

THE SEIDMAN STARTING PITCHER EFFECTIVENESS SYSTEM

This file will serve to introduce you to the weighted points system I devised that will properly evaluate the effectiveness of starting pitchers. The system takes into account many variables and statistics that we, as fans and sabermetricians, all seem to intuitively accredit effectiveness and quality. The system is designed to measure each individual game, as well as the entire season, as opposed to just the entire season. Most other evaluation methods examine the whole forest without looking at individual trees but fail to realize that a much better indicator of quality can be found by examining each of those trees. I have a database that dates back to 1998 for both the National League and American League. If you are interested in taking a look at how pitchers stacked up in SP Effectiveness Points, send me an e-mail at: seidburns850@aol.com. You may use the results from this system anywhere on the web as long as I am given some sort of credit. Without further delay, enjoy.

DIFFERENT CIRCUMSTANCES

There are three major factors that ERA and W-L fail to recognize:

- 1) Certain teams provide more run-support than others
- 2) Certain teams blow less leads and have better bullpens
- 3) Having some bad numbers does not equate to a bad season

AQS – ADJUSTED QUALITY START

Quality Starts are defined as those in which a pitcher lasts at least six innings and gives up no more than three earned runs. It seems like a quality statistic (pun very intended) but think about this – if a pitcher goes eight or nine innings and gives up four runs it is not a quality start. He arguably had a better game, or at least just as good as one, but does not earn a quality start.

The AQS extends the requirements and allows for games in which pitchers go at least 7.2 innings and give up no more than four earned runs to be considered quality. The ratio of a regular quality start is two innings per earned run so you might wonder why my AQS does not start at eight innings or follow some sort of a general $IP/ER < 2$ formula. The answer is twofold. First, managers tend to go to their bullpens frequently, oftentimes for a specialist. Since starting pitchers barely reach the seventh inning, let alone the eighth inning, I decided to drop the normal requirement by one out.

The other reason is because, with a general formula like that, a pitcher could go twelve innings and give up six runs. Though extremely rare it could still happen and, to me, giving up more than four runs is not effective regardless of the circumstances. Since teams average four or more runs per game, if a pitcher can meet the criteria of an AQS, he has just pitched a good game.

CHEAP, TOUGH, LEGIT – BREAKING DOWN W-L RECORDS

Applying the AQS to W-L records allows us to separate pitching decisions into the different categories in which they belong. Since an AQS equates to a well-pitched game you should be rewarded with a win whenever you record one. The same can be said adversely for a non-AQS. They should end up as losses. Since this usually never works all the time we have to separate W-L record into four different categories:

- 1) Cheap Win – a non-AQS resulting in a Win
- 2) Tough Loss – an AQS resulting in a Loss
- 3) Legit Win – an AQS resulting in a Win
- 4) Legit Loss – a non-AQS resulting in a Loss

THE EFFECTIVENESS POINTS SYSTEM

Due to all of these variables and statistics I devised my own weighted/scaled points system. The system takes all of the aforementioned factors into account and levels the field of play between those on good or bad teams, those with or without run support, and those either injured or called up from the minors as opposed to just plain bad.

The system does not include every statistic but does look at everything that most fans intuitively accredit effectiveness.

Twelve statistics are measured and weighted with points, based on how important they are in determining quality. Before showing the end results of the points system I want to introduce the twelve statistics and explain why they are being used, as well as what their points scale looks like. The twelve are:

- a) Games Started
- b) Innings Pitched
- c) Innings Pitcher per Game Started
- d) Cheap Wins
- e) Tough Losses
- f) Legit Wins
- g) Legit Losses
- h) AQS %
- i) AQND (Adjusted Quality Starts resulting in a no-decision)
- j) WHIP
- k) K:BB
- l) Complete Games/Shutouts

GAMES STARTED

In order to be as effective as possible a pitcher needs to be on the mound as much as he can. Effectiveness can be positive or negative and so the pitchers with the most effect on their teams are going to be the ones who have the most opportunities to cause that effect. This statistic cannot earn you negative points, though, because pitchers with low totals could have been injured or called up from the minor leagues. They could also just be bad and demoted to the bullpen but, since there are variables, we cannot take points away from them. The scale for Games Started looks like:

- 30+ = +5
- 25-29 = +3
- 20-24 = +2
- under 20 = 0

INNINGS PITCHED & IP/GS

Both of these statistics need to be looked at in the same context as Games Started in order to show us the big picture. With Innings Pitched negative points cannot be earned. Just like the Games Started, having a low amount does not necessarily mean a pitcher was bad. He could have been injured or called up from the minor leagues. IP/GS, however, can earn you negative points.

IP/GS separates these injured or called up pitchers from the downright bad ones. The scales for each work a little differently in order to properly evaluate and compare the two statistics.

The scale for raw Innings Pitched looks like:

- 230+ = +8
- 220-229 = +7
- 200-219 = +5
- 150-199 = +3
- 100-149 = +2
- under 100 = 0

The scale for Innings Pitcher per Games Started (IP/GS) looks like:

- 7.0+ = +8
- 6.5-6.99 = +7
- 6.0-6.49 = +5
- 5.5-5.99 = +3
- 5.1-5.49 = 0
- under 5.1 = -5

If you cannot average above 5.1 innings per start then you are extremely ineffective in the area of durability. It does not matter if you had ridiculously good numbers in the other areas (where you would be separately rewarded) because you could barely get out of the fifth inning, if even making it to the fifth inning.

You might wonder how it could be fair to say that someone with 145 bad innings could be better than one with 100 good innings. Well, it is not fair, and this takes it into account.

Look at this example. Pitcher A makes 27 starts and goes for 145 innings. He receives +3 for the GS and +2 for the IP total. His IP/GS, 5.37, gets him 0. Overall, in GS, IP, and IP/GS, Pitcher A records a +5. Let's compare that to Pitcher B.

Pitcher B made only 15 starts and went for only 100 innings, both much less than Pitcher A. Pitcher B's IP/GS, though, comes in at 6.67, much higher. Pitcher B would get 0 points for his low Games Started total, as well as 0 points for his low raw innings total, but he receives +7 for his IP/GS total.

Even though his raw numbers of GS and IP were much lower than that of Pitcher A he was better at going deeper into games. Pitcher B would have a +7 to the +5 of Pitcher A.

CHEAP WINS, TOUGH LOSSES, LEGIT WINS, LEGIT LOSSES

I mentioned these four statistics recently but will quickly recap. A Cheap Win occurs when a pitcher does not record an AQS but ends up with a Win. A Tough Loss occurs when a pitcher does record an AQS but ends up with a loss. A Legit Win occurs when a pitcher records an AQS and wins, and a Legit Loss occurs when a pitcher does not record an AQS and loses.

- Cheap Win = -1
- Tough Loss = +2
- Legit Win = +2
- Legit Loss = -2

The reasoning behind a Legit Win and a Legit Loss canceling each other out should make sense. The reason that a Cheap Win subtracts less than a Tough Loss adds is because a loss brings with it a stiffer and more negative connotation than a win does in the positive direction. To most people a win is a win and a loss is a loss. They will see a 7-16 record and assume the worst but, upon learning that a 16-7 record is somewhat tainted, brush it off by saying a win is a win.

ADJUSTED QUALITY STARTS PERCENTAGE (AQS %)

Instead of giving a certain point value to every single time a pitcher records an AQS, I broke it down into percentages, reason being that some pitchers will record a higher raw total but post a lower percentage. In 2007, Dontrelle Willis had 20 AQS to Shawn Hill's 12, but Dontrelle had 35 starts and Hill only had 16. Dontrelle's AQS % would be 57.1 % whereas Hill's would be 75.0 %.

The raw totals of AQS are taken into account with the different W-L categories so AQS % can evaluate a season as a whole.

- 75.0 % + = +5
- 67-74.99 % = +3
- 50-66.99 % = 0
- Under 50 % = -3

ADJUSTED QUALITY NO-DECISIONS (AQND)

Just because a pitcher records an AQS does not guarantee a Win or a Tough Loss. Sometimes he will get a no-decision and this needs to be taken into account. The reason for the no-decision is in the hands of a poor offense or a blown lead by the bullpen and the starting pitcher should not be penalized for it. Now, they are not rewarded as highly as a Tough Loss or Legit Win, but they are still rewarded. No-Decisions occurring in non-AQS situations are simply not included. **While a Tough Loss prevents a Legit Win and adds a loss to the record, a non-AQS No-Decision prevents a loss but does not negatively effect the W-L record.**

- Every AQND = +1

Again looking at Matt Cain we see that, in addition to having nine Tough Losses, he also had eight AQND's. Cain had seventeen decisions that he should have won and he either lost them or received no decision. Since he had eight AQND's he gets an additional +8 to his +18, giving him **+26** in the areas of wins, losses, and no-decisions, one of the best in the National League. You would not expect that from a pitcher with a 7-16 W-L record.

WHIP (WALKS + HITS PER INNINGS PITCHED)

This statistic serves as a measure of how many baserunners, on average, a pitcher allows per inning. If John Smoltz pitches seven innings and gives up four hits, while walking three batters, he would have a WHIP of:

$$\begin{aligned} \text{WHIP} &= (\text{BB} + \text{H}) / \text{IP} \\ &= (3 + 4) / 7 \\ &= 7 / 7 \\ &= \mathbf{1.00 \text{ WHIP}} \end{aligned}$$

His WHIP would equate to an average of 1.00 baserunners per inning, which, for the record, is amazing considering that the averages tend to be around the 1.30 mark. WHIP has a lesser amount of points in this system because I am a firm believer of the DIPS theory. DIPS (Defense-Independent Pitching Statistics) was discovered by Voros McCracken and basically proves that pitchers have very little effect on what happens once a ball is put into play. That being said, I did have to take Walks and Hits into account, and using this combo statistic made the most sense.

- Under 1.00 = +5
- 1.01 – 1.15 = +3
- 1.16 – 1.25 = +2
- 1.26 – 1.30 = +1
- 1.31 – 1.40 = 0
- 1.41+ = -2

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K:BB (STRIKEOUT TO WALK RATIO)

K:BB measures the amount of strikeouts a pitcher records relative to his number of walks. I decided to use this, instead of raw strikeout totals, because not every effective pitcher is a strikeout pitcher. Greg Maddux only struck out 104 batters in 35 starts, in 2007, but he also only walked 25. His K:BB ratio would be (104/25) **4.16**. That means he struck out over four batters for every walk given up.

Numbers above 4.00 are very rare these days. If you are 6.00+ or higher, add an additional point for each whole 1.00 higher. IE – 7.25 would be +10.

- 5.00+ = +8
- 4.00 – 4.99 = +7
- 3.00 – 3.99 = +5
- 2.00 – 2.99 = +3
- 1.10 – 1.99 = 0
- under 1.10 = -3

COMPLETE GAMES & SHUTOUTS (CG/SHO)

The last statistic used in my points system rewards those pitchers who let the bullpen rest by pitching the whole game themselves. Complete Games are so rare these days, as evidenced by the grand total of 48 in the NL in 2007 between 16 teams, so being able to go the whole nine yards (literally) earns you some extra points. Since Shutouts (Complete Games when the opposing team fails to score) are even less likely to occur, you get even more of a reward for one of them.

- Every CG = +2
- Every SHO = +1 (added to the CG)