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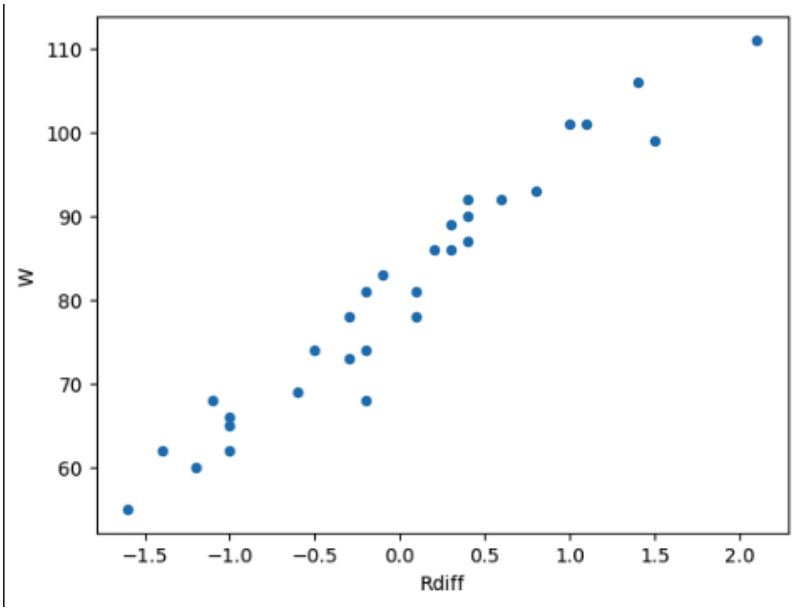
The Chicago Cubs 2023 Season is a Bust

Baseball is old. Very old. Over the years, the sport has benefitted from new statistics and data points. This led to the predictive power of an almost impossibly unpredictable game. Like most Chicagoans, the year 2016 resonates well for a city that saw a 108-year championship drought come to an end on a rainy November night in Cleveland. Since then, the city has watched a Cubs team continue to implode for the following 4.5 years until the team's front office decided to pull the plug and trade away the remaining talent from the championship roster before the 2021 Trade Deadline. Fast forward to the present and the Cubs are in a confusing spot. They have a massive amount of financial freedom, promising prospects, and a solid Major League staff behind third-year manager David Ross. But will this be the season where they can capitalize on free agents and their aspiring prospects to make it back to the postseason? There is no chance and I am here to tell you why.

2022 Results

Baseball is a magical sport. Sometimes being incredibly predictable, while other times unpredictable. In the MLB six best teams from each league (American League and National League) enter a twelve-team bracket to play for the championship. This past season was odd enough that the team with the eleventh most wins played the team with the second most wins for the World Series. The easiest way of predicting who will make the playoffs is with run differential. Run differential is calculated by runs scored divided by runs allowed.

Rdiff = (Runs) / (Runs Allowed)

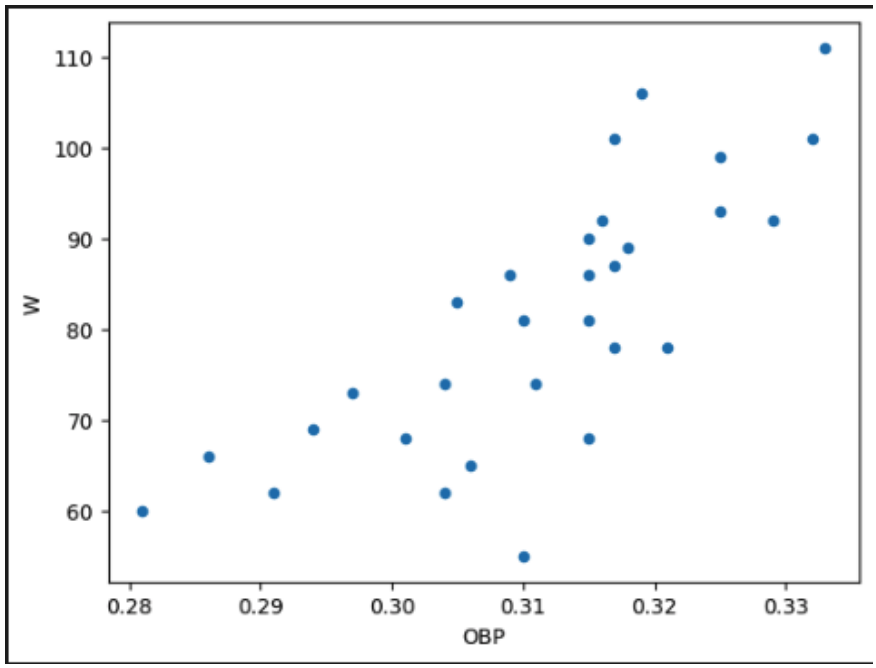


This shows a comparison to see if the team is evenly balanced between good pitching and good offense. In this category, the Cubs ranked twenty-second out of thirty teams with an average run differential of -0.5 runs per game. The team finished twenty-second overall in average runs scored per game (4.1) and twentieth overall in runs allowed per game (4.5). Thus the issue is worse than hoped for. It is both a pitching issue and a batting issue.

Batting

Diving into batting first, to get more runs, you must get on base. The best, and most simple, way to measure this is by OBP (on-base percentage). The equation for this statistic is shown below.

OBP = (Hits + Walks + Hit by Pitch) / (At Bats + Walks + Hit by Pitch + Sacrifice Flies)



Wins are directly correlated to the amount a team gets on base. The Cubs ranked seventeenth in this department with a 0.311 on-base percentage. This was 0.001 below the league average. The Cubs recently lost their all-star catcher Willson Contreras to free agency, cut their first baseman Frank Schwindel, cut right fielder Jason Heyward, and are looking to upgrade at shortstop to move current shortstop Nico Hoerner back to second base. While the current second baseman, Nick Madrigal, would move to the backup position.

Name	**OBP**
Willson Contreras	0.349
Frank Schwindel	0.277
Jason Heyward	0.278

With these three gaping holes in the lineup and the need for an upgrade at shortstop, the Cubs would need to find three replacements at each position that have a higher OPS than the previous player. Another option would be to find four players with an OBP that are each higher than 0.226.

According to SPROTAC**,** the Cubs currently have a payroll of about $92.5 million. This is 17th overall in the MLB. With the Cubs being able to take on more player salary, realistically they could take on another $50 million to $60 million total. The Cubs are notorious for not spending as much as big-name teams so we will give them the benefit of the doubt with $55 million that they are willing to spend. But they will not put all of their money into one player and sign a deal longer than six years according to multiple sources at MLB.com.

To start, the Cubs would be addressing the shortstop position due to four high-value players being free agents at that position. As of December 5th, 2022 one of those shortstops is no longer available. The top three shortstops left available are Xander Bogaerts, Carlos Correa, and Dansby Swanson. The projected yearly salary and length of the deal according to fangraphs.com is shown in the table below.

Name	**Projected Length of Contract**	**Projected Total Salary**	**Projected Yearly Salary**
Carlos Correa	8 years	$256 million	$32.0 million
Xander Bogaerts	6 years	$168 million	$28.0 million
Dansby Swanson	6 years	$141 million	$23.5 million

Based on what was stated above for the contract that the Cubs are looking for, Dansby Swanson would be the best fit at shortstop with a 6-year contract valued at $141 million on a $23.5 million yearly rate. Assuming Dansby signs with the Cubs, this would bring the Cubs' spending budget down to $31.5 million. Dansby's OBP for 2022 was 0.329.

The next issue would be at the catcher position. After psychopathically letting one of the best defensive and offensive catchers in the game simply walk away without offering a long-term deal, the Cubs are staring a big hole at that position. With not a ton of spending room left in the theoretical budget and an average free agent class at that position. Regardless, the current situation opens things up for a few possibilities. The projected contracts of the possibilities are seen in the table below and are provided via fangraphs.com.

Name	Projected Length of Contract	Projected Total Salary	Projected Yearly Salary
Christian Vázquez	2 years	$16 million	$8.0 million
Gary Sanchez	1 year	$8 million	$8.0 million
Omar Narváez	2 years	$14 million	$7.0 million

This is where the decision-making for the Cubs can get tricky. The Cubs' prospects are currently 10th in the MLB, thus up and coming players will begin to enter the team. The Cubs would most likely seek a short-term deal with a catcher that could provide a defensive backbone due to the Cubs lacking a top catcher. This would mean that they would live with the catcher that they sign having a lack of offensive production. Gary Sanchez would fit this outline the best, and provide a low-risk investment to the position until they find a suitable replacement for Willson Contreras. Gary Sanchez is projected to have a 1-year contract valued at $8 million. Thus bringing the Cubs' spending budget down to $23.5 million left to spend on a first baseman and possibly an outfielder. Gary Sanchez's OBP was 0.282 in 2022.

With the very small amount of money left, the Cubs would then, most likely, pursue a first baseman. Four first basemen could be on the Cubs' radar. Their names and projected contracts can be found in the table below and provided via fangraphs.com.

Name	Projected Length of Contract	Projected Total Salary	Projected Yearly Salary
Josh Bell	3 years	$39 million	$13.0 million
Luke Voit	NA	NA	NA
Miguel Sanó	1 year	$5 million	$5.0 million
Yuli Gurriel	1 year	$6 million	$6.0 million

In this case, Josh Bell would be the obvious candidate via the budget. However, due to age and a slump in offensive production, he would be a high-risk candidate for the position. Miguel Sanó is a similar case but due to an injury-filled career, the Cubs are looking for a healthy, stable player. Luke Voit fills that category but with high risk. After being cut from one of the bottom teams in the league and bouncing around from team to team the past two seasons he could be signed at a very low cost, possibly around $1 million to $2 million range on a one-year contract. However, Yuli Gurriel is the most sensible choice. Due to a down year with a few injuries his overall worth has sunk thus allowing a team to sign him for cheap. The Cubs have an up-and-coming first baseman prospect in their farm system that is projected to be ready within

the next year or two. Therefore, Yuli Gurriel would make the most sense as a first baseman for the team. He would sign for 1 year and $6 million. This would bring the overall budget down to $17.5 million. Yuli Gurriel had an OBP of 0.288 in 2022.

It would be safe to assume if these exact signings were made then the Cubs would stop there on their position players and then focus the rest of the money on pitching. To summarize, the Cubs would spend a total of $37.5 million for the 2023 season on three players. The players are listed in the table below with their 2022 OBP.

Name	**Position**	**OBP (2022)**
Dansby Swanson	Shortstop	0.329
Gary Sanchez	Catcher	0.282
Yuli Gurriel	First Base	0.288

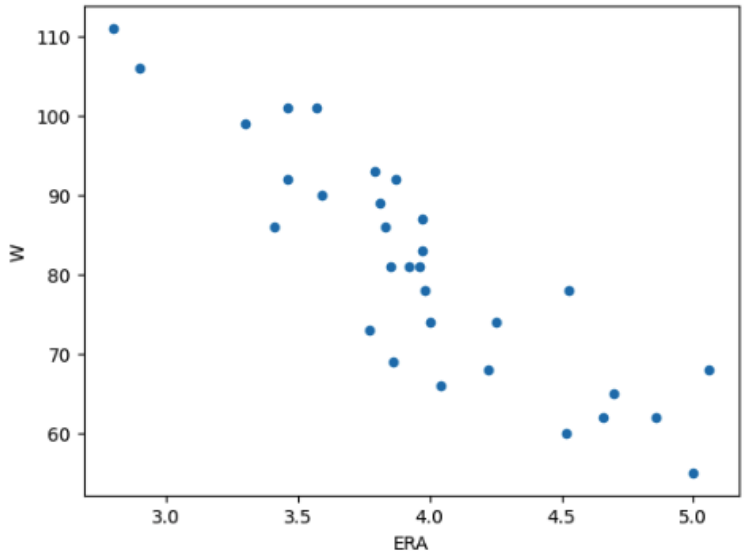
As stated earlier, the Cubs would be looking to have, at the very least, a replacement for three key players lost this offseason and the players signed would have a higher OBP. In this case, the Cubs would still be about 0.005 points less than the previous season for OBP. Therefore it is safe to assume that the run production between 2022 and 2023 would have little to no change.

Pitching

Continuing to the issue of pitching. Much like the issue of batting, a key statistic that can be looked at that factors into RA (average runs allowed per game) and pitching is ERA (earned run average). ERA accounts for the number of runs that a pitcher gives up in any way per nine innings of pitching. The lower the ERA, the better the pitcher. The formula for ERA can be found below.

$$ERA = (9 \times \text{earned runs}) / \text{innings pitched}$$

ERA has an inverse correlation with wins. Therefore, as ERA decreases the number of wins is expected to increase, or as ERA increases the number of wins decreases. This statistic has been the basis of baseball for over a century. Other statistics could be used such as ERA+, ER, FIP, and WHIP. But for the sake of simplicity and understanding for those who might not fully understand the game of baseball.



As for the Chicago Cubs, they ranked twentieth overall in ERA with a 4.00 ERA for the 2022 season, which is about 0.04 below the league average. This might not seem like much but with the league average being 1436 innings pitched last season, that means it would take quite a few innings to bring the team ERA down to the league average.

The Cubs lost two pitchers this offseason, Wade Miley and Drew Smyly, to free agency with the intent to not re-sign either player. Miley finished with an ERA of 3.16 and Smyly with a 3.47 ERA. The team also has a surplus of pitching coming through over the next few years with fifteen out of their top thirty prospects being pitchers (MLB.com). Therefore, pitching will not be a huge issue and should continue to improve naturally over time. However, the Cubs should look to still improve their aging starting pitchers. With $17.5 million left in the budget, we would look to the remaining starting pitchers in the free-agent market. Their names and projected contracts can be found in the table below and provided by fangraphs.com.

Name	**Projected Length of Contract**	**Projected Total Salary**	**Projected Yearly Salary**
Corey Kluber	1 year	$11 million	$11.0 million
Zack Greinke	1 year	$10 million	$10.0 million
Sean Manaea	2 years	$22 million	$11.0 million
Michael Lorenzen	NA	NA	NA

Based on previous years and the overall strategy the Cubs would most likely take in free agency, there are four players that the Cubs could realistically sign. Zach Greinke is coming off of a short contract with the Kansas City Royals where he saw slightly below-average production. With him nearing the end of his career, the Cubs could sign him on a short-term contract with a

relatively low cost. Corey Kluber is in a similar position where his production is beginning to decline after battling injuries and due to overall age. Kluber and Greinke seem like good cheap deals but if the Cubs sign smart, they would end up signing Manaea and Lorenzen. Manaea has struggled over the past two seasons with Oakland and half a season with San Diego and failed to develop any of the original rhythms that he had in years prior. His ERA last season was an abysmal 4.96 but does not show his upside. With Manaea looking for a multi-year contract to solidify himself in a starting pitching position this would be mutually beneficial for both him and the Cubs. Manaea can be a reinforcement to an overloaded Cubs starting pitching rotation and allow him to develop his old rhythm again. The second player is Michael Lorenzen who is coming off a stint with the Los Angeles Angels. Lorenzen is past his prime and looking to draw any interest from a team. He has the versatility to bounce between a starting pitching role and the bullpen. If he can stay healthy and average at the very least he can act as a solid piece in the Cubs' pitching core. With him seeking any sort of interest he could be picked up for a 1 year deal worth about $2 million with the possibility of a club option on a second year.

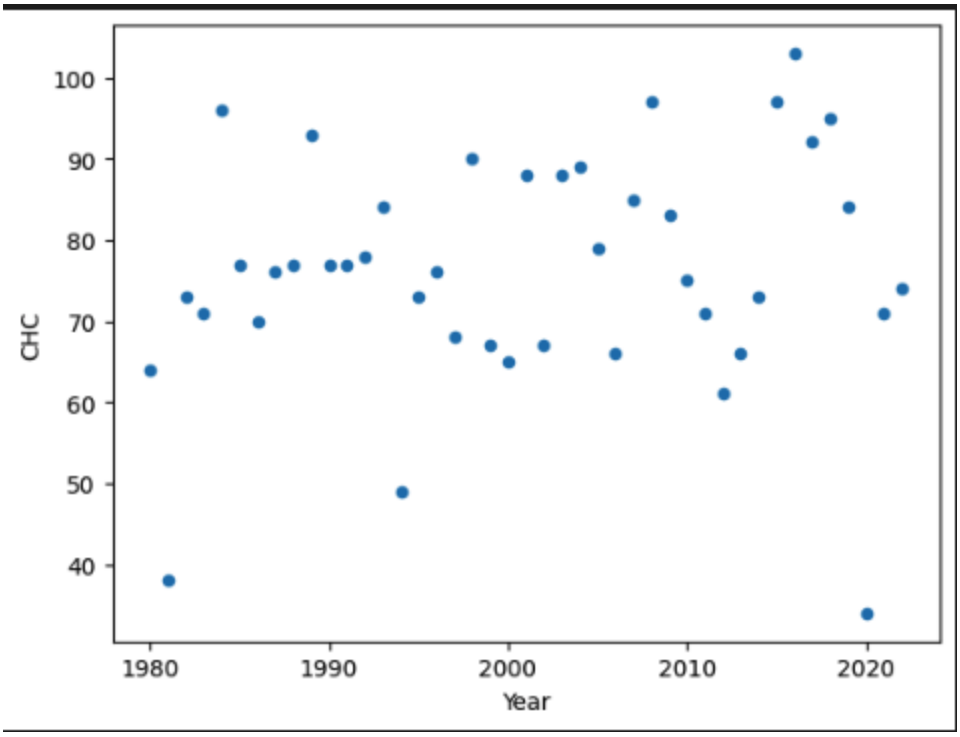
To summarize, the Cubs' pitching would add two pitchers, Sean Manaea and Michael Lorenzen for a total of $13 million. Thus, bringing the spending budget down to $4.5 million. The ERAs of both players from the 2022 season can be found in the table below.

Name	**Position**	**ERA**
Sean Manaea	Starting Pitcher	4.96
Michael Lorenzen	Starting/Relief Pitcher	4.24

The Cubs lost two pitchers, Wade Miley and Drew Smyly, with each of them having an ERA of 3.16 and 3.47. In the offseason, the Cubs will gamble on two new veteran arms in Sean Manaea and Michael Lorenzen who both have higher ERA. These signings would be in hopes that the current young pitching core will continue to improve and progress while the new signees will attempt to become a shadow of their former selves. Thus, it would be safe to assume that the ERA would remain about the same as last year with the possibility of a 0.02-point improvement from 2022. Thus bringing the team ERA to about 3.98, which is still 0.02 below the 2022 league average of 3.96.

Summary

Even with all the data at our fingertips the game of baseball is still hard to project and predict. There is no perfect trend for teams for the season-to-season win totals and the smallest events and players can have either a profound effect on a team or minimal. The Cubs Contemporary Baseball (1980 to Present Day) yearly win totals can be found on the scatterplot below.



As seen, it is incredibly hard to project how a team will perform solely off on just the previous season's result. However, with the aid of a run differential, it can be made a little easier. The Cubs finished last season with a record of 74 wins and 88 losses. This was eighteenth overall in the MLB. To make the playoffs it is safe to assume that a team would need to have at least the twelfth most wins in the MLB or better. With the projected moves that were mentioned, above the run differential of the team would slightly change, improving by possibly 0.2. This would bring their run differential to a value of -0.3. In this case, the Cubs would move into a tie for twenty-first in the category, thus improving by one place. Accounting for up-and-coming talent and new acquisitions the Cubs could win up to five more games. Thus changing their win total to 79 wins and 83 losses. This would vault them two spots higher in the overall win total rankings into eighteenth place. This is not factoring in other teams' improvement or regression from the 2022 season. Ultimately, this leads to the conclusion that the Cubs' 2023 season can be written off as a bust for their projected failure to reach the postseason for the third straight season.

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