



2019 CRYSTAL BALL AWARD WINNERS

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

FIRST PLACE - OUTSTANDING PERFORMANCE			
Horizon	Year Expectations Were Formulated	Panelist	Affiliation
5 Year (2015-2019)	2015	Rajeev Dhawan	Georgia State University
	2016	Rajeev Dhawan	Georgia State University
4 Year (2016-2019)	2015	Joel Naroff	Naroff Economic Advisors
	2016	Joel Naroff	Naroff Economic Advisors
3 Year (2017-2019)	2015	Ingo Winzer	Local Market Monitor
	2016	Ingo Winzer	Local Market Monitor
	2017	Edward Pinto	American Enterprise Institute
2 Year (2018-2019)	2015	Ingo Winzer	Local Market Monitor
	2016	Ingo Winzer	Local Market Monitor
	2017	Edward Pinto	American Enterprise Institute
	2018	Stacy Sirmans	FSU Center for Real Estate Education & Research
1 Year (2019)	2019	Daniel Bachman	Deloitte Services, LP

OUTSTANDING CONSISTENCY					
For the 11 performance categories:					
Number of Top-10 Rankings*	Number of Top-5 Rankings**	Number of Top-3 Rankings***	Number of #1 Rankings	Panelist	Affiliation
10	1	-	-	Michael Englund	Action Economics LLC
9	7	6	1	Joel Naroff	Naroff Economic Advisors
9	2	-	-	Jim Kleckley	East Carolina University
9	1	-	-	Mark Fleming	First American Financial Corporation
8	5	-	-	Paul Carrillo	George Washington University
7	7	7	4	Ingo Winzer	Local Market Monitor
7	7	6	-	Barry Habib	MBS Highway
4	4	2	2	Edward Pinto	American Enterprise Institute
4	4	4	2	Rajeev Dhawan	Georgia State University
3	3	3	1	Stacy Sirmans	FSU Center for Real Estate Education & Research
3	3	-	-	Matthew Fienup	Cal Lutheran Univ. Ctr for Ec Forecasting & Research

*Includes Top-5, Top-3, and #1 ranking counts. **Includes Top-3 and #1 ranking counts. ***Includes #1 ranking count.

Ranking Eligibility

Panelists eligible for a 2019 ranking were those who participated in at least one of the four 2019 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 2019 award pertaining to 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 2019:

Time Horizon	Expectations Vintages(s)
2019 (1 year horizon)	2019
2018-2019 (2 year horizon)	2015, 2016, 2017, 2018
2017-2019 (3 year horizon)	2015, 2016, 2017
2016-2019 (4 year horizon)	2015, 2016
2015-2019 (5 year horizon)	2015

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 ("ZHVI", the survey benchmark). Note: Zillow implemented a new methodology to calculate ZHVI effective November 2019. Thus, the accuracy benchmarks used to gauge the panelists' performance for all expectations vintages (2015 through 2019) were derived from (i) "legacy" ZHVI data through October 2019 and (ii) "new" ZHVI data for the months of November 2019 and December 2019 as of the January 2020 index publication date.

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).