Temperature Effects

Chris Constancio

Baseball is a different game in October. A pair of dominant pitchers can contribute half of a team's total innings pitched in a short series. Sluggers don't rest ailing legs; they play on and run the bases at half speed. One of the most oft-overlooked differences between the regular season and postseason is the effect of October weather on the game. In most parts of North America, atmospheric conditions are significantly different in October than during the summertime when most of the regular season games are played. As the baseball season continues to lengthen, Major League Baseball increases the possibility of extreme weather conditions affecting the most important baseball games of the season. The new postseason television contract with Fox could push back the start of the World Series another three days next year.

Yesterday's World Series game in Detroit was played in 44 degree weather, complemented by an occasional icy mist swirling in the air. The series will move further south this week, but temperatures in St. Louis are expected to dip into the 40's during Games 3, 4, and 5 of the series. It might get cooler if the series continues in Detroit next weekend.

How does the air temperature affect the game of baseball? I have sampled 2,000 major league games from the 2005-2006 seasons and am beginning to analyze the relationship between game time weather conditions and pitchers' statistics. The following overview breaks down some pitching statistics by air temperature.

Striking Batters Out

Pitchers strike out a higher proportion of batters in cold weather:


I'm not quite sure why this is, particularly because pitches should move more and be more difficult to hit in warm, humid weather. I expect a pitch to move more when pitchers are able to grip a ball
securely in warm and humid weather, but all other things being equal pitches will actually move more in cold, dense air. Pitchers do get to wear jackets and stay warm when they are not on the mound, and they also have the benefit of warm-up tosses and constant activity during their half-inning of work. Pitchers might stay warmer and be less affected by coldness than hitters.

Or maybe something else is going on.

Control Problems

Pitchers walk more batters in cold weather.


Many pitchers note that baseballs feel "hard" and difficult to grip in cold weather. Football players say the same thing about the pigskin in winter. It's likely that dry cold air leads to imprecision in control, particularly when pitchers are working with "feel" pitches like curveballs and changeups.

What about hitting batters? The ball stings a little bit more in cold weather, so I anticipated a decline in hit by pitch rates in cold weather to reflect the hitters' increased effort to get out of the way of inside pitches. In the fourth inning of yesterday's World Series game, Sean Casey dropped his elbow over home plate to get on base. So much for that theory. As it turns out, hit by pitch rates actually increase in the cold weather. This is more evidence that pitchers' control suffers in cold weather.

Balls in Play

Home runs are relatively rare in cold weather.

Over 4% of batted balls leave the ballpark in 75 degree or warmer weather, but that rate drops to about 3.2% in the kind of cold weather conditions we are witnessing in the World Series.

Additionally, batted balls in play are less likely to lead to hits in cold weather when compared to more moderate or hot temperatures:

The most straightforward explanation for these findings is that the ball simply does not carry very well in cold weather. Batted baseballs are slowed down by air resistance in the heavy, dense air of cool April and October nights.

Some Conclusions

Pitchers generally have worse control but higher strikeout rates and better luck with balls in play in cold weather. I'm not sure if this favors a certain type of pitcher in the postseason. It might be the case that a pitcher's "stuff" is an important factor in how the weather interacts with their performance. For example, a pitcher who relies on breaking balls or changeups and are susceptible to control problems might be at a particular disadvantage in cold weather conditions.

From an offensive perspective, this evidence suggests patient lineups will fare well in cold weather when compared to free swinging lineups. Pitchers appear to throw fewer strikes in cold weather and a patient lineup may be more likely to take advantage of this result. Additionally, a batted ball is less valuable in cold weather than warm weather because a batted ball is less

likely to fall for a hit or clear the outfield fences in below-55 degrees conditions.

There is still a lot of work to do in understanding how weather conditions affect baseball performances. I think this summary provides some insights into how the game can change in October.

Not Even Baseball Escapes the Maze of a Political Crisis

by Alfonso Tusa

For two decades, the political situation has been taking its toll on Venezuelan baseball.