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How to Construct a Super Bowl Winning Team

Introduction

If you read the title and believed this report would answer that question, sadly you don't have a future working in an NFL front office. There is nothing remotely close to a surefire blueprint for hoisting the Lombardi Trophy every February, no less even just once. Players, coaches, and executives dedicate their entire lives to chasing this dream, but every year only 1 out of 32 franchises achieve it. And, unless you were lucky enough to team up with Tom Brady, you were at an even greater disadvantage. The gunslinger has won over 12% of every Super Bowl ever, and has a better chance of playing in the big game any given year than the greatest 3 point shooter ever, Steph Curry, has of making one of his signature 24 foot jump shots (Clawson, 2023).

Problem Formulation

Against all odds, I propose an aid to the winning formula. Recently I have noticed a shift in the NFL, one that involves targeting a different position. Of course, winning a Super Bowl without a “Franchise QB” is next to impossible, but just because you have a Franchise QB does not mean you can stop there. Over the past few seasons, the best teams in December, January,

and February all have something in common, at least to my naked eye; they all invest and depend heavily on the wide receiver position.

The obvious outlier to this is the Chiefs and tight end Travis Kelce, who will come up more than once in this report. While Kelce is not a wide receiver on paper, the future first ballot hall of famer recently inked the largest TE contract in league history, and produces better than most other teams best WR (Dotson, 2024). And as the cornerstone of the Chiefs passing attack that has won back to back Super Bowls, along with two time league MVP quarterback Patrick Mahomes, this paper will include Travis Kelce in the conversation of a wide receiver (Pro Football Reference).

The Wide Receiver position has slowly but swiftly become a priority around the league. In the past few years, the Detroit Lions have made a name for themselves in the NFC thanks in large part to All Pro pass catcher Amon-Ra St. Brown (Pro Football Reference). St. Brown has led the charge on offense, without a prototypical franchise quarterback, turning the Lions from the laughing stock of the NFL for decades to legitimate Super Bowl contenders.

The Bengals gambled their future in the 2021 NFL draft selecting wide receiver Ja'Marr Chase 5th overall over offensive tackle Penei Sewell. This controversial pick jump started their franchise turnaround, with Chase being the second biggest reason for their Super Bowl appearance in 2022, alongside college teammate in signal caller Joe Burrow (Trapasso, 2021).

AJ Brown was acquired by the Philadelphia Eagles as part of a massive draft day trade, and a year later Brown was the single season leader in receiver yards for the Eagles, and caught a touchdown in their Super Bowl loss to the Chiefs (Erby, 2023). The Eagles, following their worst seasons in recent memory in 2020, wasted no time returning to their winning ways, and coupling

Brown with Devonta Smith, another route runner the team invested heavily into at the 10th overall spot in the 2021 NFL Draft, had the league's best offense in 2022 (Cameron, 2023).

These three teams are all examples of betting big at the wide receiver position, and winning big because of it. While the Super Bowl is the ultimate goal, the Lions, Bengals, and Eagles were all bottom 5 teams in the league within two years prior to making their big splash at the wide receiver position, and have since won multiple playoff games. It is behind this observance of mine that leads me to use data to see how right or wrong I may be, and if I can offer any suggestions to roster construction. In the past, I have created a model to predict regular season and postseason wins after studying QB salary cap data, and was elated to see it perform well beyond my expectations. Now, I am looking into the wide receiver position, keeping my mind open to all kinds of data points and angles to learn about its effect on the best teams in the NFL.

Data Collection, Storage, and Cleaning

To obtain my data, I am using the best sources at my disposal. Spotrac is a website, used by the professionals, that tracks player contract data across most professional sports leagues, but specializing in the NFL (Spotrac). Thanks to them, I am able to use historical data containing everything from total money spent at the team and player level to the percentages of the cap each player is paid.

Along with Spotrac, I have pulled data from two other sources. The first of which is Fantasy Pros. Fantasy Pros is a website that acts as an aid to fantasy football players and sports bettors. Just like Spotrac, Fantasy Pros tracks historical data about fantasy football players, along with the other major American pro sports (Fantasy Pros).

Here, it is important to note one of my data points. To measure production of a wide receiver, as I will do in my data, I am using the fantasy football scoring of wide receivers in the given year, specifically the half point per reception style. The reason for this, if you are familiar with the discrepancies of point per reception, half point per reception, and standard scoring, is personal preference. The purpose of this datapoint is to find one objective metric to estimate the most productive receiver in a given year. While the football world can debate the importance of a reception for the offense, I hold the belief that a half of a point per a reception is the right balance between the other scoring metrics, yards and touchdowns.

Lastly, I am using data from both Pro Football Reference to create visualizations using team data. Pro Football Reference is an encyclopedia of football information almost every deep dive into football data uses. From play by play data to normal, advanced and proprietary statistics, they describe their core competency as “We democratize data, so our users enjoy, understand and share the sports they love” (Sports Reference).

The collection of my data was very straightforward. Both Fantasy Pros and Pro Football Reference make data collection very easy, with downloadable and copyable CSV files to import into an Excel spreadsheet. For Spotrac, I had to get a little more creative. I used ChatGPT to copy the raw text from the salary cap data and paste it along with the text “please convert this to a csv file.” From there, I watched as ChatGPT worked its magic, and formatted the data into an easily usable format to copy and paste into Excel using paste special. At this point, I have copied and pasted into my Excel spreadsheet all of the raw data available on Spotrac, Fantasy Pros, and Pro Football reference pertaining to the top 20 highest paid receivers, the top 20 best performing receivers, and playoff teams of the last 5 years.

I decided to keep my dataset within the last 5 years of the NFL (the 2019 NFL season through the 2023 NFL season), barring one of my visualizations that needs more time to show a bigger difference. While I could freely obtain more than double this data, the NFL landscape changes so much year over year that my observed trend does not even apply to the 2019 season.

Cleaning my data was as simple as removing the excess. Because I used ChatGPT to collect data from Spotrac, data cleaning happened in real time. As for my data from Fantasy Pros and Pro Football Reference, I removed all of the week by week data, leaving myself with points per game and total points for every season, as well as the extra data Pro Football Reference provides besides teams, record, and playoff finish.

Data Analysis

Figure 1 - Slope Graph seems to confirm the trend that I noticed as a football fan over the years. The smartest minds in all football are starting to spend more money at the wide receiver position, affirming the notion that wide receivers have become more important. This graph is interesting because the NFL is known as a ‘copycat’ league, where front offices will notice a team doing something different that is better and copy them. From the data I collected and analyzed, I found no strong reason for the drastic change in WR pay to start in the 2024 season, at least at first.

Figure 2 - Line Graph may provide an answer to change in salary cap allocation, if you look at it from a different lens. On the surface, this graph only shows an increase of Wide Receivers being selected in the first round of the NFL draft, a trend starting 4 years earlier than the salary cap increase in 2020. At first, this looks like data negating each other. But, given rookie contracts last 4 years, this data suggests the trend of teams investing more into the wide receiver position started all the way back in 2020, and the salary cap is now finally catching up

to them (Spotrac). If that is indeed the case, I want to take a deeper dive into the production of these receivers, and indeed how much of an impact these rookie contracts have on a team.

Figure 3 - Scatterplot shows the top 20 receivers of the last 5 years plotted by their percentage of salary cap and their fantasy points. This scatterplot also includes the aforementioned Travis Kelce, who does not add or take away too much from this graph but it is interesting to see his inclusion and where he stacks up against traditional wide receivers. Taking a glance at the scatterplot, there seems to be no correlation at all between how much a receiver makes and how much they provide for their team. However, it does show a big clump in the bottom left. This clump is all of the rookies that crack the list, while moving towards the right shows the really high performing rookies, including Amon Ra St. Brown and Ja'marr Chase.

Figure 4 - Scatterplot is the same data as the previous scatterplot, but using different metrics and spliced differently. The reason I am using the rank of the players salary cap data and receiver production is to make the correlation more easily visible. Using the gray line as the cutoff of players on their rookie contract, this figure does start to show that although a very small difference, wide receivers who are paid more tend to produce better.

Figure 5 - Bar Graph is a great reminder that you cannot just pay any receiver. As was the main focus of mine when I looked into Quarterback contracts, NFL front offices cannot throw money at a player and expect it to work. This graph shows the top 5 highest spending teams at the wide receiver position over the last 5 years, sorted from top to bottom on total dollars spent.

The 2020 Kansas City Chiefs, along with the 2019 Chiefs and the 2020 Buffalo Bills are arguably the only teams who threw big money at the position as a whole in the right way, if how good of a season the team has is the metric you care about. In fact, the 2020 Kansas City Chiefs had the most expensive wide receiver room in my study, and were the only team to win the Super

Bowl, thanks in large part to the production and pay of Tyreek Hill, who was awarded First Team All-Pro in the 2020 season (Pro Football Reference). The other 22 teams all failed to make it out of Divisional Round weekend, ending their season at best tied for the 8th best team. Over half of the teams (13/25) failed to even make the playoffs.

Among the teams to miss the playoffs, the 2023 Las Vegas Raiders stand out. In the 2022 offseason, the team traded both a first and second round pick to acquire First Team All-Pro pass catcher Devontae Adams to give long time starting quarterback and former MVP candidate Derek Carr an elite playmaker to throw to (Camenker, 2023). This trade was made following a successful season for the Silver and Black, who had made the playoffs for the first time since 2016, back when Carr was playing like a league MVP. Thanks to salary intricacies, the 2022 Raiders owed less than market value to Adams, leaving them outside the top 5. In the 2022 season however, the Raiders massively underperformed, going 6-11 and moving on from Carr following 10 seasons as their field general. 2023 was not much better for the Raiders, and without a viable option at quarterback anymore, it seems both Devontae Adams and the Raiders are in a worse place after making this trade.

Figure 6 - Multigraph is my most important singular visualization as it is vital to showing how important these wide receivers are to actually winning. While there is a lot to unpack in this graph, the first finding I made is that not only did Cooper Kupp of the 2021 Los Angeles Rams have a ridiculous season, but his historical numbers tell a story. All football fans know the quarterback is the most important position on the field, and the goal of this research is to prove that wide receiver position is the second most important. The Rams quarterback was Matt Stafford, by no means a bad quarterback, in fact he will likely end up in Canton as a Pro Football Hall of Famer, but even across the past decade, he is one of the lesser Super Bowl winning

quarterbacks. The other quarterbacks to win a Super Bowl in the last 5 years are Tom Brady, only the most dominant athlete of all time, and Patrick Mahomes, the 28 year old magician on track to break every single one of Tom Brady's records, who's won 3 of the last 5 big games.

I say all of this to speak into existence the importance of the wide receiver. Cooper Kupp willed Matt Stafford to a Super Bowl win. In fact, it was Cooper Kupp who won Super Bowl MVP, whereas Brady and Mahomes both have multiple career Super Bowl MVPs. In those other four years, 2 of the 3 Mahomes teams and the Brady team had a top 20 pass catcher, with Travis Kelce exploding for a top 5 season in 2022. Even the 2023 Chiefs with the aforementioned Patrick Mahomes dominating, he still relied on two pass catchers within mere points of cracking the top 20 cutoff.

At a more macro level, of the 40 receivers visualized in this graph, 24 of them crack the top 20 for their given season, and only a total of 3 of the 20 teams played late into the month of January without an elite receiver. The 2019 Packers were led by the dynamic duo of quarterback Aaron Rodgers and wide receiver Devontae Adams and the only reason Adams failed to crack the top 20 was because he missed 5 games in the regular season.

The final team without a top 20 receiver was the 2023 Ravens. The Baltimore Ravens are an interesting team who happen to support my hypothesis. Their offense is built around former league MVP Lamar Jackson, a quarterback who does more damage running the football himself than throwing it. Though the Ravens have had multiple seasons as the league's best regular season team in the last 5 years, they have struggled in the playoffs, reaching the AFC Championship game only once in 2023. Ahead of the 2023 season, the team finally invested in the wide receiver position, selecting rookie receiver Zay Flowers in the first round of the NFL draft (Mink, 2023). While Flowers did not produce like a top 20 pass catcher, he was the best

receiver the Ravens have had in years, and the Ravens can lean on his development in hopes of finally knocking off the AFC juggernaut Kansas City Chiefs.

Data Visualizations

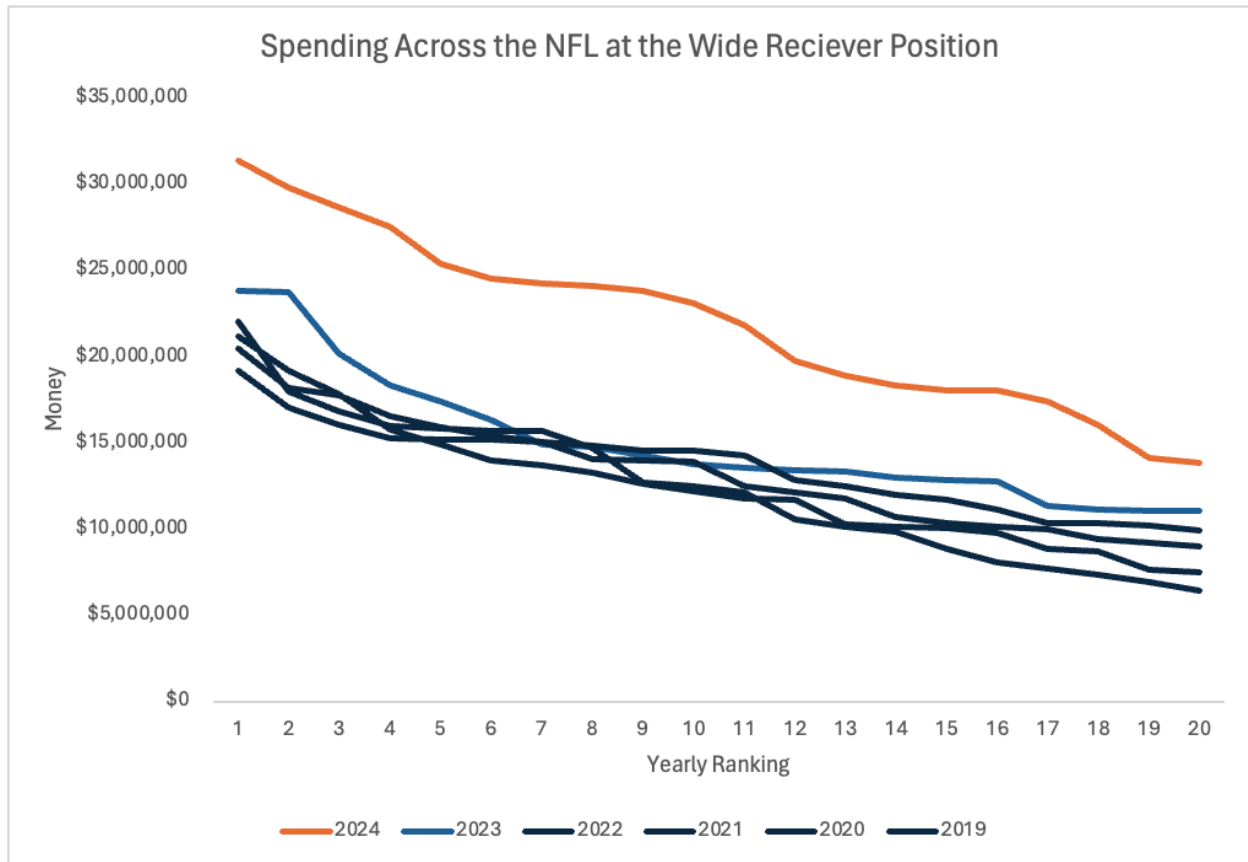


Figure 1 - Slope Graph. This graph shows the highest paid wide receivers in the NFL over the last five years

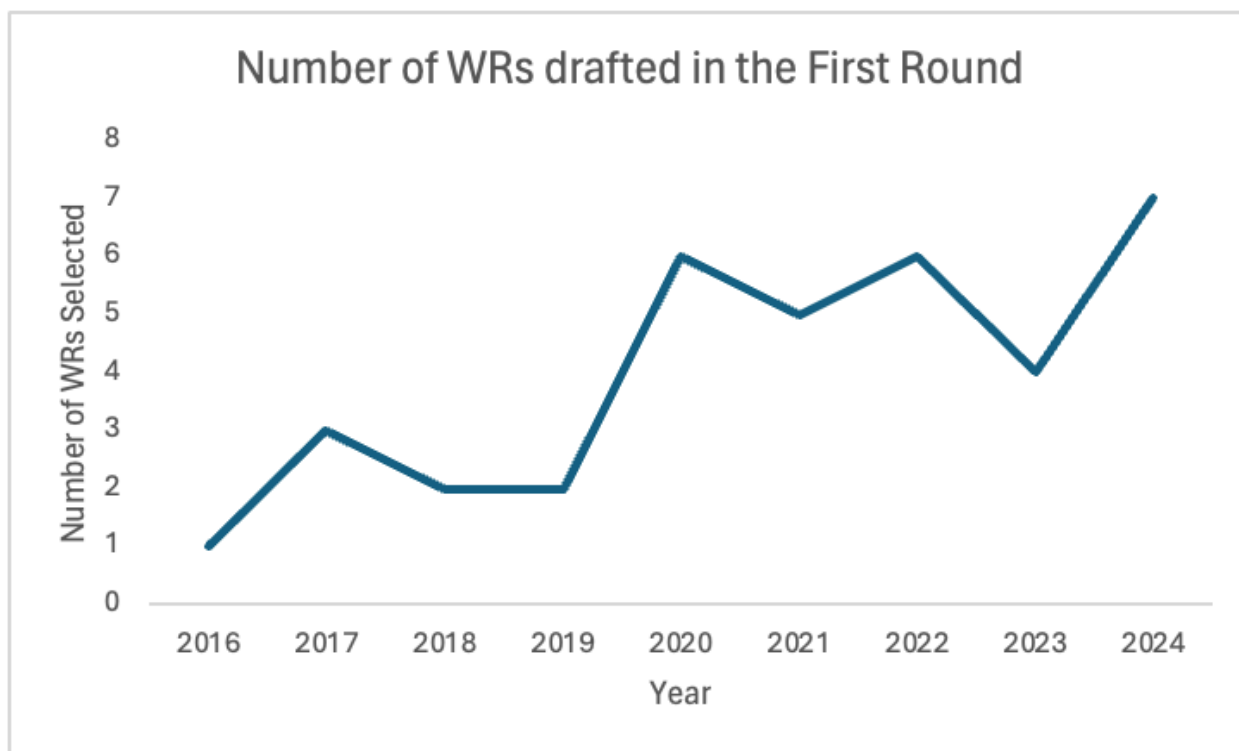


Figure 2 - Line Graph. This graph shows the number of Wide Receivers selected in the first round of the NFL Draft over the years

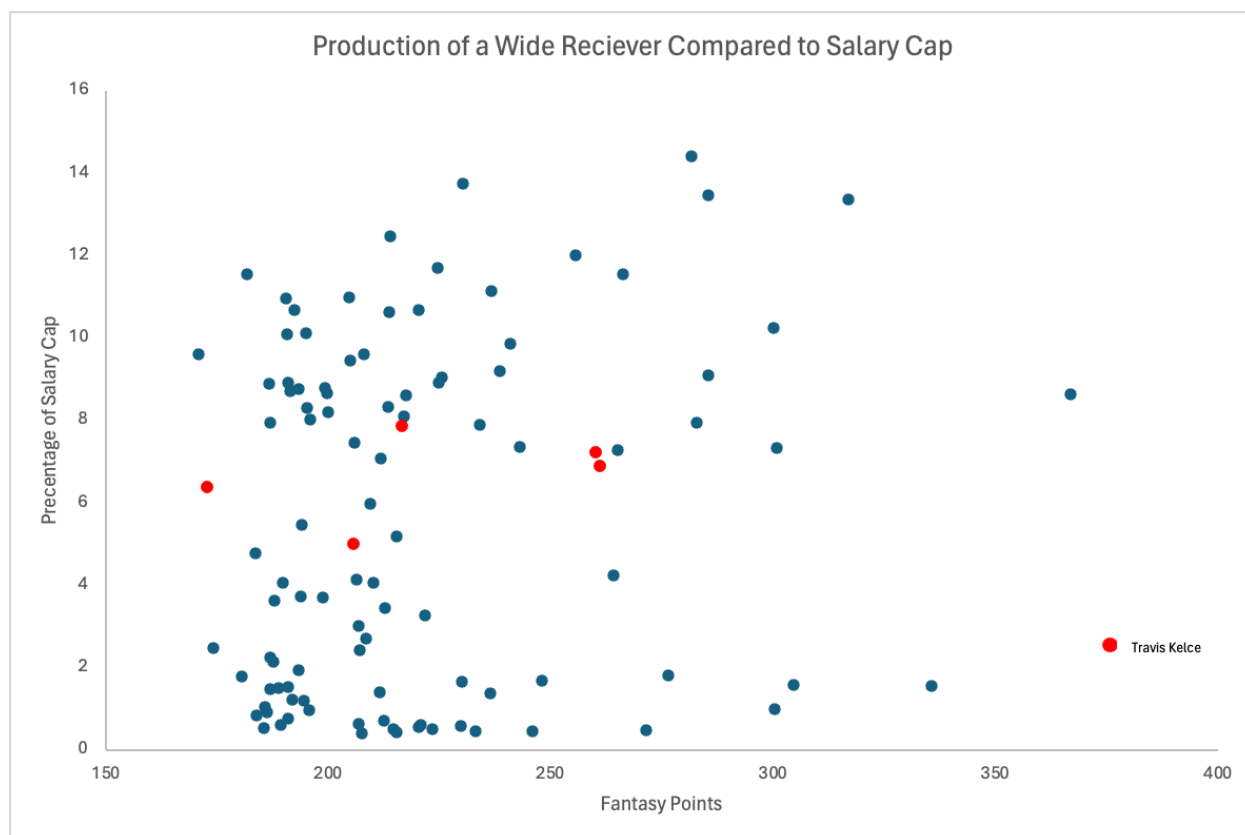


Figure 3 - Scatter Plot. This graph shows the relationship between how much percentage of the salary cap a receiver takes up and how much they produced

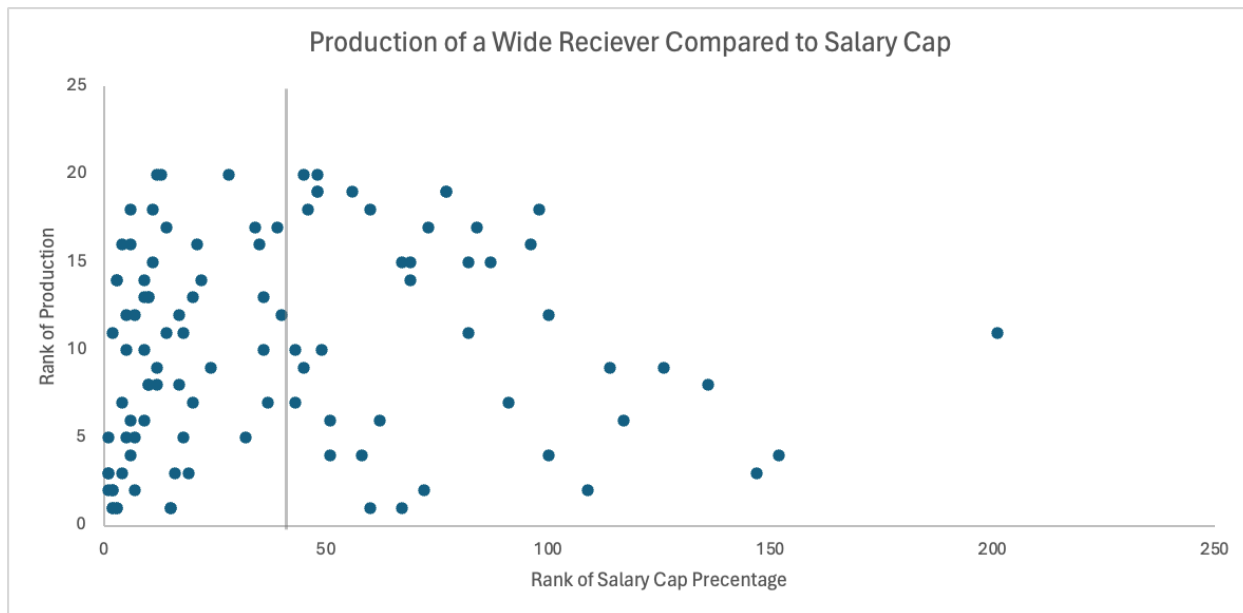


Figure 4 - Scatter Plot. This graph shows the relationship between a receivers' production ranking and their ranking of how much they are paid



Figure 5 - Bar Graph. This graph shows the highest paying teams over the last 5 years at the wide receiver position and how much success they had

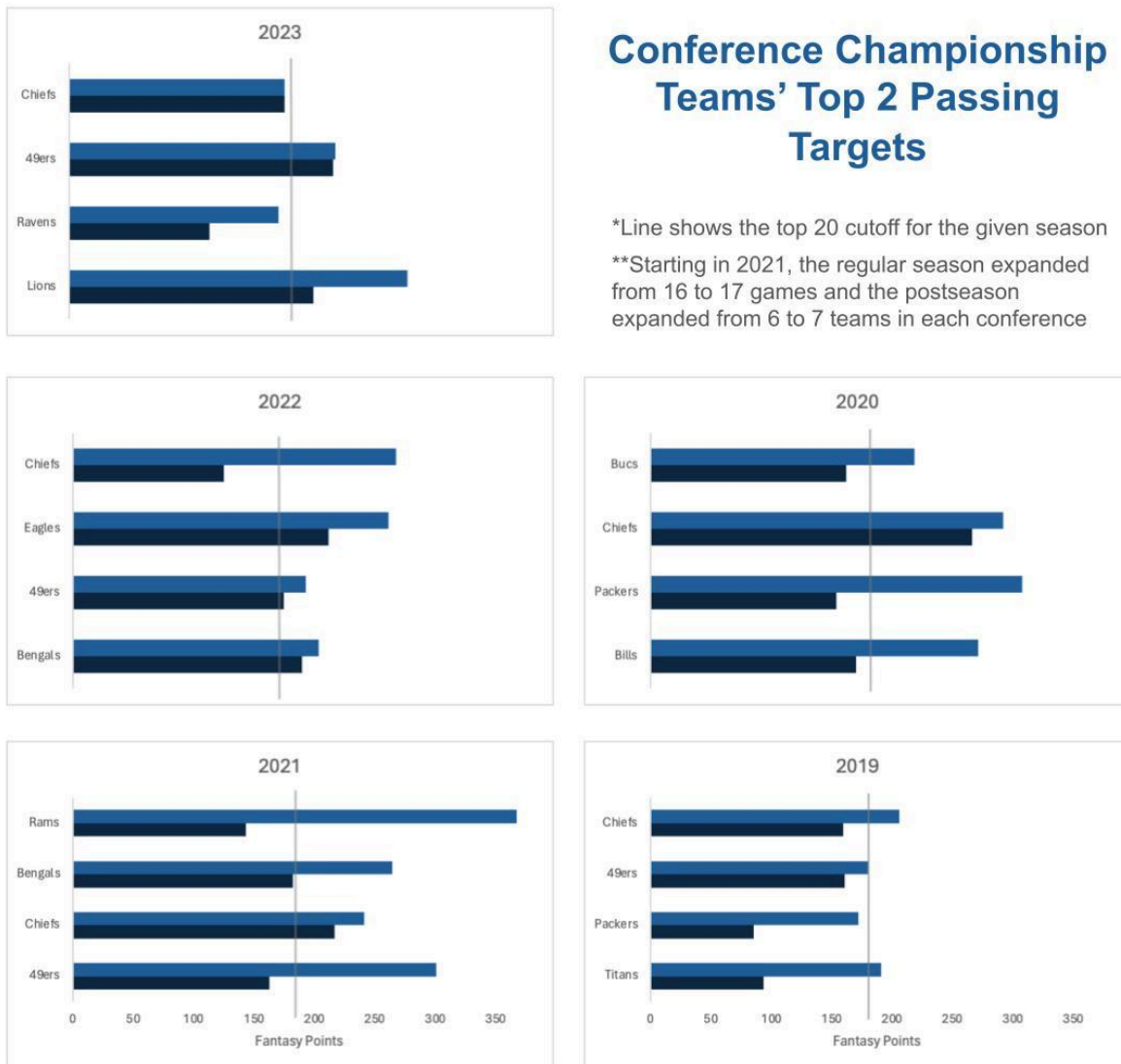


Figure 6 - Multigraph. This graph shows the best 4 teams the past 5 years sorted from top to bottom best to worst. The two bars show the fantasy production of their top two receivers

Conclusions

It is my hope that fellow football fans of America and now the entire globe share my belief that the wide receiver position is the second most important in the NFL. While countless debates will still be had, bringing in the offensive tackle position, the edge rusher position, and

even the cornerback position as it rises in prominence due to the threat a wide receiver poses, I hope the data I have provided in this paper turns your head my way. But I also encourage future work. Never did I research the comparison between the wide receiver position and the other commonly referred to second-best positions. Future work could compare the amount of money teams spend at the pass rusher and pass protector positions, discuss data on a team by team basis to form an argument such as I did in support of the wide receiver position.

To get the conversation started, I said the Bengals selecting wide receiver Ja'marr Chase over offensive tackle Penei Sewell was a landmark cause and effect for the wide receiver position across the NFL landscape. But what was neglected in that was Sewell's selection two picks later by the Detroit Lions, who as mentioned, have turned their entire franchise. Future research could compare the impact of wide receiver Amon Ra St Brown to offensive tackle Penei Sewell on the Lions franchise. Interestingly, both got paid handsomely within the last month, with Amon Ra St Brown receiving slightly more total money, but Penei Sewell receiving slightly more guaranteed money (Woodyard, 2024). A more finance savvy researcher could even explore the difference between total money and guaranteed money in the National Football League.

Nevertheless, the findings I have presented today tell a story of the increased value and importance placed on the wide receiver position in the NFL. I simply formed a theory as an educated football fan and used data science to test and analyze my theory using the data from the smartest minds in all of football. The league's 32 GMs are likely multiple steps ahead of me, with detailed data and advanced planning happening behind locked doors within their facilities. But as football fans on the outside, we can only role play as the smartest guy in the room, debating every last decision made both on the field and off the field.

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