

## Who Were the Most Productive Offensive Players in 2014?

By Bill Gilbert

Numerous methods have been devised to measure offensive performance. The most common are batting average, on-base percentage and slugging average. Since none of these averages provides a complete picture by itself, a more comprehensive measure of offensive performance is useful. Such a measure would include the following elements:

1. The ability to get on base.
2. The ability to hit with power.
3. The ability to add value through baserunning.

The first two elements are measured by on-base percentage and slugging average. A measure of offensive performance, which encompasses both as well as baserunning achievements, is Bases per Plate Appearance (BPA). This measure accounts for the net bases accumulated by a player per plate appearance. It is calculated as follows:

$$\text{BPA} = (\text{TB} + \text{BB} + \text{HB} + \text{SB} - \text{CS} - \text{GIDP}) / (\text{AB} + \text{BB} + \text{HB} + \text{SF})$$

Where: BPA = Bases per Plate Appearance

TB = Total Bases  
BB = Bases on Balls  
HB = Hit by Pitch  
SB = Stolen Bases  
CS = Caught Stealing  
GIDP = Grounded into Double Plays  
AB = At Bats  
SF = Sacrifice Flies

The numerator accounts for all of the bases accumulated by a player, reduced by the number of times he is caught stealing or erases another runner by grounding into a double play. The denominator accounts for the plate appearances when the player is trying to generate bases for himself. Sacrifice hits are not included as plate appearances, since they represent the successful execution of the batter's attempts to advance another runner.

Major league BPA for the past fifteen years are shown below along with the number of players with BPA over .550 and .600:

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>BPA</b>	<b>.481</b>	<b>.468</b>	<b>.457</b>	<b>.461</b>	<b>.468</b>	<b>.456</b>	<b>.470</b>	<b>.463</b>	<b>.458</b>	<b>.461</b>	<b>.446</b>	<b>.442</b>	<b>.447</b>	<b>.440</b>	<b>.426</b>
.550	<b>50</b>	46	39	42	33	34	46	34	41	42	19	25	12	14	9
.600	<b>30</b>	26	17	15	18	13	14	15	11	16	7	7	5	3	4

Offensive production peaked in 2000 before declining in the early years of this century. BPA declined significantly in 2014 and was the lowest in over 15 year.

In the 1990s, there were 14 individual .700 BPA seasons. In the eight year period from 2000 to 2007, there were 18. The highest BPA in the 1990s was recorded by Mark McGwire in 1998 (.799). Barry Bonds shattered that with .907 in 2001, the highest figure ever recorded, topping Babe Ruth's best two years (1920 and 1921). Bonds followed that with .869 in 2002, .818 in 2003 and .882 in 2004. There have not been any hitters with a BPA of .700 since 2007. The last player to make it was Alex Rodriguez (.702) in 2007. Surprisingly, Albert Pujols has not had a .700 BPA in his fourteen seasons.

The .700 BPA seasons in 2000-2013 are listed below:

<u>Player</u>	<u>Team</u>	<u>Year</u>	<u>BPA</u>
<b>Barry Bonds</b>	<b>San Francisco</b>	<b>2001</b>	<b>.907</b>
Barry Bonds	San Francisco	2004	.882
Barry Bonds	San Francisco	2002	.869
Barry Bonds	San Francisco	2003	.818
Sammy Sosa	Chicago Cubs	2001	.758
Barry Bonds	San Francisco	2000	.745
Jim Thome	Cleveland	2002	.728
Manny Ramirez	Cleveland	2000	.726
Todd Helton	Colorado	2000	.720
Luis Gonzalez	Arizona	2001	.713
Todd Helton	Colorado	2001	.709
Carlos Delgado	Toronto	2000	.707
Larry Walker	Colorado	2001	.707
Jason Giambi	Oakland	2000	.706
Travis Hafner	Cleveland	2006	.703
Alex Rodriguez	NY Yankees	2007	.702
Jason Giambi	Oakland	2001	.700
Ryan Howard	Philadelphia	2006	.700

The yearly leaders since 1992 are as follows:

1992 Bonds	.734	1993 Bonds	.740	1994 Bagwell	.768
1995 Belle	.692	1996 McGwire	.765	1997 Walker	.770
1998 McGwire	.799	1999 McGwire	.735	2000 Bonds	.745
<b>2001 Bonds</b>	<b>.907</b>	2002 Bonds	.869	2003 Bonds	.818
2004 Bonds	.882	2005 D. Lee	.699	2006 Hafner	.703
2007 A. Rodriguez	.702	2008 Pujols	.685	2009 Pujols	.696
2010 Bautista	.671	2011 Bautista	.681	2012 Trout	.665
2013 C. Davis	.670	2014 Trout	.623		

The benchmark for an outstanding individual season is .600. Following is a list of only four players with enough plate appearances to qualify for the batting title and with a BPA of .600 in 2014. The list is topped by Mike Trout of the Los Angeles Angels who also led in 2012.

Bases per Plate Appearance (BPA) of .600+ in 2014

<u>Player</u>	<u>2014 BPA</u>	<u>2013 BPA</u>	<u>No. of .600+ LG Seasons</u>	<u>Comments</u>
1. Mike Trout	<b>.623</b>	.649	A 3	Over .600 in each of his 3 full seasons.
2. Giancarlo Stanton	<b>.614</b>	.542	N 2	Big season led to big bucks.
3. Andrew McCutchen	<b>.613</b>	.574	N 1	Better than MVP season in 2013.
4. Jose Abreu	.600	---	A 1	Cuban rookie did it all.

Two other players had a BPA over .600 in 2013 but fell short in 2014.

<u>Player</u>	<u>2013 BPA</u>	<u>2014 BPA</u>	<u>No. of .600+ LG Seasons</u>	<u>Comments</u>
1 Chris Davis	.670	.477	A 1	.196 BAVG and suspension.
2 Miguel Cabrera	.663	.528	A 5	An off-year by his standards.

Three active players have a BPA over .600 for their careers:

Player	Age	2014 BPA	Career BPA	Comments
Mike Trout	22	.623	<b>.623</b>	Quick rise to the top.
Albert Pujols	34	.466	<b>.611</b>	<b>In decline phase of career.</b>
Alex Rodriguez	38	---	<b>.609</b>	Suspended for 2014.

Another list of interest is of players with a BPA of over .600 in 2014 who did not have enough plate appearances (PA) to qualify for the batting title.

Player	Age	BPA	PA	Comments
Troy Tulowitzki	29	<b>.643</b>	375	Would have been first with more playing time.
Steve Pearce	27	<b>.608</b>	383	Entered 2014 with career BPA of .427

Looking at the other end of the spectrum, twenty five players who earned enough playing time to qualify for the batting title had a BPA less than .400 in 2014. With the decline in offensive production, this list gets longer every year and now includes some players who were previously near the top (David Wright, Derek Jeter).

Player	BPA	Team
117 Jason Kipnis	.399	Indians
118 Jason Castro	.397	Astros
119 Gerardo Parra	.394	Diamondbacks/Brewers
120 James Loney	.393	Rays
121 Salvador Perez	.391	Royals
122 Jed Lowrie	.390	A's
123 Austin Jackson	.389	Tigers/Mariners
124 Xander Bogaerts	.389	Red Sox
125 David Wright	.387	Mets
126 Billy Butler	.386	Royals
127 J.J. Hardy	.385	Orioles
128 Domonic Brown	.385	Phillies
129 Casey McGehee	.375	Marlins
130 Aaron Hill	.373	Diamondbacks
131 Omar Infante	.372	Royals
132 Yunel Escobar	.370	Rays
133 D.J. LeMahieu	.365	Rockies
134 Elvis Andrus	.364	Rangers
135 Jean Segura	.360	Brewers
136 Chris Johnson	.358	Braves
137 Adeiny Hechavarria	.350	Marlins
138 Derek Jeter	.345	Yankees
139 Zack Cozart	.331	Reds
140 Matt Dominguez	.324	Astros
141 Andrelton Simmons	.322	Braves

Only one player compiled a batting average over .300, an on-base average over .400, a slugging percentage over .500 and bases per plate appearance over .600 in 2014.

Player	BAVG	OBA	SLG	BPA	OPS
Andrew McCutchen	.314	.410	.542	.613	.952

Another player has these numbers for his career.

Player	BAVG	OBA	SLG	BPA	OPS
Albert Pujols	.317	.403	.588	.611	.991

Another means of measuring offensive performance is Bases per Out, also called Total Average. The top 10 players on both lists for 2014 are shown below.

<u>Bases per Plate Appearance</u>			<u>Bases per Out</u>		
1	Mike Trout	.623	Angels	1	Andrew McCutchen 1.046 Pirates
2	Giancarlo Stanton	.614	Marlins	2	Mike Trout 1.018 Angels
3	Andrew McCutchen	.613	Pirates	3	Giancarlo Stanton 1.017 Marlins
4	Jose Abreu	.600	White Sox	4	Victor Martinez 1.000 Tigers
5	Victor Martinez	.585	Tigers	5	Jose Bautista .981 Blue jays
6	Anthony Rizzo	.580	Cubs	6	Jose Abreu .980 White Sox
7	Jose Bautista	.579	Blue Jays	7	Anthony Rizzo .946 Cubs
8	Edwin Encarnacion	.570	Blue Jays	8	Michael Brantley .914 Indians
9	Michael Brantley	.555	Indians	9	Edwin Encarnacion .891 Blue Jays
10	Carlos Gomez	.546	Brewers	10	Jayson Werth .884 Nationals

Both methods confirm that three players (Trout, McCutchen and Stanton) separated themselves offensively from the pack in 2014.

Nine players appear on both lists but not in the same order. Carlos Gomez is on the first list and Jayson Werth is on the second one. They are different type players. Gomez gets his production largely from extra base hits and stolen bases while Werth gets a lot of his from bases on balls which results in fewer outs.

Bill Gilbert  
12/8/14