Comparing the quality of the 2008 National Baseball League against other seasons and other leagues

Joe Gray ★ 12 April 2009

For all the statistics that baseball has, no attempt that I am aware of has previously been made to use the numbers to compare the quality of baseball across different leagues or across different seasons of the same league. This is something I will do here. In the article, I use the word quality to capture a spectator's perspective of the game, but the numbers used will have some relation to quality in its purest sense.

Quality comparison

In this quality comparison, we will use one statistic to represent each of the fundamental segments of baseball: fielding, catching, pitching, and batting.

We need to be careful to choose statistics that genuinely reflect the quality of watching baseball from the perspective of a spectator. We could, for instance, try to argue that high strike-out rates were good because a strike-out is an exciting event for a fan. However, this would be flawed reasoning, because while a high strike-out rate might reflect good pitching, it could just as plausibly indicate a low overall level of batting quality.

So many baseball statistics describe the outcome of a finely balanced battle involving two or more different aspects of the game that it is rarely possible to say that a statistic is reliably related to quality. But that is not to say that there are no statistics that we can draw on.

Fielding

Fielding is not a difficult segment to quantify, with the most commonly reported statistic in this area – fielding average – being useful. The overall average of a league gives a fairly decent indication of the quality of fielding since the occurrence of an error tells us a lot more about the negatives of the fielder than of the positives involved in the play that preceded the error being made (such as the speed of the batter-runner putting pressure on the fielder).

Still, fielding average is not a perfect indicator: firstly, it does not tell us about the ability of players to make an extraordinary play (something that can be a fan's favourite memory of a game); secondly, it is a subjective statistic and it is possible that the way that errors are scored varies over time or between different countries. However, it is the best widely reported statistic available.

Another statistic that would be of value here is the percentage of double-play balls that are converted into two outs, but it is simply not possible to extract this information from readily available statistics.

Catching

For the majority of fans, the catcher's most exciting contribution to the game is in throwing out a base-stealer. In addition, if it is too easy for players to steal then it destroys the subtle balance of the game and devalues extra-base hits. These two factors combine to make the league caught stealing rate a good choice of statistic for this segment.

You might be wondering why this is not a statistic we should reject as it could reflect poor base-running instead of good arms. The reason that this is not a problem is that being a good base stealer is a much more common skill than being good at throwing out runners. Therefore, as we move from worse leagues to better leagues, the overall quality of catchers' arms will increase more than the overall ability of base-stealers. To further illustrate this point, there will be players in the bottom tier of British baseball who are better base-stealers than some Major League players,

through speed alone. Conversely, it is very difficult to imagine a catcher in the bottom tier of British baseball coming even close to the worst catchers in the Major Leagues.

Pitching

Among the more common events for a pitcher, the one that can have the biggest effect (positive or negative) on a fan's enjoyment of a game is walking a lot of batters. Watching a pitcher load the bases with bases on balls and then walk in a run or two is anaemic in its entertainment level.

While a relatively high number of walks per plate appearance in a league might tell us something about the positives of how good batters' eyes are and how dangerous batters are to pitch to, it tells us a lot more about the negative of poor control from the pitchers, and so it is a reasonably reliable statistic to choose.

Batting

Batting quality is probably the most difficult to quantify in a single statistic as so many events are also dependent on a pitcher's quality and the ability of fielders. Our best option is to use home run rates, and there are three reasons for this: firstly, a home run is, for the majority of fans, the most exciting thing a batter can achieve in a plate appearance; secondly, home runs are generally defence independent; thirdly, while home runs can be attributable to bad *pitches*, they are not so strongly related to bad *pitchers*, because the pitching speed typical of high-quality pitchers helps a well-hit ball to travel over the home run fence.

The results

Next, we will combine the statistics for the four segments in a method of comparing different leagues or different seasons within a league. To reflect the reliability that I feel can be attached to each statistic, the leagues or seasons being compared will be ranked on the following sliding scales:

- ★ 7–35 points for fielding;
- ★ 6–30 points for catching;
- ★ 4–20 points for pitching;
- ★ 3–15 points for batting.

Nation	Fielding average	Caught stealing %	Walks per plate app.	Home runs per at-bat
CZE	.955	24.2%	9.3%	0.61%
FRA	.950	20.1%	11.4%	0.46%
GBR	.909	18.8%	12.6%	1.81%
GER	.941	19.5%	11.1%	0.83%
ITA	.966	30.0%	10.2%	1.47%
NED	.953	31.4%	10.5%	0.84%
SPA	.953	30.5%	8.4%	0.69%
USA	.984	27.0%	8.7%	2.93%

Table 1. Raw statistics for the comparison of different countries' top league in 2008. CZE = the Czech Republic (Extraliga); FRA = France (Championnat de France Elite); GBR = Great Britain (National Baseball League); GER = Germany (1. Bundesliga); ITA = Italy (Italian Baseball League); NED = The Netherlands (Hoofdklasse); SPA = Spain (División de Honor); USA = the United States (Major League Baseball).

Comparison against other nations

Now we have this method we will first use it to compare the National Baseball League of 2008 against Major League Baseball and some of the main European leagues. The raw statistics are presented in Table 1 and the calculated scores are presented in Figure 1. (With no central site at present for European baseball statistics, obtaining the raw numbers took several hours of web searching and manual data processing.)

It is reassuring for the validity of the method that Major League Baseball trumps all of the European leagues included in the comparison, but it is a little

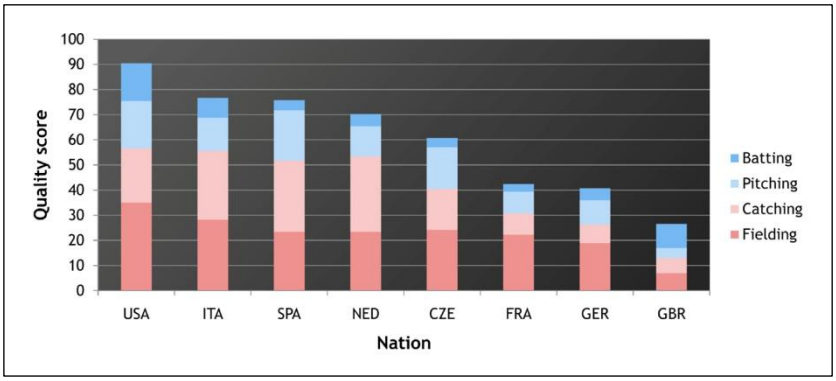

Figure 1. Quality scores for different leagues in 2008 (see Table 1 for definitions).

surprising to see the Spanish División de Honor coming out ahead of the Dutch Hoofdklasse as the second European league (behind the Italian Baseball League). The segment where the Spanish league gains an advantage over the Hoofdklasse is its low walk rate (8.4%), which is below that of Major League Baseball (8.7%).

The National Baseball League picks up some points courtesy of its Europe-leading home run rate but is hit heavily by its low fielding average, and to a lesser extent by its low caught stealing rate and its high walk rate.

Comparison against previous seasons

The fielding statistics necessary for the quality score are available back to 2003 for the National Baseball League, so that will be the earliest season. No values are presented for 2006 and 2007 as the statistics in those two seasons were accumulated in part against teams from the second tier, meaning that they are not a true reflection of the quality of the league.

The raw statistics can be seen in Table 2 and the computed results are shown in Figure 2. The 2003 season comes out on top, with 2005 being a clear loser. The 2008 season saw the quality almost return to the level seen in 2004.

Can this method be used to compare quality in its purest sense?

It is tempting to use the results to draw conclusions about the overall quality of each of the European leagues, rather than thinking of them just as a reflection of the spectator's perspective. However, this should not be done for several reasons.

- ★ There may be different attitudes to the definition of an error in different countries.
- ★ The umpires' strike zones could vary from country to country, and a marginal difference could have a sizeable impact on the rate of walks.
- ★ Differences in the typical field size and bats used between different countries will have an obvious effect on home run rates.

Nation	Fielding average	Caught stealing %	Walks per plate app.	Home runs per at-bat
2003	.920	19.0%	10.9%	1.77%
2004	.916	19.6%	12.9%	1.72%
2005	.903	15.5%	14.0%	1.61%
2006	Season with interleague play			
2007	Season with interleague play			
2008	.909	18.8%	12.6%	1.81%

Table 2. Raw statistics for the comparison of the National Baseball League between 2003 and 2008 (statistics are taken from the southern split in 2004, 2005, and 2008).

- ★ There may be differences from country to country in terms of what the break-even rate is for base-stealing: if a country is, in general, less tolerant of players getting thrown out, then the caught stealing rate could be lower despite the catchers having relatively good arms.

Could the European leagues be compared by using players as yardsticks?

If the spectator-orientated quality score is not an adequate means of assessing true quality, is there a better option?

Another way to approach to the problem would be to see how players do during the season before and the season of a move from one European country to another. If players on average did better the year after the move then the country they were moving from would probably have a higher standard of baseball. Conversely, if they fared worse then the league being moved from would probably have a lower standard of play.

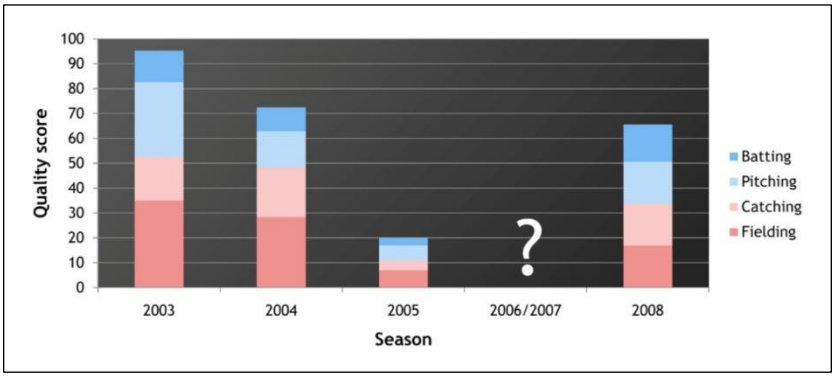

Figure 2. Quality scores for different seasons in the National Baseball League.

Unfortunately, though, there is probably insufficient player movement to use this as an accurate gauge of quality, although that is not to say that it would not be interesting for someone to do some exploratory work.

Could any of these factors be artificially adjusted?

Of the four factors singled out as being particularly important to spectators, it is possible to artificially improve three of them (the exception is fielding average, for which practice is the only aid).

Artificially improving home run rates

Reducing the distance to the outfield fence and employing metal bats are two ways to improve home run rates. Of the two suggestions, the former is the one I dislike less.

Artificially improving walk rates

To reduce the rate of walks, all that is needed is for umpires to open up the strike-zone. Clearly it would not be fair on batters to make it too large, but there is room for some leniency, and, on balance, it might make for a more enjoyable game.

Artificially improving caught stealing rates

Here, baseball could borrow from softball and prevent runners from taking a lead off the bag, if it was needed to make stealing second base and third base more difficult. If this was adopted, the rule should not be applied to leads off third base. Many people would disagree with this suggestion, but I feel that preventing runners taking a lead off first or second base in a league where catchers do not generally have good enough arms to throw out base-stealers would improve the baseball. It might at least be worth an experiment to see the overall effect that such a rule would have.

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