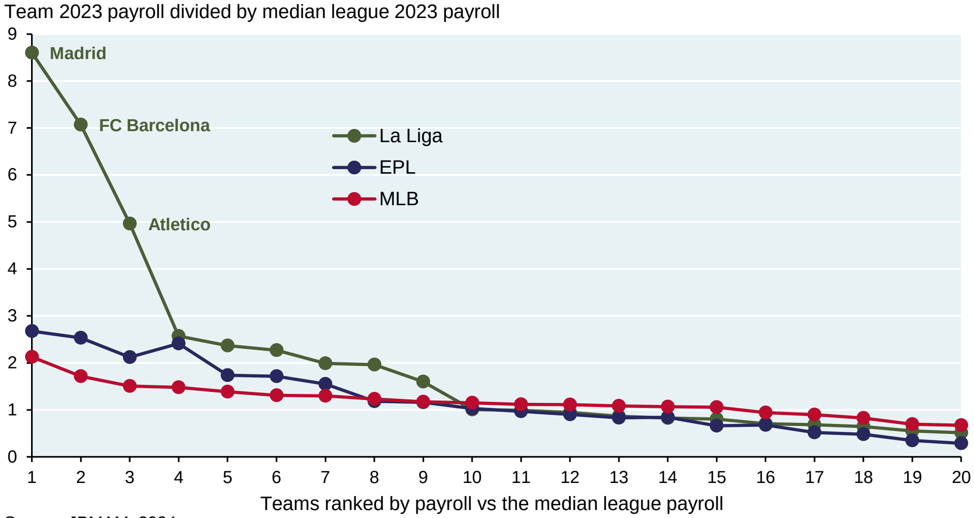
The EPL and La Liga have no salary caps, although the EPL plans to introduce one next year. As shown in the bottom chart, the EPL salary curve is steeper than the MLB. The La Liga payroll curve is even steeper, and is the perfect example of what an arms race league looks like.

Payroll parity in US major sports leagues
Team 2023 payroll divided by median league 2023 payroll



Source: JPMAM, 2024

Payroll parity in major sports leagues
Team 2023 payroll divided by median league 2023 payroll



Source: JPMAM, 2024

European soccer: relegation, rising player salaries, rotten returns to public investors and new regulations

There are five major European soccer leagues; in prior sections on parity and salary caps, we focused on the two largest in terms of revenue, the English Premier League and La Liga (Spain) since we had all the data needed. However, we are not able to compute valuation-to-revenue ratios *within* each soccer league since Forbes only covers the largest 21 teams *across* the five European leagues rather than covering all 96 teams. As a result, Forbes data is not a full sample for each league and does not allow inferences to be drawn regarding valuation disparities within a league and the benefits of any revenue-sharing.

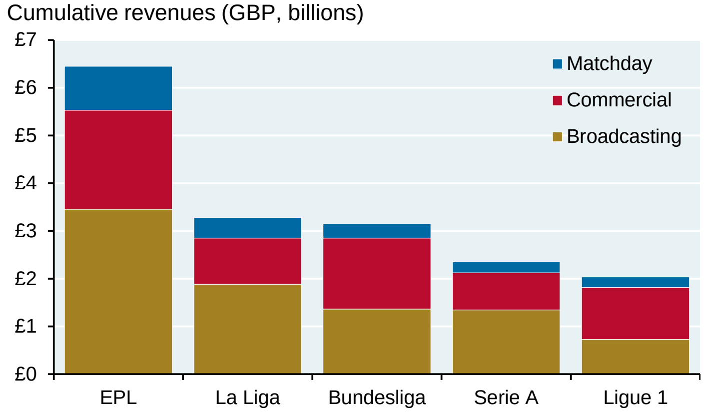
On the English Premier League. Relegation refers to a team finishing towards the bottom of the EPL, in which case it competes in the lower tier EFL Championship League the next year. As shown in the table, finishing towards the bottom in the EPL results in substantially lower revenues in that year, and as much as a 60% decline for relegated teams in the next year. When teams are relegated, part of the financial hit can be mitigated by "parachute payments" but only to teams that have been relegated within the last three years.

Team revenue in the EPL and EFL Championship, 2019-20 season

GBP, millions	Finishing position	Matchday revenue	Broadcast revenue	Commercial revenue	Total revenue
UEFA Champions league	#1 - #4	£66	£178	£200	£444
UEFA Europa League	#5 - #8	£61	£118	£148	£327
Other EPL teams	#9 - #17	£13	£100	£28	£141
Teams relegated from the EPL	#18 - #20	£8	£89	£15	£112
EFL Championship teams with parachute payments		£5	£39	£8	£52
EFL Championship teams w/o parachute payments		£5	£8	£7	£20

Source: Secretariat International Consulting, October 2023

"Big Five" European league club revenues, 2021-2022
Cumulative revenues (GBP, billions)



Source: Secretariat International Consulting, October 2023

A relegation story: the Luton Town Hatters and the impact of relegation/promotion

Luton Town was relegated from the EPL in 1992 and fell as low as the third tier by the early 2000s. They rejoined the EFL Championship League for a single season in 2005 but were relegated again from the EFL to the lesser tier League One and League Two over the next three seasons. In 2010 the team improved, finally reaching the top tier EPL again in 2023. Luton Town's EFL revenue was £17.6 mm in 2021 and rose to £200+ mm in 2023

Rising revenues, rising costs: challenges for EPL team owners[17]

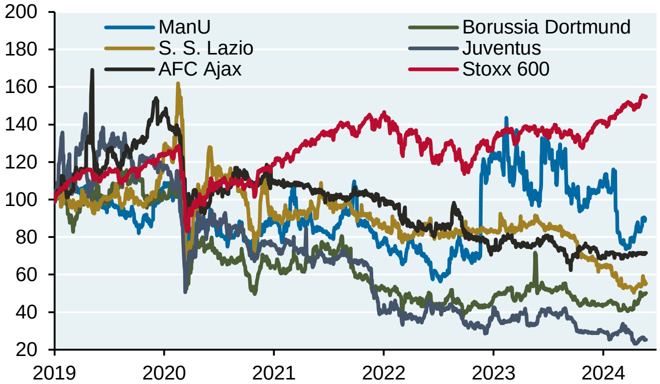
While EPL broadcast revenues have been rising (the latest contract entails £10 bn for 2022-2025), financial success in the EPL is highly tied to performance and to soaring player salaries. **In the absence of salary caps and rookie contracts, EPL salaries have increased by 36x from 1992 to 2021. Over the same time period, EPL league revenues only increased by 27x**. Total wages as a share of revenue are 73% for the average EPL team; outside the top 6 teams, this figure is even higher at 87%. **The bottom line: only 7 EPL teams reported a profit in the 2021-2022 season, which is roughly one third of the league**.

In contrast, the US MLS requires more revenue-sharing. National revenue from broadcasting, merchandise sales and national sponsorships is pooled and distributed to team owners based on a ratio that isn't affected by on-field performance. While MLS teams keep 70% of their local revenue, two thirds of team revenue is likely to be related to pooled national revenue. In 2024, MLS capped team salary budgets at $5.5 mm with a designated player rule allowing teams to acquire up to only 3 players whose total compensation exceeds the maximum salary cap. Over the last 5 years, the average MLS team value has risen by 17%, with individual team values highly clustered around the league average; this is an indication that its parity approach is working.

[17] "*Valuations of sports teams on the rise*", Secretariat International Consulting, October 2023

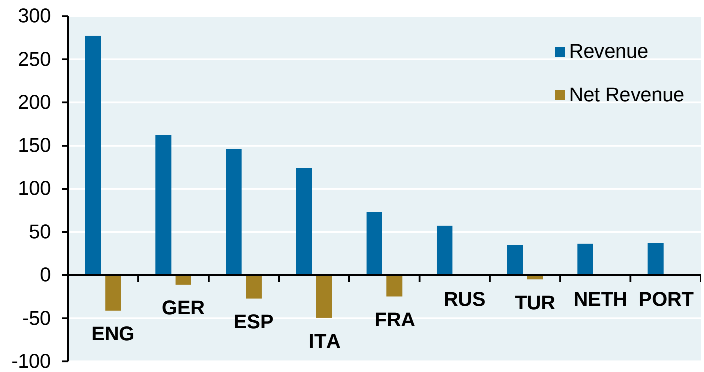
For these and other reasons, investment returns in European soccer have been poor compared to a European stock market index (Euro Stoxx 600). The chart at the right explains why: **the average European soccer team simply does not make any money**. A major challenge facing European soccer clubs: less leverage over players since there are so many leagues for good players to compete in; the same is not true for major US sports leagues which pay much more than overseas counterparts. A University of Portsmouth study analyzed the financial accounts of English Premier League clubs from 1993 - 2018 to assess how exposed they were to economic shocks such as the global financial crisis, finding that only Arsenal was resilient enough to withstand a shock[18]. Another challenge for European soccer clubs: the Ronaldo effect (the impact of major players departing), which greatly impacted Juventus' share price when he joined and again when he left. See Appendix V for details.

Total return performance of select European soccer clubs vs Stoxx 600, Index (100 = January 1, 2019)



Source: Bloomberg, JPMAM, May 27, 2024

European top 10 division: net revenue, avg per club
EUR, millions



Source: *"Sports M&A: Coming for your team",* Deutsche Bank, April 8, 2024

A comprehensive discussion of European soccer would be incomplete without referencing the following[19]:

- Tax investigations into UK football clubs recovered £125 mm in unpaid taxes for the fiscal year ending March 2023, double the amount from the prior year; part of the UK focus is on compensation disguised as image rights payments with the goal of avoiding National Insurance taxes
- In Italy, Serie A clubs were determined by the Italian Revenue Agency to have underpaid taxes by €500 mm
- Suspension by UK tax authorities and criminal offenses like tax evasion are now grounds for automatic disqualification for owning or running an English Premier League team
- Spanish tax authorities fined clubs like Barcelona for incorrectly paying taxes on player agent fees; also, Barcelona is under investigation for active bribery of a refereeing committee
- In 2019, the EU added football to its money laundering watchlist; this year, the European Parliament voted to include football in its sixth anti-money laundering directive. Starting in 2029, teams will have to verify customer identities, publish beneficial owners, monitor transactions including player transfers and report suspicious transactions. This directive covers the Bundesliga, Ligue 1 and Serie A
- There are currently disputes between the EPL and member team owners regarding sponsorship rights and team payrolls since the higher the sponsorship payments, the higher a team's payroll can be. One example: the UAE owns Man City and has been cited by the EPL as inflating sponsorship payments from UAE entities (Etihad Airlines, Emirates Palace, Aldar Properties, Masdar etc) as a back-door way of increasing Man City's salary cap. When the Saudi's bought Newcastle, procedures were put in place to prevent this by requiring sponsorship valuation at fair market levels. This dispute is one of several issues being investigated by the EPL regarding Man City compliance with financial regulations

[18] "*Measuring the resilience of EPL clubs*", Cox and Philippou, Soccer and Society, April 2022

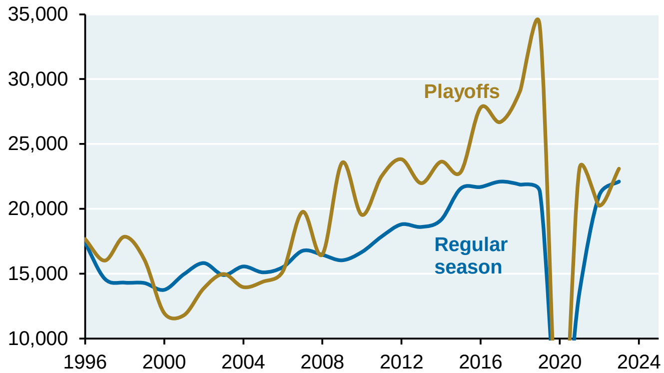
[19] "*Tax investigations into UK football*", Hacker Young Chartered Accountants, Oct 2023; "*New bill targeting football fraud*", Guardian, April 2024; "*Money laundering in football*", Royal United Services Institute, Jan 2024

International and emerging sports: an update the MLS, F1 and start-up efforts in various sports

The MLS and F1 are essentially transplants of non-US sports to the US. Both are seeing meaningful expansion:

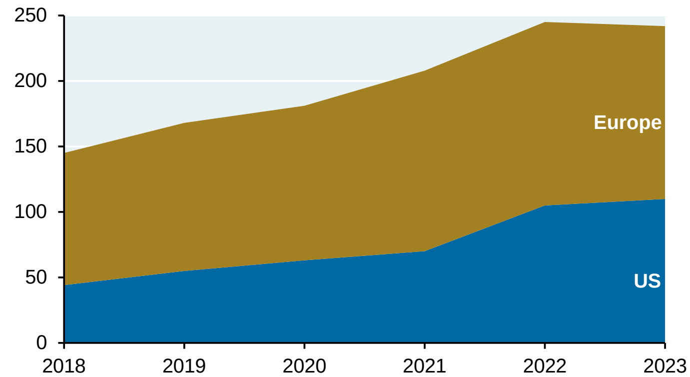
- **Major League Soccer** (MLS) has grown the number of teams to 29 vs 10 in 1996 and plans to debut a 30th team in 2025. Sponsorship revenue rose to a record $587 mm in 2023, a 15% increase vs the previous year in part due to Messi joining the MLS. Even prior to the Messi effect, MLS regular season matches averaged about the same number of TV viewers as an NHL game. Currently, NHL rights are valued at 2x MLS rights[20]
- **Formula 1** racing is becoming more popular in the US, with races in Miami, Austin and Vegas, although the latter event was plagued last year by course problems, damaged cars, practice delays and cancelled events. Another sign of US viewer interest: the number of US advertising brand partners aligned with F1 or with individual racing teams has been rising. Disney signed an agreement with F1 through 2025 to air all 23 F1 races on ABC, ESPN or ESPN2

Major League Soccer (MLS) average attendance per game
Attendees



Source: MLS Media Resources, 2023

F1 brand partners from the US and Europe
Number of partners



Source: Sports Business Journal, 2023

While major US sports leagues garner a lot of attention, there are emerging sports leagues that private equity firms may consider. Some are still in their infancy with proof of concept still pending. To be clear, monetizing "digital views" can be a difficult challenge for any company whether sports-related or not, and is an insufficient metric for valuing anything. There's a risk that rising valuations in emerging sports result from investors having been priced out of major sports leagues whose valuations are soaring. And: these leagues will need to prove they can attract streaming demand, since the declining cable industry will probably be insufficient.

- The **NBA's 12-team Africa league** is valued at $1 bn based on a 2021 investment from private equity and former NBA players Luol Deng and Dikembe Mutombo. So far, the league has generated losses and is struggling to gain an in-person audience for its games
- A professional **Drone Racing League** was acquired for $250 mm in 2024 by a digital entertainment company; the league has existed for 9 years and generated 260 mm digital views on race content in 2022-2023
- The **Premier Lacrosse League** raised money in 2024 at twice the league's 2021 valuation, and signed a 4-year deal with ESPN; last year, ESPN streamed all 48 games with peak viewership of 782,000
- **Professional Bull Riding** locked in a media rights relationship with CBS in 2012 after decades of *paying* major broadcast channels for airtime. Aggregate TV viewership surpassed 31 mm viewers in 2023 with live events averaging 900,000 viewers per broadcast on CBS
- **Major League Pickleball**: team valuations have grown 100x in 2 years to $10 mm; the MLP merged with the Professional Pickleball Association this year, with the new entity backed by $75 mm from private equity
- **SailGP**: a group of investors acquired 100% ownership of the US team. The group raised capital at a valuation believed to be nearly double the $40 mm the Great Britain team was valued at in December 2023[21]

---

[20] *"Soccer is taking over America",* Fortune, September 9, 2023

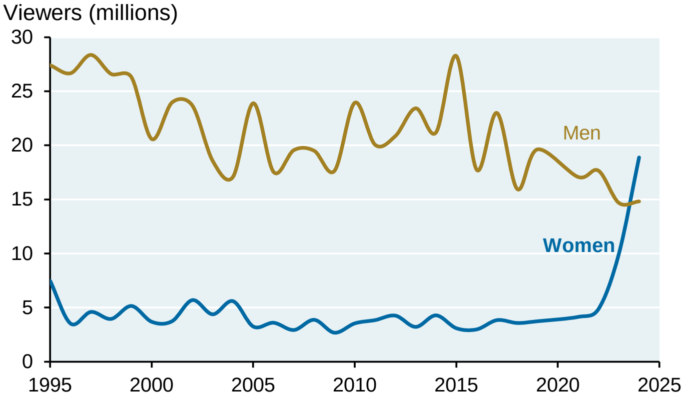
[21] "*Avenue Sports Fund, celebrity investors acquire SailGP's US Team*", Sports Business Journal, November 2023

- The UFL (**United Football League**): various iterations of spring football have existed since the 1970s but all ceased operations due to lack of profitability. The UFL is the merger of two spring football leagues (XFL and USFL), with ownership split between Dwayne Johnson, RedBird Capital and Fox. XFL partners reportedly lost $60 million in 2023, nearly 3x their original $23.5 million investment. The UFL is paid just $6,570 per 30-second advertising spot and league attendance is just 15,000 per game. However, the league has secured sponsorships from Under Armour, Gatorade and the US Army. UFL telecasts have averaged ~800,000 viewers per game since launch, up 27% vs XFL/USFL combined regular season averages last year

Some women's sports have been rising in popularity, although profitability measures are mixed:

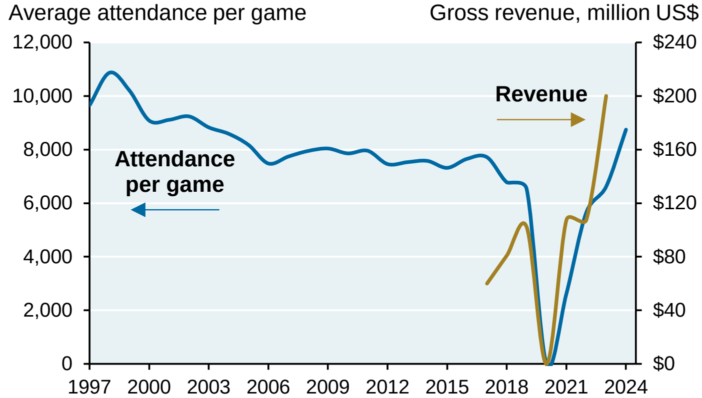
- Revenue generated by women's professional sports leagues is expected to surpass $1 billion for the first time in 2024 according to a report from Deloitte. The 2023 FIFA Women's World Cup Tournament generated $570 million in ad revenue; this compares to $7.6 billion in revenue from the FIFA Men's World Cup
- The surge in **NCAA** tournament viewers for the women's bracket is a notable example (see chart). With respect to the Olympics, a 2021 survey found that interest in women's events practically matched interest in men's events. Gymnastics has been the most watched Olympic Sport since 1996, with 38.7 million viewers tuning in to watch the US women's gymnastics team win a gold medal in 2012 (the team also won a gold medal in 2016)
- **WNBA** attendance of 8,000 to 10,000 per game is roughly 50% of NBA levels, which doesn't sound bad. However, WNBA league revenues of $200 million are just 2% of NBA levels. As a result, the valuation gap is less about in-game attendance and more about ticket prices, jersey sales, broadcast revenues and other economics. As for the possibility of a positive Caitlin Clark effect, based on the frequency of hard fouls she has been receiving since joining the league and the potential for injury, it might not last long
- National Women's Soccer League (**NWSL**) club valuations have risen following announcement of a four-year $60 mm per year broadcast deal with ESPN, CBS, Amazon and Scripps; the prior broadcast deal was worth only $1.5 mm per year. In March 2024, San Diego Wave FC sold for $113 million, nearly doubling the league's previous record sale of $63 mm two months earlier; the team was purchased in 2022 for just $2 million. A Sixth Street-led consortium invested $125 mm to launch the latest NWSL expansion team, Bay FC. The team's first game in March sold out all 18,000 tickets. The proposed Angel City FC sale follows board tension over the team's large spending habits; while it is the most valuable NWSL team, the club is still not profitable

NCAA division 1 championship viewership



Source: Nielsen, Sports Media Watch, JPMAM, 2024

WNBA attendance vs net revenues



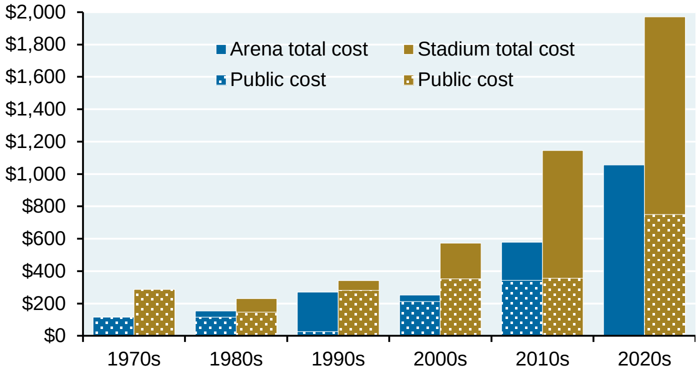
Source: Across the Timeline (WNBA Records), Bloomberg, JPMAM, 2024

Stadiums and subsidies: a controversial source of value for sports team owners

Public subsidies for open air stadiums and domed/retractable roof arenas are one of the more hotly debated topics in sports economics. As shown in the first chart, the publicly funded share of these facilities has been substantial since the 1970s. While the public *share* of construction costs have been falling, facilities are becoming more technologically advanced and expensive to build, resulting in rising inflation-adjusted public dollars *spent*. The median share of public financing over the entire period is 61%, but as shown on the right this is misleading; some facilities get no public support[22] and others get plenty of it.

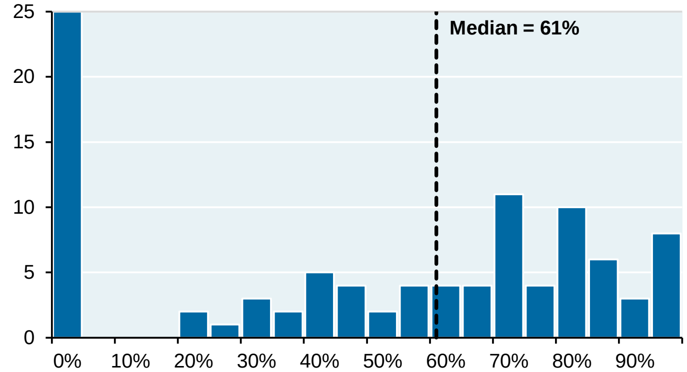
Public funding is of substantial value to sports team owners. The third chart shows select examples of facility costs as a percentage of estimated franchise value. One example of a boost from public funding: once among the least valuable NFL franchises, after securing $750 million in taxpayer funding for a new stadium in Las Vegas, the valuation of the Raiders rose from $1.4 billion in 2015 to more than $6 billion today.

Stadium and arena median construction costs by decade
2020 US$, millions



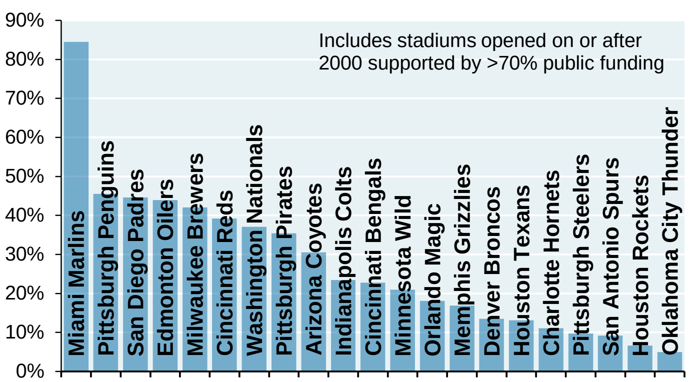
Source: "*Sports Venue Construction Costs*", Bradbury et al, JPMAM, July 2023

Public funding share of total stadium construction costs
Number of venues since 1990



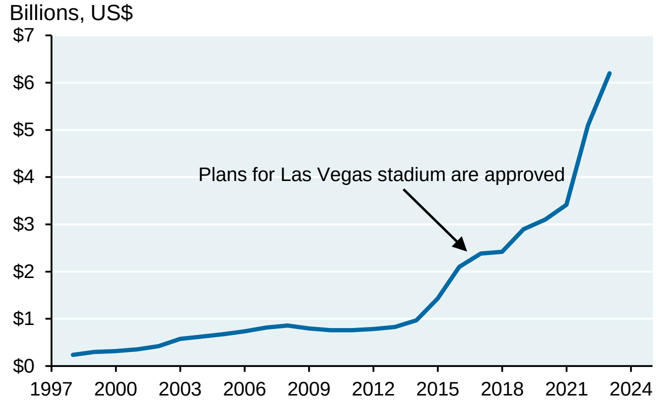
Source: "*Public Policy Toward Sports Stadiums*", Bradbury et al, July 31, 2023

Stadium costs as a share of team valuation
Stadium construction costs in 2023$ as a % of team valuation



Source: Bradbury et al stadium data, Forbes, JPMAM, 2024

Valuation of the Raiders
Billions, US$



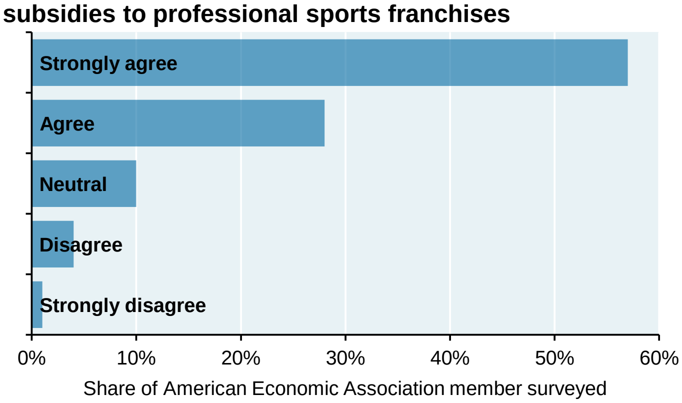
Source: Forbes, Bloomberg, JPMAM, 2024

22 The most expensive sports stadium ever built is SoFi Stadium (home to the LA Rams and Chargers) which cost $5.5 bn and which was 100% privately financed. Separately, in April 2024, voters in Kansas City rejected a measure to renew a 40-year sales tax to subsidize a downtown stadium for the Kansas City Royals

Here's where the controversy lies. According to a meta-study published in April 2022[23], the economic rationale for subsidizing professional sports facilities is weak despite arguments that such projects catalyze local economic development. The 130 individual studies that the authors analyzed measured economic benefits by looking at income, employment, retail sales, tax receipts, hotel occupancy/room rates and housing values in the wake of stadium completion. The authors found clear consensus in the economic literature: **the value of stadium subsidies is typically much larger than the value of economic benefits that result from their addition to a community**. One reason why: increases in sports-related consumer spending after a new stadium is built are shifts from other local consumer spending, not net-new spending. As a result, subsidies end up as wealth transfers from taxpayers to sports team owners.

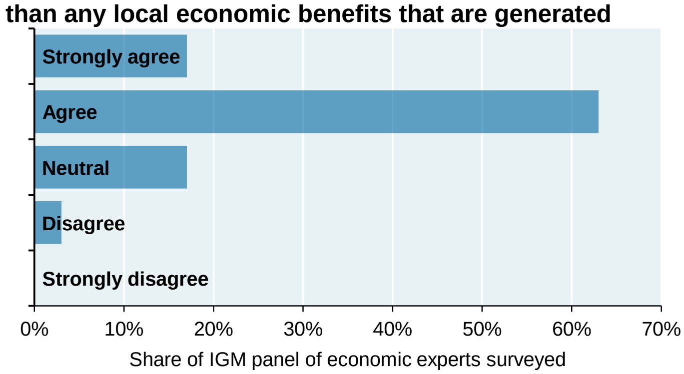
The authors cite two surveys as confirmation of their findings: panels of economic experts strongly agreed that subsidies should be eliminated, and that they cost taxpayers more than economic benefits generated:

Local and state governments in the US should eliminate subsidies to professional sports franchises



Source: Bradbury et al, Journal of Economic Studies, April 2022

Providing state & local subsidies to build stadiums for pro sports teams is likely to cost the relevant taxpayers more than any local economic benefits that are generated

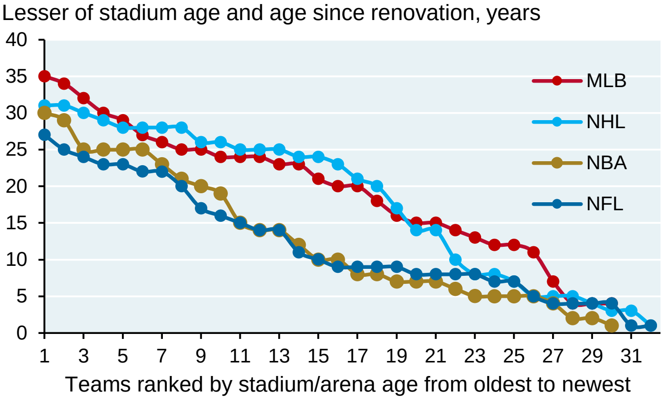


Source: Bradbury et al, Journal of Economic Studies, April 2022

Despite the evidence, stadium subsidies continue in many jurisdictions. This issue will become increasingly important for league owners and local governments in the years ahead. A new wave of stadium construction appears imminent given the median age of existing facilities across the four major sports leagues (24 years) and the typical 30-year stadium replacement cycle. The chart below shows the age of each facility by league; by 2030, 30 facilities will be at least 30 years old, which is roughly 25% of all stadiums.

Stadium ages by league

Lesser of stadium age and age since renovation, years



Source: *"Economics of Stadium Subsidies"*, Bradbury et al, January 2023

[23] "*Impact of Sports Franchises/Venues on Local Economies*", Bradbury, Journal of Economic Studies, April 2022

Adjacent businesses: examples in apparel, image management and player management

The bulk of this piece focuses on sports team dynamics since that's a topic that we have not reviewed before. But as explained upfront, sports franchises are one among many industries that sports-focused funds might consider. Below we take a brief look at sports-adjacent businesses that have gained some traction:

Apparel. Fanatics is an apparel company that was valued at $31 billion based on a 2022 funding round in which it raised $700 million. Fanatics began as an e-commerce company selling sports gear and now has data on 94 million sports fans, and exclusive rights to manufacture and distribute branded fan apparel. Fanatics acquired Topps (baseball cards), acquired clothing brands in partnership with Kevin Durant and LeBron James, established partnerships with the Tokyo Giants and has a manufacturing agreement with Nike for college apparel. The company has launched a gaming effort as well in a crowded market (see next section for more on gaming).

Fanatics revenues are estimated at $5-$8 billion but the company has experienced growing pains according to S&P which revised its outlook to negative while affirming its BB- rating[24]. According to S&P, Fanatics leverage is elevated while revenue growth has been slowing due to production delays and revised product launches, resulting in a 5.5% decline in EBITDA margins in Q2 2023. Another risk: Fanatics licensing agreements include guaranteed minimum royalty payments that it must pay to intellectual property owners regardless of sales volume. The company is also involved in antitrust litigation with the NFL as co-defendant (see Appendix I).

Licensing rights and image management. Name, image and likeness (NIL) group licensing deals entail athletes pooling their rights and licensing them collectively. The licensee can then use a certain number of player names, images or likenesses in conjunction with products such as trading cards, video games, jerseys and bobbleheads. An example: OneTeam Partners works with unions from the NFL, MLB, MLS, WNBA, and US Women's National Soccer Team on commercializing group licensing rights and recently announced OneTeam International to expand its existing business verticals internationally.

OneTeam Partners has also partnered with Fanatics on college athletic jersey production, which requires the group to go school by school to aggregate NIL rights. OneTeam is currently working with over 100 schools to bring co-branded products to market across football, women's soccer, women's volleyball, men's basketball and women's basketball with plans to expand into college baseball, softball and lacrosse. OneTeam earns a percent of sales for arranging these collegiate partnerships. One challenge: it's much harder to anticipate jersey demand in collegiate athletics than for the professional leagues, so college jerseys are generally produced on demand.

Player management. The aggregate payroll for the four major US sports leagues was ~$20 billion last year. As a result, there's a lot of work to go around for sports agencies. Some of the largest ones are shown below along with their commissions, contracts and reported sources of funding.

	Agency	Sports	Commissions (mm)	Contracts (bn)	Major Investors
1	CAA	FBASH	$971	$18.0	TPG, CMC, Temasek, Pinault, Taiwan Mobile
2	Wasserman	FBASHGORE	$733	$9.0	Providence, Madrone
3	WME Sports	FBTG	$588	$6.0	Silver Lake, KKR, DFO
4	Excel Sports Management	BAG	$499	$6.0	Shamrock
5	Octagon	FBAHSGTO	$212	$3.0	Interpublic
6	Boras Corporation	A	$206	$4.0	n/a
7	Roc Nation Sports	FBASRC	$203	$3.0	Live Nation
8	Athletes First	F	$181	$5.0	General Catalyst, Mosaic
9	Klutch Sports Group	FB	$100	$2.0	EQT, United Talent Agency
10	You First	BS	$93	$1.0	Alia, ASM Sports
11	GSE Worldwide	FGT	$87	$0.8	n/a
12	Newport Sports Management	H	$76	$2.0	n/a
13	Rep 1 Sports	FAB	$60	$2.0	EQT, United Talent Agency
14	Priority Sports & Entertainment	FB	$55	$1.0	n/a
15	Independent Sports & Entertainment	FAB	$54	$1.0	Yucaipa

F: Football, B: Basketball, A: Baseball, S: Soccer, H: Hockey, G: Golf, O: Olympics, R: Rugby, E: Extreme sports, T: Tennis, C: Cricket. Sources: Forbes 2022 (commissions and contracts), JPMAM 2024 (sources of funding)

24 "*Fanatics Outlook Revised to Negative as Ratings Affirmed*", S&P Global, October 13 2023

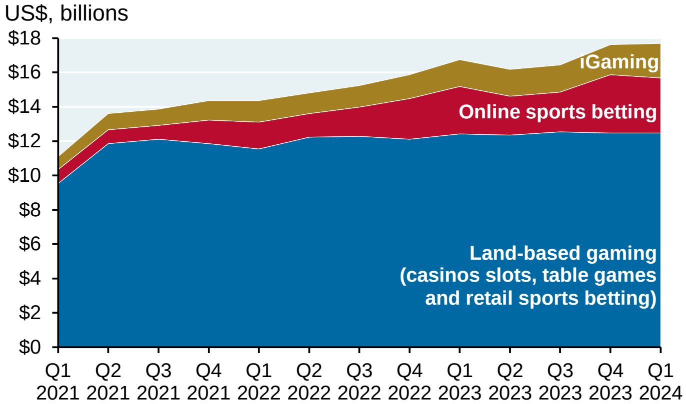
Sports betting: Supreme Court rulings, parlays and fantasy sports regulatory arbitrage

"*I spent half my money on gambling, alcohol and women. The other half I wasted*" – WC Fields

After the US Supreme Court[25] overturned a federal ban on sports gambling in 2018, the sports betting industry was off to the races. Individual states can now decide whether to make sports betting legal, which 38 states have now done (in 8 of them, online betting is not permitted, only in-person betting). Some large remaining states that have yet to legalize sports seem unlikely to do so soon; voters in California defeated two separate sports betting initiatives in 2022. While land-based casino gaming and retail sports betting revenues have been flat since 2021, online sports betting revenues are gradually rising and now represent 18% of all commercial gaming revenues. US bettors are spending (i.e. losing) $700 million to $1 billion per month.

US commercial gaming revenue by vertical

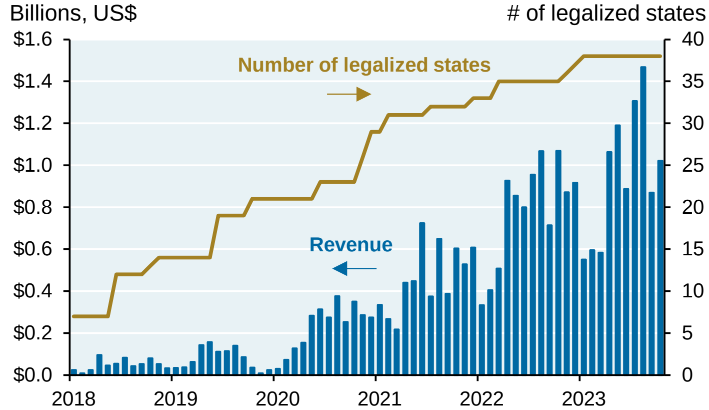
US$, billions



Source: American Gaming Association, Q1 2024

US monthly sports-betting revenue

Billions, US$ # of legalized states

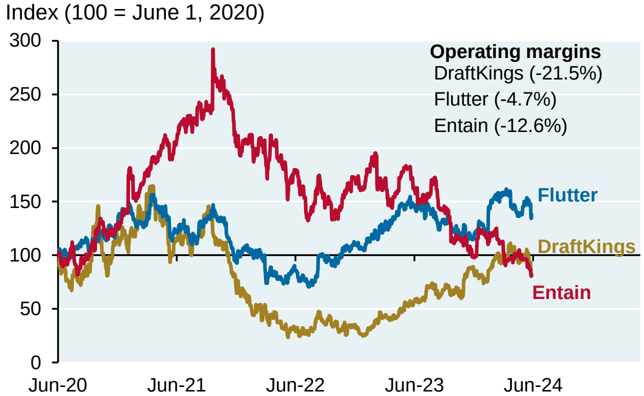


Source: "Legal Sports Betting Revenue", Sportshandle.com, JPMAM, May 29, 2024

Publicly traded sports betting stocks (DraftKings, Flutter-FanDuel and Entain) rose in 2020/2021 but gave up their gains in the 2022 correction of high-flying growth stocks. While some have recovered from their lows, they all underperformed the S&P 500 and the Russell 1000 Consumer Discretionary Index since June 2020. Note that three of the most well-known sports betting companies still have negative operating margins. There's also a sports betting and iGaming ETF with over 30 holdings that provides exposure to the sector, but most of its component companies with online sports betting platforms are part of bigger diversified companies that are not pure plays on sports betting (MGM Resorts, Caesars Entertainment, Penn Entertainment, Bally's, Boyd Gaming).

Sports betting stock performance

Index (100 = June 1, 2020)

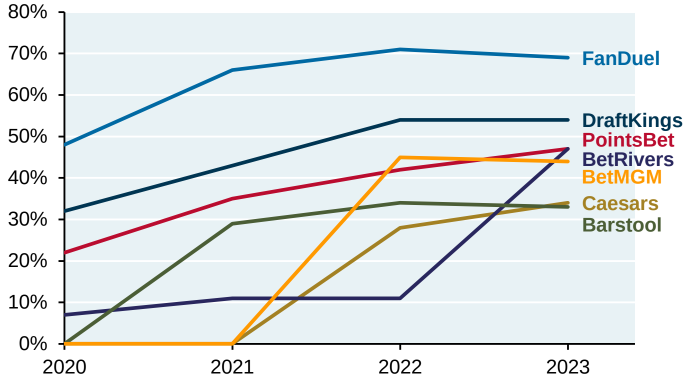


Source: Bloomberg, JPMAM, May 30, 2024

[25] **States Rights**. The Supreme Court's "just let the states decide" movement is being applied to immigration, abortion rights, foster care, gun rights, voting rights, sports gambling and other issues. Let's wait 15-20 years; I'm willing to bet that this revived States Rights movement is not going to make the United States a better place.

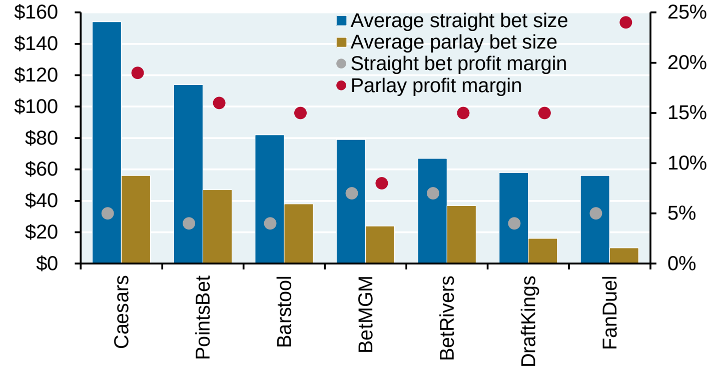
Sports parlays. Parlay bets are a way of combining wagers to offer higher payout odds; these combined wagers can be made on different sporting events or on various aspects of the same game. The number of bettors using parlays is growing, with FanDuel reporting 90% of active users having placed a same-game parlay. This trend benefits sportsbooks since parlays tend to have higher profit margins than straight bets. Data from Illinois[26] reveals average profit on parlays is 18% compared to just 5% on straight bets. This higher profit margin is partially offset by the fact that the average straight bet is 5-6x larger than parlay bets. Additionally, sportsbooks have reported that parlays lead to higher customer retention than other types of bets.

Increase in parlay bets
Parlay bet share of total bets placed



Source: Sports Business Journal, September 2023

Size and profitability: straight bet vs parlay bet
Average size, US$ Profit margin

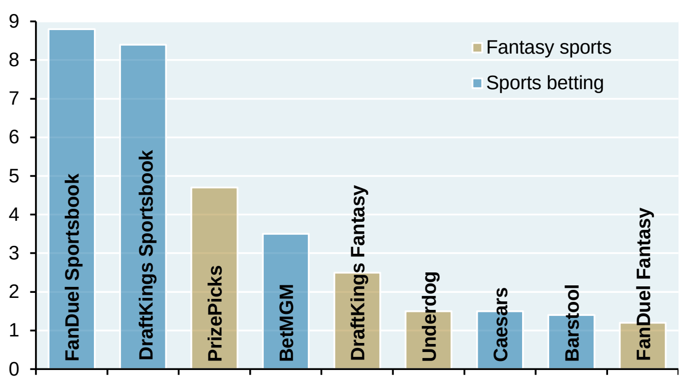


Source: Sports Business Journal, December 2023

Fantasy sports betting and regulatory arbitrage

The category of "sports betting" includes rapidly growing sports fantasy companies that are not regulated like FanDuel or DraftKings. Sports fantasy in its simplest iteration entails users paying to enter their fantasy teams into tournaments against other users; after some period of time, winning teams are determined and their fantasy team owners split the pot. The legal language in most states exempts this kind of activity from the sports betting regulation applied to other companies. Over time, fantasy sports companies developed betting products that have a very similar look and feel to the sports parlay bets mentioned above. As shown below, the fantasy company PrizePicks was the third most downloaded sports gambling app from July 2022 through June 2023.

Sports-gambling app downloads (July 2022-June 2023)
Millions



Source: *"Startup Making It Easier to Put Money on Sports"*, WSJ, July 27, 2023

The DFS (Daily Fantasy Sports) loophole

- States with 33% of the US population (including California, Alabama, Georgia, Minnesota, Missouri, Oklahoma, South Carolina, Utah and Texas) don't allow sportsbook companies like DraftKings and FanDuel to operate in their states (location settings have to be turned on to use these apps)
- However, states such as California and Texas do permit DFS companies like PrizePicks to operate due to the legal language under which its bets are made. In California, DFS companies are not regulated and don't pay taxes
- To make matters more complicated, some states which allow sportsbook companies do NOT allow DFS

[26] *"Import of same-game multi-bets brings U.S. operators together"*, Sports Business Journal, December 2023. The parlay charts above reflect data from Illinois, which requires sportsbooks to disclose how much bettors wager, how many bets they place, the type of bets and the profit margins earned

Headwinds. Players in all four major North American sports leagues have been caught up in sports betting scandals which have resulted in suspensions or permanent bans. The NCAA is pushing for a ban on college prop bets in order to preserve what they describe as "the integrity of competition" and to protect student and professional athletes from getting harassed by bettors.

Other headwinds include states like Florida sending fantasy sports betting companies PrizePicks, Underdog and Betr cease and desist letters which accused the companies of offering illegal bets or wagers. Fantasy companies typically argue that they offer "games of skill" rather than gambling since success depends on knowledge; Florida disagrees, saying that fantasy sports prizes must be set and announced in advance, and not tied to the number of participants or amount of fees.

There's also the issue of sports gambling addiction and the inevitable flood of class action lawsuits and industry restrictions, some of which have already begun[27]:

- The Connecticut Council on Problem Gambling saw a 91% increase in calls in 2022, the first year the state legalized gambling. Calls to the New Jersey Council on Compulsive Gambling hotline tripled since gambling was legalized in 2019
- The University of New Mexico Center on Alcohol, Substance Use and Addictions found a high level of correlation between binge drinking and sports gambling
- An NCAA survey of 3,527 college age students shows how sports betting has become commonplace. Nearly 60% bet on sports and 4% do so daily. Almost 6% reported losing more than $500 in a single day
- The UK Committee of Advertising Practice banned betting advertisements that feature former sports stars and social media influencers. In addition, betting firms are prevented from including team uniforms and stadiums in ad campaigns and from showing video game content. In the Netherlands, all advertising and sponsoring of online gambling is now prohibited. The Dutch Parliament also barred former and present sports celebrities from taking part in promotions for online betting

Gambling addictions may be harder to overcome than other addictions: only 30% of addicted gamblers successfully refrain from betting after receiving treatment, while post-treatment recovery rates are higher for alcohol addiction (70%-80%), drug addiction (75%) and sex addiction (64%)[28].

[27] Sources include Forbes, Time Magazine, Yahoo News

[28] Sources include Health Central, Frontiers in Psychiatry, AddictionHelp.com, American Journal of Drug and Alcohol Abuse, CDC, National Institute on Drug Abuse, Hazelden Betty Ford Foundation

The esports winter continues: poor business fundamentals, layoffs and league terminations

Of all the things I have seen investors embrace that flamed out (metaverse, hydrogen, P2P lending, cannabis), esports looks the most absurd in the light of day. After millions of dollars flooded into esports in 2021 (and to be clear, I have strong objections to describing it as a "sport"), advertisers and event sponsors slashed spending amidst evidence of falling viewership and insufficient return on investment. The first chart shows declining viewership and hours watched for the "League Championship Series", the top professional US/Canada League of Legends competition. The surge in esports viewership in 2020 might in retrospect have partially included viewers unable to consume traditional sports content due to COVID. Advertising partnerships are further complicated by esports viewers who are more likely to use ad blockers, which decreases advertising reach.

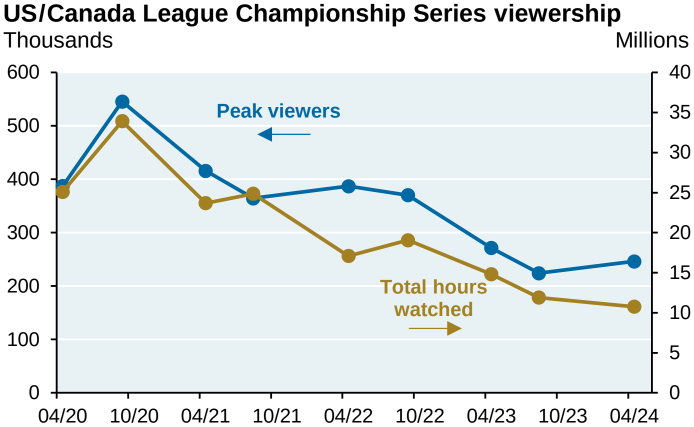
Unmet expectations. FaZe Clan, a conglomerate of pro gamers, streamers and "online personalities" (don't ask) went public via SPAC (the corporate finance kiss of death[29]) in 2022. Elevated spending reportedly plagued the company before 40% of its staff was laid off in May 2023[30]. Its shares fell by 24% on the first day of trading and fell 99% from its IPO price before being taken private by GameSquare Holdings in March 2024.

More e-stress, and this is just a partial list:

- Madison Square Garden attempted to sell its esports team but was reportedly unable to recoup its costs. Instead, MSG group laid off dozens of gaming employees and merged its remaining assets with NRG. MSG did not receive a payment from the deal; it actually *paid* NRG several million dollars to take on the costs of the esports facilities and the salaries of the remaining employees[31]
- Amazon cut its gaming/streaming headcount twice in 2023
- The Overwatch League voted to shut down operations entirely in 2023 after six seasons, with Microsoft reportedly at risk of losing $120 million in compensation payouts[32]
- Activision laid off most of its esports teams, negatively impacting the Call of Duty league that it managed
- The esports and video game coaching platform ProGuides will wind down operations at the end of May

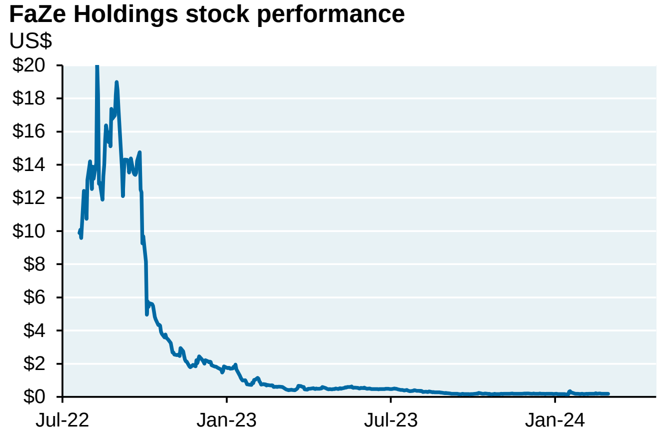
All is not lost, at least not just yet. While US viewership of League of Legends has declined, it continues to rise globally. Esports companies have announced several new brand partnerships and renewals in 2024. One example is Riot Games which announced sponsorships with brands such as Kia, HyperX, KitKat and Omen. But despite these new sponsors, Riot still laid off over 500 staff in January. Some venture funds show interest in esports, but with a focus on infrastructure and data analytics rather than esports leagues themselves.

US/Canada League Championship Series viewership



Source: Esports Charts, May 2024

FaZe Holdings stock performance



Source: Bloomberg, JPMAM, March 8, 2024

[29] See section 2 in "*The impact of underperforming 2020 and 2021 US IPOs*", Eye on the Market, July 2023

[30] "*Here's what ultimately led to the fall of FaZe Clan",* DigiDay, November 2023

[31] "*The E-Sports World is Starting to Teeter*", New York Times, May 2023

[32] "*Overwatch League Shutdown May Cost Microsoft $120 Million*", Game 8, November 2023

Appendix I: US sports leagues mostly function as unregulated monopolies under the Sherman Act

While the Sherman Act (federal antitrust law) would normally be expected to apply to US professional sports leagues, it has rarely been used to curtail the established monopoly status of US sports teams and the unique level of coordination and cooperation across teams that routinely takes place. The net result: sports team owners are able to earn monopoly rents from the viewing public and from municipalities as well.

While the NFL, NBA, and NHL have each been subject to the Sherman Antitrust Act for over 60 years, the MLB has been exempt from federal antitrust law since 1922 when the Supreme Court ruled that its operations did not constitute interstate commerce. Even so, in most respects the MLB structures its operations consistent with other professional leagues, behaving as if it were subject to the Sherman Act as well.[33]

While the Sherman Act does in principle apply to professional sports, the courts tend to apply a "rule of reason" to league activity: some anticompetitive restraints are necessary to encourage competitive balance among the league's teams and ensure the league's long-term viability. For example, anti-collusion restrictions in Section One of the Sherman Act[34] would be impossible/impractical to apply to professional sports. In addition, most significant league decisions require approval of a majority or supramajority of owners, which would similarly be considered anticompetitive in other industries, but not in professional sports.

Other examples and issues related to anti-trust law and US professional sports:

- From 1973 to 2011, the NFL refused to allow games that were not sold out 72 hours in advance to be televised in the home team city (the rule was relaxed in 2012 to 85% of available tickets). No antitrust actions have been taken regarding this policy since 1961. Similarly, courts in Pennsylvania affirmed an NFL rule preventing other games from being broadcast into a home team's market, even while acknowledging that this technically violates the Sherman Act; the courts cited overriding concerns regarding negative financial effects on the league
- Class action litigants are currently contesting the legality of the NFL's exclusive license of its bundled Sunday Ticket package (such rights were originally licensed by DirecTV and are now licensed by YouTube). Plaintiffs argue that teams should be required to independently sell broadcast rights to different bidders, rather than the NFL's current approach of pooling all rights and selling them collectively
- In a 2010 decision (*American Needle*), the Supreme Court rejected the NFL's argument that when applied to licensing of intellectual property, it was acting as a single entity which was incapable of violating Section One of the Sherman Act. In other words, the Court found that the NFL acted as multiple entities and was therefore subject to the Sherman Act; it remanded the case to district courts where it was settled after 11 years of litigation. This *American Needle* case is in the headlines again now that a retailer has sued the **NFL and Fanatics** for conspiring to dominate the retail market for online sales of NFL licensed apparel in violation of antitrust laws (the NFL owns 3% of Fanatics)
- Courts on occasion side with owners challenging league rules. For example, courts held that rules banning public ownership of teams, and rules preventing owners from acquiring an interest in a team in a competing league, both violate the Sherman Act. The courts also sided with owners on relocation. In *Los Angeles Memorial Coliseum Commission v. National Football League*, the Ninth Circuit held that the NFL policy requiring franchise moves be approved by three-fourths of owners constituted illegal restraint of trade

[33] "*Regulating professional sports leagues*", Washington & Lee Law Review, Nathaniel Grow, 2015

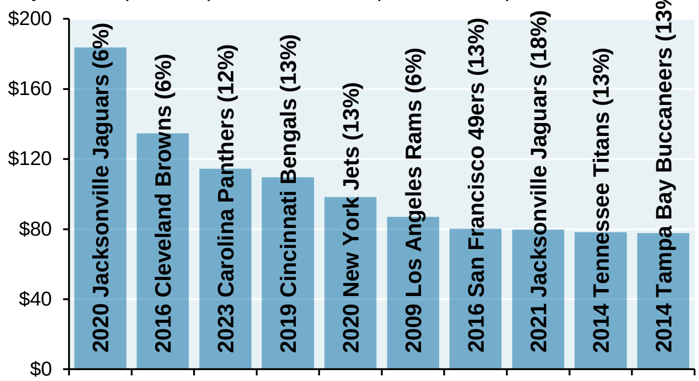
[34] Section 2 of the Sherman Act generally only applies when firms maintain dominant positions via exclusionary practices to prevent a rival from entering the market. To date, courts have not found that US leagues violate this provision; high barriers of entry are the primary factor preventing competitive leagues from thriving. In 1986, a college friend went to work for McKinsey. He was staffed on an 18-month project designed to provide economic evidence supporting the USFL antitrust lawsuit against the NFL. A jury found the NFL guilty of acting as a monopoly **but only awarded the USFL a symbolic $1 award** which was trebled according to antitrust law to $3. He left consulting after that and went to LA to work in television programming.

Appendix II: The Worst Team that Money Can Buy

I was curious to see which teams spent the most amount of money relative to team wins that season; in other words, the worst teams that money could buy. The charts below show the 10 teams for the NFL, NBA, MLB and NHL with the highest ratio of dollars spent per win. We adjusted payrolls for inflation and normalized wins by the number of games played in the season, whether that refers to a time when fewer games were played or due to a shortened season due to COVID. The starting years for each analysis appear in the chart header.

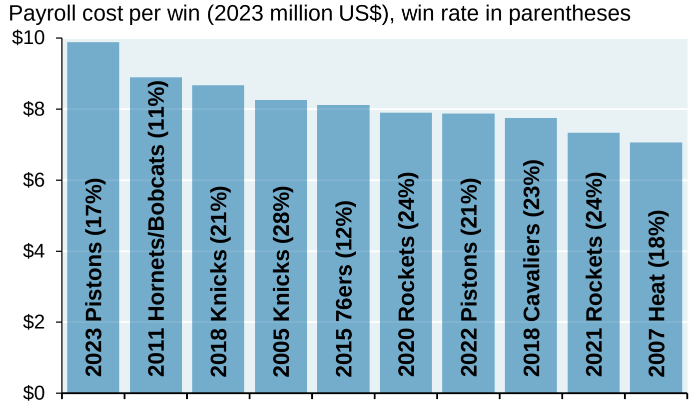
- **NFL**: The 2008 Detroit Lions and 2017 Cleveland Browns should be first on this chart but they lost every game, resulting in an infinite cost per win which we cannot plot
- **NBA**: The Knicks show up twice: 2005 and 2018. In 2005, Allan Houston was the Knick's highest paid player and did not play a single game due to a knee injury. The circumstances were so bad that the NBA created the "Allan Houston Rule" to let teams avoid paying additional luxury taxes for a waived player
- **MLB**: The MLB curve is pretty flat, except for the unenviable new record set by the 2023 Mets. Unlike the NFL and NBA where "high cost per win" teams tend to lose a lot of games, many teams on the MLB list won a little more than half their games; they just paid a fortune to do so. The Yankees show up three times; if we had extended the chart to the top 11 teams, the 2023 Yankees would have been included at #11. The 2018 Orioles were cited as "one of the worst teams of all time" according to the New York Times[35]

The most costly seasons in the NFL since 1994
Payroll cost per win (2023 million US$), win rate in parentheses



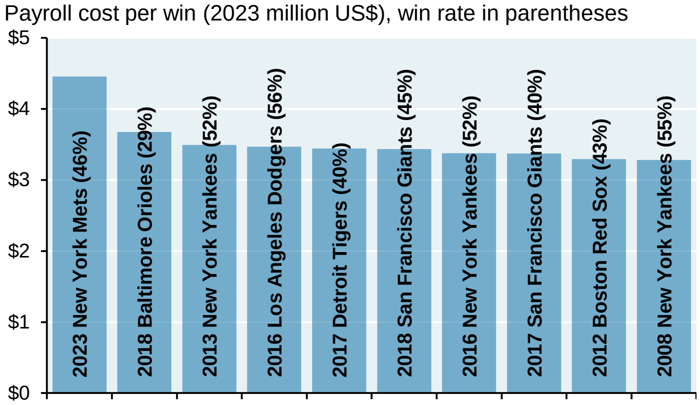
Source: JPMAM, 2024

The most costly seasons in the NBA since 1990
Payroll cost per win (2023 million US$), win rate in parentheses



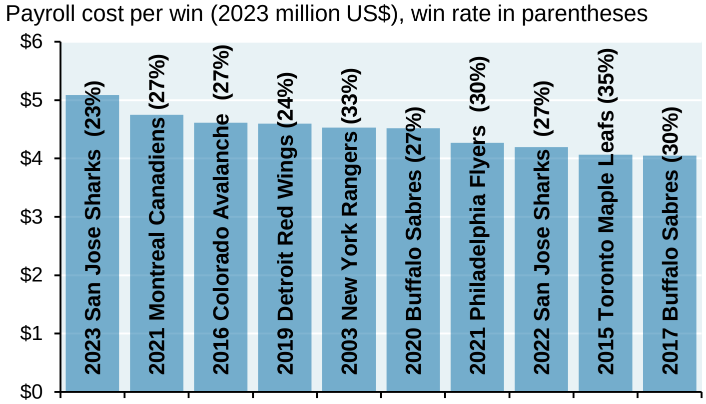
Source: JPMAM, 2024

The most costly seasons in the MLB since 2000
Payroll cost per win (2023 million US$), win rate in parentheses



Source: JPMAM, 2024

The most costly seasons in the NHL since 1989
Payroll cost per win (2023 million US$), win rate in parentheses



Source: JPMAM, 2024. 2008-2010 seasons not included due to lack of data.

[35] "*10 weird things the Baltimore Orioles did in 2018*", The New York Times, October 30, 2018

Appendix III: The best basketball players of all time

A few years ago, I wanted to get my 13-year old son interested in learning about statistics. He loves basketball, so we built a database of all 4,622 players in NBA history since 1951, scoring each player based on their on-court contributions and their playing style. We then created the playing style trichotomy chart on the next page that shows the best 250 NBA players of all time. I have updated the chart through the 2023-2024 season.

How are on-court contributions measured? Explaining "Model Estimated Value" (MEV)

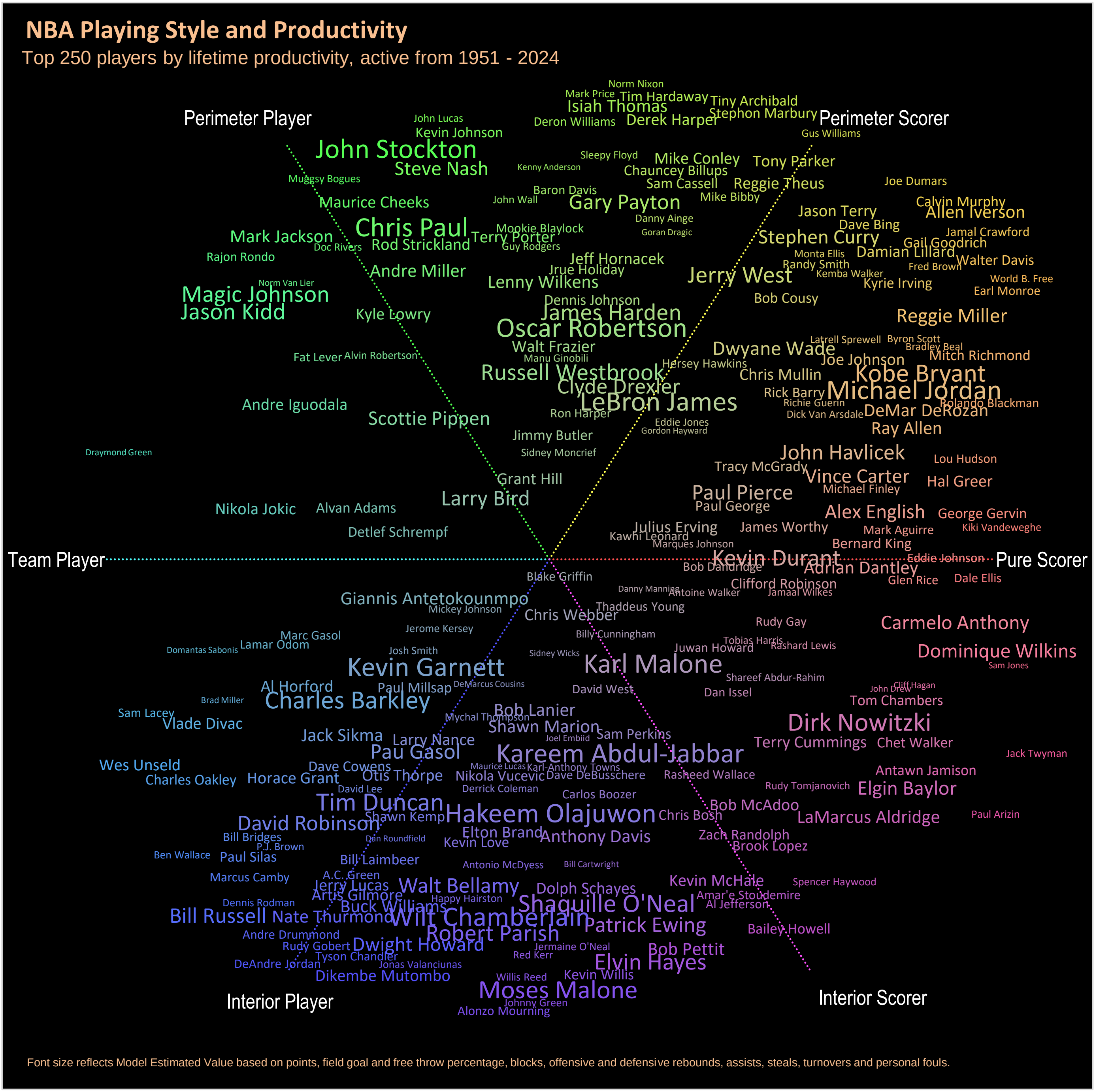
David Sparks at Duke University (now the head of sports analytics for the Boston Celtics) regressed decades of player stats against margin of team victory in each game, and derived the *positive* implied value of offensive rebounds, defensive rebounds, blocks, steals, assists, steals and total points; and the *negative* implied value of missed shots, missed free throws, personal fouls and turnovers. Using these coefficients, we computed each player's lifetime MEV across all seasons, and also per minute and per game played[36]. The higher a player's lifetime MEV, the larger the font size used to display that player's name in the chart.

Where do players show up on the chart? Explaining "relative playing style"

We also replicated David's way of illustrating the data. Every NBA player is differentiated according to how often they shoot, rebound, pass, block and make assists *relative* to other players. There are three pure playing styles: Shooting, Perimeter Play (assists and steals) and Interior Play (blocks and rebounds). Now, imagine a clock which is actually a polar coordinate chart. At 3 o'clock, pure shooters are shown (e.g., Carmelo Anthony, George Gervin). At 7 o'clock, pure interior players are shown (e.g., Bill Russell, Dikembe Mutombo). At 11 o'clock, pure perimeter players are shown (e.g., John Stockton, Steve Nash). Players with more balanced relative play show up in in the middle (Julius Erving, Chris Webber, Larry Bird and Blake Griffin).

In 2015, Peter and I were fortunate to be able to present a framed version of this chart to former Commissioner David Stern and EVP of basketball operations Kiki VanDeWeghe (who was pleased to find out that he is on the chart, right below George Gervin). In the photo, Peter is explaining the methodology. Peter is the shorter one.

[36] Just missed the MEV cutoff for the top 250 players: Richard Jefferson, Trevor Ariza, Metta World Peace, Pete Maravich, Damon Stoudamire, Paul Westphal, Michael Cage



The NBA is a trademark or registered trademark of NBA Properties, Inc. All brands, sports or entertainment figures identified are used strictly in a referential sense and are not affiliated with, connected to, or sponsored by JPMorgan Chase & Co.

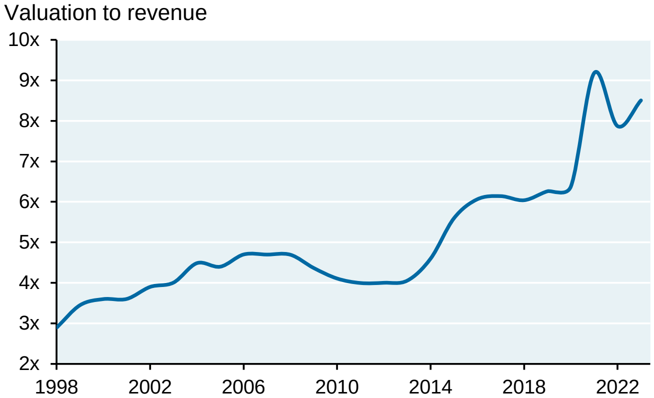
Appendix IV: Valuations, revenues, debt and operating income by team

Latest team valuations, revenues, debt and operating income

NFL	Valuation US$, bil	Revenue US$, mm	Oper Income US$, mm	Valuation to Revenue	Debt / Valuation	Operating Margin	5-yr Revenue Growth (ann.)
Dallas Cowboys	$9.0	$1,140	$504	7.9x	3%	44%	4%
New England Patriots	$7.0	$684	$206	10.2x	4%	30%	3%
Los Angeles Rams	$6.9	$686	$125	10.1x	46%	18%	11%
New York Giants	$6.8	$639	$216	10.6x	7%	34%	4%
Chicago Bears	$6.3	$556	$203	11.3x	2%	37%	4%
Las Vegas Raiders	$6.2	$729	$72	8.5x	22%	10%	15%
New York Jets	$6.1	$560	$126	10.9x	9%	23%	3%
Washington Commanders	$6.1	$545	$87	11.1x	17%	16%	2%
San Francisco 49ers	$6.0	$622	$152	9.6x	5%	24%	5%
Philadelphia Eagles	$5.8	$598	$187	9.7x	3%	31%	4%
Miami Dolphins	$5.7	$600	$111	9.5x	11%	19%	6%
Houston Texans	$5.5	$605	$195	9.1x	0%	32%	4%
Denver Broncos	$5.1	$563	$103	9.1x	4%	18%	5%
Seattle Seahawks	$5.0	$555	$89	9.0x	4%	16%	5%
Atlanta Falcons	$4.7	$544	$159	8.6x	20%	29%	4%
Minnesota Vikings	$4.7	$540	$99	8.6x	12%	18%	5%
Pittsburgh Steelers	$4.6	$548	$96	8.4x	4%	18%	5%
Baltimore Ravens	$4.6	$544	$108	8.5x	6%	20%	4%
Cleveland Browns	$4.6	$545	$104	8.5x	11%	19%	6%
Green Bay Packers	$4.6	$577	$69	8.0x	2%	12%	5%
Tennessee Titans	$4.4	$516	$85	8.5x	11%	16%	6%
Indianapolis Colts	$4.4	$545	$101	8.0x	9%	19%	7%
Kansas City Chiefs	$4.3	$540	$95	8.0x	2%	18%	6%
Tampa Bay Buccaneers	$4.2	$531	$64	7.9x	4%	12%	6%
Los Angeles Chargers	$4.2	$518	$65	8.0x	19%	13%	7%
Carolina Panthers	$4.1	$530	$72	7.7x	5%	14%	5%
New Orleans Saints	$4.1	$533	$66	7.7x	6%	12%	4%
Jacksonville Jaguars	$4.0	$517	$110	7.7x	8%	21%	4%
Arizona Cardinals	$3.8	$500	$83	7.6x	4%	17%	5%
Buffalo Bills	$3.7	$503	$119	7.4x	11%	24%	5%
Detroit Lions	$3.6	$495	$51	7.3x	6%	10%	5%
Cincinnati Bengals	$3.5	$498	$104	7.0x	4%	21%	6%

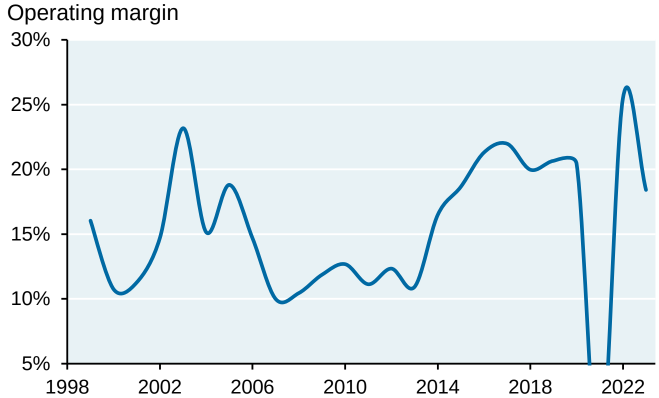
Source: Forbes, JPMAM, 2024

NFL median valuation to revenue
Valuation to revenue



Source: Forbes, JPMAM, 2024

NFL median operating margin
Operating margin



Source: Forbes, JPMAM, 2024

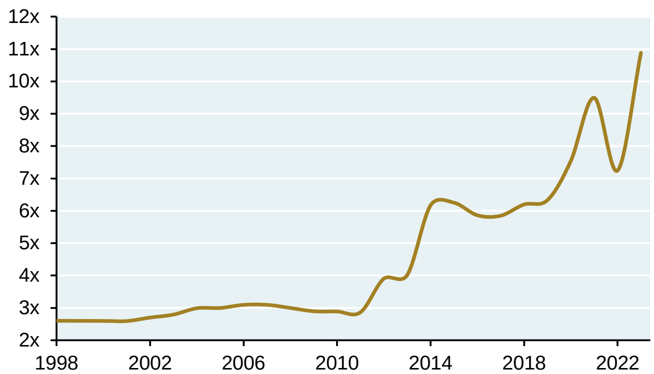
Latest team valuations, revenues, debt and operating income

NBA	Valuation US$, bil	Revenue US$, mm	Oper Income US$, mm	Valuation to Revenue	Debt / Valuation	Operating Margin	5-yr Revenue Growth (ann.)
Golden State Warriors	$7.7	$765	$79	10.1x	14%	10%	14%
New York Knicks	$6.6	$504	$169	13.1x	4%	34%	3%
Los Angeles Lakers	$6.4	$516	$159	12.4x	1%	31%	5%
Boston Celtics	$4.7	$443	$88	10.6x	4%	20%	9%
Los Angeles Clippers	$4.7	$425	-$12	10.9x	2%	-3%	10%
Chicago Bulls	$4.6	$372	$115	12.4x	4%	31%	5%
Dallas Mavericks	$4.5	$429	$83	10.5x	3%	19%	8%
Houston Rockets	$4.4	$381	$125	11.5x	5%	33%	3%
Philadelphia 76ers	$4.3	$371	$120	11.6x	3%	32%	7%
Toronto Raptors	$4.1	$305	$75	13.4x	5%	25%	2%
Phoenix Suns	$4.0	$366	$15	10.9x	8%	4%	9%
Miami Heat	$3.9	$371	$108	10.5x	10%	29%	7%
Brooklyn Nets	$3.9	$367	-$5	10.5x	7%	-1%	5%
Washington Wizards	$3.5	$323	$85	10.8x	6%	26%	5%
Denver Nuggets	$3.4	$348	$71	9.7x	8%	20%	9%
Cleveland Cavaliers	$3.4	$348	$78	9.6x	7%	22%	3%
Sacramento Kings	$3.3	$289	$36	11.5x	16%	12%	2%
Atlanta Hawks	$3.3	$326	$85	10.2x	8%	26%	9%
San Antonio Spurs	$3.3	$319	$113	10.2x	6%	35%	4%
Milwaukee Bucks	$3.2	$329	-$36	9.7x	10%	-11%	10%
Utah Jazz	$3.1	$274	$46	11.3x	10%	17%	2%
Portland Trail Blazers	$3.1	$300	$65	10.3x	6%	22%	4%
Detroit Pistons	$3.1	$274	$83	11.2x	7%	30%	3%
Oklahoma City Thunder	$3.1	$267	$49	11.4x	6%	18%	2%
Charlotte Hornets	$3.0	$269	$35	11.2x	10%	13%	5%
Orlando Magic	$3.0	$261	$66	11.3x	7%	25%	3%
Indiana Pacers	$2.9	$263	$68	11.0x	9%	26%	3%
New Orleans Pelicans	$2.6	$262	$57	9.7x	9%	22%	4%
Minnesota Timberwolves	$2.5	$259	$47	9.7x	9%	18%	3%
Memphis Grizzlies	$2.4	$258	$51	9.3x	14%	20%	4%

Source: Forbes, JPMAM, 2024

NBA median valuation to revenue

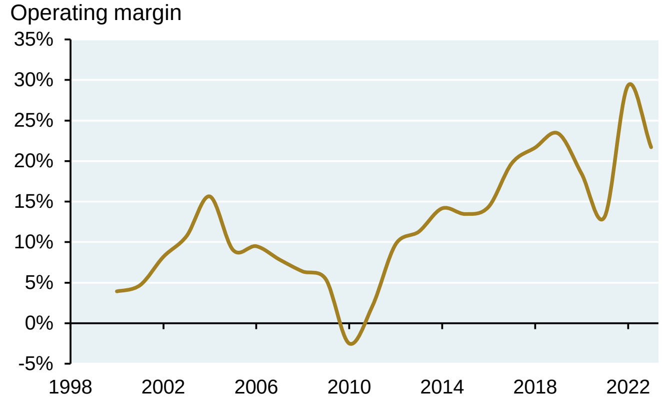
Valuation to revenue



Source: Forbes, JPMAM, 2024

NBA median operating margin

Operating margin



Source: Forbes, JPMAM, 2024

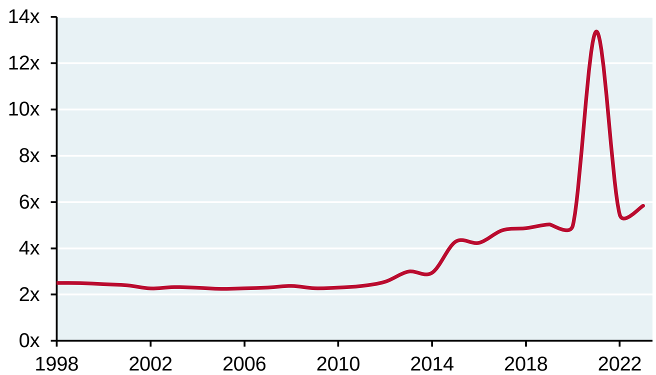
Latest team valuations, revenues, debt and operating income

MLB	Valuation US$, bil	Revenue US$, mm	Oper Income US$, mm	Valuation to Revenue	Debt / Valuation	Operating Margin	5-yr Revenue Growth (ann.)
New York Yankees	$7.6	$679	$2	11.1x	1%	0.3%	-0.1%
Los Angeles Dodgers	$5.5	$549	$26	9.9x	11%	5%	-0.3%
Boston Red Sox	$4.5	$500	$62	9.0x	6%	12%	-1%
Chicago Cubs	$4.2	$506	$68	8.3x	10%	13%	1%
San Francisco Giants	$3.8	$443	$50	8.6x	4%	11%	-0.4%
New York Mets	$3.0	$393	-$292	7.6x	10%	-74%	2%
Philadelphia Phillies	$2.9	$458	$19	6.4x	4%	4%	3%
Atlanta Braves	$2.8	$473	$66	5.9x	6%	14%	4%
Los Angeles Angels	$2.7	$388	$15	7.0x	0%	4%	1%
St Louis Cardinals	$2.6	$372	$57	6.9x	7%	15%	-1%
Houston Astros	$2.4	$445	$54	5.4x	3%	12%	1%
Texas Rangers	$2.4	$425	$12	5.6x	28%	3%	5%
Seattle Mariners	$2.2	$396	$76	5.6x	11%	19%	5%
Toronto Blue Jays	$2.1	$328	-$45	6.4x	0%	-14%	4%
Chicago White Sox	$2.1	$288	-$28	7.1x	7%	-10%	0.2%
Washington Nationals	$2.0	$355	$63	5.6x	28%	18%	-1%
San Diego Padres	$1.8	$345	-$116	5.2x	20%	-34%	3%
Baltimore Orioles	$1.7	$328	$99	5.3x	13%	30%	5%
Milwaukee Brewers	$1.6	$320	$36	5.0x	16%	11%	2%
Colorado Rockies	$1.5	$313	-$17	4.7x	8%	-5%	1%
Minnesota Twins	$1.5	$342	$19	4.3x	24%	6%	3%
Detroit Tigers	$1.5	$306	$17	4.7x	11%	6%	2%
Arizona Diamondbacks	$1.4	$314	$33	4.6x	9%	11%	2%
Cleveland Guardians	$1.4	$315	$52	4.3x	7%	17%	2%
Pittsburgh Pirates	$1.3	$309	$68	4.3x	11%	22%	3%
Cincinnati Reds	$1.3	$315	$53	4.0x	12%	17%	3%
Tampa Bay Rays	$1.3	$301	$68	4.2x	10%	23%	3%
Kansas City Royals	$1.2	$302	$52	4.1x	22%	17%	4%
Oakland Athletics	$1.2	$241	-$11	5.0x	21%	-5%	1%
Miami Marlins	$1.0	$295	$23	3.4x	45%	8%	6%

Source: Forbes, JPMAM, 2024

MLB median valuation to revenue

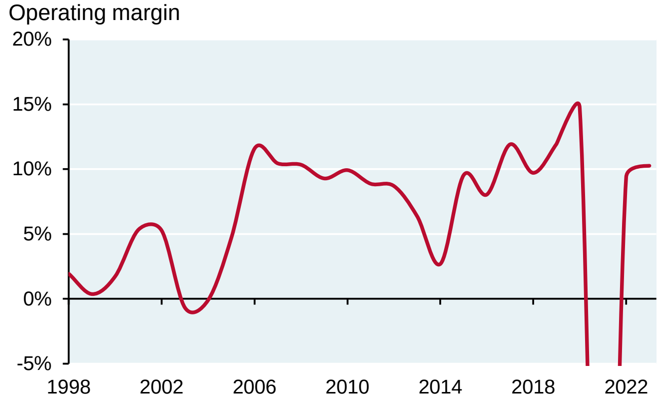
Valuation to revenue



Source: Forbes, JPMAM, 2024

MLB median operating margin

Operating margin



Source: Forbes, JPMAM, 2024

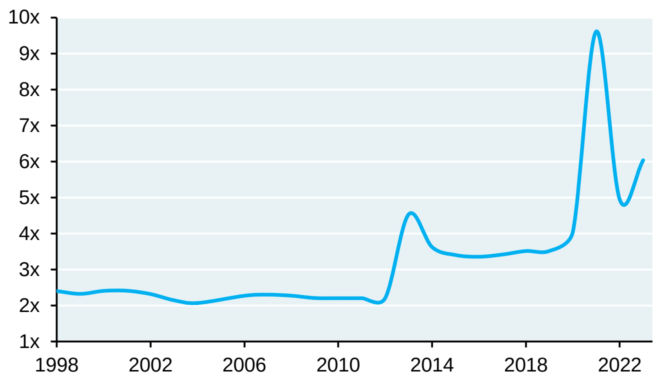
Latest team valuations, revenues, debt and operating income

NHL	Valuation US$, bil	Revenue US$, mm	Oper Income US$, mm	Valuation to Revenue	Debt / Valuation	Operating Margin	5-yr Revenue Growth (ann.)
Toronto Maple Leafs	$2.8	$281	$127	10.0x	7%	45%	3%
New York Rangers	$2.7	$265	$69	10.0x	3%	26%	0%
Montreal Canadiens	$2.3	$265	$99	8.7x	9%	37%	2%
Los Angeles Kings	$2.0	$279	$108	7.2x	5%	39%	7%
Boston Bruins	$1.9	$239	$57	7.9x	5%	24%	1%
Chicago Blackhawks	$1.9	$228	$96	8.2x	5%	42%	2%
Edmonton Oilers	$1.9	$281	$122	6.6x	4%	43%	13%
Philadelphia Flyers	$1.7	$219	$53	7.5x	0%	24%	3%
Washington Capitals	$1.6	$218	$74	7.3x	12%	34%	4%
New York Islanders	$1.6	$183	$30	8.5x	32%	16%	10%
New Jersey Devils	$1.5	$240	$55	6.0x	9%	23%	6%
Vancouver Canucks	$1.3	$198	$48	6.7x	9%	24%	3%
Tampa Bay Lightning	$1.3	$196	$27	6.4x	12%	14%	7%
Seattle Kraken	$1.2	$197	$44	6.2x	29%	22%	3%*
Detroit Red Wings	$1.2	$199	$64	6.0x	8%	32%	2%
Pittsburgh Penguins	$1.2	$207	$49	5.7x	17%	24%	2%
Colorado Avalanche	$1.2	$182	$39	6.3x	30%	21%	7%
Vegas Golden Knights	$1.1	$233	$73	4.8x	13%	31%	7%
Calgary Flames	$1.1	$183	$37	6.0x	8%	20%	6%
Dallas Stars	$1.1	$210	$50	5.1x	15%	24%	5%
Minnesota Wild	$1.1	$185	$43	5.7x	15%	23%	4%
St Louis Blues	$1.0	$184	$41	5.4x	13%	22%	1%
Nashville Predators	$1.0	$180	$38	5.4x	15%	21%	6%
Ottawa Senators	$1.0	$128	$5	7.4x	29%	4%	0%
Anaheim Ducks	$0.9	$164	$22	5.6x	27%	13%	4%
San Jose Sharks	$0.9	$158	$11	5.7x	6%	7%	-1%
Carolina Hurricanes	$0.8	$177	$25	4.7x	18%	14%	7%
Winnipeg Jets	$0.8	$162	$21	4.8x	17%	13%	5%
Florida Panthers	$0.8	$161	$6	4.8x	21%	4%	9%
Columbus Blue Jackets	$0.8	$151	$35	5.1x	18%	23%	5%
Buffalo Sabres	$0.8	$159	$25	4.7x	17%	16%	3%
Arizona Coyotes	$0.5	$120	$19	4.2x	62%	16%	3%

Source: Forbes, JPMAM, 2024. *Note: Seattle Kraken revenue growth is over one year since it first reported revenues in 2022.

NHL median valuation to revenue

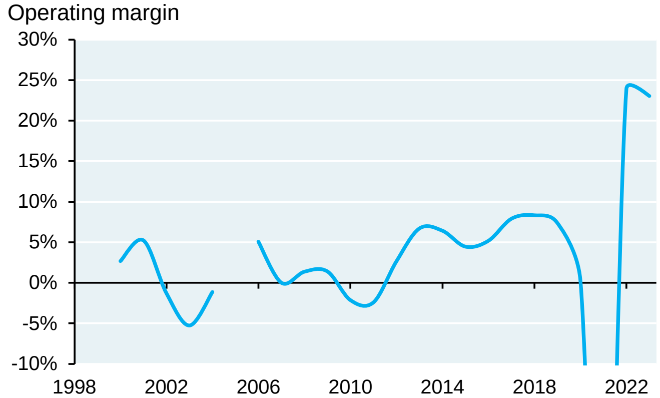
Valuation to revenue



Source: Forbes, JPMAM, 2024

NHL median operating margin

Operating margin

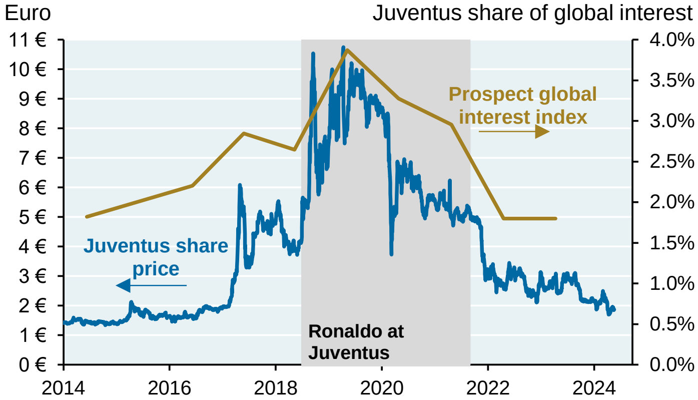


Source: Forbes, JPMAM, 2024

Appendix V: The Ronaldo effect of departing players

Ronaldo consistently shows up on lists of the 5 best soccer players of all time so when he showed up at Juventus in 2019, the team's share price soared (blue line) alongside a measure of global interest in the team computed by Prospect (gold line). When Ronaldo left, global interest in Juventus and its share price plummeted. In terms of on-field performance, Juventus' record modestly declined after Ronaldo left.

The "Ronaldo effect"

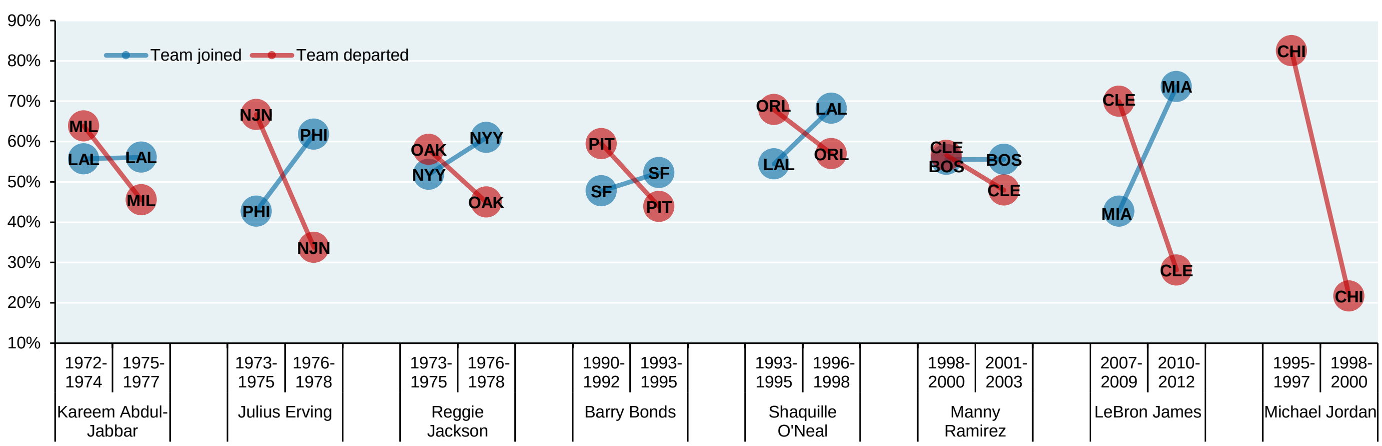


Source: Bloomberg, Prospect, Deutsche Bank, JPMAM, May 27, 2024

There are a few notable examples of player departures in US sports leagues due to free agency, players being traded or players retiring. While the impact on team performance can be substantial (see chart below), the revenue sharing and other features described in this paper would likely mitigate to a large extent any possible financial impact on team owners from declining team performance.

Major US sports departures

Team winning percentage



Source: Baseball Reference, NBA, JPMAM, 2024

IMPORTANT INFORMATION

KEY RISKS

This material is for information purposes only, and may inform you of certain products and services offered by private banking businesses, part of JPMorgan Chase & Co. ("JPM"). Products and services described, as well as associated fees, charges and interest rates, are subject to change in accordance with the applicable account agreements and may differ among geographic locations. Not all products and services are offered at all locations. If you are a person with a disability and need additional support accessing this material, please contact your J.P. Morgan team or email us at accessibility.support@jpmorgan.com for assistance. Please read all Important Information.

GENERAL RISKS & CONSIDERATIONS

Any views, strategies or products discussed in this material may not be appropriate for all individuals and are subject to risks. **Investors may get back less than they invested, and past performance is not a reliable indicator of future results**. Asset allocation/diversification does not guarantee a profit or protect against loss. Nothing in this material should be relied upon in isolation for the purpose of making an investment decision. You are urged to consider carefully whether the services, products, asset classes (e.g. equities, fixed income, alternative investments, commodities, etc.) or strategies discussed are suitable to your needs. You must also consider the objectives, risks, charges, and expenses associated with an investment service, product or strategy prior to making an investment decision. For this and more complete information, including discussion of your goals/situation, contact your J.P. Morgan team.

NON-RELIANCE

Certain information contained in this material is believed to be reliable; however, JPM does not represent or warrant its accuracy, reliability or completeness, or accept any liability for any loss or damage (whether direct or indirect) arising out of the use of all or any part of this material. No representation or warranty should be made with regard to any computations, graphs, tables, diagrams or commentary in this material, which are provided for illustration/ reference purposes only. The views, opinions, estimates and strategies expressed in this material constitute our judgment based on current market conditions and are subject to change without notice. JPM assumes no duty to update any information in this material in the event that such information changes. Views, opinions, estimates and strategies expressed herein may differ from those expressed by other areas of JPM, views expressed for other purposes or in other contexts, **and this material should not be regarded as a research report**. Any projected results and risks are based solely on hypothetical examples cited, and actual results and risks will vary depending on specific circumstances. Forward-looking statements should not be considered as guarantees or predictions of future events.

Nothing in this document shall be construed as giving rise to any duty of care owed to, or advisory relationship with, you or any third party. Nothing in this document shall be regarded as an offer, solicitation, recommendation or advice (whether financial, accounting, legal, tax or other) given by J.P. Morgan and/or its officers or employees, irrespective of whether or not such communication was given at your request. J.P. Morgan and its affiliates and employees do not provide tax, legal or accounting advice. You should consult your own tax, legal and accounting advisors before engaging in any financial transactions.

YOUR INVESTMENTS AND POTENTIAL CONFLICTS OF INTEREST

Conflicts of interest will arise whenever JPMorgan Chase Bank, N.A. or any of its affiliates (together, "J.P. Morgan") have an actual or perceived economic or other incentive in its management of our clients' portfolios to act in a way that benefits J.P. Morgan. Conflicts will result, for example (to the extent the following activities are permitted in your account): (1) when J.P. Morgan invests in an investment product, such as a mutual fund, structured product, separately managed account or hedge fund issued or managed by JPMorgan Chase Bank, N.A. or an affiliate, such as J.P. Morgan Investment Management Inc.; (2) when a J.P. Morgan entity obtains services, including trade execution and trade clearing, from an affiliate; (3) when J.P. Morgan receives payment as a result of purchasing an investment product for a client's account; or (4) when J.P. Morgan receives payment for providing services (including shareholder servicing, recordkeeping or custody) with respect to investment products purchased for a client's portfolio. Other conflicts will result because of relationships that J.P. Morgan has with other clients or when J.P. Morgan acts for its own account.

Investment strategies are selected from both J.P. Morgan and third-party asset managers and are subject to a review process by our manager research teams. From this pool of strategies, our portfolio construction teams select those strategies we believe fit our asset allocation goals and forward-looking views in order to meet the portfolio's investment objective.

As a general matter, we prefer J.P. Morgan managed strategies. We expect the proportion of J.P. Morgan managed strategies will be high (in fact, up to 100 percent) in strategies such as, for example, cash and high-quality fixed income, subject to applicable law and any account-specific considerations.

While our internally managed strategies generally align well with our forward-looking views, and we are familiar with the investment processes as well as the risk and compliance philosophy of the firm, it is important to note that J.P. Morgan receives more overall fees when internally managed strategies are included. We offer the option of choosing to exclude J.P. Morgan managed strategies (other than cash and liquidity products) in certain portfolios.

The Six Circles Funds are U.S.-registered mutual funds managed by J.P. Morgan and sub-advised by third parties. Although considered internally managed strategies, JPMC does not retain a fee for fund management or other fund services.

LEGAL ENTITY, BRAND & REGULATORY INFORMATION

In the United States, bank deposit accounts and related services, such as checking, savings and bank lending, are offered by JPMorgan Chase Bank, N.A. Member FDIC.

JPMorgan Chase Bank, N.A. and its affiliates (collectively "JPMCB") offer investment products, which may include bank managed investment accounts and custody, as part of its trust and fiduciary services. Other investment products and services, such as brokerage and advisory accounts, are offered through J.P. Morgan Securities LLC ("JPMS"), a member of FINRA and SIPC. Insurance products are made available through Chase Insurance Agency, Inc. (CIA), a licensed insurance agency, doing business as Chase Insurance Agency Services, Inc. in Florida. JPMCB, JPMS and CIA are affiliated companies under the common control of JPM. Products not available in all states.

In Germany, this material is issued by J.P. Morgan SE, with its registered office at Taunustor 1 (TaunusTurm), 60310 Frankfurt am Main, Germany, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB). In Luxembourg, this material is issued by J.P. Morgan SE – Luxembourg Branch, with registered office at European Bank and Business Centre, 6 route de Treves, L-2633, Senningerberg, Luxembourg, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Luxembourg Branch is also supervised by the Commission de Surveillance du Secteur Financier (CSSF); registered under R.C.S Luxembourg B255938. In the United Kingdom, this material is issued by J.P. Morgan SE – London Branch, registered office at 25 Bank Street, Canary Wharf, London E14 5JP, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – London Branch is also supervised by the Financial Conduct Authority and Prudential Regulation Authority. In Spain, this material is distributed by J.P. Morgan SE, Sucursal en España, with registered office at Paseo de la Castellana, 31, 28046 Madrid, Spain, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE, Sucursal en España is also supervised by the Spanish Securities Market Commission (CNMV); registered with Bank of Spain as a branch of J.P. Morgan SE under code 1567. In Italy, this material is distributed by J.P. Morgan SE – Milan Branch, with its registered office at Via Cordusio, n.3, Milan 20123, Italy, authorized by the Bundesanstalt für

Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Milan Branch is also supervised by Bank of Italy and the Commissione Nazionale per le Società e la Borsa (CONSOB); registered with Bank of Italy as a branch of J.P. Morgan SE under code 8076; Milan Chamber of Commerce Registered Number: REA MI 2536325. In the Netherlands, this material is distributed by J.P. Morgan SE – Amsterdam Branch, with registered office at World Trade Centre, Tower B, Strawinskylaan 1135, 1077 XX, Amsterdam, The Netherlands, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Amsterdam Branch is also supervised by De Nederlandsche Bank (DNB) and the Autoriteit Financiële Markten (AFM) in the Netherlands. Registered with the Kamer van Koophandel as a branch of J.P. Morgan SE under registration number 72610220. In Denmark, this material is distributed by J.P. Morgan SE – Copenhagen Branch, filial af J.P. Morgan SE, Tyskland, with registered office at Kalvebod Brygge 39-41, 1560 København V, Denmark, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Copenhagen Branch, filial af J.P. Morgan SE, Tyskland is also supervised by Finanstilsynet (Danish FSA) and is registered with Finanstilsynet as a branch of J.P. Morgan SE under code 29010. In Sweden, this material is distributed by J.P. Morgan SE – Stockholm Bankfilial, with registered office at Hamngatan 15, Stockholm, 11147, Sweden, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Stockholm Bankfilial is also supervised by Finansinspektionen (Swedish FSA); registered with Finansinspektionen as a branch of J.P. Morgan SE. In Belgium, this material is distributed by J.P. Morgan SE – Brussels Branch with registered office at 35 Boulevard du Régent, 1000, Brussels, Belgium, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE Brussels Branch is also supervised by the National Bank of Belgium (NBB) and the Financial Services and Markets Authority (FSMA) in Belgium; registered with the NBB under registration number 0715.622.844. In Greece, this material is distributed by J.P. Morgan SE – Athens Branch, with its registered office at 3 Haritos Street, Athens, 10675, Greece, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Athens Branch is also supervised by Bank of Greece; registered with Bank of Greece as a branch of J.P. Morgan SE under code 124; Athens Chamber of Commerce Registered Number 158683760001; VAT Number 99676577. In France, this material is distributed by J.P. Morgan SE – Paris Branch, with its registered office at 14, Place Vendôme 75001 Paris, France, authorized by the Bundesanstaltfür Finanzdienstleistungsaufsicht(BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB) under code 842 422 972; J.P. Morgan SE – Paris Branch is also supervised by the French banking authorities the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and the Autorité des Marchés Financiers (AMF). In Switzerland, this material is distributed by J.P. Morgan (Suisse) SA, with registered address at rue du Rhône, 35, 1204, Geneva, Switzerland, which is authorised and supervised by the Swiss Financial Market Supervisory Authority (FINMA) as a bank and a securities dealer in Switzerland.

This communication is an advertisement for the purposes of the Markets in Financial Instruments Directive (MIFID II) and the Swiss Financial Services Act (FINSA). Investors should not subscribe for or purchase any financial instruments referred to in this advertisement except on the basis of information contained in any applicable legal documentation, which is or shall be made available in the relevant jurisdictions (as required).

In Hong Kong, this material is distributed by JPMCB, Hong Kong branch. JPMCB, Hong Kong branch is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission of Hong Kong. In Hong Kong, we will cease to use your personal data for our marketing purposes without charge if you so request. In Singapore, this material is distributed by JPMCB, Singapore branch. JPMCB, Singapore branch is regulated by the Monetary Authority of Singapore. Dealing and advisory services and discretionary investment management services are provided to you by JPMCB, Hong Kong/Singapore branch (as notified to you). Banking and custody services are provided to you by JPMCB Singapore Branch. The contents of this document have not been reviewed by any regulatory authority in Hong Kong, Singapore or any other jurisdictions. You are advised to exercise caution in relation to this document. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. For materials which constitute product advertisement under the Securities and Futures Act and the Financial Advisers Act, this advertisement has not been reviewed by the Monetary Authority of Singapore. JPMorgan Chase Bank, N.A., a national banking association chartered under the laws of the United States, and as a body corporate, its shareholder's liability is limited.

With respect to countries in Latin America, the distribution of this material may be restricted in certain jurisdictions. We may offer and/or sell to you securities or other financial instruments which may not be registered under, and are not the subject of a public offering under, the securities or other financial regulatory laws of your home country. Such securities or instruments are offered and/or sold to you on a private basis only. Any communication by us to you regarding such securities or instruments, including without limitation the delivery of a prospectus, term sheet or other offering document, is not intended by us as an offer to sell or a solicitation of an offer to buy any securities or instruments in any jurisdiction in which such an offer or a solicitation is unlawful. Furthermore, such securities or instruments may be subject to certain regulatory and/or contractual restrictions on subsequent transfer by you, and you are solely responsible for ascertaining and complying with such restrictions. To the extent this content makes reference to a fund, the Fund may not be publicly offered in any Latin American country, without previous registration of such fund´s securities in compliance with the laws of the corresponding jurisdiction.

JPMorgan Chase Bank, N.A. (JPMCBNA) (ABN 43 074 112 011/AFS Licence No: 238367) is regulated by the Australian Securities and Investment Commission and the Australian Prudential Regulation Authority. Material provided by JPMCBNA in Australia is to "wholesale clients" only. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001 (Cth). Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future. JPMS is a registered foreign company (overseas) (ARBN 109293610) incorporated in Delaware, U.S.A. Under Australian financial services licensing requirements, carrying on a financial services business in Australia requires a financial service provider, such as J.P. Morgan Securities LLC (JPMS), to hold an Australian Financial Services Licence (AFSL), unless an exemption applies. JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (Cth) (Act) in respect of financial services it provides to you, and is regulated by the SEC, FINRA and CFTC under US laws, which differ from Australian laws. Material provided by JPMS in Australia is to "wholesale clients" only. The information provided in this material is not intended to be, and must not be, distributed or passed on, directly or indirectly, to any other class of persons in Australia. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Act. Please inform us immediately if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

This material has not been prepared specifically for Australian investors. It:

- may contain references to dollar amounts which are not Australian dollars;
- may contain financial information which is not prepared in accordance with Australian law or practices;
- may not address risks associated with investment in foreign currency denominated investments; and
- does not address Australian tax issues.

References to "J.P. Morgan" are to JPM, its subsidiaries and affiliates worldwide. "J.P. Morgan Private Bank" is the brand name for the private banking business conducted by JPM. This material is intended for your personal use and should not be circulated to or used by any other person, or duplicated for non-personal use, without our permission. If you have any questions or no longer wish to receive these communications, please contact your J.P. Morgan team.

© 2024 JPMorgan Chase & Co. All rights reserved.