

# Sports versus Esports – A Comparison of Industry Size, Viewer Friendliness, and Game Competitiveness

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## Introduction

Traditional sports, such as Taekwondo, handball, cricket, and soccer, are popular and well-understood around the world. Over the last couple decades, a new phenomenon is emerging: *electronic sports*, or esports, which could redefine the meaning of the word “sport.” Esports are the professional, competitive play of computer games for a spectator audience. Esports are growing in popularity, with both increased participation and increased viewership in recent years and will likely have many of the same societal and cultural impacts as do traditional sports.

The goal of this chapter is to analyze esports along three important axes: industry size (revenue, salaries/prizes, viewers), viewer friendliness (game complexity, broadcast action) and game competitiveness (based on team points during a game). Researching the size of the esports industry allows for observation of potential economic impact. Examining the viewer friendliness of esports can help better understand the appeal to spectators. Analysis of game competitiveness can show potential engagement by audiences. We analyze esports by comparing them to traditional sports in order to provide for a relatively well-understood frame of reference. That said, some of our comparative analysis of sports leagues is novel, too.

In order to compare the industry sizes of the professional sports and esports, we gathered data on revenue, player salaries, team sizes, viewership, and growth in viewers over time, concentrating on the North American sports and esports industries. To compare viewer friendliness, we designed and deployed surveys assessing complexity and viewer friendliness of a sport or esports and combined that with data gathered on viewer friendliness, including gameplay per broadcast, and rule complexity. To compare game competitiveness, we analyzed how often a team leads in a game and the likelihood of relinquishing a lead at various stages in the game. In all cases, analysis of the data is primarily in the form of visual aids (e.g., graphs and timelines) to compare and visualize the data collected.

Overall, sports are larger than esports in terms of industry size, with the exception of prize pools for tournaments where esports are comparable. However, esports are on par with Major League Soccer in terms of industry size. Sports have the two events with the most number of viewers by far – the FIFA World Cup and the NFL Super Bowl – but

esports have the third most – the League of Legends World Championships – which itself is far larger than any other esports event in terms of viewers.

Esports are somewhat more complex and somewhat less understandable to viewers than sports based on rule complexity and game action, but esports broadcasts are more viewer-friendly than sports broadcasts since the former are shorter (about 1-2 hours compared to 2-3 hours) and have a large percentage of broadcast time showing live gameplay (about 50%).

Esports tend to be more competitive than sports since for much of their game time, the outcomes of esports are not known and/or the team that is leading can change several times during a match. In contrast, the least competitive sports (based on our metrics of lead changes) – the NBA basketball and MLB baseball – have the leading team win over two-thirds of the time, compared to about only one-third for esports.

The rest of this chapter is organized as follows: the Background section provides relevant information on the professional sports and esports analyzed in this chapter; the Industry section compares industry sizes for sports and esports; the Viewer Friendliness section analyzes aspects of sports and esports rules and broadcasting that suggest general appeal to viewers; the Game Competitiveness section compares the competitiveness of sports to esports; and the Conclusions section summarizes our findings.

## Background

Table 1 summarizes the professional sports and esports analyzed and compared in this chapter.

Table 1  
*Professional Sports and Esports Analyzed and Compared*

Acronym	Name	Primary Region	Sport/Genre
EPL	English Premier League	Global	Soccer
MLB	Major League Baseball	NA	Baseball
MLS	Major League Soccer	NA	Soccer
NBA	National Basketball Association	NA	Basketball
NFL	National Football League	NA	Football
NHL	National Hockey League	NA	Hockey
CS:GO	Counter Strike: Global Offensive	Global	First Person Shooter
DOTA2	Defense of the Ancients 2	Global	Multi-player Online Battle Arena
LCS	League Championship Series	Global	Multi-player Online Battle Arena
OWL	Overwatch League	Global	Hero Shooter

For representative sports, we analyzed major professional sports in North America (NA): the National Football League (NFL), the National Hockey League (NHL), the National Basketball Association (NBA), Major League Baseball (MLB), and Major League Soccer (MLS), with the English Premier League (EPL) added for an international comparison (based in the UK, but with global following).

For comparative esports, we primarily analyzed two major professional esports: the

League of Legends Championship Series (LCS) and the Overwatch League (OWL). The LCS is a professional esports league founded in 2013 featuring the multi-player online battle arena (MOBA) game *League of Legends* (LoL) (Riot Games, 2009). The LCS has the highest level of professional LoL play in North America. The OWL is a professional esports league founded in 2017 featuring the hero shooter *Overwatch* (Blizzard Entertainment, 2016). In addition, we include some analysis of professional tournaments featuring the first person shooter (FPS) game *Counter Strike Global Offensive* (CS:GO) (Valve Corporation, 2012) and *Defense of the Ancients 2* (Valve Corporation, 2013) where data is available and comparisons are appropriate.

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## Industry

This section compares industry sizes for sports and esports, with data analyzed for revenue, salaries, prize pools and viewership.

### Revenue

The amount of money an industry makes is typically the metric by which industry sizes are measured. As revenue reporting often lags a given calendar year, we gathered data for sports and esports organizations for the year 2017. Data was obtained primarily from Forbes (Brown, 2017),<sup>1</sup> Statista (Statista, 2018),<sup>2</sup> and NewZoo (Pannekeet, 2018).<sup>3</sup> While individual sports leagues often report yearly revenue, esports leagues do not and only an aggregate esports revenue for 2018 was available.

Figure 1 compares the most recently available sports and esports revenues. The x-axis is the sport or esports (with corresponding year) and the y-axis the revenue in billions of U.S. dollars. From the graph, sports occupy the highest and lowest spots, the NFL at \$13.6 and the MLS at \$0.6 billion, respectively. Even aggregated, esports are relatively low compared with sports, only just above the MLS at \$0.9 billion.

### Salaries

Player salaries are often correlated with revenue, are an indication of how attractive and viable a player's career is, and can help attract the top talent. We gathered salary data from Spotrac (Spotrac, 2019)<sup>4</sup> and Forbes (Heitner, 2018).

<sup>1</sup>Forbes is a global media company, focusing on business, investing, technology, and entrepreneurship.

<sup>2</sup>Statista aggregates consumer survey results and industry studies from about 22k sources on about 60k topics on the Internet.

<sup>3</sup>Newzoo provides market research on games and esports analytics.

<sup>4</sup>See: *sport/rankings/average* where *sport* is one of: {eps, mlb, mls, nba, nfl, nhl}

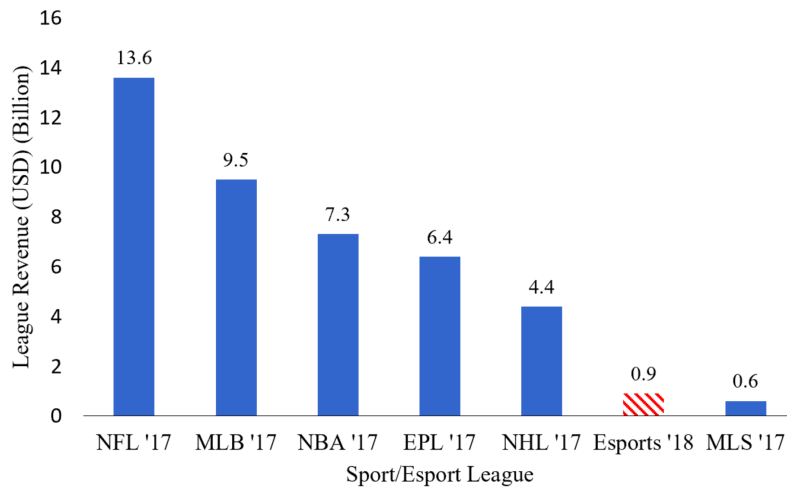


Figure 1. League Revenue for Sports (blue) versus Esports (hashed red).

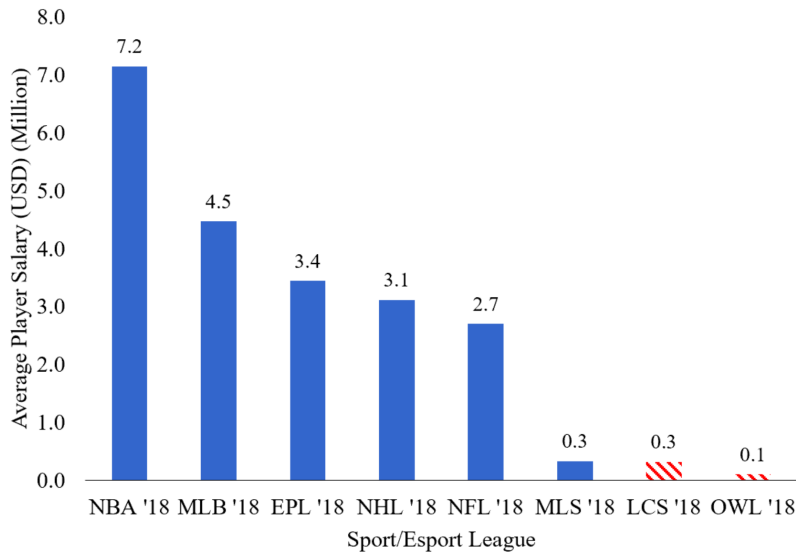


Figure 2. Average Player Salary for Sports (blue) versus Esports (hashed red).

Figure 2 compares the average sports and esports salaries for 2018. The x-axis is the sport or esports and the y-axis the average salary in millions of U.S. dollars. From the graph, most sports have higher average salaries than esports, with the average NBA salary of \$7.2 million being 25x more than the average LCS salary. However, the average salaries in the sports league MLS is on-par with the average salaries in the LCS and OWL esports leagues.

## Prize Pools

Another monetary measure of industry size is the amount of money in prize pools and similar awards in major sports and esports tournaments. In such cases, teams that win receive large payments, often dividing this up among the players. Data from Esports Earnings (E\$ports

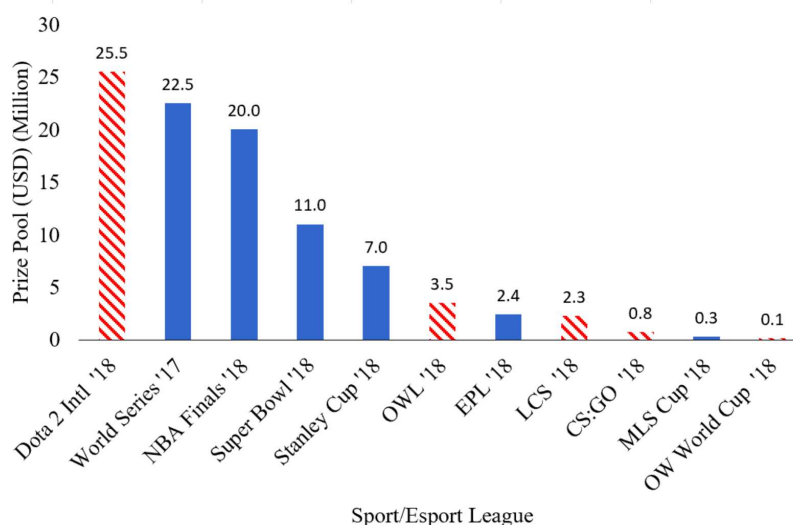


Figure 3. Championship Prize Pools for Sports (blue) versus Esports (hashed red).

Earning, 2019) provided data on the tournament prize pools and CNBC-Money (Martin, 2018) provided data on player winnings for the major sporting championships.

Figure 3 compares the prize pools for championship events for sports and esports salaries for 2018. The x-axis is the sport or esports and the y-axis the prize pool in millions of U.S. dollars. MLB has the World Series (note, data is from 2017), the NFL has the Super Bowl, and the NHL has the Stanley Cup. From the graph, while sports occupy 4 of the largest 5 spots, the largest prize pool is for the esports DOTA 2, at \$25.5 million. The esports OWL has prize pools greater than the EPL and MLS, too.

## Viewers

The number of viewers of a sports or esports events usually directly affects league revenue through advertising and indirectly impacts player salaries. Figure 4 shows the average viewers for the championship event for each sport or esports. The x-axis is the sport or esports event and the y-axis the average concurrent viewers (CCV) in millions. Note, the y-axis is shown in logscale.

From the graph, the number of viewers of the FIFA (international soccer) World Cup<sup>5</sup> dwarfs all other events, except for the NFL Superbowl which had over 1 million concurrent viewers. For other championship events, sports generally has more viewers, with the exception of the LCS Worlds championship and the MLS Cup. Note, the EPL does not have a final Championship event but rather plays simultaneous games on the last day of play.

Figure 5 shows the change in viewers over time (since 1970) for some of the sports and esports championships. The x-axis is years, and the y-axis the average concurrent viewers (CCV) in millions. The FIFA World Cup is not included since it is only once every 4 years. The OWL is not included because at the time data was gathered for this chapter there has been only one season. The MLB and NHL have small gaps in their timelines due to strikes

<sup>5</sup>Data from 2014 is shown since data from 2018 was not available. The tournament is every 4 years.

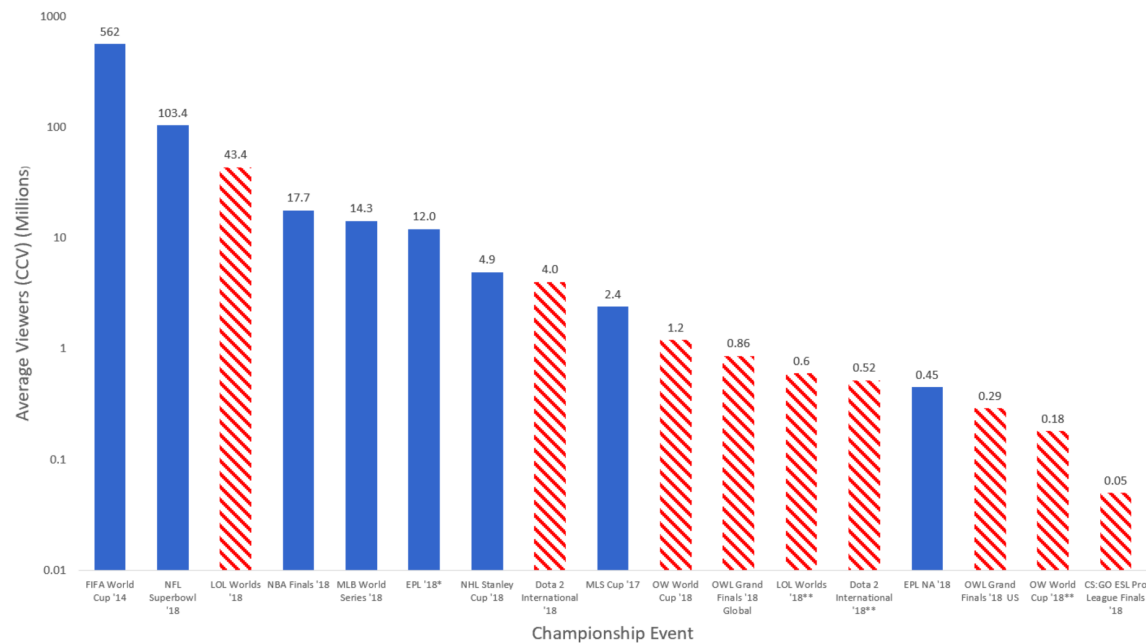


Figure 4. Average Concurrent Viewers for Championship Events for Sports (blue) versus Esports (hashed red). Note, y-axis in logscale.

when the season or championship was canceled. In the case of DOTA 2, the 2016 year had no viewership data reported that corresponded to concurrent viewership.

From the graph, while the NFL championship (i.e., the Super Bowl) still dominates in terms of viewer numbers, esports, specifically League of Legends (LoL) and Defense of the Ancients 2 (DOTA 2), have viewerships comparable to other professional sports with LoL having a sharp upward trajectory.

## Summary

Overall, sports still generally dominate esports in terms of revenue and viewers, but esports has significant presence in both, and some esports have larger prize pools than sports.

Sports dwarf esports in terms of revenue, with the NFL alone making \$12.7 billion USD more than the entire esports industry. Player salaries show a similar difference, with the largest sports salary around \$7 million USD, while the largest esports salary is only \$0.3 million USD. However, some esports have larger prize pools than sports. The 2018 DOTA 2 International tournament had a prize pool of \$25.5 million USD, larger than the largest sport prize pool (the MLB World Series) of \$22.5 million USD.

The largest two events with the most viewers are for sports – the FIFA World Cup and the NFL Super Bowl have 562 and 103 million viewers, respectively. An esports event is third in this list, however – the LCS World Championships at 43 million viewers – and is more than double the number of viewers that any of the other sports leagues.

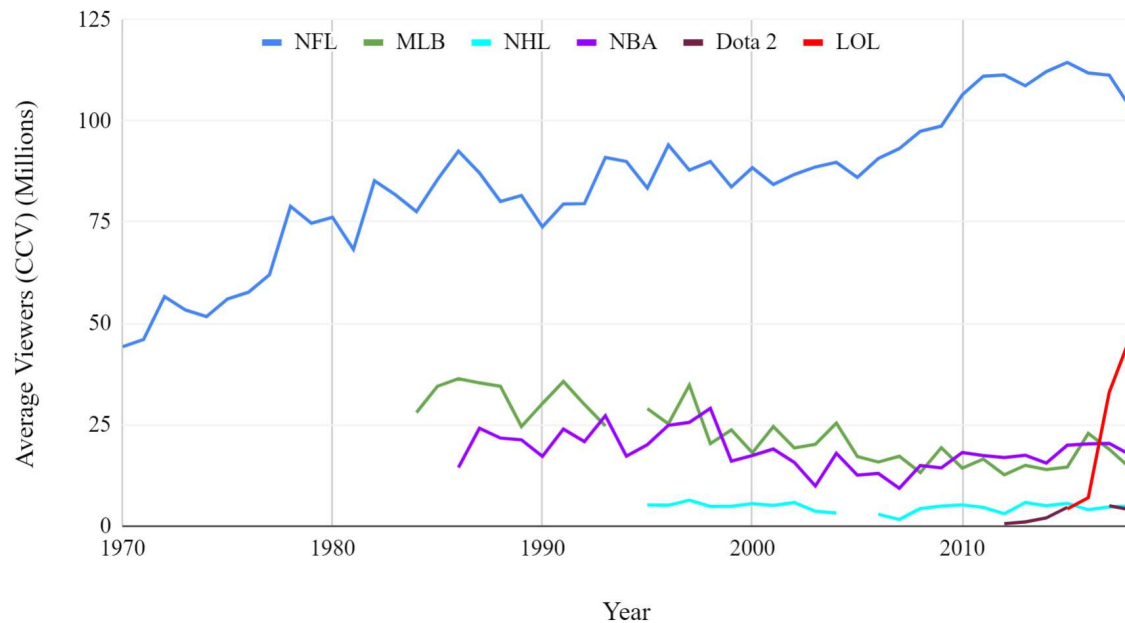


Figure 5. Average Concurrent Viewers for Championship Events over Time.

## Viewer Friendliness

A core element of professional sports and esports is the audience. In essence, the appeal to viewers is what makes sports and esports professionally viable. While aficionados can be found for almost all sports and even most computer games, a sport or esports needs broad viewer appeal for industry growth. This section analyzes the main aspects of sports and esports that suggest general appeal to viewers – game complexity and broadcast action.

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Figure 6 provides combined analysis, showing the percentage of action per broadcast on the y-axis versus the broadcast length. The average for sport and esports is depicted as a dot (blue for the sports, red for the esports). Generally, areas in the top left (high action percent, relatively short broadcasts) are likely more viewer friendly than areas in bottom right (low action percent, relatively long broadcasts). From the graph, MLB and NFL broadcasts stand out as long (about 3 hours) and with relatively low percentages of action (under 10%). Based on this broadcast analysis alone, Esports tend to be more viewer friendly with higher percentages of action and lower broadcast lengths.

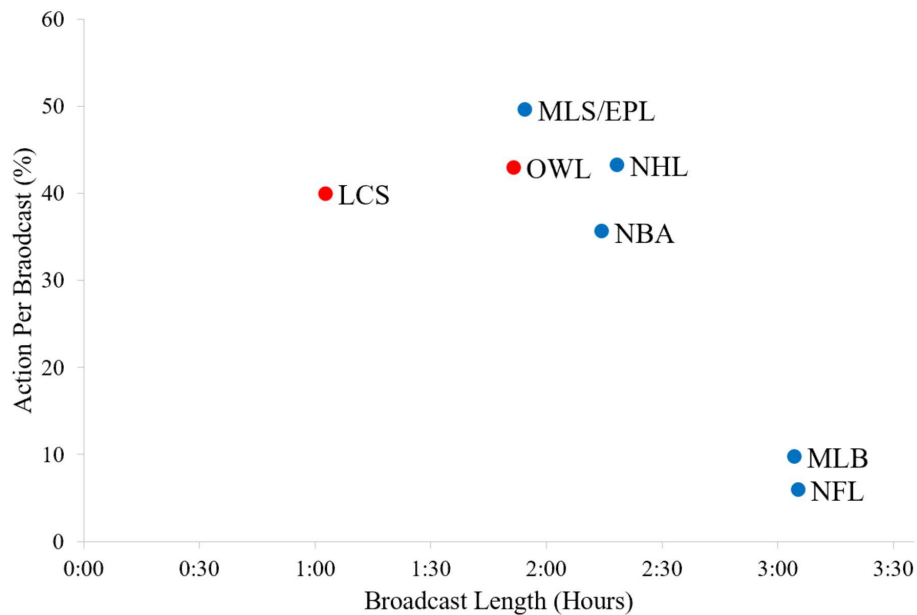


Figure 6. Action per Broadcast versus Broadcast Length.

## Summary

In summary, for viewer friendliness, esports are somewhat more complex than sports, evidenced by: 1) the League of Legends rules being at a college reading level compared to football's early high school level, and 2) survey results that show the LCS League of Legends and the OWL Overwatch viewers find their games 1-2 points (out of 7) more complex and less understandable than the NFL football and the MLB, respectively. However, esports broadcasts (LCS and OWL) are more viewer friendly than sports broadcasts given that the former have about 40-45% of the time showing live gameplay, while broadcasts for NFL football and MLB baseball only have 10-20% time with live gameplay.

## Game Competitiveness

For viewers, the competitiveness of a game is important to its appeal. When the outcome of a game is known early on, it can be less interesting to watch than one where the outcome is uncertain for longer. A non-competitive game may cause fans to lose interest and stop watching the the game early, instead finding another activity to do. This section applies metrics that have been applied to assess the competitiveness of sports to esports, allowing for a head-to-head comparison.

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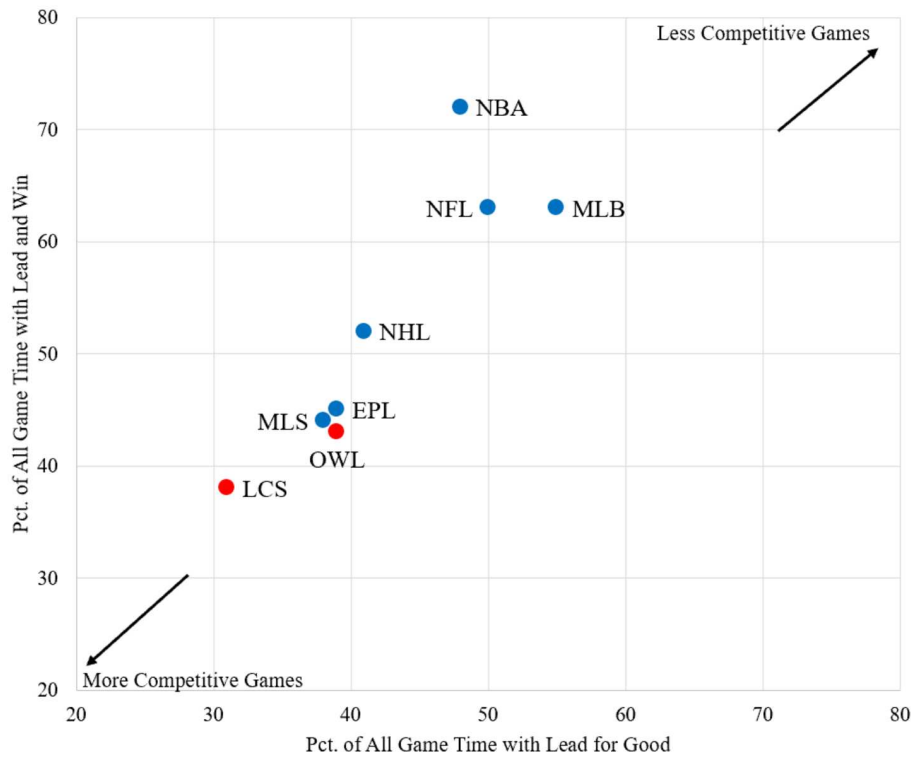


Figure 7. Percentage of Game Time with Lead for Good versus with Lead and Win (Sports blue, Esports red).

The final graph in Figure 7 compares the summary percentage of game time with the lead for good against the percentage of game time where the team in the lead goes on to win. The graph is augmented with explanatory arrows indicating leagues that are closer to the upper-right corner are relatively less competitive while those closer to the lower-left corner are relatively more competitive. Results from these two metrics indicate that games in the NBA basketball and the MLB baseball leagues are relatively less competitive while those in the MLS soccer and the EPL soccer leagues are relatively more competitive. These same metrics show esports OWL Overwatch is as competitive as the most competitive sports, MLS and EPL, while the esports LCS League of Legends is slightly more competitive than all.

## Summary

In summary, based on games with teams in the lead, the OWL Overwatch and the NBA basketball leagues are the least competitive while the LCS League of Legends, MLS soccer and EPL soccer leagues are the most. Based on the amount of time a team in the lead wins, the NBA is still the least competitive, while the OWL and LCS leagues are the most competitive. For leagues with teams ahead for good, the MLB baseball league is the least competitive (the NBA is second), while the OWL and LCS leagues remain the most competitive. Overall, esports are somewhat more competitive than most sports.

## Conclusion

Sports are prevalent and pervasive, not only as a hobby for leisure and fitness, but also as a profession. Professional sports employ highly paid professional athletes, competing in yearly leagues and championships events, fueled largely by the massive audiences that are interested in watching. The relatively more recent esports – multiplayer computer games played competitively by professionals – have a lot in common with traditional sports, providing a platform for professional players and millions of viewers. Analyzing esports with sports as a reference can help better understand the size of the industry, and hence economic impact, as well as the scope of appeal to viewers.

This chapter provides a comparison of sports to esports for professional sports leagues and major esports leagues along three key dimensions: industry size, viewer friendliness, and game competitiveness. We compare industry sizes through player salaries, tournament prize pools and audience sizes. We assess viewer friendliness through rule analysis and a 50+ person survey that subjectively measures viewer understanding. We analyze game competitiveness by applying and comparing a competition metric from sports to esports.

For industry size, sports are considerably larger than esports, with the National Football League (NFL) having about 15x more revenue and the National Basketball Association having about 20x higher player salaries than the largest esports. However, the largest tournament prize pool is for the esports DOTA 2 (in 2018), being about 15% larger than the largest sports tournament prize (the Major League Baseball World Series in 2017). For viewers, sports' championship FIFA World Cup and the NFL Super Bowl dwarf all others for viewers, but the esports League of Legends World championship has about 3x more viewers than any other sporting event.

For viewer friendliness, esports' League of Legends is slightly more complex than football, although both have a comparable number of roles, positions and special cases. Viewers subjectively indicated the same, with esports League Challenger Series (LCS) and Overwatch League (OWL) being about 20% more complex and one-third less understandable than baseball and football, respectively. However, the LCS and OWL broadcasts are more viewer friendly, being somewhat shorter than all sports broadcasts and having a comparable amount of action per broadcast as the top sports (hockey and soccer).

For competitiveness, esports are more competitive than all sports considering point-based metrics that account for team leads over the course of a game. The outcome of the LCS and OWL games are typically not known until well past the half-way point and both feature many more lead changes than the least competitive sports (baseball and football).

Overall, professional sports are still larger than the biggest esports, generally commanding larger revenues, player salaries and viewers. However, esports viewer numbers are growing, potentially fueled by appealing aspects of broadcast lengths and game competitiveness, that will likely continue to drive industry growth and social impact.

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