

# OC LEADER BOARD

Opinion, Analysis, Insight

## Baseball, Healthy Angels and WAR

By Jim Doti and Rick Reiff

It was over cups of coffee a few weeks back where we were solving the momentous problems of the day when our discussion turned to baseball.

Maybe spring was in the air because our shared Chicago childhood memories of rooting for the Go-Go White Sox (and booing the crosstown Cubs) took on greater importance than what was happening on the global and inflationary fronts.

This economist and business journalist recalled how baseball shaped their love of statistics as they tracked the batting averages of heroes like Nellie Fox, Minnie Minoso and Jungle Jim Rivera. Turning our attention from vintage baseball to today's Angels—we refuse to prefix that with "L.A."—we speculated whether better luck injury-wise could turn our adopted heroes from star-crossed also-rans into championship contenders.

After all, the Angels' remarkable two-way player **Shohei Ohtani**, the American League's reigning Most Valuable Player, should get some extra swings this season. On days he pitches, the new "Ohtani rule" lets him stay in the game as the designated hitter after he's relieved on the mound.

But even more significant would be a return to full health of the Angels' other MVP, the incomparable **Mike Trout**, and two former All-Stars, third baseman **Anthony Rendon** and pitcher **Noah Syndergaard**. All were sidelined for most of 2021; Syndergaard, back after Tommy John surgery, has seen almost no action since 2019.

Lest you dismiss all this as the idle banter of two guys with nothing better to do, consider that today's baseball has a body of statistics, formulas and projections that rival those of the Federal Reserve. Econometrics has nothing on sabermetrics, the name given to the empirical analysis of baseball. So using a little sabermetrics, let's examine how much the Angels might benefit from more playing time by the above trio.

The key to this is not something we could have gleaned from the backs of 1950 baseball cards. It's a more recent statistic called WAR, which despite its frightful-sounding acronym, stands for "wins above replacement." It essentially measures how many wins a player contributes to the team. The beauty of WAR, and it really is beautiful, is that it distills all of a player's offensive and defensive contributions into a single number.

In very rare cases, a player rings up WAR as both a batter and pitcher—hello, Babe Ruth and Ohtani-san! Indeed, the Babe has the highest lifetime WAR of any player—183.1, with his pitching WAR of 20.4 enough to catapult him over another outfielder, Barry Bonds, whose WAR of 162.8 edges out Ruth among position players by the slimmest of margins, 0.01. Similarly, while Ohtani did not post either the highest batting or pitching WAR of 2021, his combined total of 9.0 (4.9 batting, 4.1 pitching) was easily best, a quantitative affirmation of his historic season.

Keep in mind there are variations of the formula, and they're being constantly refined; sabermetricians argue over WAR fielding metrics as much as economists debate the money supply. Yet so pervasive has WAR become that in the recent major leagues contract negotiations it was trotted out as a way to award bonuses to young stars, until the "WAR lords" vigorously protested. They feared their stat would be misused, much as nuclear physicists of an earlier era worried about the atom bomb.

We're using the version of WAR found on a wonderful website called Baseball-Reference.com, founded by a Ph.D. in applied math and computational sciences.

Now back to the Angels. We developed a regression equation, let's call it JAR, aka the **Jim And Rick** equation, to predict the percentage of wins for each of the 30 major league teams in 2021 based on their total WAR. The equation explained a whopping 87% of all the variation in a team's percentage of wins (**Table 1**).

JAR predicted the Angels, with a WAR of 21.7, would win 42.6% of its games—not far from its actual 47.5%. By comparison, our equation predicted that based on its much higher WAR of 55.1, the real "L.A." team, the Dodgers, would win 63.7% of its games versus an actual 65.4%—almost a bulls-eye!

Now, let's take those same numbers but assume Trout would have been healthy for the full season. To do this, we averaged his performance from 2012 through 2019 (discarding the strike-shortened 2020 season). Over that span, the Millville Meteor averaged 9.0 WAR (nobody else came close). Using Trout instead of the injured one who posted that a WAR of 1.8 in just 36 games improves the 2021 Angels by 7.2 WAR.

The hobbled Rendon's 2021 WAR was (yikes!) zero. But from 2016 through 2019, he averaged an impressive WAR of 5.7. Let's add that figure to the 2021 Angels. And in his four healthy seasons prior to 2020, the imposing Syndergaard averaged 3.2 WAR; let's count that, too.

Using JAR to translate this higher WAR total, we compute that the Angels would jump from 19th place among the 30 major-league clubs to 14th with a 52.8 winning percentage. That would make the Halos serious contenders for a spot in the post-season, which they



Doti



Reiff

TABLE 1

	Team	Actual Percentage of Wins for 2021 Season	Predicted Percentage of Wins Based on the JAR Equation
1	San Francisco Giants	66.0	63.7
2	Los Angeles Dodgers	65.4	63.7
3	Tampa Bay Rays	61.7	60.3
4	Houston Astros	58.6	60.5
5	Milwaukee Brewers	58.6	55.7
6	Chicago White Sox	57.4	60.3
7	Boston Red Sox	56.8	56.0
8	New York Yankees	56.8	54.7
9	Seattle Mariners	55.6	46.3
10	St. Louis Cardinals	55.6	53.5
11	Atlanta Braves	54.7	54.2
12	Toronto Blue Jays	54.7	62.0
13	Oakland Athletics	53.1	53.5
	<b>The Healthy Angels</b>	<b>52.8</b>	
14	Cincinnati Reds	51.2	52.7
15	Philadelphia Phillies	50.6	50.4
16	Cleveland Indians	49.4	48.9
17	San Diego Padres	48.8	51.7
18	Detroit Tigers	47.5	44.7
19	Los Angeles Angels	47.5	42.6
20	New York Mets	47.5	48.4
21	Colorado Rockies	46.0	46.9
22	Kansas City Royals	45.7	44.4
23	Minnesota Twins	45.1	44.4
24	Chicago Cubs	43.8	41.3
25	Miami Marlins	41.4	45.6
26	Washington Nationals	40.1	45.1
27	Pittsburgh Pirates	37.7	37.0
28	Texas Rangers	37.0	38.6
29	Arizona Diamondbacks	32.1	36.9
30	Baltimore Orioles	32.1	34.4

haven't achieved since 2014.

At an appropriate fee, we'll use the JAR equation to advise **Arte Moreno** on who he should pick up before this season's trade deadline to help the Angels' pennant push.

Admittedly, our scenario is loaded with ifs. Neither Trout, Rendon nor Syndergaard has logged a full season for three years. But so far so good in 2022: The trio has shrugged off minor injuries and is on pace to match our projected WAR. Add in fast starts by lesser-heralded players, and the Angels have been the early surprise of the season, near the top in wins.

Could an Anaheim vs. L.A. World Series be brewing? When it comes to baseball, hope springs eternal.

Addendum: Thanks to Rick's boyhood buddy **Bill Victor** who, despite being a lifelong Cubs fan, helped us with the Baseball-Reference statistics.

*Editor's Note: Jim Doti, president emeritus of Chapman University, is one of the nation's preeminent economists. Rick Reiff, a Pulitzer Prize winning journalist, is editor at large for the Business Journal. As of May 12, the Angels were 21 and 12 with a 63.6% win record, good for first place in its division.*

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