



# Mendoza's Champions: An Analysis of MLB's Worst World Champions

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## Abstract and Objectives

Despite the large sample size that is the 162-game MLB regular season, randomness plays a significant role in baseball and determining baseball's yearly champion. According to a 2013 Harvard Sports Analysts Collective's study, out of the 4 major American sports leagues, the MLB by far produces the "least deserving postseason winner." The purpose of this project is to rank each of the 114 World Series champions through 2018 using a variety of statistics and metrics to measure the strength of each team: Pythagorean Win Percentage, FiveThirtyEight's Composite Elo Rankings, Win Percentage in years surrounding championship season, strength of schedule, and BABIP.

## Important Terminology

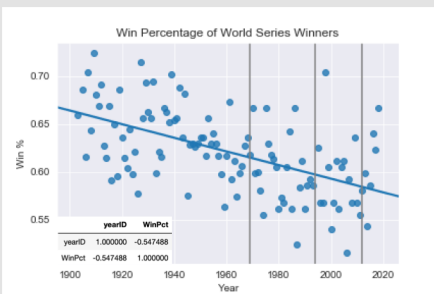
**Pythagorean Win Percentage:** A formula by David Smyth and "US Patriot," derived from Bill James' Pythagorean Theorem, which uses team's runs scored and runs allowed to measure a team's strength. Considered to be a better measure of the strength of a team than win percentage.

**Boundary Win Percentage:** A measurement I created to measure the strength of a team within  $\pm 2$  years of a given season. Used to give indication if a team's success was sustained over time or more fluky.

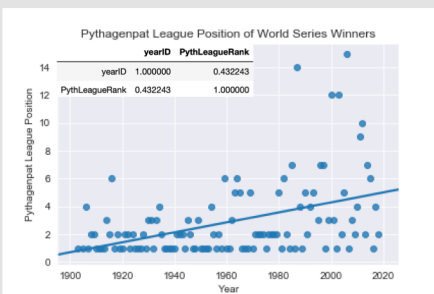
**BABIP:** Batting Average on Balls In Play,  $(H - HR) / (AB - K - HR + SF)$ . Significant differences between a hitter's BABIP (or pitcher's opponents' BABIP) and their career BABIP are generally considered an indicator of luck.

**Elo:** FiveThirtyEight's Composite Elo rating measures the overall strength of a team in a given season, updating after every game based on result, score, and strength of opposition. The average is 1500, and thus far ranges from 1387 (1904 Washington Senators) to 1623 (1939 New York Yankees)

## History of the Strength of World Champions



Over time, the strength of World Series winners has diminished. This can be attributed to a variety of factors, including a more equal distribution of revenue among teams and a dilution of talent that comes with league expansion. But what most contributes to this is continued playoff expansion, which are visualized by the vertical lines above at years 1969, 1994, and 2012.



Expanded playoff formats have given lesser teams the opportunity to partake in the roulette of the MLB playoffs, putting them just a handful of wins from the World Series. Six Wild Card teams, including the '14 Giants, have won a World Series. Those '14 Giants, who snuck into the playoffs via the new second Wild Card spot, had a better record than only 13 of the 390 teams (3.3%) to have made the playoffs in non-strike shortened seasons through 2014.

## Pythagorean Win Percentage

Year	Team	W	L	R	RA	WinPct	PythWinPct	WinPct - PythWinPct
0	1987 Minnesota Twins	85	77	786	806	0.525	0.488	0.037
1	2006 St. Louis Cardinals	83	78	781	762	0.516	0.512	0.004
2	1959 Los Angeles Dodgers	88	68	705	670	0.564	0.524	0.04
3	1985 Kansas City Royals	91	71	687	639	0.562	0.533	0.029
4	2000 New York Yankees	87	74	871	814	0.54	0.533	0.007

The worst World Champion by Pythagorean Win Percentage are the '87 Minnesota Twins, .024 worse (or 3.88 wins over a 162-game season) than the next-worst '06 Cardinals. The '87 Twins are the only World Series winner to who had a negative Run Differential, as reflected in their losing Pythagorean record (79.040 - 82.960).

Comparing Pythagorean Win Percentage and Win Percentage can often present indicators on which teams are either lucky or unlucky. The root-mean-square error of Pythagorean Win Percentage against a team's actual Win Percentage is about 3.9911 wins over a 162-game season

## FiveThirtyEight Composite Elo Rating

Year	Team	W	L	WinPct	PythWinPct	Elo	All-Time Elo Rank
0	1987 Minnesota Twins	85	77	0.525	0.488	1514	1124
1	1959 Los Angeles Dodgers	88	68	0.564	0.524	1525	860
2	2014 San Francisco Giants	88	74	0.543	0.536	1536	620
3	1985 Kansas City Royals	91	71	0.562	0.533	1536	621
4	2003 Florida Marlins	91	71	0.562	0.538	1537	590

The '87 Twins finished with the lowest Elo rating by some distance. Note that the Elo data was utilized for years 1903-2015, which in total had 2,330 teams, of which these Twins were ranked 1124, or just about the 50<sup>th</sup> percentile.

FiveThirtyEight's Elo ratings give a strong indication on the strength of team as they take into account not only the results of a team within a season, but of recent seasons as well, meaning teams that have sustained success will have a higher Elo rating.

## Boundary Win Percentage

Year	Team	W	L	WinPct	PythWinPct	BoundaryWinPct
0	1997 Florida Marlins	92	70	0.568	0.547	0.417
1	2013 Boston Red Sox	97	65	0.599	0.622	0.454
2	1988 Los Angeles Dodgers	94	67	0.584	0.563	0.472
3	1969 New York Mets	100	62	0.617	0.568	0.472
4	1990 Cincinnati Reds	91	71	0.562	0.567	0.482

The worst Boundary Win Percentage of any World Champion went to the Florida Marlins, whose .417 mark is equivalent to a 67.554 - 94.446 record in a 162-game season. This is skewed though as the Marlins were an expansion team, playing their inaugural season in 1993, and expansion teams are generally poor in their first few seasons.

Boundary Win Percentage allows for analysis over the strength of a World Champion in the years surrounding their championship, indicating the overall strength of the team.

## Conclusion: The Worst World Champions

Year	Team	W	L	WinPct	PythWinPct	Elo	SurroundingWinPct	Total Strength
0	1959 Los Angeles Dodgers	88	68	0.564	0.524	1525	0.513	0.142
1	2014 San Francisco Giants	88	74	0.543	0.536	1536	0.51	0.159
2	1997 Florida Marlins	92	70	0.568	0.547	1537	0.417	0.16
3	1987 Minnesota Twins	85	77	0.525	0.488	1514	0.496	0.166
4	2006 St. Louis Cardinals	83	78	0.516	0.512	1538	0.559	0.17

### 1) 1959 Los Angeles Dodgers

In an era before playoff expansion and league expansion, the Dodgers won the NL pennant while being only the 6<sup>th</sup> best team in MLB by Pythagorean Win Percentage, good for the 3<sup>rd</sup> lowest Pythagorean Win Percentage of any World Champion. They also recorded the 2<sup>nd</sup> lowest Elo of any World Champion.

### 2) 2014 San Francisco Giants

To complete a historic 5-year dynasty, the Giants posted the 4<sup>th</sup> worst record and 3<sup>rd</sup> lowest Composite Elo of any World Champion. They were the 8<sup>th</sup> best team in 2014 by Composite Elo, the 2<sup>nd</sup> worst ranking within a season of any World Champion. In their last 98 games of the regular season, they went 45-53.

### 3) 1997 Florida Marlins

In their fifth season in existence, the Marlins recorded their first winning record and only winning record until 2003, when they again won the World Series. They followed their 1997 season with their to-date franchise worst record in 1998 and 3<sup>rd</sup> worst in 1999. Their 1998 season 54-108 record is the worst of any defending World Champion by 17 wins.

### 4) 1987 Minnesota Twins

With the lowest win percentage, Pythagorean Win Percentage, and Composite Elo of all World Champions, as well as the only World Series winner with a negative run differential, the '87 Twins won one of the tightest divisions in MLB history, finishing just 10 wins above the last-placed Angels in the AL West.

### 5) 2008 St. Louis Cardinals

With the fewest wins of any World Champion in a non-shortened season, the Cardinals hold the distinction of having the second-longest losing skid of any World Champion, losing 8 consecutive games twice, as well as 7-game streak as well. By Pythagorean Win Percentage they were the 15<sup>th</sup> best team in the MLB in 2008, a record low. Albert Pujols, Scott Rolen, and Chris Carpenter combined for 19.3 bWAR, with no one else eclipsing 2.0.

