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MLB Pitcher Analysis

1-0 counts vs. 0-1 counts

Outline

- Quick Terminology
- General Hypothesis
- Assumptions
- Methodology
- Results

Terminology- FIP

- Fielding Independent Pitching: Measures what an ERA should have looked like over a given time
- Pitchers have little control over balls in play



Terminology- FIP (cont.)

- Assesses talent based statistics a pitcher can control: Walks, Hit by Pitches, Homeruns, and Strikeouts.
- Each of these have different impact (Homerun has more impact than Walks)
- $FIP = ((13 * HR) + (3 * (BB + HBP)) - (2 * K)) / IP + \text{constant}$
- Constant is to bring FIP onto an ERA scale, approximately 3.20
- Helps remove factors a pitcher cannot control (Baserunner ability, fielder ability and luck)

Terminology- OBP

➤ On Base Percentage: Times reached base safely divided by at bats

➤ Formula:
$$\frac{(H + BB + HBP)}{(AB + BB + HBP + SF)}$$

Example:

	AB	H	BB	HBP	SF	OBP
Molina, Y	505	159	45	5	5	.373

$$OBP = (159 + 45 + 5) / (505 + 45 + 5 + 5) = .373$$

General Hypothesis

- Batters will have lower statistics after starting a count with a strike versus starting a count with a ball
- In terms of Pitchers:
 - After 1-0: lower performance
 - After 0-1: higher performance

Assumptions

- 2012 Pitchers
- Minimum 162.0 innings pitched (Qualified)
- Starting Pitchers

Methodology

- Data for 79 qualifying pitchers was extracted from Baseball-Reference and FanGraphs (35 from AL and 44 from NL)
- Data inputted to an Excel spreadsheet
- Batting statistics compared for each pitcher after 1-0 and after 0-1 counts.
- Batting stats analyzed: BA, OBP, SLG, OPS, SO/BB

Methodology

- Spreadsheets were created for all pitchers, elite pitchers and weak pitchers
- All Pitchers- spreadsheet of all qualified pitchers
- Elite Pitchers- Top third of pitchers from each league based on FIP
- Weak Pitchers- Bottom third of pitchers from each league based on FIP

Methodology (cont.)

- A final spreadsheet was created which contained the averages for all, elite and weak groups in the following fields:
 - Season total averages for the fields: BA, OBP, SLG, OPS, SO/BB
 - Season averages for after 1-0 counts in mentioned fields
 - Season averages for after 0-1 counts in mentioned fields

Results

- Hypothesis upheld
 - Batting statistics after 1-0 counts were higher than total season averages
 - Batting statistics after 0-1 counts were lower than total season averages
 - This suggests that pitchers are more effective after 0-1 counts vs. 1-0 counts

Results (cont.)

- Elite pitchers had better averages than weak pitchers after 1-0 counts as well after 0-1 counts (Expected)
- However, it was discovered that while elite pitchers out performed weak pitchers regardless of count, the difference in batting points from 1-0 and 0-1 counts was nearly the exact same between elite and weak pitchers

Results (cont.)

- Differences in 1-0 counts and 0-1 counts were the same regardless of the type of pitcher. The table on the next page suggests that regardless if the batter is facing an elite or weak pitcher, there is an OBP difference of .10248 when the at bat starts with a strike vs. when the at bat starts with a ball

Results (cont.)

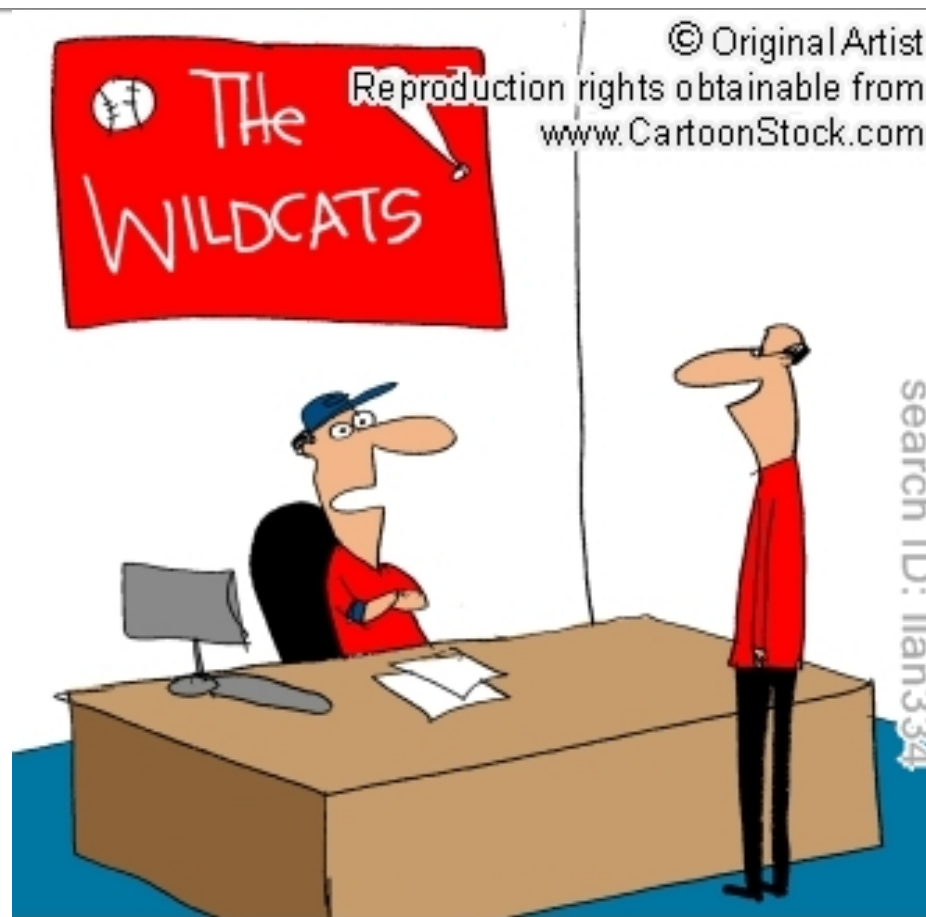
Batting Field	OBP	OBP	OBP
Count	After 1-0	After 0-1	Difference (1-0)-(0-1)
Elite Pitchers	.34652	.24404	.10248
Weak Pitchers	.37916	.27668	.10248

-This shows that a batter is approximately 10.2% more likely to get on base when starting the at bat with a ball versus starting the at bat with a strike regardless of starting pitcher.

Review

- Quick Terminology
- General Hypothesis
- Assumptions
- Methodology
- Results

Questions?



“Our sabermetrics guy has confirmed that last year's team that went 60-102 was bad.”

Sources

- Fangraphs. <http://www.fangraphs.com/>
- Baseball-Reference.
<http://www.baseball-reference.com/>