



HOME PRICE EXPECTATIONS SURVEY

Top-10 Rankings for 2019

	1-Year Horizon (Dec 2019 / Dec 2018)			Be	nchmark: US ZI	HVI	3.79%	
					Paneli	st Expectation	ns, By Survey	Edition:
	Rank	Panelist	<u>Title</u>	Affiliation	Q1 2019	Q2 2019	Q3 2019	Q4 2019
	1	Daniel Bachman	Senior Manager, U.S. Economics	Deloitte Services, LP	3.90%	3.60%	3.80%	3.70%
	2	Brad Hunter	Chief Economist	RCLO	4.10%	4.20%	3.80%	3.60%
S	3	Brian Wesbury / Robert Stein	Chief Economist / Senior Economist	First Trust Advisors	3.50%	3.80%	2.90%	3.80%
ions	4	Susan Sterne	Chief Economist	Economic Analysis Associates, Inc.	3.40%	4.20%	3.80%	3.20%
station	5	Mike Cosgrove	Principal	The Econoclast	4.30%	3.90%	4.30%	3.20%
be	6	Scott Anderson	Chief Economist	Bank Of The West	3.90%	3.90%	3.00%	3.00%
Exp	7	Thomas Swift	Chief Economist	American Chemistry Council	4.30%	4.30%	4.30%	3.50%
2019	8	Vijay Bhasin	Chief Risk Officer	Essent U.S. Holdings	4.00%	3.00%	4.50%	4.00%
2	9 TII	Craig Evers	Economist	Brevan Howard	4.00%	4.00%	2.50%	3.50%
	9 111	Alexei Tchistyi	Director of Office of Real Estate Research	University of Illinois at Urbana-Champaign	4.00%	4.00%	3.00%	3.00%
	10	Wilson Magee	Director of Real Estate and Infrastructure Securities	Franklin Templeton	3.00%	4.00%	3.50%	3.00%

10							
	Wilson Magee	Director of Real Estate and Infrastructure Securities	Franklin Templeton	3.00%	4.00%	3.50%	3.00
		2-Year Horizon (Dec 2019 / Dec 201	7)	Be	nchmark: US Z	HVI	12.40
		(,			ns, By Survey	
Rank	Panelist	Title	Affiliation	Q1 2018	Q2 2018	Q3 2018	Q4 20
1	Stacy Sirmans	Director	FSU Center for Real Estate Education & Research	12.36%	11.83%	12.36%	12.36
2	James Smith	Chief Economist	Parsec Financial Management	12.25%	12.25%	12.25%	11.4
3	Donald Haurin	Professor of Economics, Finance, and Public Policy	Ohio State University	11.72%	11.83%	12.25%	11.7
4	Matthew Fienup	Economist, Economic Forecasting and Research Center	California Lutheran Univ. Ctr for Economic Forecasting & Research	11.51%	12.78%	13.21%	12.6
5	Stephen Stanley	Chief Economist	Amherst Pierpont Securities	10.99%	13.21%	12.36%	12.1
6	Timothy Hopper	Managing Director	Macro Fund Advisors	12.89%	13.42%	11.30%	12.3
7	Michael Englund	Chief Economist	Action Economics LLC	11.62%	13.42%	12.89%	11.8
8	Peter Linneman	Founder and CEO	American Land Fund	10.78%	11.30%	12.36%	11.7
9	James Gaines	Chief Economist	Texas A&M University Real Estate Center	12.89%	12.89%	13.42%	10.7
10	Paul Carrillo	Professor of Economics	·				
10	Paul Carrillo	Professor of Economics	George Washington University	10.78%	11.30%	12.36%	13.4
				Benchmark: US ZHVI			12.4
						ns, By Survey	
Rank	<u>Panelist</u>	<u>Title</u>	Affiliation	Q1 2017	Q2 2017	Q3 2017	Q4 2
1	Edward Pinto	Resident Fellow	American Enterprise Institute	11.83%	11.83%	12.89%	12.8
2	Stacy Sirmans	Director	FSU Center for Real Estate Education & Research	12.89%	11.04%	12.89%	11.3
3	Raymond Hodgdon	CEO	Enlightened Economics	13.96%	11.41%	11.41%	12.0
4	James Smith	Chief Economist	Parsec Financial Management	11.30%	11.30%	11.30%	11.3
5	Matthew Fienup	Economist, Economic Forecasting and Research Center	California Lutheran Univ. Ctr for Economic Forecasting & Research	11.09%	11.09%	11.51%	10.
6	Gregory Daco / Kathy Bostjancic	Chief U.S. Economist / Head of U.S. Macro Investors Service	Oxford Economics	10.46%	11.61%	11.30%	10.9
7	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	10.20%	9.99%	11.72%	12.3
8	Michael Englund	Chief Economist	Action Economics LLC	10.78%	10.78%	10.88%	11.0
9	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	7.90%	13.42%	12.63%	14.0
	Mark Fleming Joel Naroff	Senior Vice President, Chief Economist President	First American Financial Corporation Naroff Economic Advisors Inc	7.90% 9.93%	13.42% 8.68%	12.63% 12.67%	14.0
9	_		·	9.93%		12.67%	
9	_		·	9.93% Be	8.68% nchmark: US Z	12.67% HVI	11.0 12.4
9 10	Joel Naroff	President	Naroff Economic Advisors Inc	9.93% Be Paneli	8.68% nchmark: US Z st Expectation	12.67% HVI ns, By Survey	11.0 12.4 Edition
9 10 Rank	Joel Naroff <u>Panelist</u>	President <u>Title</u>	Naroff Economic Advisors Inc Affiliation	9.93% Be Paneli Q1 2016	8.68% nchmark: US Z st Expectation Q2 2016	12.67% HVI ns, By Survey Q3 2016	11.0 12.4 Edition Q4.2
9 10 Rank 1	Joel Naroff Panelist Ingo Winzer	President <u>Title</u> President	Naroff Economic Advisors Inc Affiliation Local Market Monitor	9.93% Be Paneli Q1 2016 12.15%	8.68% nchmark: US Z st Expectation Q2 2016 12.57%	12.67% HVI ns, By Survey Q3 2016 12.47%	11.0 12.4 Edition Q4.2
9 10 Rank 1 2	Joel Naroff Panelist Ingo Winzer Joel Naroff	President <u>Title</u> President President	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc	9.93% Bee Paneli Q1 2016 12.15% 12.78%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83%	12.4 Edition Q4 2 12.5 8.5
9 10 Rank 1 2 3	Joel Naroff Panelist Ingo Winzer Joel Naroff Barry Habib	President Title President President CEO	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway	9.93% Bee Panelii Q1 2016 12.15% 12.78% 7.42%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94%	12.4 Edition Q4 2 12.5 8.5
9 10 Rank 1 2 3	Joel Naroff Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley	President Title President President CEO Director, Bureau of Business Research	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25%	12.4 Edition Q4.2 12.5 8.5 10.9
9 10 Rank 1 2 3 4 5	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo	President Title President President CEO Director, Bureau of Business Research Professor of Economics	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University	9.93% Bee Panelii Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68%	12.4 Edition Q4 2 12.5 8.5 10.1 10.2
9 10 Rank 1 2 3 4 5 6	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25%	11.0 12.2 Edition Q4.2 12.3 8.5 10.9 10.2 10.2
9 10 Rank 1 2 3 4 5 6 7	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16% 9.20%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.20% 8.16%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58%	11.0 12.4 Edition Q4 2 12.5 8.5 10.3 10.2 10.2
9 10 Rank 1 2 3 4 5 6 7 8	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16% 9.20% 9.73%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.20% 8.16% 9.10%	12.67% HVI ns, By Survey 03 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31%	11.0 12.4 Edition Q4 2 12.5 10.5 10.5 10.5 11.6 9.3
9 10 Rank 1 2 3 4 5 6 7	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist	Naroff Economic Advisors Inc Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16% 9.20%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.20% 8.16%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58%	11.0 12.4 Edition Q4 2 12.5 10.5 10.5 10.5 11.6 9.3 6.0
9 10 Rank 1 2 3 4 5 6 7 8	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets	9.93% Be Panell Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16% 9.20% 9.73% 10.25% 8.68%	8.68% nchmark: US Z nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.20% 9.10% 10.25% 8.68%	12.67% HVI 1s, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.688% 10.25% 8.58% 9.31% 9.20% 8.26%	11.0 Q4 2 12.5 8.5 10.1 10.2 11.6 9.3 6.0 9.5
9 10 Rank 1 2 3 4 5 6 7 8	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets	9.93% Bee Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68%	12.67% HVI 15, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 9.31% 9.20% 8.26%	11.0 Q4 2 12.5 8.5 10.5 10.2 10.2 11.6 9.3 6.0 9.5
9 10 Rank 1 2 3 4 5 6 7 8	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets	9.93% Bee Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68%	12.67% HVI 1s, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.688% 10.25% 8.58% 9.31% 9.20% 8.26%	11.0 12.4 Edition Q4 2 12.5 8.5 10.1 10.2 10.2 11.6 9.3 6.0 9.5
9 10 Rank 1 2 3 4 5 6 7 8 9	Joel Naroff Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 10.25% 8.16% 9.20% 9.73% 10.25% 8.68%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation	12.67% HVI 1s, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.58% 9.31% 9.20% 8.26% HVI 1s, By Survey	12.4. Edition Q4 2 12.5. Edition Q4 2 12.5. Edition 10.2 10.2 11.6 9.3 6.0 9.5 12.4 Edition Q4 2
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 19.25% 8.99% 9.20% 8.16% 9.20% 8.16% 9.10% 10.25% 8.68%	12.67% HVI 12.67% 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% 9.20% 8.26% HVI 10.8, By Survey 03.2015 12.36%	12.4. Edition Q4 2 12.5. Edition Q4 2 12.5. Edition Q4 2 12.5. Edition Q4 2 12.5. Edition Q4 2 12.6. Edition Q4 2 12.6.
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.10% 10.25% 8.68% 9.10% 10.25% 8.68% 10.25% 10.25% 10.25% 10.25%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.58% 9.31% 9.20% 8.26% HVI ns, By Survey Q3 2015 12.36% 12.12%	11.0 12.2 Edition Q4 2 12.5 Edition Q4 2 12.5 10.9 10.0 10.0 10.0 10.0 10.0 10.0 10.0
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26% 9.18%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation Q2 2015 13.00% 11.26% 11.30%	12.67% HVI 1s, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% 9.20% 8.26% HVI 1s, By Survey Q3 2015 12.36% 12.12% 11.28%	11.0 12.2 Edition Q4 2 12.5 10.9 10.0 10.0 10.0 10.0 10.0 10.0 10.0
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib Paul Carrillo	President Title President President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO Professor of Economics	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway George Washington University	9.93% Be Panell Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.20% 9.73% 10.25% 8.68% Be Panell Q1 2015 11.94% 11.26% 9.18%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 10.25% 9.20% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation Q2 2015 13.00% 11.30% 9.20%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.20% 8.26% HVI ns, By Survey Q3 2015 12.36% 12.12% 11.28% 10.25%	11.0.1 12.4 12.5 12.5 10.9 10.0 10.0 10.0 10.0 11.6 11.6 12.6 12.6 12.7 12.7 12.7 12.7 12.7 12.7 12.7 12.7
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib Paul Carrillo Michael Englund	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO Professor of Economics Chief Economics Chief Economics Chief Economics Chief Economics	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway George Washington University Action Economics LLC	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.10% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26% 9.18% 10.25% 10.25%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation Q2 2015 13.00% 11.26% 11.30% 9.31%	12.67% HVI 12.67% BY 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% HVI 12.36% 12.36% 12.26% 12.28% 12.36% 12.28% 9.31%	11.0.1 12.c. Edition Q4 2 12.5. 10.9.1 10 10 10 11 9.3.3 6 6 Q4 2 12 11 9.3.3 11 9.3.3 11 9.3.3 9.3.3 11 11 9.3.3
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib Paul Carrillo Michael Englund Joel Naroff	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO Professor of Economics Chief Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway George Washington University Action Economics LLC Naroff Economics LLC Naroff Economics LLC	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26% 9.18% 10.25% 10.25%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation Q2 2015 13.00% 11.26% 11.30% 9.20%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% 9.20% 8.26% HVI ns, By Survey Q3 2015 12.36% 12.12% 11.28% 10.25% 9.31% 8.58%	11.0.12
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib Paul Carrillo Michael Englund	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO Professor of Economics Chief Economist Senior U.S. Economic Forecasting Center CEO Professor of Economics Chief Economist President Senior Vice President, Chief Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway George Washington University Action Economics LLC Naroff Economic SLC Naroff Economic SLC	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26% 9.18% 10.25% 8.16% 8.16%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 9.10% 10.25% 8.68% 9.11% 10.25% 10.25% 10.25% 10.20% 10.25% 10.20% 10.25% 10.20% 10.25% 10.20% 10.25% 10.20% 10.20% 10.20% 10.20% 10.20% 10.20% 10.20% 10.20% 10.25%	12.67% HVI 1s, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% 9.20% 8.26% HVI 1s, By Survey Q3 2015 12.36% 12.12% 11.28% 10.25% 9.31%	11.C. Edition (04 2 2 12.5.2 10.9 10.1 11.6.
9 10 Rank 1 2 3 4 5 6 7 8 9 10	Panelist Ingo Winzer Joel Naroff Barry Habib Jim Kleckley Paul Carrillo Edward Pinto Mark Fleming Michael Englund Kevin Cummins Sibel Korkmaz Panelist Ingo Winzer Rajeev Dhawan Barry Habib Paul Carrillo Michael Englund Joel Naroff	President Title President President CEO Director, Bureau of Business Research Professor of Economics Resident Fellow Senior Vice President, Chief Economist Chief Economist Senior U.S. Economist Economist Title President Director, Economic Forecasting Center CEO Professor of Economics Chief Economist	Affiliation Local Market Monitor Naroff Economic Advisors Inc MBS Highway East Carolina University George Washington University American Enterprise Institute First American Financial Corporation Action Economics LLC NatWest Markets AIG Global Economics Affiliation Local Market Monitor Georgia State University MBS Highway George Washington University Action Economics LLC Naroff Economics LLC Naroff Economics LLC	9.93% Be Paneli Q1 2016 12.15% 12.78% 7.42% 8.16% 9.20% 9.73% 10.25% 8.68% Be Paneli Q1 2015 11.94% 11.26% 9.18% 10.25% 10.25%	8.68% nchmark: US Z st Expectation Q2 2016 12.57% 12.57% 8.99% 10.25% 9.20% 8.16% 9.10% 10.25% 8.68% nchmark: US Z st Expectation Q2 2015 13.00% 11.26% 11.30% 9.20%	12.67% HVI ns, By Survey Q3 2016 12.47% 9.83% 12.94% 10.25% 8.68% 10.25% 8.58% 9.31% 9.20% 8.26% HVI ns, By Survey Q3 2015 12.36% 12.12% 11.28% 10.25% 9.31% 8.58%	11.C. 12.6 Editior Q4 2 2 12.5 Editior 10.9 10.1 10.2 11.6 10.2 11.6 10.2 11.6 12.5 Editior Q4 2 12.C 12.C 12.C 12.C 12.C 12.C 12.C 12





HOME PRICE EXPECTATIONS SURVEY

Top-10 Rankings for 2019

		3-Year Horizon (Dec 2019 / Dec 2016		Be	nchmark: US Z	HVI	20.549
				Paneli	st Expectation	ns, By Survey	Edition:
Rank	Panelist	<u>Title</u>	Affiliation	Q1 2017	Q2 2017	Q3 2017	Q4 20:
1	Edward Pinto	Resident Fellow	American Enterprise Institute	18.54%	18.54%	20.57%	20.57
2	Raymond Hodgdon	CEO	Enlightened Economics	21.36%	18.32%	18.32%	19.329
3	Stacy Sirmans	Director	FSU Center for Real Estate Education & Research	19.10%	17.42%	19.10%	18.53
4	Joel Naroff	President	Naroff Economic Advisors Inc	17.30%	15.96%	20.90%	19.19
5	Matthew Fienup	Economist, Economic Forecasting and Research Center	California Lutheran Univ. Ctr for Economic Forecasting & Research	17.42%	17.42%	18.76%	18.75
6	Gregory Daco / Kathy Bostjancic	Chief U.S. Economist / Head of U.S. Macro Investors Service	Oxford Economics	17.08%	18.98%	18.31%	17.86
7	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	16.79%	15.83%	18.88%	19.27
8	James Smith	Chief Economist	Parsec Financial Management	17.65%	17.65%	17.65%	17.65
9	Michael Englund	Chief Economist	Action Economics LLC	17.42%	17.42%	17.53%	17.98
10	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	12.76%	20.23%	19.95%	24.32
	9		·		1		
				Be	nchmark: US Z	HVI	20.54
				Paneli	st Expectation	ns. By Survey	Edition:
Rank	Panelist	Title	Affiliation	Q1 2016	Q2 2016	Q3 2016	Q4 20
1	Ingo Winzer	President	Local Market Monitor	17.53%	18.54%	18.54%	18.5
2	Joel Naroff	President	Naroff Economic Advisors Inc	19.78%	19.78%	16.09%	15.5
3	Barry Habib	CEO	MBS Highway	11.50%	14.55%	19.38%	15.52
4	Edward Pinto	Resident Fellow	American Enterprise Institute	13.03%	14.55%	16.42%	16.6
5	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	12.49%	15.76%	15.76%	15.6
6	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	14.66%	13.03%	13.79%	17.7
7	Paul Carrillo	Professor of Economics	George Washington University	15.21%	14.12%	13.57%	15.2
8	Michael Englund	Chief Economist	Action Economics LLC	14.88%	13.79%	14.44%	14.4
9	Kevin Cummins	Senior U.S. Economist	NatWest Markets	15.76%	15.76%	14.12%	10.33
10	Andrea Heuson	Professor of Finance	University of Miami	15.76%	13.57%	12.49%	13.57
10	Andrea neuson	Professor of Finance	Oniversity of Wildin	13.70% 13.37% 12.43%			13.3
				Ro	nchmark: US Z	HVI	20.5
					st Expectation		
Rank	Panelist	Title	Affiliation	Q1 2015	Q2 2015	Q3 2015	Q4 2
1		President	Local Market Monitor	18.43%	19.21%	19.21%	17.2
2	Ingo Winzer						
3	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University Naroff Economic Advisors Inc	16.27% 17.64%	16.27% 19.20%	17.17%	18.6
	Joel Naroff	President CFO		12.46%	15.64%	14.76% 16.29%	17.9
4	Barry Habib		MBS Highway				
5	Paul Carrillo	Professor of Economics	George Washington University	15.76%	14.12%	15.76%	14.66
6	Michael Englund	Chief Economist	Action Economics LLC	15.76%	14.55%	14.55%	14.99
7	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	12.49%	15.76%	17.42%	10.33
8	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	17.12%	14.26%	12.02%	12.28
9	Nathaniel Karp	Chief U.S. Economist	BBVA Research	15.69%	11.91%	13.01%	13.20
10	Amy Crews Cutts	President	AC Cutts & Associates	13.03%	14.66%	13.35%	12.49

		4-Year Horizon (Dec 2019 /	Dec 2015)	Be	nchmark: US Z	HVI	29.08%
				Paneli	st Expectatio	ns, By Survey	Edition:
Rank	Panelist	<u>Title</u>	Affiliation	Q1 2016	Q2 2016	Q3 2016	Q4 201
1	Joel Naroff	President	Naroff Economic Advisors Inc	26.12%	26.36%	23.40%	22.45%
2	Ingo Winzer	President	Local Market Monitor	22.70%	24.35%	24.70%	25.069
3	Barry Habib	CEO	MBS Highway	17.30%	22.11%	26.90%	22.229
4	Edward Pinto	Resident Fellow	American Enterprise Institute	18.68%	21.20%	22.71%	23.189
5	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	19.82%	18.68%	19.48%	24.129
6	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	16.99%	21.37%	21.37%	22.059
7	Paul Carrillo	Professor of Economics	George Washington University	19.93%	19.82%	19.70%	20.409
8	Michael Englund	Chief Economist	Action Economics LLC	20.05%	18.80%	20.17%	20.179
9	Kevin Cummins	Senior U.S. Economist	NatWest Markets	21.55%	21.55%	19.25%	15.309
10	Andrea Heuson	Professor of Finance	University of Miami	20.39%	19.25%	18.11%	19.25
				Paneli	st Expectatio	ns, By Survey	Edition:
Rank	Panelist	Title	Affiliation	Q1 2015	Q2 2015	Q3 2015	Q4 201
1	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University	26.73%	26.73%	26.78%	28.369
2	Ingo Winzer	President	Local Market Monitor	24.71%	25.89%	25.17%	22.009
3	Joel Naroff	President	Naroff Economic Advisors Inc	24.81%	27.31%	23.49%	21.299
4	Paul Carrillo	Professor of Economics	George Washington University	21.55%	20.96%	21.55%	20.409
	Barry Habib	CEO	MBS Highway	15.83%	21.89%	22.80%	22.919
5		Chief Economist	Action Economics LLC	21.55%	20.05%	20.17%	20.179
5 6	Michael Englund			23.46%	19.62%	16.51%	16.609
_	Michael Englund Jim Kleckley	Director, Bureau of Business Research	East Carolina University	23.40/0	13.0270		-0.00
6		Director, Bureau of Business Research Senior Vice President, Chief Economist	East Carolina University First American Financial Corporation	16.99%	21.55%	23.30%	
6	Jim Kleckley	,	•				13.649





HOME PRICE EXPECTATIONS SURVEY

Top-10 Rankings for 2019

	5-Year Horizon (Dec 2019 / Dec 2014)			Be	Benchmark: US ZHVI			
				Paneli	Panelist Expectations, By Survey E			
Rank	Panelist	<u>Title</u>	<u>Affiliation</u>	Q1 2015	Q2 2015	Q3 2015	Q4 2015	
1	Rajeev Dhawan	Director, Economic Forecasting Center	Georgia State University	33.70%	33.70%	32.86%	33.75%	
2	Joel Naroff	President	Naroff Economic Advisors Inc	31.43%	34.82%	31.02%	29.06%	
<u>थ</u> 3	Ingo Winzer	President	Local Market Monitor	32.56%	32.81%	30.93%	28.35%	
€ 4	Barry Habib	CEO	MBS Highway	20.46%	30.54%	30.29%	30.29%	
5	Paul Carrillo	Professor of Economics	George Washington University	28.24%	27.62%	28.24%	25.81%	
₩ 6	Michael Englund	Chief Economist	Action Economics LLC	27.75%	27.02%	26.18%	25.21%	
7 2	Jim Kleckley	Director, Bureau of Business Research	East Carolina University	30.65%	24.84%	20.94%	21.24%	
8 8	Mark Fleming	Senior Vice President, Chief Economist	First American Financial Corporation	22.84%	27.02%	28.84%	17.62%	
9	Amy Crews Cutts	President	AC Cutts & Associates	25.21%	24.32%	23.65%	21.78%	
10	Peter Linneman	Founder and CEO	American Land Fund	24.02%	23.42%	25.81%	21.65%	

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 2016, a panelist would have had to submit forecast data for each of the four quarterly surveys that Pulsenomics conducted in 2016).

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 Vintage(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).