



**2018 CRYSTAL BALL AWARD WINNERS**

*In Recognition of Outstanding Performance in The Zillow® Home Price Expectations Survey*

<b>FIRST PLACE - OUTSTANDING PERFORMANCE</b>			
Horizon	Year Expectations Were Formulated	Panelist	Affiliation
5 Year (2014-2018)	2014	Rajeev Dhawan	Georgia State University
	2015	Rajeev Dhawan	Georgia State University
4 Year (2015-2018)	2014	Ingo Winzer	Local Market Monitor
	2015	Rajeev Dhawan	Georgia State University
3 Year (2016-2018)	2014	Ingo Winzer	Local Market Monitor
	2015	Rajeev Dhawan	Georgia State University
	2016	Joel Naroff	Naroff Economic Advisors
2 Year (2017-2018)	2014	Ingo Winzer	Local Market Monitor
	2015	Rajeev Dhawan	Georgia State University
	2016	Joel Naroff	Naroff Economic Advisors
	2017	Joel Naroff	Naroff Economic Advisors
1 Year (2018)	2018	Rajeev Dhawan	Georgia State University

<b>OUTSTANDING CONSISTENCY</b>				
<i>For the 11 performance categories:</i>				
Number of Top-10 Rankings*	Number of Top-5 Rankings**	Number of Top-3 Rankings	Panelist	Affiliation
11	11	8	Joel Naroff***	Naroff Economic Advisors
11	3	1	Jim Kleckley	East Carolina University
10	5	1	Michael Englund	Action Economics
9	9	9	Ingo Winzer***	Local Market Monitor
8	8	8	Rajeev Dhawan***	Georgia State University
7	2	-	Robert Dye	Comerica Bank
6	-	-	Peter Linneman	American Land Fund
5	3	-	Paul Carrillo	George Washington University
5	3	-	Mark Fleming	First American Financial Corporation
4	4	4	Edward Pinto	American Enterprise Institute
4	3	1	Grant Thrall	American Real Estate Society

\*Includes Top-5 and Top-3 ranking counts. \*\*Includes Top-3 ranking counts. \*\*\*Also a First Place winner.

**Ranking Eligibility**

Panelists eligible for a 2017 ranking were those who participated in at least one of the four 2017 quarterly surveys AND in all four of the quarterly surveys that comprise a given year's set of expectations data (e.g., to be eligible for a 2017 award pertaining expectations made in 2015, a panelist would have had to submit forecast data for each of the four quarterly surveys that Pulsenomics conducted in 2015).

**Ranking Methodology**

The expectations data submitted by eligible panelists for each of the four survey editions in each calendar year were compared to the actual (Q4/Q4, or Dec/Dec) home price percentage changes for the five time horizons that ended in 2017:

Time Horizon	Expectations Vintage(s)
2018 (1 year horizon)	2018
2017-2018 (2 year horizon)	2014, 2015, 2016, 2017
2016-2018 (3 year horizon)	2014, 2015, 2016
2015-2018 (4 year horizon)	2014, 2015
2014-2018 (5 year horizon)	2014

Rankings are based on a comparison of each panelist's expectations for home price changes to the actual change as measured by the Zillow U.S. Home Value Index (the survey benchmark) using the index values published on 1/24/2019.

For each time horizon and expectations vintage, the sum of the absolute differences between (a) each of the four sets of quarterly expectations data submitted by eligible panelists in a calendar year and (b) the actual (Dec/Dec) percentage change in the applicable benchmark data was computed. These sums were then sorted in ascending order to generate rankings (i.e., the lowest sum represents the least average error/highest rank).