

Rule of 53 Exploration

Football Consulting
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What is the Rule of 53?

- Brian Schottenheimer, former offensive coordinator for the Seahawks and Cowboys, hypothesized a correlation between Completions + Rush Attempts and Win Percentage
- His Magic Number was 53, believing 53 Completions + Rush Attempts would lead to an increased winning percentage
- But is this true? For this project, we imported NFL data from 2019-2023 and analyzed various facets of the Rule of 53. We analyzed the correlation between the rule with no modifications, then expanded to excluding garbage time and other factors that may lead to increased win probability
- The results, while not infallible, can help influence decision making for offensive play callers by identifying positive links between types of plays and the resulting outcomes

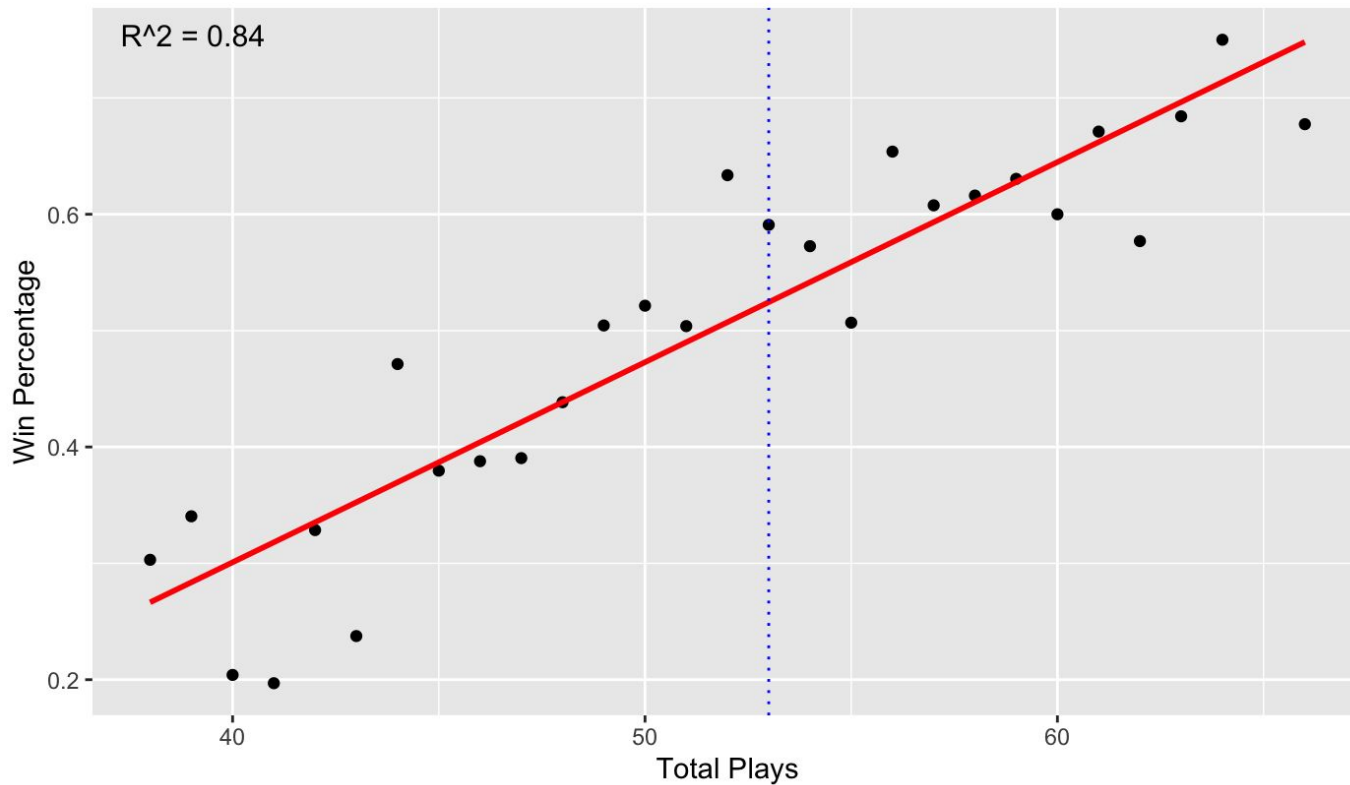
Initial Exploration

Team Result	Completed Passes + Run Plays
Loss	49.46
Win	53.45

53 Plays Reached?	# Losses	# Wins	Win %
Yes	487	769	61.2
No	898	616	40.69

Initial Exploration

Run + Completed Pass Plays vs Win Percentage



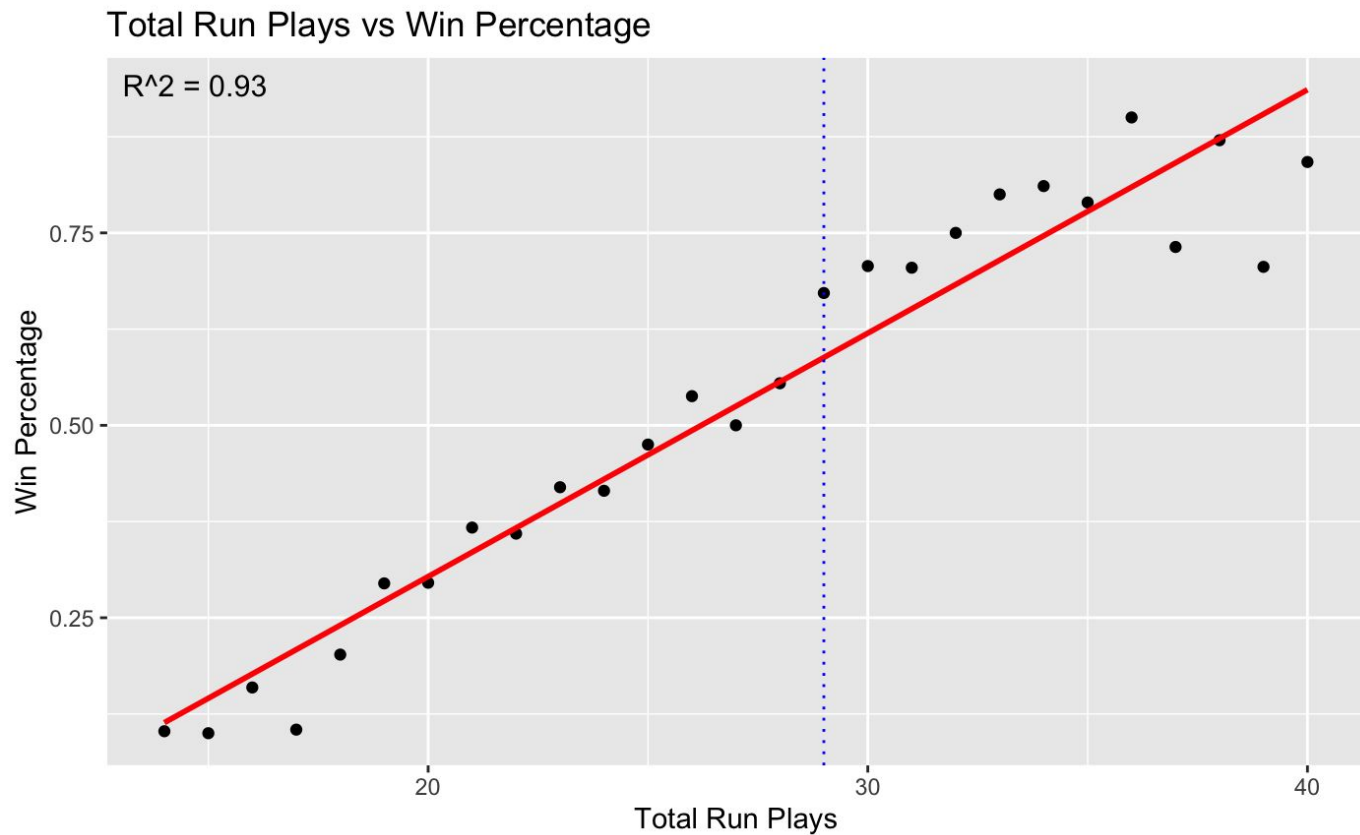
By Play Type

Team Result	Completed Passes
Win	24.19
Loss	26.71

Team Result	Run Plays
Win	29.25
Loss	22.75

29 Runs Reached?	# Losses	# Wins	Win %
Yes	226	744	76.70
No	1159	641	35.61

Rule of 29 (Runs)?



Garbage Time Filter

- Must consider the confounding factor of score differential
- Teams that are leading will run the ball to run out the clock
 - Running is more passive and safe compared to passing

Solution: exclude plays run when the team has at least a 95% chance to win (as determined by Vegas)

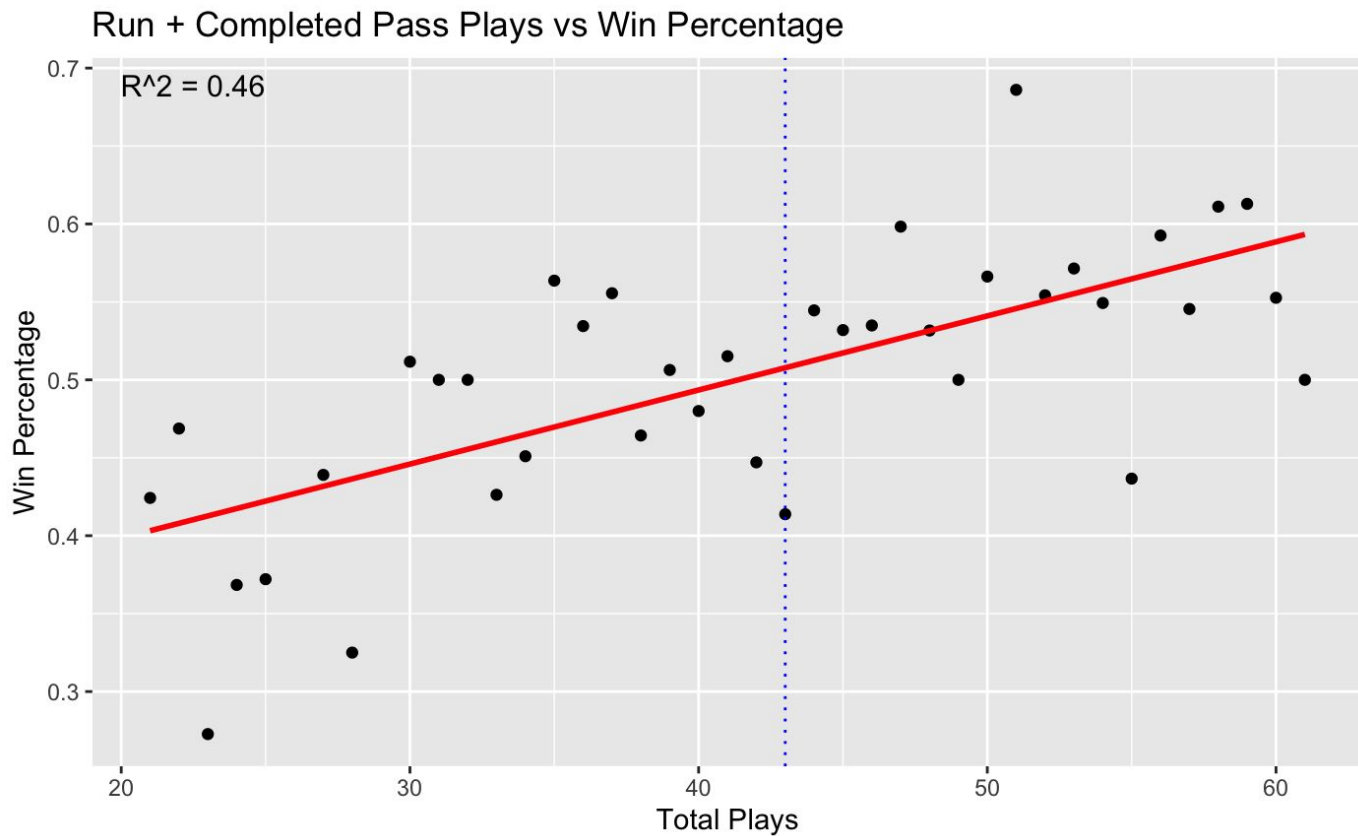
Garbage Time?	Run Play %	Avg. Yards Gained
No	51.64	4.74
Yes	67.22	4.19

Exploring Play Count Again

Team Result	Completed Passes + Run Plays
Win	42.93
Loss	39.39

43 Plays Reached?	# Losses	# Wins	Win %
Yes	468	793	55.03
No	736	589	44.45

Rule of 43?



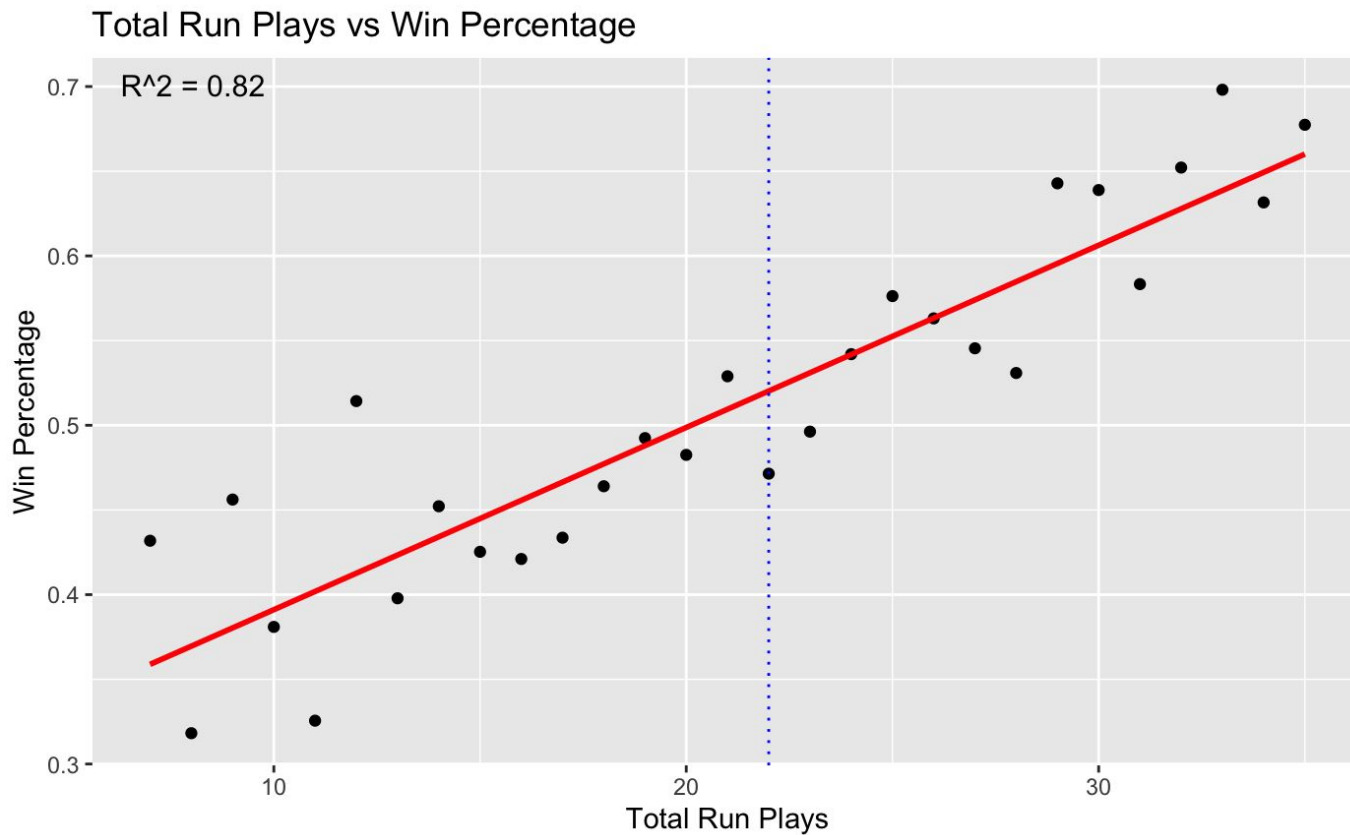
By Play Type

Team Result	Completed Passes
Win	20.76
Loss	19.95

Team Result	Run Plays
Win	22.17
Loss	19.46

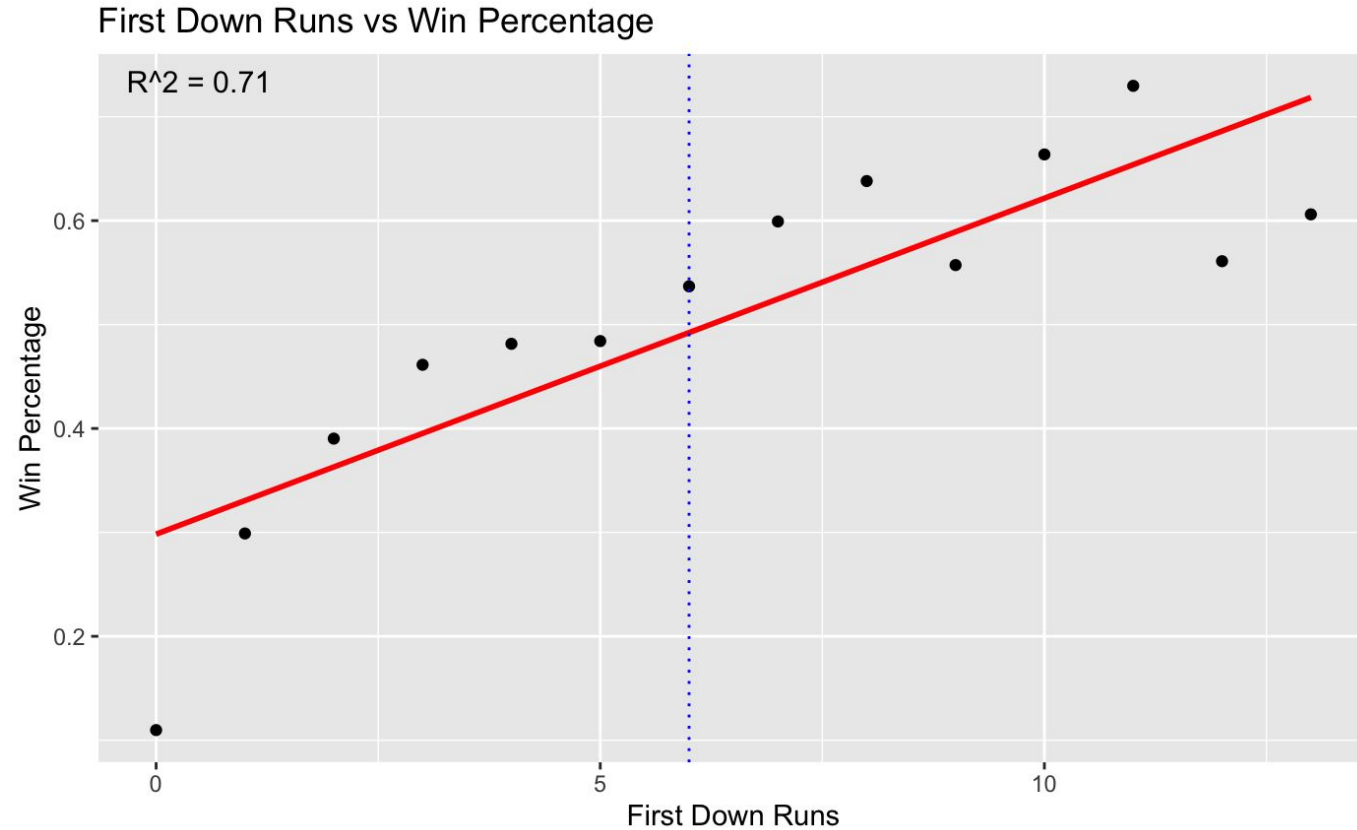
22 Runs Reached?	# Losses	# Wins	Win %
Yes	551	735	57.15
No	833	647	43.72

Rule of 22 (Runs)?



First Down Runs?

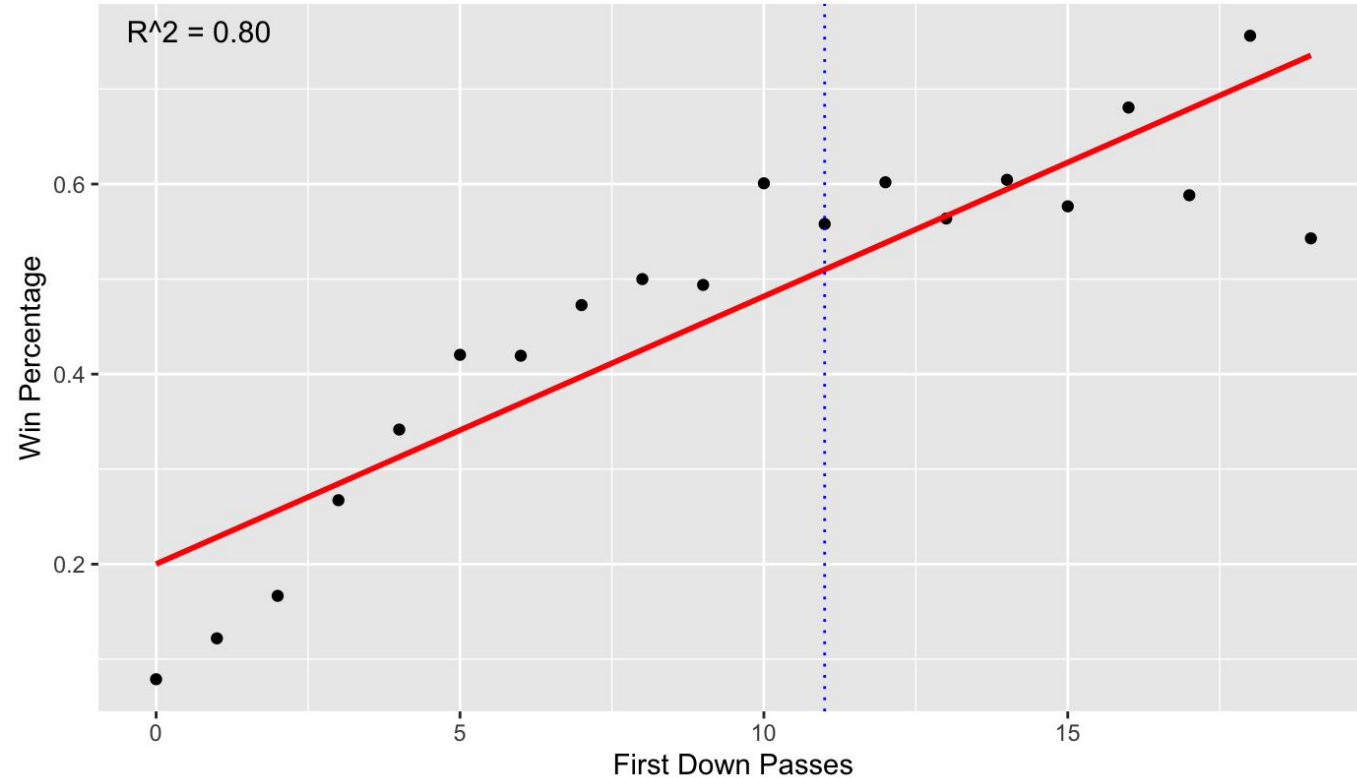
≥ 6 FD Runs?	Win %
Yes	60.08
No	43.88



First Down Passes?

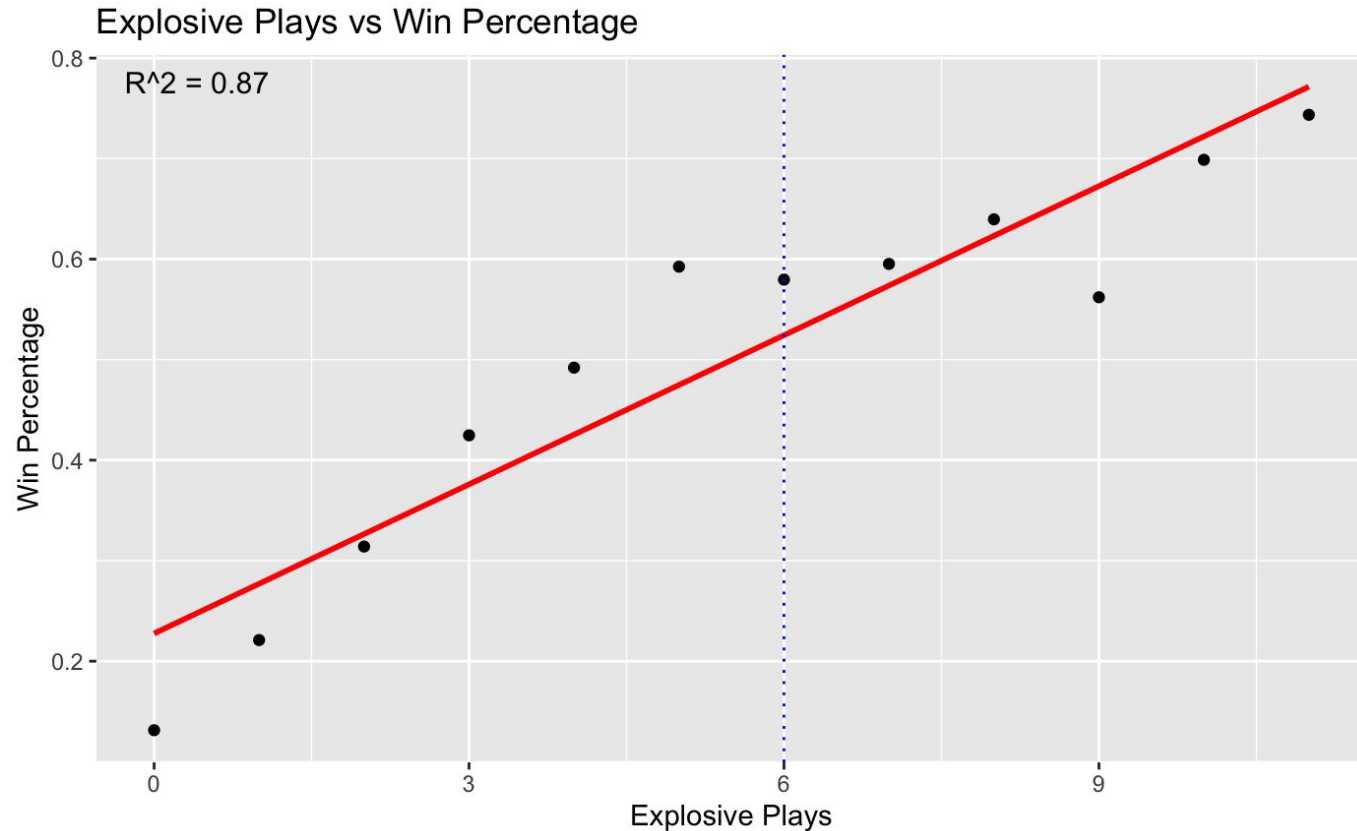
First Down Passes vs Win Percentage

≥ 11 FD Passes?	Win %
Yes	59.49
No	44.20



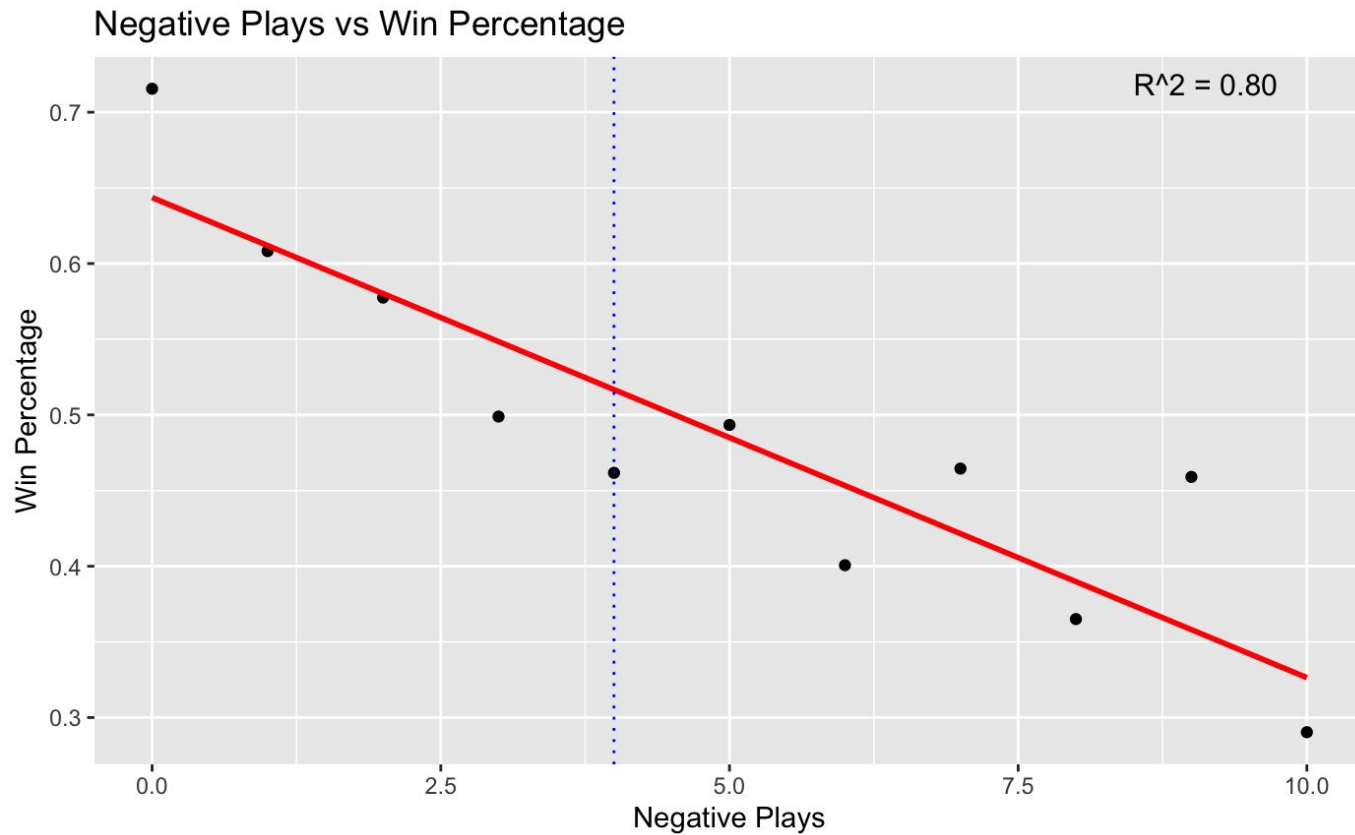
Explosive Plays?

≥ 6 Explosive?	Win %
Yes	60.78
No	44.61



Negative Plays

≥ 4 Negative?	Win %
Yes	44.40
No	55.30



Next Steps

- Predictive classification models (won't be helpful in determining a "rule")
 - Identify any "clusters"
- PFF college football data as opposed to NFL
- Suggested expansions from Coaching Staff