Analysis of 2001 Mariners

We looked at the 2001 Mariners in the context of the modern game and specifically by taking into account the highest win total team each year for the past ten years (not including 2020) as well as the 1998 Yankees, which was the next closest team to tying the most win season with 114 wins. We specifically looked at Batting Average, On Base Percentage, and Slugging. BA and OBP are self-explanatory and are how often a hit is recorded and a batter gets on base, respectively. Slugging is somewhat more complicated as it takes into account the number of bases gained from a hit; for example, a hit that goes for two bases is worth more than a single base hit. We looked at a confidence interval and prediction interval for the stats. When comparing the 2001 Mariners, we see that they have the highest batting average and second-highest OBP. When doing a regression analysis with the batting average and win percentage, we see that the Mariners are just within the confidence intervals. Same with the OBP. We see the only team that is close to the Mariners would be the 1998 Yankees and none of the teams in the past 10 years aren't close. In fact, when we look at the z-score, we get a score of 1.53 and 1.4 for average and on-base percentage, respectively. This score only gets higher when the '98 Yankees team is removed, becoming 1.8 and 1.7. We see an interesting relationship with SLG, the mariners are in the middle of the pack when it comes to SLG but should be winning less. This means that a lot of the ways the Mariners got on base were through infield hits or singles. This makes sense with the team composition and with AL MVP Ichiro's style of play. For pitching, we looked at the ERA and the FIP. These two stats are interrelated as the FIP is just the ERA without considering fielding skills. ERA is the amount of earned runs in 9 innings. The ERA of the Mariners was middling, yet the win percentage was overachieved. When looking at the FIP we see a very high FIP, meaning that a lot of defensive plays made by the Mariners can be chalked up to the defensive skills of the fielders.

For the next part of our analysis we used a monte carlo simulation to simulate the playoffs based on the Pythagorean Expectation formula which uses runs scored and runs allowed to calculate a teams expected win percentage.

Using the pythagorean expectation, we simulated each game of the post season by generating random outcomes based on the expected probabilities of a win for each team in every round of the playoffs keeping in mind that the first round is best of 5 while the second and third are both best of 7. This process was played out 10,000 times to ensure robust sample outcomes, providing a probabilistic outcome of each team progressing through the rounds and winning the World Series.

Team	DS	CS	WS
1 ARI_2001	0.5074	0.2757	0.1282
2 ATL_2001	0.5063	0.2369	0.1086
3 CLE_2001	0.3973	0.1747	0.0819
4 HOU_2001	0.4937	0.2257	0.0981
5 NYA_2001	0.4238	0.1857	0.0911
6 OAK_2001	0.5762	0.2990	0.1706
7 SEA_2001	0.6027	0.3406	0.2000
8 SLN_2001	0.4926	0.2617	0.1215

Figure 1: Simulated Playoff Results

Figure 2: Simulated Bracket for 2001 Playoffs

Figure one is the probabilities that a team makes it through the round. Notice that the Mariners had a 20% chance to win the world series based on our simulation results however the Arizona Diamondbacks the true winner had a 12.82% chance of winning. Figure 2 represents the bracket our simulation would predict and actually does a pretty good job with the NL getting every pick right in that division while only getting the Mariners first game right in the AL.

Lastly, we did a time series since our pythagorean expectation only looks at the overall season we wanted to see if their play was declining near the end of the season.
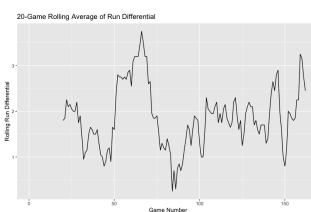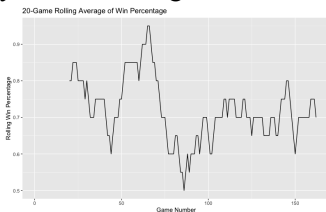

Figure 3: 20-Game Rolling Average of W% for Mariners

Figure 4: 20-Game rolling average of Run Differential for the Mariners

Figure 3 shows that the start of the season was the Mariners best part of the season which could have inflated their stats for the remaining part of the season. Although less blatant Figure 2 shows the same thing with a bit of a recovery but notice the sharp decline right before entering the playoffs.

In conclusion, the 2001 Mariners were a great team as exemplified by their record and their z scores for a variety of stats however although our simulation shows that they had the highest chance of winning it does leave room for other teams to win it all accounting for the randomness in sports especially in 7 game series. Our time series analysis also highlights that they were not at their best when entering the playoffs which could have led to their shortcomings when it mattered most.