

# HOME PRICE EXPECTATIONS SURVEY

## 2015 PANELIST "TOP 10" RANKINGS

1 Year Horizon (2015)

Actual Change (Dec 2015 / Dec 2014)

2015 Expectations

Rank	Panelist	Title	Affiliation
1	Vijay Bhasin	Chief Risk Officer	Essent U.S. Holdings
1	Edward Pierzak	Managing Director, Global Real Estate Strategy and Research	TIAA-CREF
2	Mark Zandi / Andres Carbacho-Burgos	Chief Economist / Senior Director	Moody's Analytics
3	Anne Thompson	Economist	Dodge Data & Analytics
4	Douglas Poutasse	Head of Strategy and Research	Bentall Kennedy
5	David Downs	Real Estate Finance Professor	Virginia Commonwealth University
6	Christy Fields	Director, Real Estate Consulting	Pension Consulting Alliance, Inc.
7	Susan Wachter	Professor of Real Estate, Finance, City & Regional Planning	Wharton - University of Pennsylvania
8	Abdullah Yavas	Professor, Real Estate and Urban Land Economics	University of Wisconsin
9	Lynn Reaser	Chief Economist	Point Loma Nazarene University
10	Nariman Behravesht	Chief Economist	IHS Global Insight

Benchmark: US ZHVI					4.08%
Panelist Expectations, By Survey Edition:					
Q1 2015	Q2 2015	Q3 2015	Q4 2015		
4.00%	4.00%	4.00%	4.00%		
4.00%	4.00%	4.00%	4.00%		
4.60%	3.80%	4.22%	4.10%		
4.20%	4.20%	4.40%	3.60%		
4.50%	4.00%	3.80%	3.80%		
3.75%	4.00%	3.80%	3.70%		
4.50%	4.00%	4.00%	3.50%		
4.00%	4.50%	4.20%	3.50%		
4.50%	4.50%	4.50%	4.10%		
4.00%	4.40%	4.00%	5.00%		
4.90%	3.60%	4.20%	4.10%		

2-Year Horizon (2014-2015)

Actual Change (Dec 2015 / Dec 2014)

2014 Expectations

Rank	Panelist	Title	Affiliation
1	Mike Cosgrove	Principal	The Econoclast
2	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
3	Edward Pierzak	Managing Director, Global Real Estate Strategy and Research	TIAA-CREF
4	Thomas Swift	Chief Economist	American Chemistry Council
5	Sean Snaith	Director, Institute for Economic Competitiveness	University of Central Florida
6	Christy Fields	Director, Real Estate Consulting	Pension Consulting Alliance, Inc.
7	Parul Jain	Chief Investment Strategist	MacroFin Analytics LLC
8	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
9	Maury Harris	Chief Economist	UBS Securities
10	Mark Zandi / Andres Carbacho-Burgos	Chief Economist / Senior Director	Moody's Analytics

Benchmark: US ZHVI					7.94%
Panelist Expectations, By Survey Edition:					
Q1 2014	Q2 2014	Q3 2014	Q4 2014		
7.74%	7.74%	7.54%	7.95%		
8.16%	8.16%	7.85%	8.87%		
7.64%	7.64%	7.64%	8.67%		
8.26%	8.26%	7.95%	8.99%		
7.64%	7.64%	7.38%	7.33%		
8.42%	8.42%	7.64%	8.68%		
6.91%	6.91%	7.64%	8.57%		
8.14%	8.14%	9.83%	8.68%		
7.12%	7.12%	8.67%	8.67%		
8.44%	8.44%	6.63%	7.10%		

2013 Expectations

Rank	Panelist	Title	Affiliation
1	Bruce McCain	Chief Investment Strategist	KeyBank
2	Christy Fields	Director, Real Estate Consulting	Pension Consulting Alliance, Inc.
3	Paul Diggle	Economist	Aberdeen Asset Management
4	John McIlwain	Sr Res Fellow, J. Ronald Terwilliger Chair for Housing	Urban Land Institute
5	Mike Cosgrove	Principal	The Econoclast
6	Kenneth Rosen	Chairman	Rosen Consulting Group
7	Timothy Ghriskey	Chief Investment Officer	Solaris Asset Management LLC
8	Marc Halle	Managing Director, Portfolio Manager	Prudential Real Estate Investors
9	David Berson	Chief Economist	Nationwide Insurance
10	Thomas Swift	Chief Economist	American Chemistry Council

Benchmark: US ZHVI					7.94%
Panelist Expectations, By Survey Edition:					
Q1 2013	Q2 2013	Q3 2013	Q4 2013		
7.90%	7.90%	7.90%	7.90%		
7.85%	7.85%	8.37%	8.16%		
8.16%	8.16%	8.16%	8.16%		
7.64%	7.64%	7.64%	7.64%		
7.64%	7.63%	7.63%	8.36%		
7.64%	7.64%	7.64%	8.58%		
8.15%	8.15%	8.15%	9.20%		
7.12%	8.16%	8.68%	8.16%		
6.40%	7.84%	8.16%	7.74%		
7.64%	7.90%	9.46%	7.64%		

2012 Expectations

Rank	Panelist	Title	Affiliation
1	James Smith	Chief Economist	Parsec Financial Management
2	Douglas Poutasse	Head of Strategy and Research	Bentall Kennedy
3	Esmael Adibi	Director	Chapman University
4	Stephen Stanley	Chief Economist	Amherst Pierpont Securities
5	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
6	Andrea Heuson	Professor of Finance	University of Miami
7	Allen Sinai	President, CEO, Chief Global Economist & Strategist	Decision Economics
8	Joseph Carson	Chief Economist	Alliance Bernstein
9	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
10	Amy Crews Cutts	Chief Economist	Equifax

Benchmark: SPCSI US National					10.20%
Panelist Expectations, By Survey Edition:					
Q1 2012	Q2 2012	Q3 2012	Q4 2012		
10.14%	10.14%	10.14%	10.14%		
10.25%	10.25%	10.25%	8.16%		
10.77%	10.77%	10.77%	9.62%		
9.20%	10.25%	9.20%	8.16%		
9.73%	11.30%	10.78%	12.89%		
8.16%	9.20%	8.16%	10.25%		
8.89%	8.68%	8.68%	8.47%		
7.12%	7.12%	10.25%	11.30%		
13.35%	12.95%	11.10%	9.62%		
8.16%	8.16%	8.16%	8.16%		

2011 Expectations

Rank	Panelist	Title	Affiliation
1	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
2	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
2	Joel Naroff	President	Naroff Economic Advisors Inc.
3	Michael Englund	Chief Economist	Action Economics LLC
4	John Silvia	Chief Economist	Wells Fargo
5	Stephen Stanley	Chief Economist	Amherst Pierpont Securities
6	Sean Snaith	Director, Institute for Economic Competitiveness	University of Central Florida
7	Douglas Poutasse	Head of Strategy and Research	Bentall Kennedy
7	Edward Pierzak	Managing Director, Global Real Estate Strategy and Research	TIAA-CREF
8	Andrea Heuson	Professor of Finance	University of Miami
9	Paul Diggle	Economist	Aberdeen Asset Management
10	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors

Benchmark: SPCSI US National					10.20%
Panelist Expectations, By Survey Edition:					
Q1 2011	Q2 2011	Q3 2011	Q4 2011		
11.46%	11.30%	10.25%	9.73%		
10.03%	10.85%	11.73%	12.03%		
9.73%	11.61%	10.35%	8.05%		
10.78%	10.46%	9.20%	7.12%		
8.61%	8.96%	8.39%	7.85%		
9.73%	7.12%	7.64%	9.20%		
7.64%	13.11%	10.50%	8.68%		
8.16%	8.16%	8.16%	8.16%		
8.16%	8.16%	8.16%	8.16%		
8.16%	9.20%	6.09%	8.16%		
8.16%	8.16%	7.64%	7.64%		
9.20%	12.36%	6.50%	7.12%		

# HOME PRICE EXPECTATIONS SURVEY

## 2015 PANELIST "TOP 10" RANKINGS

**3-Year Horizon (2013-2015)**      Actual Change (Dec 2015 / Dec 2012)

2013 Expectations

Rank	Panelist	Title	Affiliation
1	Michael Carliner	Housing Economist	Independent Consultant
2	Diane Swonk / Adolfo Laurenti	Chief Economist / Deputy Chief Economist	Mesirow Financial
3	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
4	Andrea Heuson	Professor of Finance	University of Miami
5	Stephen Stanley	Chief Economist	Amherst Pierpont Securities
6	Paul Diggle	Economist	Aberdeen Asset Management
7	Timothy Ghiskey	Chief Investment Officer	Solaris Asset Management LLC
8	Kenneth Rosen	Chairman	Rosen Consulting Group
9	John Ryding / Conrad DeQuadros	Chief Economist / Senior Economist	RDQ Economics
10	Bob Baur	Chief Global Economist	Principal Global Investors

Benchmark: US ZHVI					15.91%
Panelist Expectations, By Survey Edition:					
Q1 2013	Q2 2013	Q3 2013	Q4 2013		
15.74%	15.74%	15.74%	15.74%		
15.31%	16.08%	16.59%	16.59%		
15.76%	15.87%	16.93%	16.93%		
15.76%	15.76%	17.98%	15.75%		
14.99%	15.20%	16.84%	16.83%		
16.81%	16.81%	16.81%	16.81%		
15.18%	14.64%	14.64%	15.21%		
15.17%	15.17%	15.17%	17.80%		
13.57%	13.57%	15.75%	15.75%		
11.30%	14.60%	16.77%	15.69%		

2012 Expectations

Rank	Panelist	Title	Affiliation
1	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
2	James Smith	Chief Economist	Parsec Financial Management
3	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
4	Abdullah Yavas	Professor, Real Estate and Urban Land Economics	University of Wisconsin
5	Joel Naroff	President	Naroff Economic Advisors Inc
6	Esmael Adibi	Director	Chapman University
7	Joseph Carson	Chief Economist	Alliance Bernstein
8	Stephen Stanley	Chief Economist	Amherst Pierpont Securities
9	Andrea Heuson	Professor of Finance	University of Miami
10	Allen Sinai	President, CEO, Chief Global Economist & Strategist	Decision Economics

Benchmark: SPCSI US National					22.05%
Panelist Expectations, By Survey Edition:					
Q1 2012	Q2 2012	Q3 2012	Q4 2012		
13.57%	14.08%	14.65%	17.40%		
14.88%	14.88%	14.88%	14.88%		
18.11%	17.41%	12.90%	10.80%		
11.40%	15.19%	15.19%	15.19%		
8.63%	8.61%	17.72%	19.77%		
13.76%	13.76%	13.76%	12.03%		
10.33%	10.33%	15.76%	16.87%		
11.38%	14.66%	14.66%	12.49%		
11.40%	13.57%	12.49%	14.66%		
13.03%	12.37%	12.48%	12.27%		

2011 Expectations

Rank	Panelist	Title	Affiliation
1	Nariman Behraves	Chief Economist	IHS Global Insight
2	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
3	Bart Van Ark	Chief Economist	The Conference Board
4	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
5	Joel Naroff	President	Naroff Economic Advisors Inc
6	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
7	John Silvia	Chief Economist	Wells Fargo
8	Edward Pierzak	Managing Director, Global Real Estate Strategy and Research	TIAA-CREF
9	Vijay Bhasin	Chief Risk Officer	Essent U.S. Holdings
10	Michael Englund	Chief Economist	Action Economics LLC

Benchmark: SPCSI US National					22.05%
Panelist Expectations, By Survey Edition:					
Q1 2011	Q2 2011	Q3 2011	Q4 2011		
18.87%	22.85%	23.52%	12.70%		
18.13%	18.30%	17.83%	17.93%		
12.48%	12.48%	20.19%	17.39%		
16.36%	16.87%	13.56%	14.11%		
17.30%	15.18%	14.66%	11.08%		
14.12%	19.10%	9.91%	10.66%		
13.18%	12.66%	13.09%	11.35%		
12.49%	12.49%	12.49%	12.49%		
12.48%	12.48%	12.48%	11.39%		
14.10%	13.55%	11.82%	8.94%		

**4-Year Horizon (2012-2015)**      Actual Change (Dec 2015 / Dec 2011)

2012 Expectations

Rank	Panelist	Title	Affiliation
1	James Smith	Chief Economist	Parsec Financial Management
2	Stephen Stanley	Chief Economist	Amherst Pierpont Securities
3	Joseph Carson	Chief Economist	Alliance Bernstein
4	Esmael Adibi	Director	Chapman University
5	Andrea Heuson	Professor of Finance	University of Miami
6	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
7	Allen Sinai	President, CEO, Chief Global Economist & Strategist	Decision Economics
8	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
9	Abdullah Yavas	Professor, Real Estate and Urban Land Economics	University of Wisconsin
10	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University

Benchmark: SPCSI US National					29.96%
Panelist Expectations, By Survey Edition:					
Q1 2012	Q2 2012	Q3 2012	Q4 2012		
19.24%	19.24%	19.24%	19.24%		
12.50%	16.95%	22.69%	19.24%		
12.54%	12.54%	19.24%	22.71%		
15.80%	15.80%	16.15%	19.09%		
14.75%	16.98%	15.86%	19.25%		
17.16%	17.17%	16.19%	15.54%		
16.87%	16.19%	16.31%	16.08%		
14.52%	12.55%	14.74%	20.85%		
14.19%	15.76%	15.76%	16.92%		
15.27%	13.51%	14.88%	18.81%		

2011 Expectations

Rank	Panelist	Title	Affiliation
1	Nariman Behraves	Chief Economist	IHS Global Insight
2	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
3	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
4	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
5	Joel Naroff	President	Naroff Economic Advisors Inc
6	Bart Van Ark	Chief Economist	The Conference Board
7	John Silvia	Chief Economist	Wells Fargo
8	Esmael Adibi	Director	Chapman University
9	Douglas Poutasse	Head of Strategy and Research	Bentall Kennedy
10	Andrea Heuson	Professor of Finance	University of Miami

Benchmark: SPCSI US National					29.96%
Panelist Expectations, By Survey Edition:					
Q1 2011	Q2 2011	Q3 2011	Q4 2011		
27.67%	32.18%	25.12%	7.60%		
20.19%	19.55%	18.91%	16.88%		
19.25%	26.25%	12.99%	14.09%		
21.02%	19.20%	13.56%	16.97%		
21.40%	17.25%	17.75%	13.19%		
14.73%	14.73%	19.82%	17.04%		
15.66%	13.81%	15.83%	14.36%		
15.19%	14.52%	14.52%	14.74%		
15.86%	15.86%	13.63%	12.52%		
13.63%	16.98%	9.29%	14.75%		

**5-Year Horizon (2011-2015)**      Actual Change (Dec 2015 / Dec 2010)

2011 Expectations

Rank	Panelist	Title	Affiliation
1	Joel Naroff	President	Naroff Economic Advisors Inc
2	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors
3	Andrea Heuson	Professor of Finance	University of Miami
4	Nariman Behraves	Chief Economist	IHS Global Insight
5	Bart Van Ark	Chief Economist	The Conference Board
6	Mark Zandi / Celia Chen	Chief Economist / Senior Director	Moody's Analytics
7	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University
8	John Silvia	Chief Economist	Wells Fargo
9	Kenneth Rosen	Chairman	Rosen Consulting Group
10	Stephen Stanley	Chief Economist	Amherst Pierpont Securities

Benchmark: SPCSI US National					24.90%
Panelist Expectations, By Survey Edition:					
Q1 2011	Q2 2011	Q3 2011	Q4 2011		
24.19%	15.37%	17.75%	13.19%		
22.23%	27.64%	12.54%	12.03%		
14.77%	20.48%	10.39%	17.04%		
19.12%	16.06%	18.62%	6.96%		
13.58%	13.58%	14.91%	16.45%		
16.41%	15.12%	14.07%	12.46%		
17.39%	14.43%	10.15%	15.80%		
14.63%	11.25%	15.66%	13.79%		
16.60%	13.33%	13.33%	8.82%		
19.89%	8.70%	13.09%	10.25%		

# HOME PRICE EXPECTATIONS SURVEY

## 2015 PANELIST "TOP 10" RANKINGS

### Ranking Eligibility

Panelists eligible for a 2015 ranking were those who participated in at least one of the four 2015 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 2015 award pertaining expectations made in 2013, a panelist would have had to submit forecast data for each of the four quarterly surveys that Pulsenomics conducted in 2013).

### 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 2015:

Time Horizon	Expectations Vintage(s)
2015 (1 year horizon)	2015
2014-2015 (2 year horizon)	2011, 2012, 2013, 2014
2013-2015 (3 year horizon)	2011, 2012, 2013
2012-2015 (4 year horizon)	2011, 2012
2011-2015 (5 year horizon)	2011

Rankings are based on a comparison of each panelist's expectations for home price changes to the actual change as measured by the applicable survey benchmark used at the time the expectations data was submitted (i.e., S&P/Case-Shiller U.S. National HPI for pre-2013 expectations, and the Zillow U.S. Home Value Index for 2013-2015 expectations). These calculations are based upon the respective benchmark index values as published by Standard & Poor's and Zillow on 2/23/2016.

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).