

Baker Mayfield: An Ideal NFL Quarterback



Abstract

This project analyzes top NFL quarterbacks' statistical data, such as passing and rushing statistics. It creates a model to show how Baker Mayfield, current quarterback of the Cleveland Browns, compares to other top NFL quarterbacks.

Methods Used

- Gathered statistical data from all top NFL quarterbacks in the past 20 years (1999 to 2019), including other top QBs from the past such as Otto Graham.
- Cleaned/removed data that was unneeded (rushing statistics, age, fumbles, number of snaps, etc.).
- Created:
 - A regression model to analyze what a successful "top" quarterback in the NFL is.
 - Tableau graphs to illustrate how Baker Mayfield compares to other NFL quarterbacks.
 - A comparison model of Baker Mayfield with Tom Brady, one of the best quarterbacks of all time.

Case Description

A multiple regression model was created to compare any quarterback with the best quarterbacks of the last 20 years.

Original Analysis:

- Based on the multiple regression equation, the predicted passing rate would be: $74.759 + 2.415 * \text{Passing Completions} - 2.527 * \text{Passing Attempts} + 0.197 * \text{Passing Yards} + 10.128 * \text{Passing Touchdowns} - 14.607 * \text{Interceptions}$.
- While some statistics seemed to lower Passing Rate with a negative value (Passing Attempts and Interceptions), all five statistics that calculate Passing Rate are statistically significant when used together. Further analysis was needed to find which statistics were most important in calculating Passing Rate.

Original Passing Rate Analysis		
Variable	Unstandardized B Value	Significance
Constant	74.759	0.000
Completions	2.415	0.001
Passing Attempts	-2.527	0.000
Passing Yards	0.197	0.000
Passing TD	10.128	0.000
Interceptions	-14.607	0.000

Refined Analysis:

- The refined analysis showed that Passing Yards and Touchdowns were significant.
- The predicted Passing Rate would be: $55.862 + 0.056 * \text{the number of Passing Yards} + 13.851 * \text{the number of Passing Touchdowns}$.

Refined Analysis		
Variable	Unstandardized B Value	Significance
Constant	55.862	0.000
Passing Yds	0.056	0.000
Passing TD	13.851	0.000

2020-21 NFL Season Prediction

- Based on the multiple regression equation, likely Passing Statistics for Baker Mayfield in the coming 20/21 NFL Season:
 - Average Passing Rate = 90.35
 - Average TD (per game) = 2
 - Total TD = 26
 - Average INT (per game) = 1
 - Total INT = 8

Outcomes

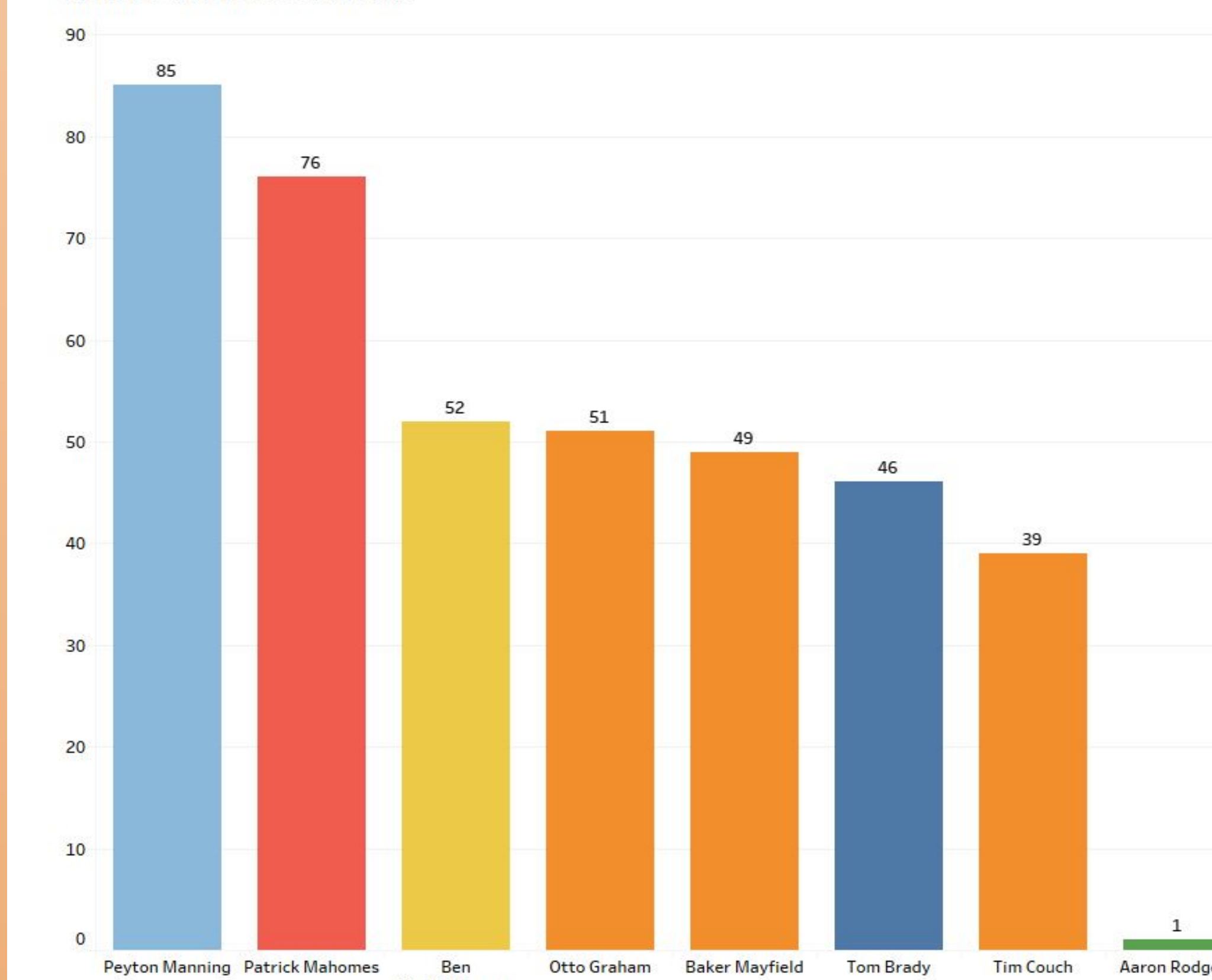
- Inserted data for Baker Mayfield to see how his first two years of data compare to the best quarterbacks of the last 20 years.
- Comparing Baker Mayfield to Tom Brady:
 - The analysis of Tom Brady VS Baker Mayfield showed that while having similar numbers the difference in Passing Rate was significant.
 - The predicted value of Passing Rate would be: $86.587 + 10.268 * \text{the value of the Dummy Variable (1 for Brady, 0 for Mayfield)}$.

Brady VS. Baker Results		
Variable	Unstandardized B Value	Significance
Constant	86.587	0.000
Dummy Variable	10.268	0.042

Discussion

- How have top quarterbacks performed statistically in their first 3-5 years and how do those top quarterbacks compare to their peers?
- How does the chosen quarterback (Baker Mayfield in this instance) compare to and fall among the best quarterbacks of the selected time period?

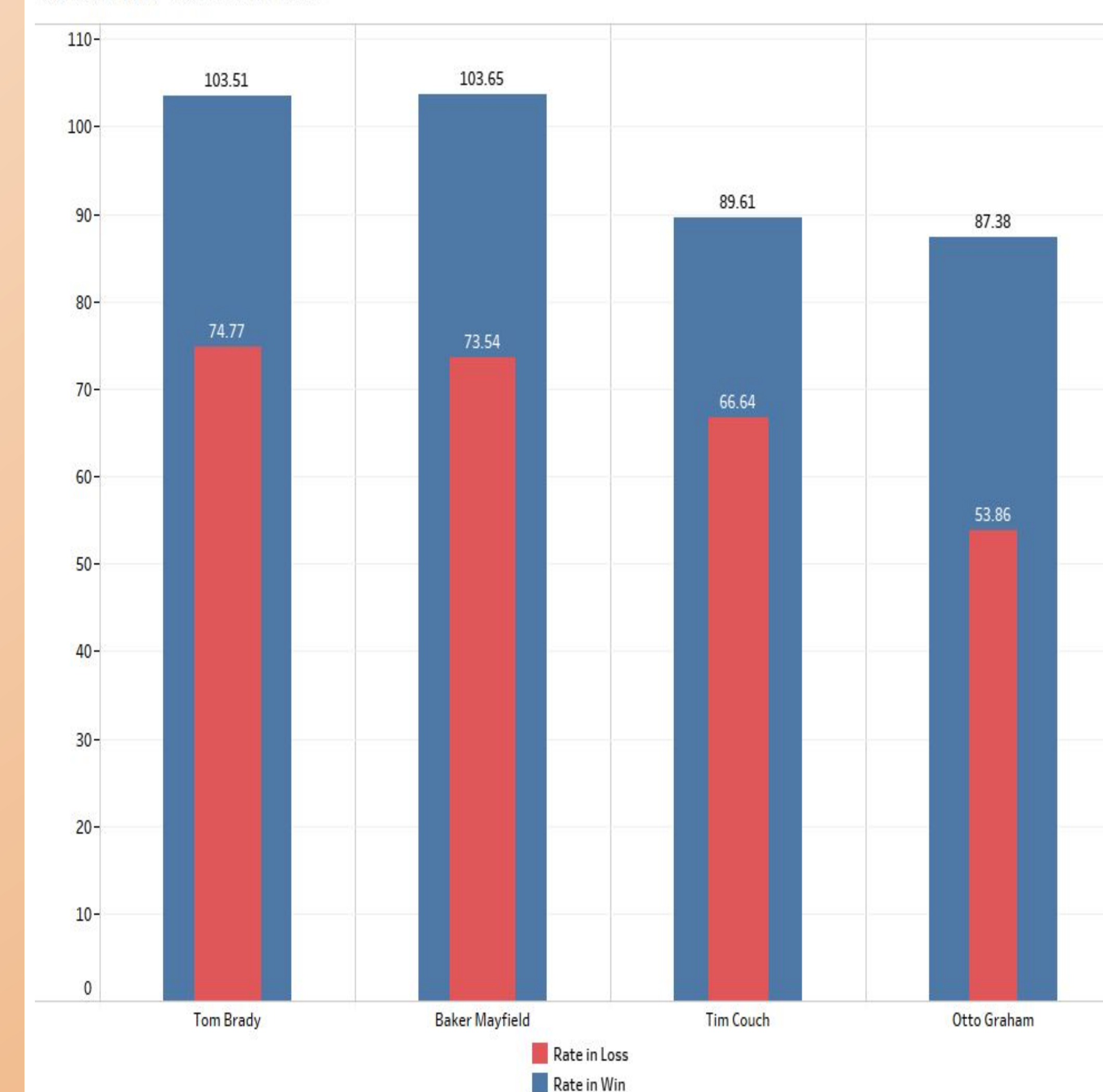
Total TD's in first 3 seasons



Conclusions

- Baker Mayfield compares favorably to the top NFL quarterbacks used in this model.
- The model can be used to compare any NFL quarterbacks that have statistical data available on Pro-Football-Reference.

Rate in Win VS Rate in Loss



References

- Pro Football Reference. (2019). *Career Overview*. Retrieved from <https://www.pro-football-reference.com/players/gamelog/>