# ULI Real Estate Consensus Forecast

A Survey of Leading Real Estate Economists/Analysts

**uli.org/consensusforecast**

April 2017

ULI Center for Capital Markets and Real Estate

Urban Land Institute
ULI Center for Capital Markets and Real Estate

# ULI Real Estate Consensus Forecast

- Three-year forecast ('17-'19) for 27 economic and real estate indicators.
- A consensus forecast based on the median of the forecasts from 53 economists/analysts at 39 leading real estate organizations.
- Respondents represent major real estate investment, advisory, and research firms and organizations.
- This is the 11th survey; completed March 3 – April 1, 2017.
- A semi-annual survey; next release planned for October 2017.
- Forecasts for:
  - Broad economic indicators
  - Real estate capital markets
  - Property investment returns for four property types
  - Vacancy rates and rents for five property types
  - Housing starts and prices

# Overview



- The *ULI Real Estate Consensus Forecast* for April 2017 projects continued economic expansion over the next three years, with healthy GDP growth, though moderating somewhat by 2019; moderating employment growth compared to 2016; relatively high but moderating commercial real estate volumes; continued commercial price appreciation, rent growth, and positive returns but at relatively subdued and decelerating rates; better than, or at, average vacancy/occupancy rates for all but retail, but with little, if any, further improvement in all sectors; continued growth in single family housing starts but remaining at levels below the long-term average.

- In 2017, 11 real estate indicators are projected to be better than their 20-year averages, while 12 are expected to be worse. Also, inflation is projected to be higher than it's 20-year average, while the 10-year Treasury rate and the NCRIEF Capitalization rate are projected to be lower than their long-term averages.

- In 2019, 9 indicators are expected to be better than their 20-year average, 1 is expected to be right at its average and 13 are expected to be worse than their average. Similar to the 2017 projections, inflation in 2019 is expected to be above its average while the Treasury rate and the cap rate are projected to be lower.

# Forecasts vs. Long-Term Averages

**2017 Forecast**

| Better than long-term averages | Worse than long-term averages |
|---|---|
| Unemployment Rate | GDP Growth |
| Employment Growth | CMBS Issuance |
| Transaction Volume | CPPI |
| Vacancy/Occupancy: Industrial, Apartment, Office, Hotel | NCREIF Total Returns: Industrial, Apartment, Office, Retail |
| Rental Rate Growth: Industrial, Office, Retail | Vacancy: Retail |
| | Rental Rate Growth: Apartment |
| Home Price Growth | REIT Total Returns |
| | Hotel RevPAR |
| | Single-family housing starts |

**2019 Forecast***

| Better than long-term averages | Worse than long-term averages |
|---|---|
| Unemployment Rate | GDP Growth |
| Employment Growth | CPPI |
| Transaction Volume | NCREIF Total Returns: Industrial, Apartment, Office, Retail |
| CMBS Issuance | REIT Total Returns |
| Vacancy/Occupancy: Industrial, Office, Hotel | Vacancy: Retail |
| Rental Rate Growth: Retail and Industrial | Rental Rate Growth: Office and Apartment |
| | Hotel RevPAR |
| | Home Price Growth |
| | Single-family starts |

*The 2019 Forecast for Apartment Vacancy is equal to the long-term average

# Key Findings

- Following 6 years of commercial property transaction volume growth that reached a post-recession high of $547 billion in 2015, transaction volume declined to $489 billion in ‘16. Annual volume is forecasted to further decline to $450 billion in ‘17 and $430 billion in ‘19. Still, the average volume of the 3-year forecast period is surpassed only by 2007, 2015, and 2016 levels and remains well above the long-term average.

- Similarly, issuance of commercial mortgage-backed securities (CMBS), a source of financing for commercial real estate which had grown consistently since ’09 to $101 billion in 2015, declined in ‘16 to $76 billion. Issuance is forecasted to remain essentially level in ‘17 and moderately increase to $80 billion in ’18 and $85 billion in ‘19.

- Commercial real estate prices are projected to grow at relatively subdued and slowing rates in the next three years, at 5.0% in ‘17, 3.5% in ‘18 and 3.0% in ‘19, all below the long-term average growth rate of 5.7%.

- Institutional real estate assets are expected to provide total returns of 7.0% in ‘17, moderating to 6.0% in ‘18 and staying at 6.0% in ‘19. By property type, 2017 returns are expected to range from 9.8% for industrial to 6.0% for both office and apartments. In ‘19, returns are expected to range from 7.9% for industrial to 5.5% for apartments.

- Availability and vacancy rates for 3 sectors (industrial, office, and retail) are expected to continue to improve in ’17, but remain essentially flat in ‘18 and ‘19. The exception is apartments, whose vacancy rate slightly increased in ‘16 from near historic lows in ‘15, and is expected to tick up once more in ’17 to 5.2%, but remain below the long-term average. The hotel sector’s occupancy rate is forecasted to remain flat in ’17 and decline slightly in ‘18 and ’19.

- Commercial property rent is expected to continue to grow in the next three years in all sectors, although at more subdued rates than in recent years. In 2017, rent increases in the four major property types will range from 4.6% for industrial to 2.0% for apartments. Rent increases in 2019 will range from 3.0% for industrial to 2.0% for retail, office, and apartments . Hotel RevPAR is expected to increase by 2.5% in 2017 and 2.4% in 2019.

- Single-family housing starts are projected to increase from 781,500 units in 2016 to 920,000 units in 2019, still slightly below the 20-year annual average.

# Economy

- The economists/analysts expect continued economic expansion over the next 3 years, though they expect employment growth to slow and the unemployment rate to plateau as the economy approaches full employment.

- GDP growth was 1.6% in 2016, down from the 2.6% growth in 2015. Growth rates are forecasted to increase to 2.3% in 2017 and 2.6% in 2018 and be slightly lower at 2.0% in 2019.

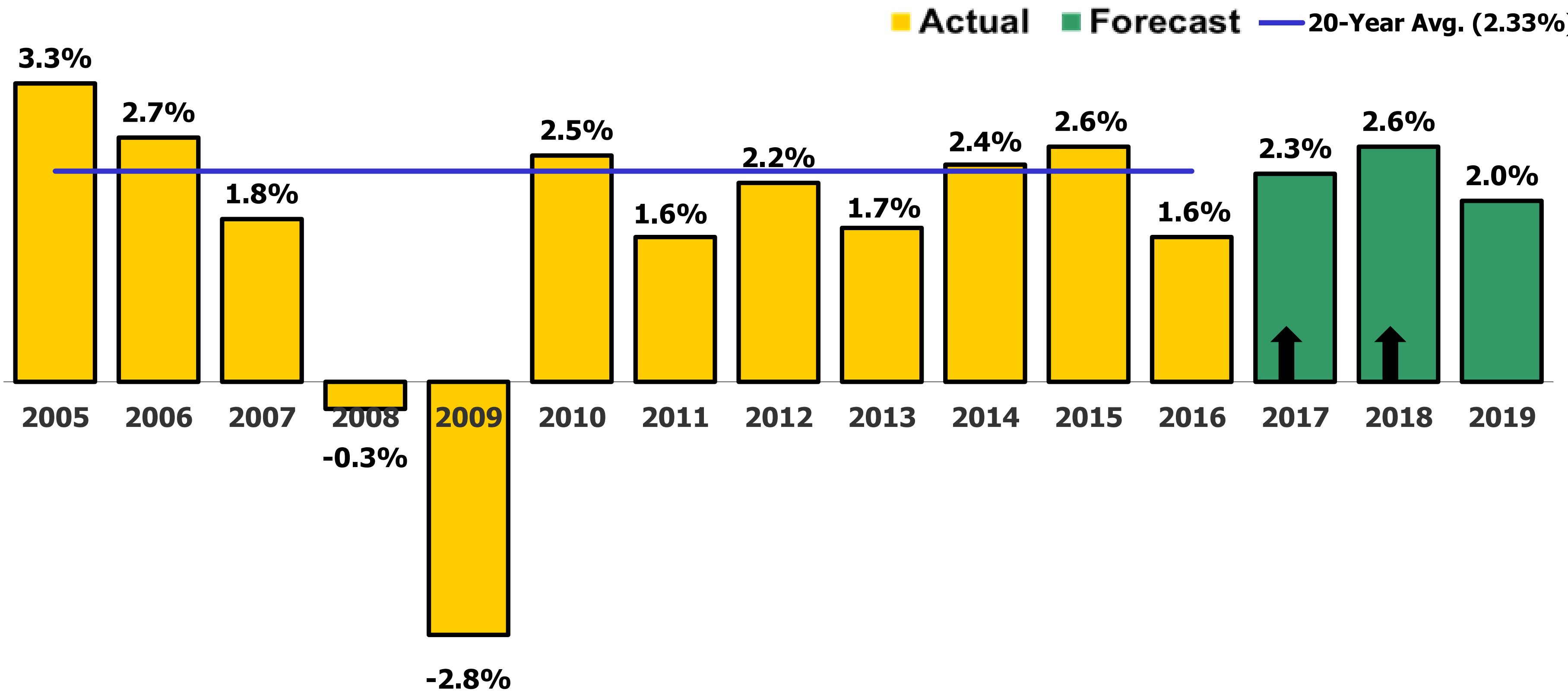
- Employment growth is expected to continue in 2017 at 2.20 million jobs, similar to the 2.24 million jobs added in 2016. Employment growth is expected to moderate to 1.90 million jobs in 2018 and 1.55 million jobs in 2019.

- The unemployment rate is expected to continue its seven-year decline, reaching 4.6% by the end of 2017 and 4.5% in 2018, before ticking back up to 4.6% by the end of 2019.

- Compared to forecasts of 6 months ago, the forecasts for GDP, unemployment rate, and employment growth are all more optimistic for both ‘17 and ‘18.

# Real GDP Growth

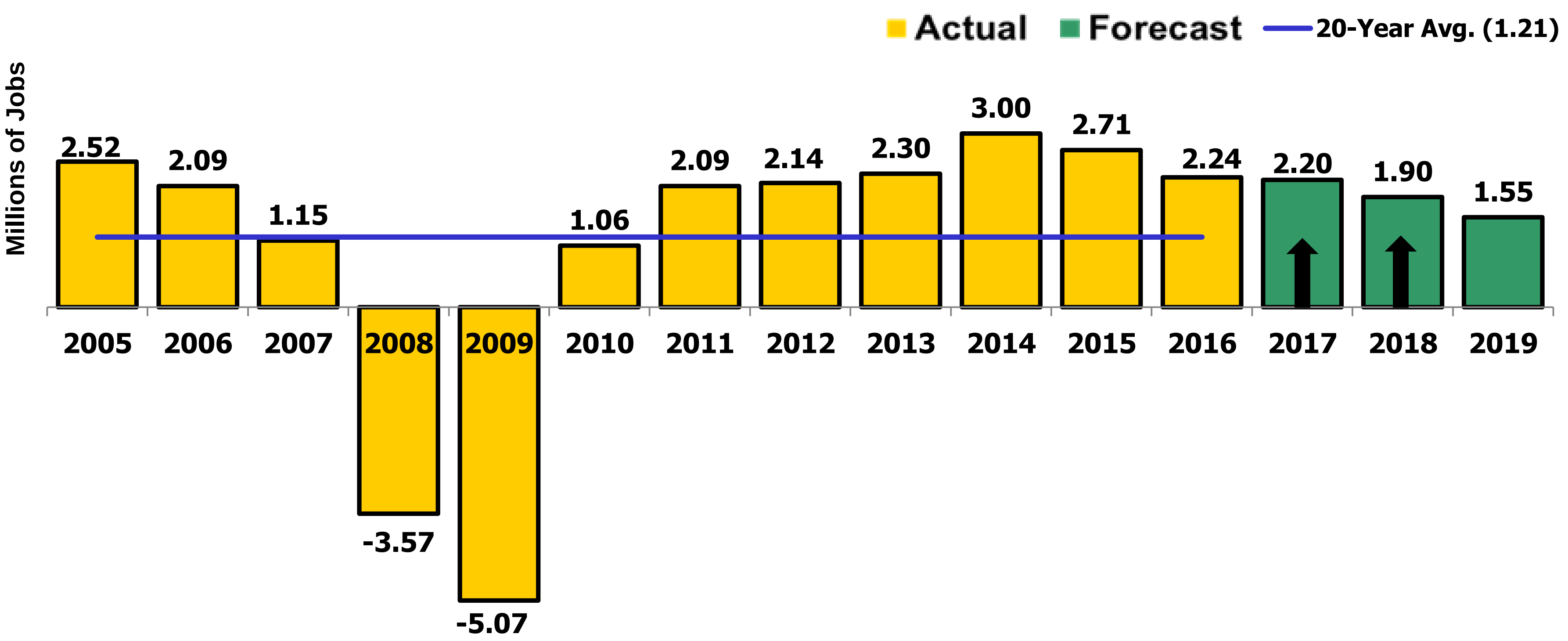





**Sources: 1997-2016, Bureau of Economic Analysis; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 2.1% and 2.0%, respectively, for 2017 and 2018.

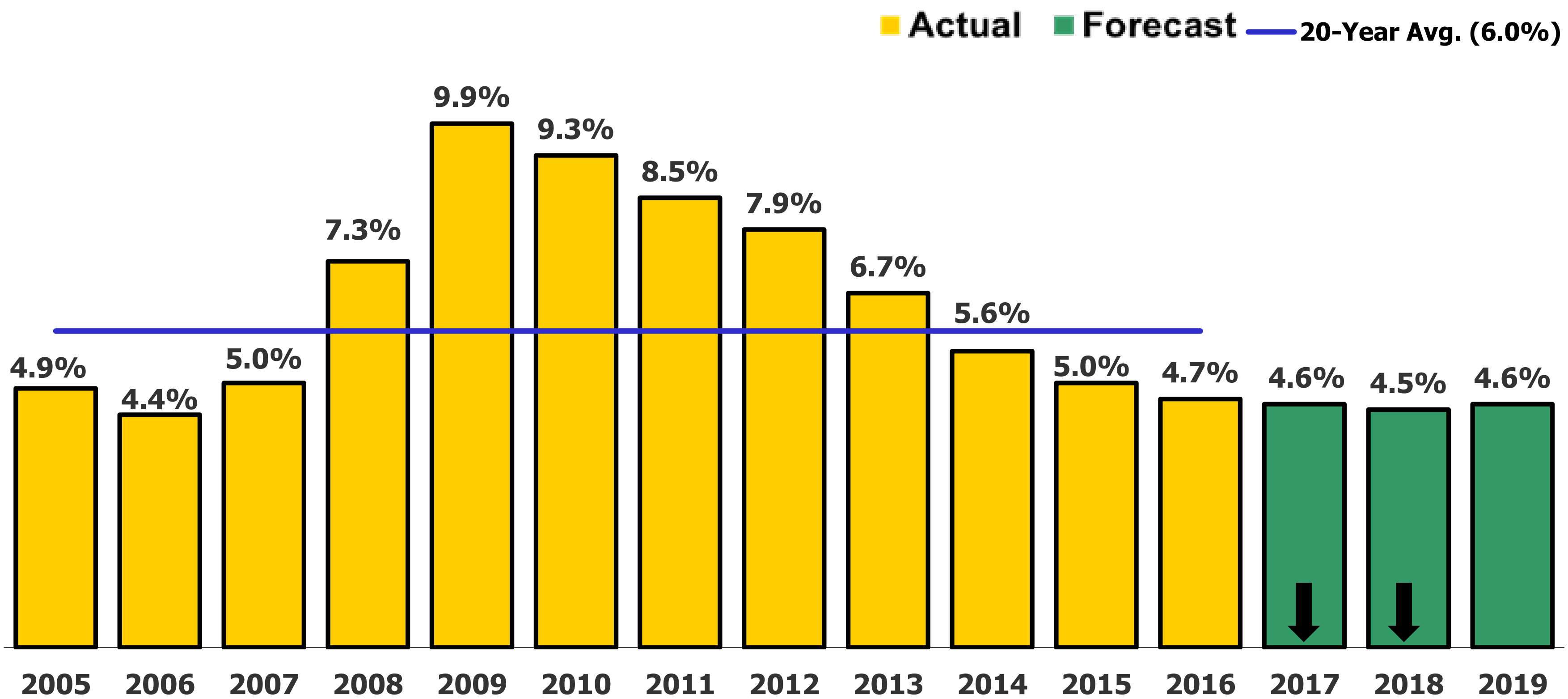
# Employment Growth




**Sources: 1997-2016, Bureau of Labor Statistics; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 2.00 and 1.80, respectively, for 2017 and 2018.

# Unemployment Rate




**Sources: 1997-2016, (seasonally adjusted, as of December), Bureau of Labor Statistics; 2017-2019 (YE), ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 4.7% and 4.6%, respectively, for 2017 and 2018.

# Inflation, Interest Rates, and Cap Rates



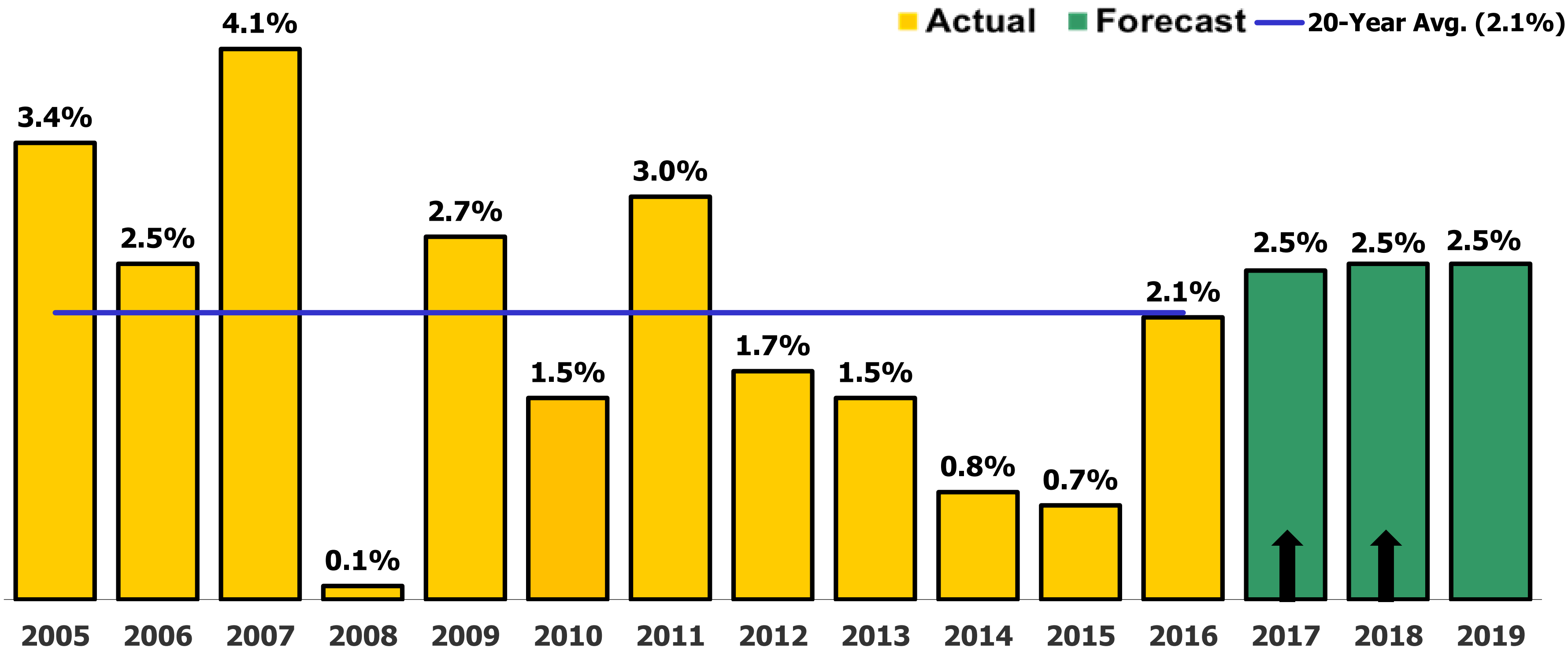
- The CPI inflation rate reversed a decline of 4 consecutive years in 2016, increasing to 2.1%. CPI is projected to rise to 2.5% in ‘17 and plateau at that rate in both ‘18 and ‘19. This rate is above the 20-year average of 2.1%.

- Ten-year treasury rates reached 2.5% by the end of 2016, and are projected to rise to 2.8% by year-end 2017. They are then projected to rise to 3.2% in 2018 and stay at that level in 2019. These rates remain below the 20-year average of 3.78%.

- Capitalization rates for institutional-quality investments (NCREIF cap rates) in 2016 were 5.1%, flat from 2015. They are expected to stay at 5.1% in 2017, before inching up to 5.3% in 2018 and 5.5% in 2019.

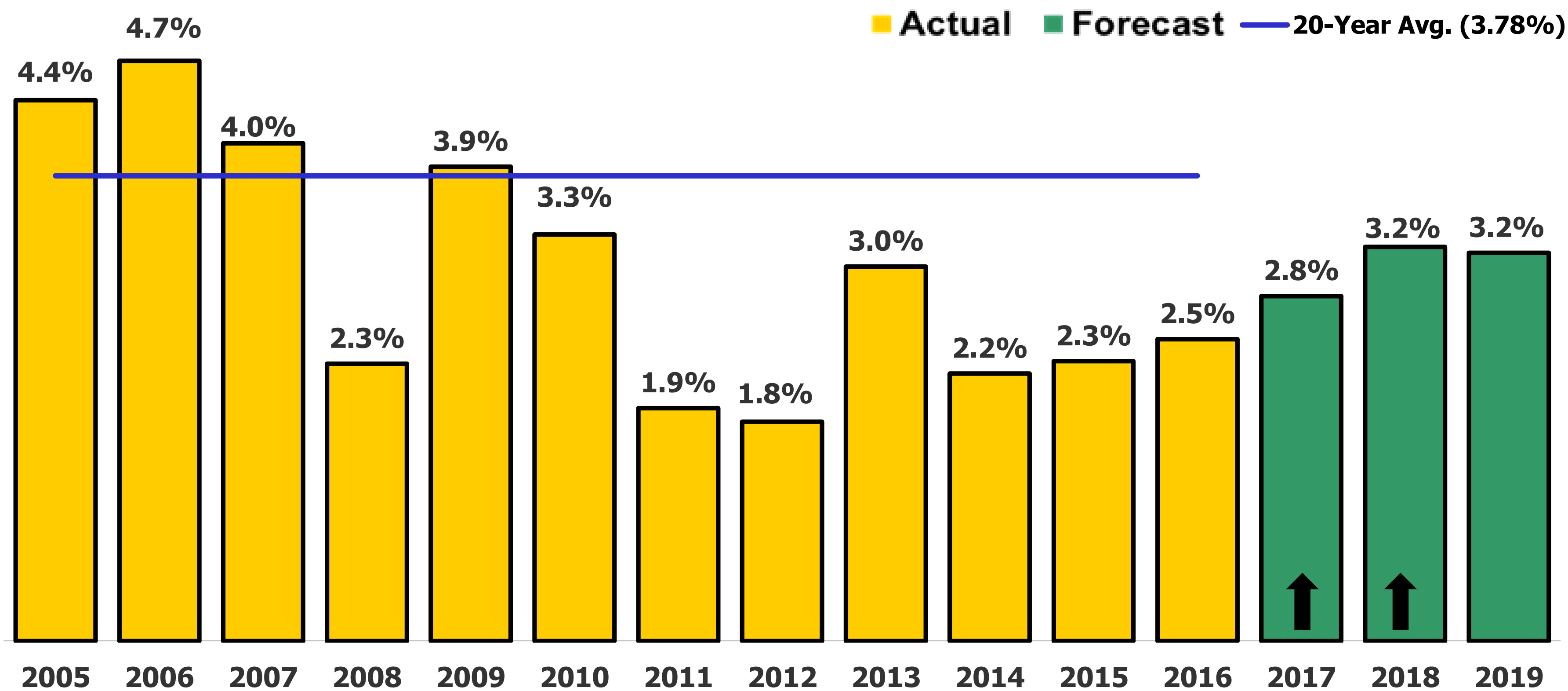
- Compared to 6 months ago, forecasts for CPI and 10-year treasury rates are higher for both ‘17 and ‘18, while cap rate forecasts are lower.

# Consumer Price Index Inflation Rate



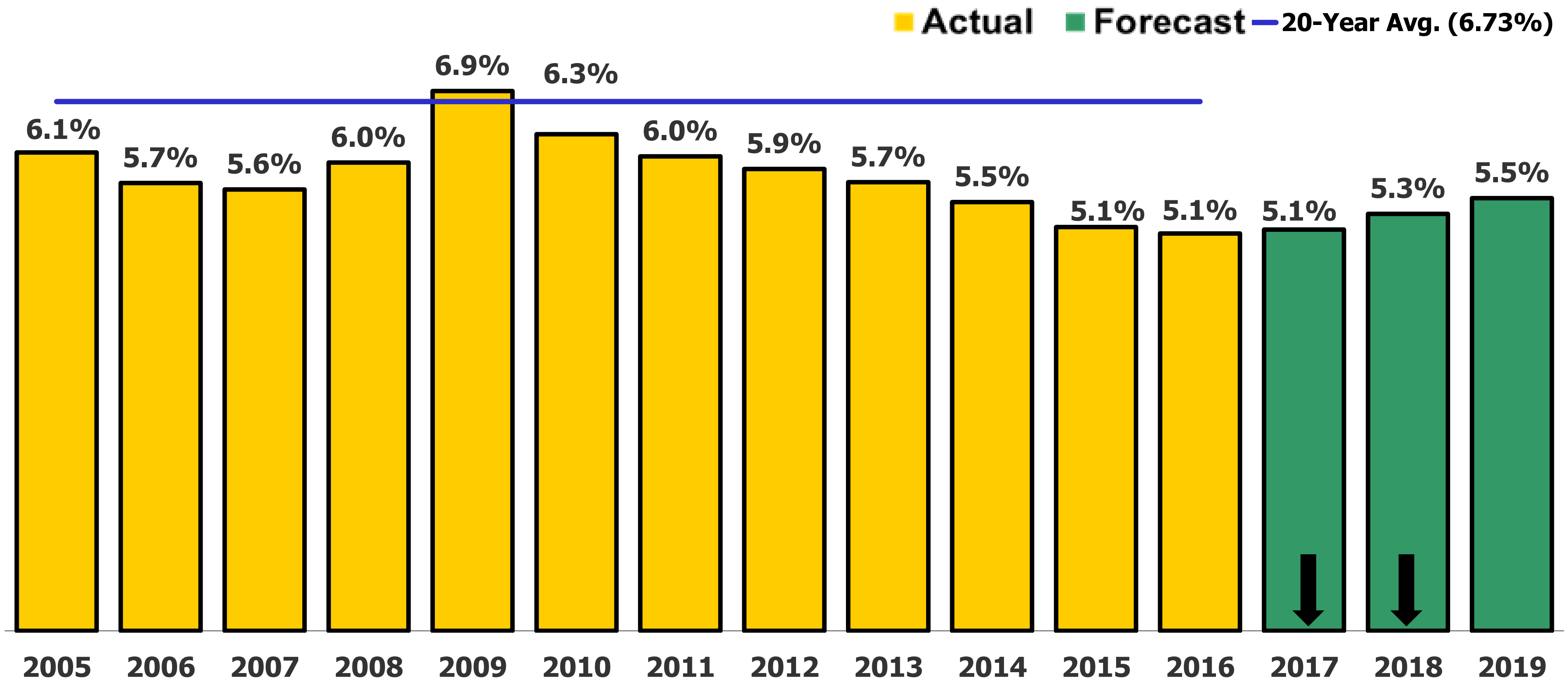

**Sources: 1997-2016, (12-month change, as of December), Bureau of Labor Statistics; 2017-2019 (YE), ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 1.9% and 2.1%, respectively, for 2017 and 2018.

# Ten-Year Treasury Rate




**Sources: 1997-2016 (YE), U.S. Federal Reserve; 2017-2019 (YE), ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 2.2% and 2.5% respectively, for 2017 and 2018.

# NCREIF Capitalization Rate




**Sources: 1997-2016, (Q4), National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019 (YE), ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 5.3% and 5.5%, respectively, for 2017 and 2018.

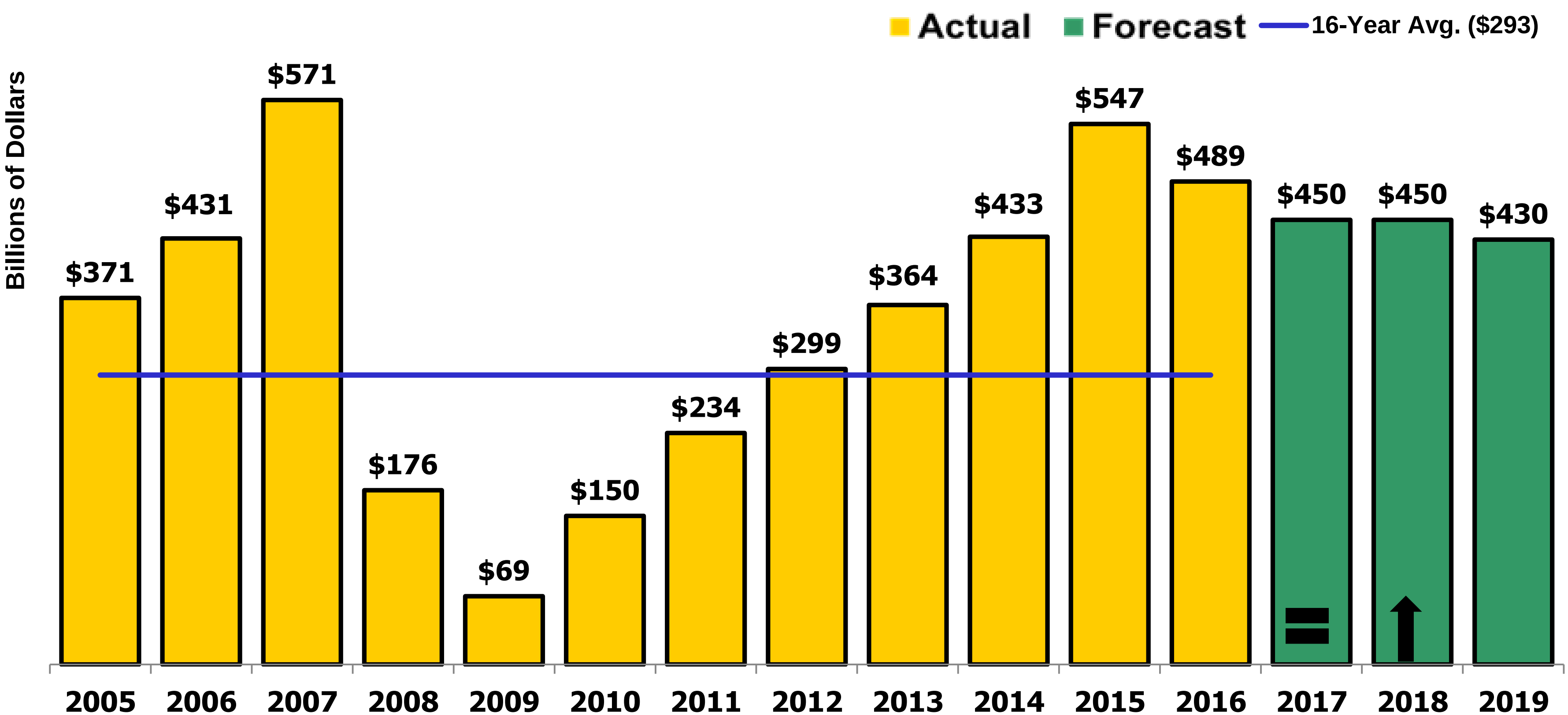
# Real Estate Capital Markets

- Commercial real estate transaction volume had consistently increased for 6 years through 2015 to a post-recession peak of $547 billion, but decreased in 2016 to $489 billion. Volume is expected to further decline in 2017 to $450 billion, remain at that level in 2018, and decline in '19 to $430 billion. Despite these projected declines, volumes remain substantially above the 16-year average of $293 billion.

- Issuance of commercial mortgage-backed securities (CMBS), a key source of financing for commercial real estate that had rebounded consistently since '09, declined in 2016 to $76 billion from 2015's $101 billion. CMBS issuance is expected to slightly decrease to $74 billion in 2017, and then increase to $80 billion and $85 billion in '18 and '19, respectively.

- Compared to the forecasts of 6 months ago, the current forecasts for transactions is the same in '17 and higher in '18, while CMBS issuance is lower for both years.

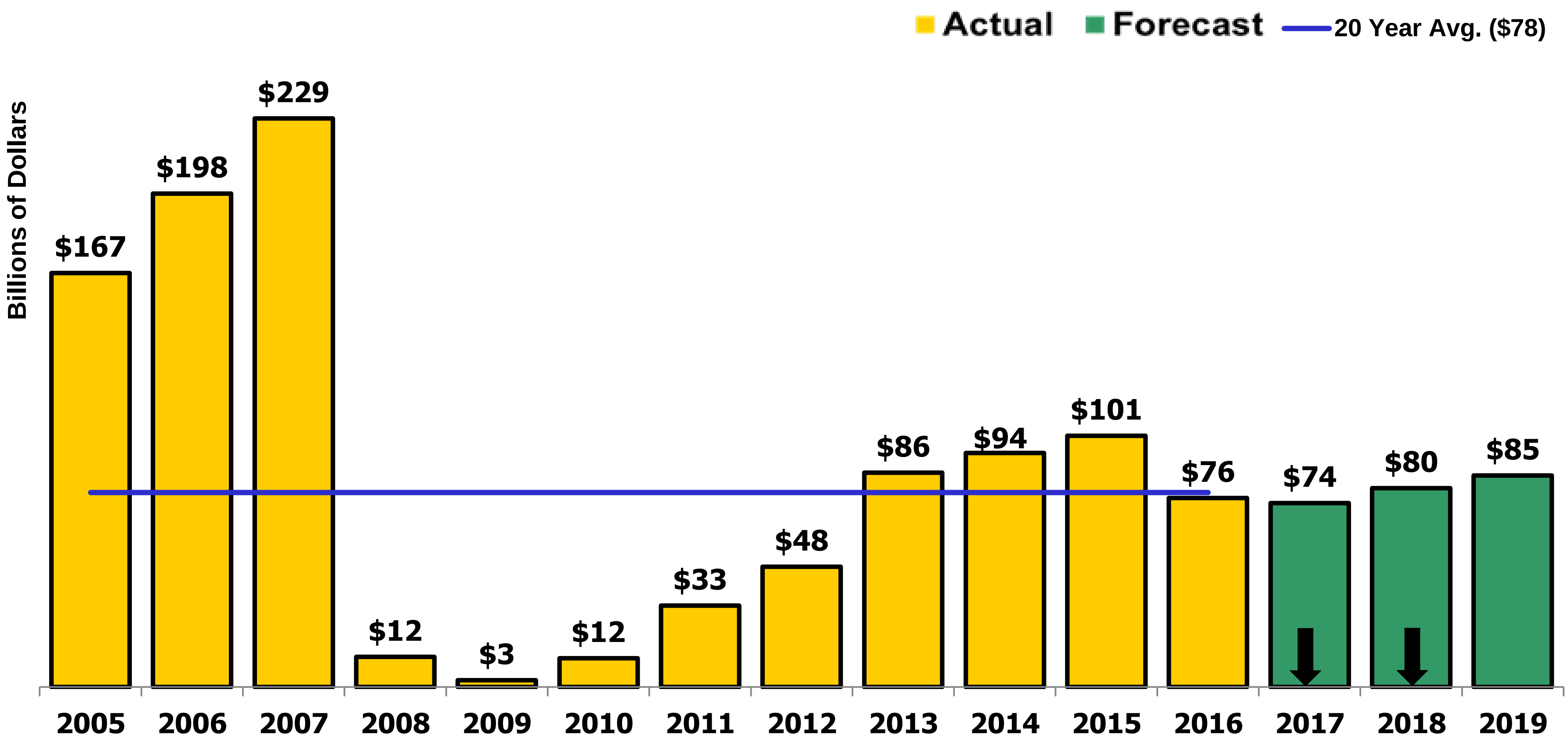
# Commercial Real Estate Transaction Volume




**Sources: 2001-2016, Real Capital Analytics; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected $450 and $428 respectively, for 2017 and 2018.

# Commercial Mortgage-Backed Securities (CMBS) Issuance




**Sources: 1997-2016, Commercial Mortgage Alert; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected $85 billion and $90 billion, respectively, for 2017 and 2018.

# Real Estate Returns and Prices



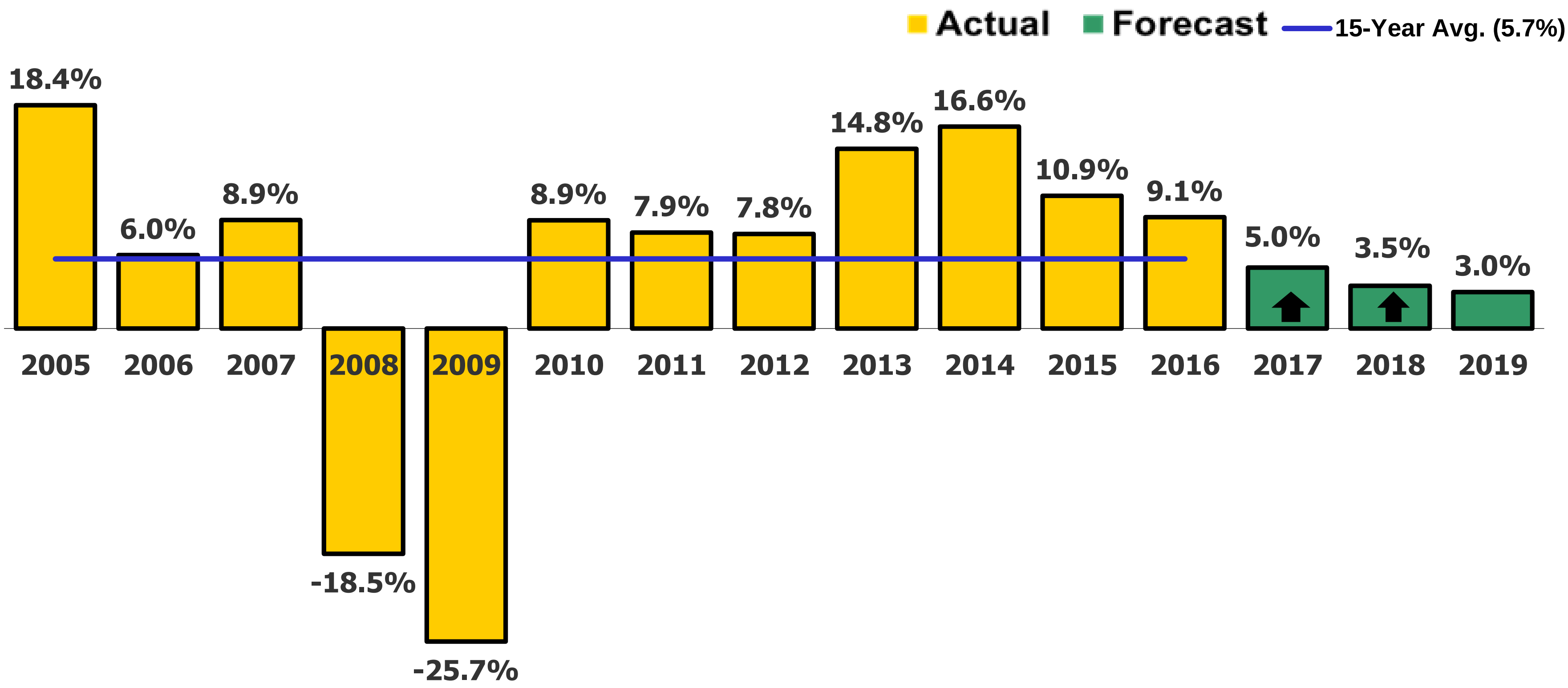
- The Moody's/RCA Commercial Property Price Index (CPPI) has had some recent high growth years. It is expected to continue to grow at relatively subdued and slowing rates in the next three years, at 5.0% in 2017, 3.5% in '18 and 3.0% in '19, all below the long-term average growth rate of 5.7%.

- Equity REIT total returns, according to NAREIT, experienced over 30% growth in 2014 but returns declined to 3.2% in 2015 before increasing to 8.5% in 2016. Future returns are expected to moderate to 7.0% in '17, remain at 7.0% in '18 and bump up to 7.3% in '19. Returns in all three forecasted years are below the long-term average returns.

- Total returns for institutional-quality direct real estate investments, as measured by the NCREIF Property Index, dipped to 8.0% in 2016, below the long-term average for the first time since 2009. Returns for the next three years are forecasted to further moderate to 7.0% in 2017, 6.0% in '18 and 6.0% in '19.

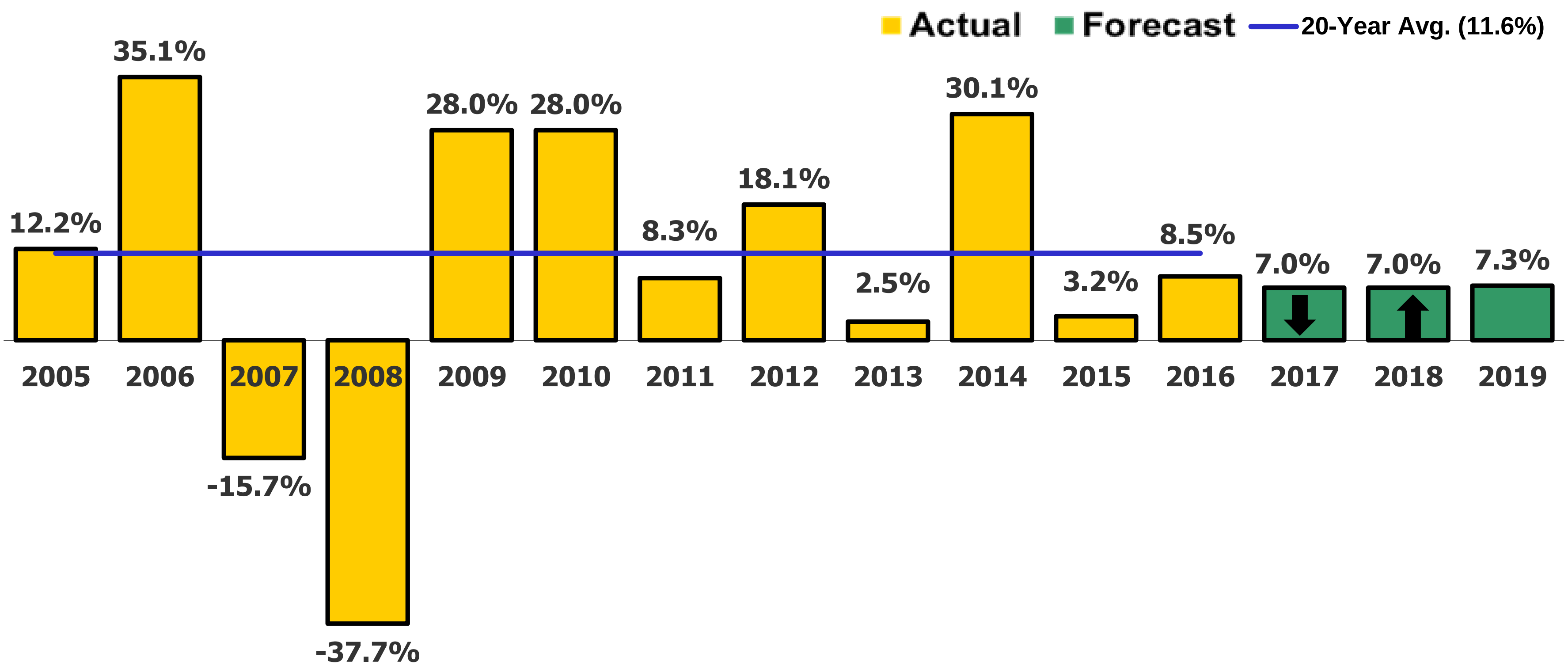
- Compared to the forecasts of 6 months ago, the forecasts for the CPPI are more optimistic while, on average, the REIT returns forecasts are about the same and NCREIF total returns forecasts remained the same for both '17 and '18.

# Moody's/RCA Commercial Property Price Index (annual change)



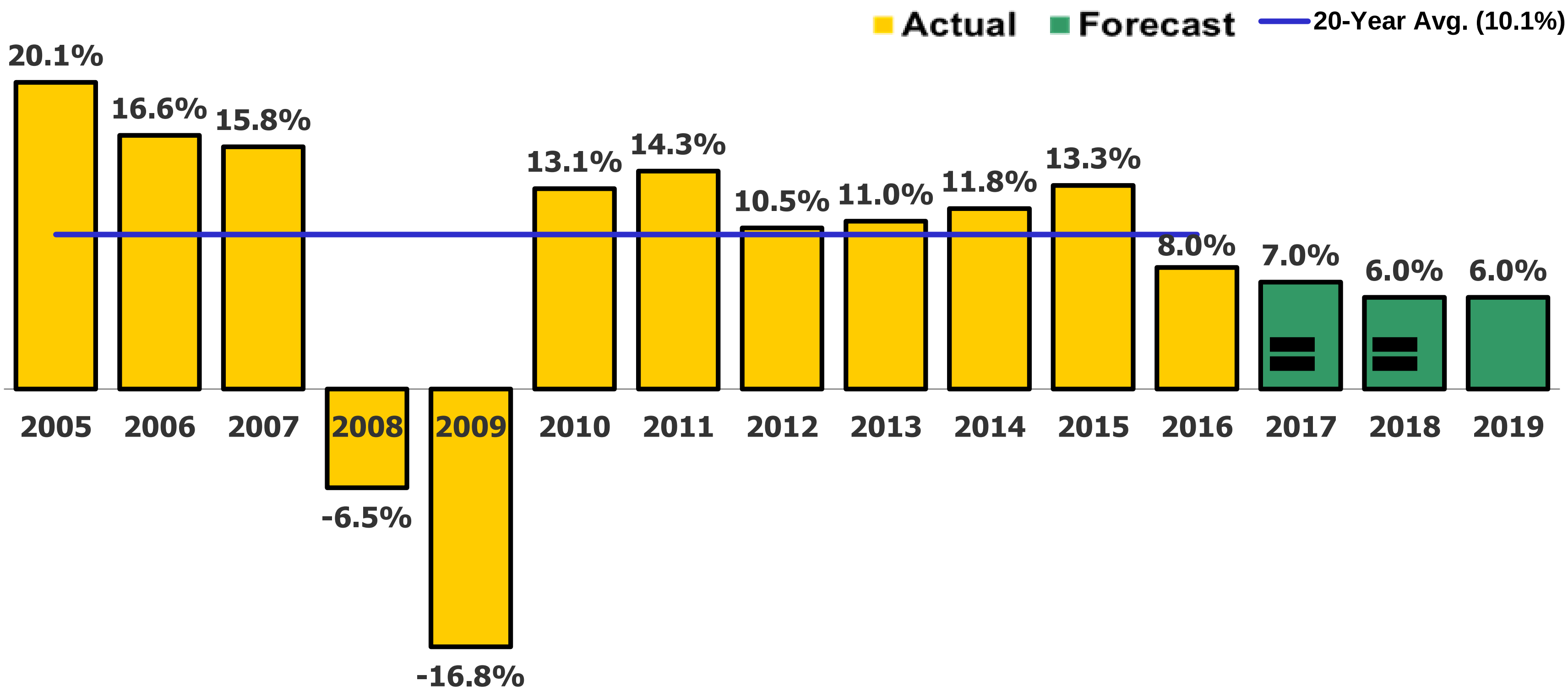

**Sources: 2001-2016, Moody's and Real Capital Analytics; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 4.0% and 2.5%, respectively, for 2017 and 2018.

# Equity REIT Total Annual Returns




**Sources: 1997-2016, National Association of Real Estate Investment Trusts; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 8.0% and 6.0%, respectively, for 2017 and 2018.

# NCREIF Property Index (Total Annual Returns)




**Sources: 1997-2016 National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 7.0% and 6.0% respectively, for 2017 and 2018.

# NCREIF Returns by Property Type

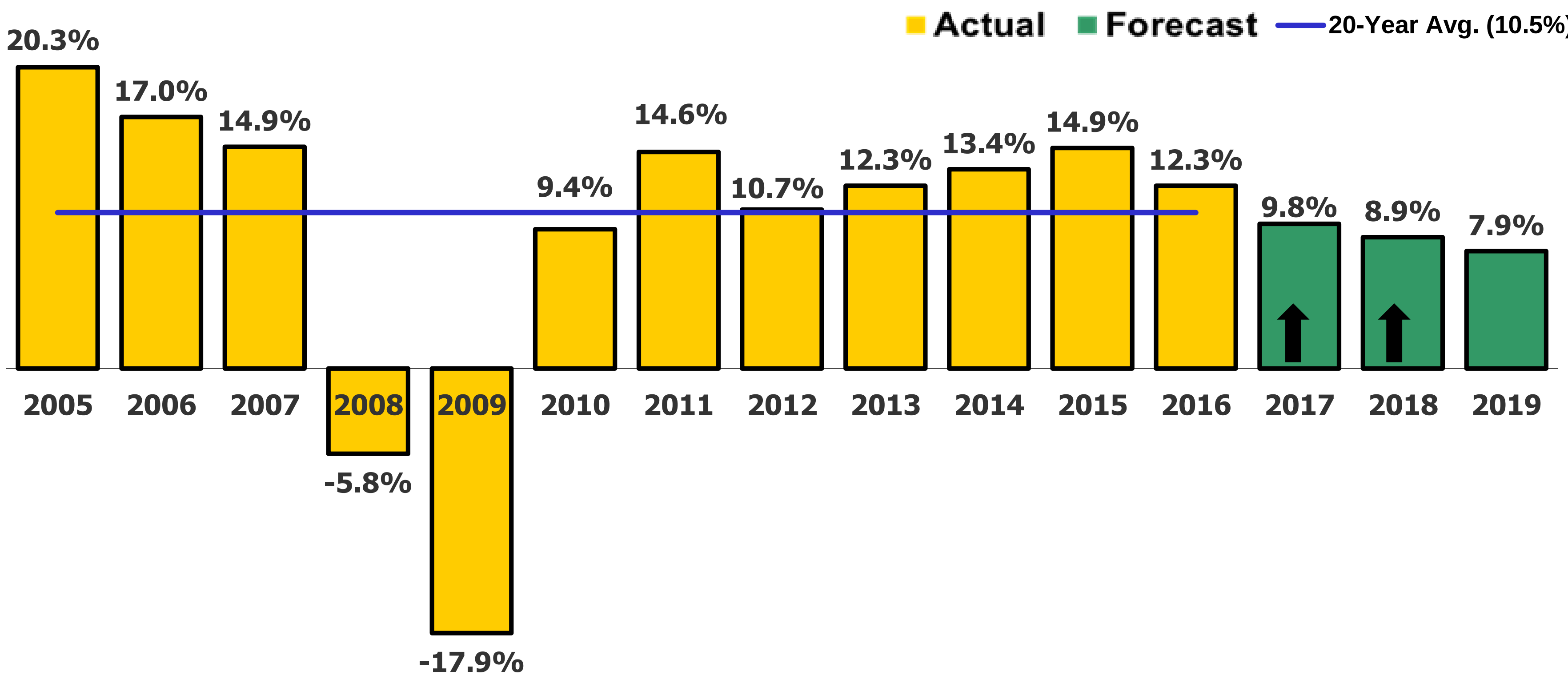


- NCREIF total returns in 2017 for all sectors are expected to moderate relative to each sector's performance over the last few years. By property type, returns for the industrial sector are forecasted at 9.8%, followed by retail returns of 7.0%. Apartment and office returns are both forecasted at 6.0%.

- By 2019, all sector returns are expected to further moderate, with industrial returns forecast at 7.9% and retail, office and apartment returns at 6.0%, 5.6% and 5.5%, respectively.

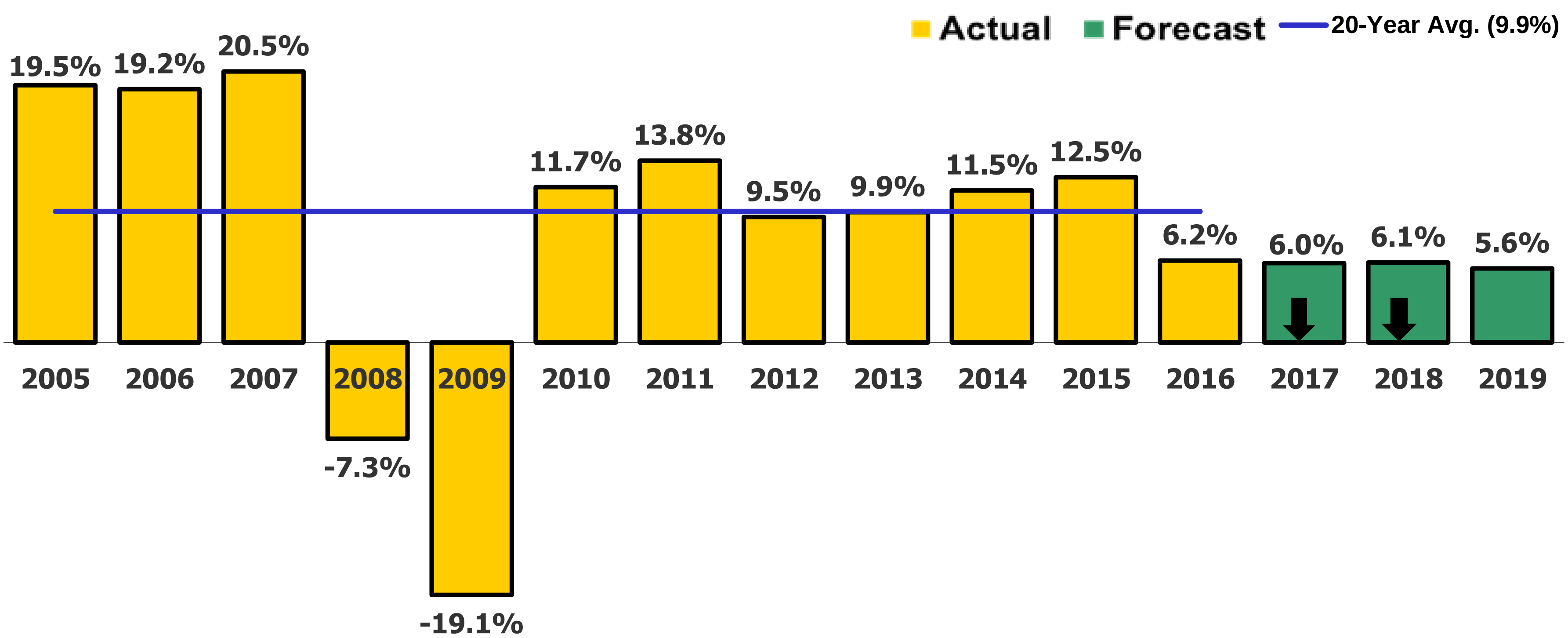
- Compared to 6 months ago, forecasts for '17 are more optimistic for the industrial sector and less optimistic for the apartment, retail and office sectors. Forecasts for '18 are more optimistic for the industrial, retail and apartment sectors and less optimistic for the office sector.

# NCREIF Industrial Total Annual Returns



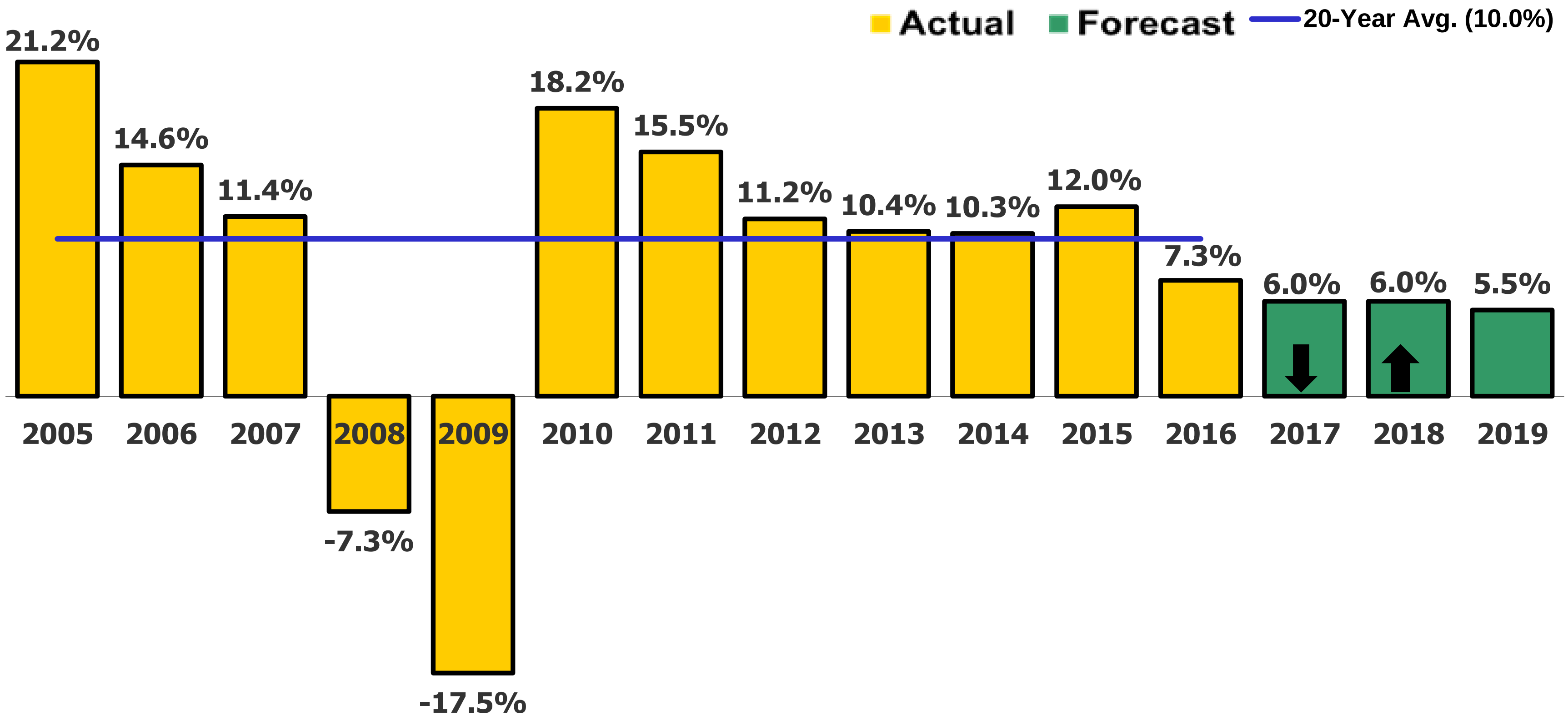

**Sources: 1997-2016, National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 8.5% and 7.0% respectively, for 2017 and 2018.

# NCREIF Office Total Annual Returns



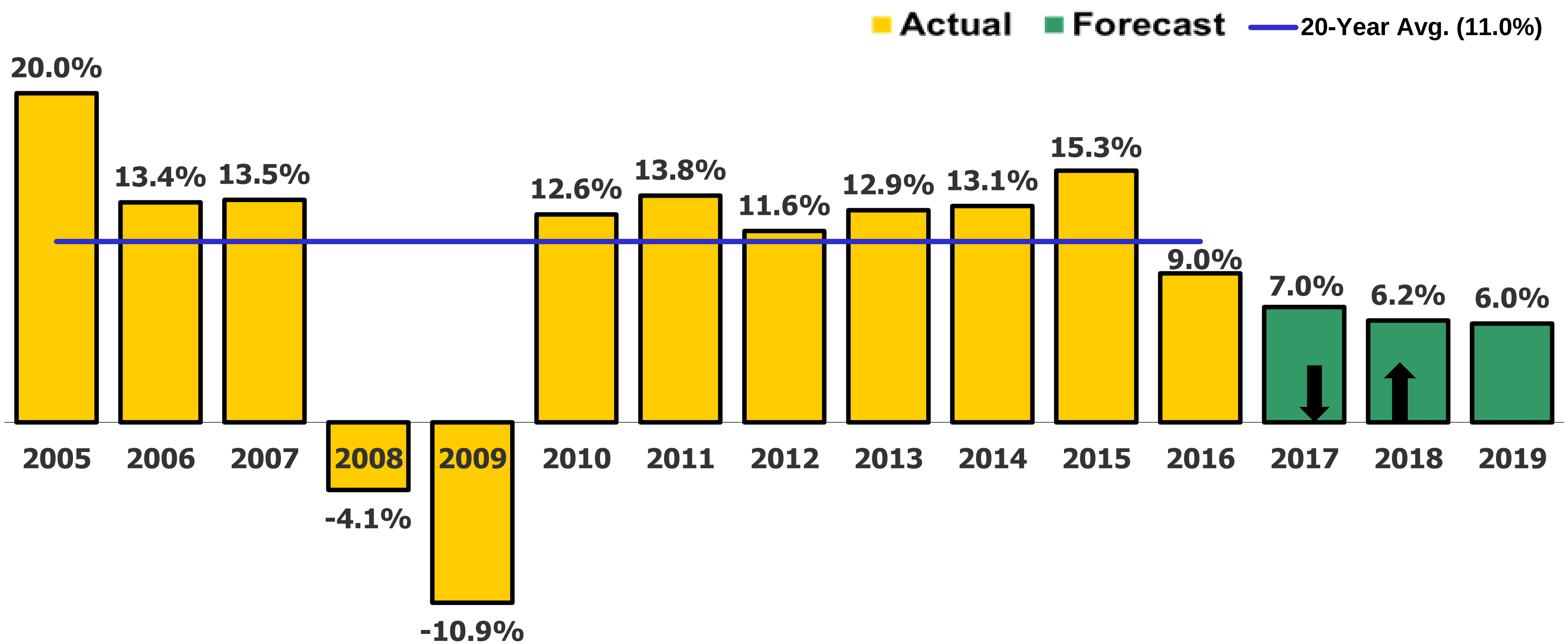

**Sources: 1997-2016, National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 7.5% and 6.5% respectively, for 2017 and 2018.

# NCREIF Apartment Total Annual Returns




**Sources: 1997-2016, National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 7.0% and 5.6%, respectively, for 2017 and 2018.

# NCREIF Retail Total Annual Returns




**Sources: 1997-2016, National Council of Real Estate Investment Fiduciaries (NCREIF); 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 8.0% and 6.0%, respectively, for 2017 and 2018.

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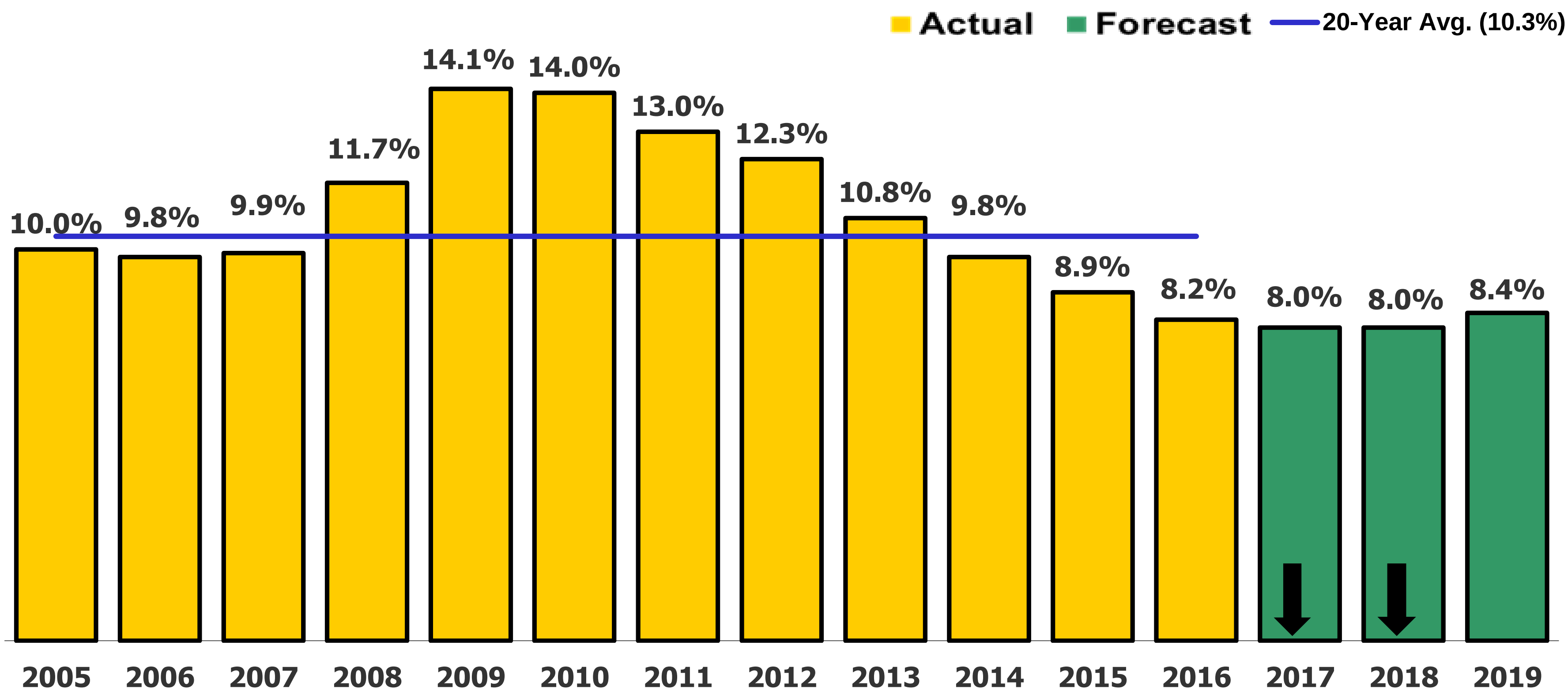
# Industrial/Warehouse Sector Fundamentals

- The availability rate for the industrial/warehouse sector declined to 8.2% at the end of 2016. Availability rates are expected to continue to further decline in 2017, with year-end vacancy rates at 8.0%, where it will remain in ‘18 at before slightly increasing to 8.4%. Rates in all three forecast years are projected to remain well below the 20-year average.

- Warehouse rental rates have shown positive growth for the past five years, with growth in the last four years substantially above the long-term average. Forecasts are for healthy but moderating rental rate growth with increases of 4.6% in 2017, 3.8% in 2018, and 3.0% in 2019, still remaining above the 20-year average growth rate.

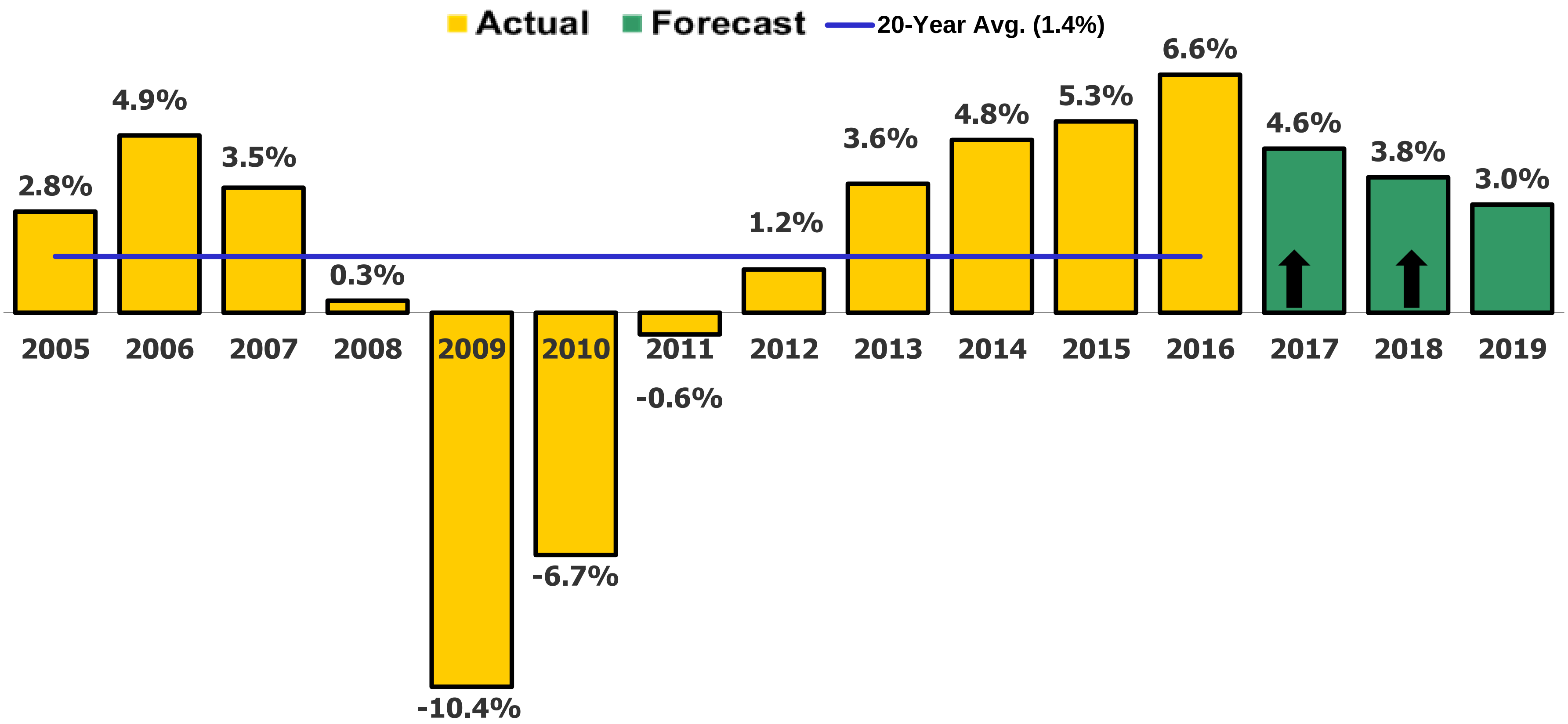
- The forecasts for industrial/warehouse availability rates in both 2017 and 2018 are more optimistic than the forecast from six months ago. Forecasts for rental growth rates are also more optimistic in ‘17 and ‘18.

# Industrial/Warehouse Availability Rates




**Sources: 1997-2016 (Q4), CBRE; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 8.6% and 8.7%, respectively, for 2017 and 2018.

# Industrial/Warehouse Rental Rate Change




**Sources: 1997-2016, CBRE; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 4.0% and 2.7%, respectively, for 2017 and 2018.

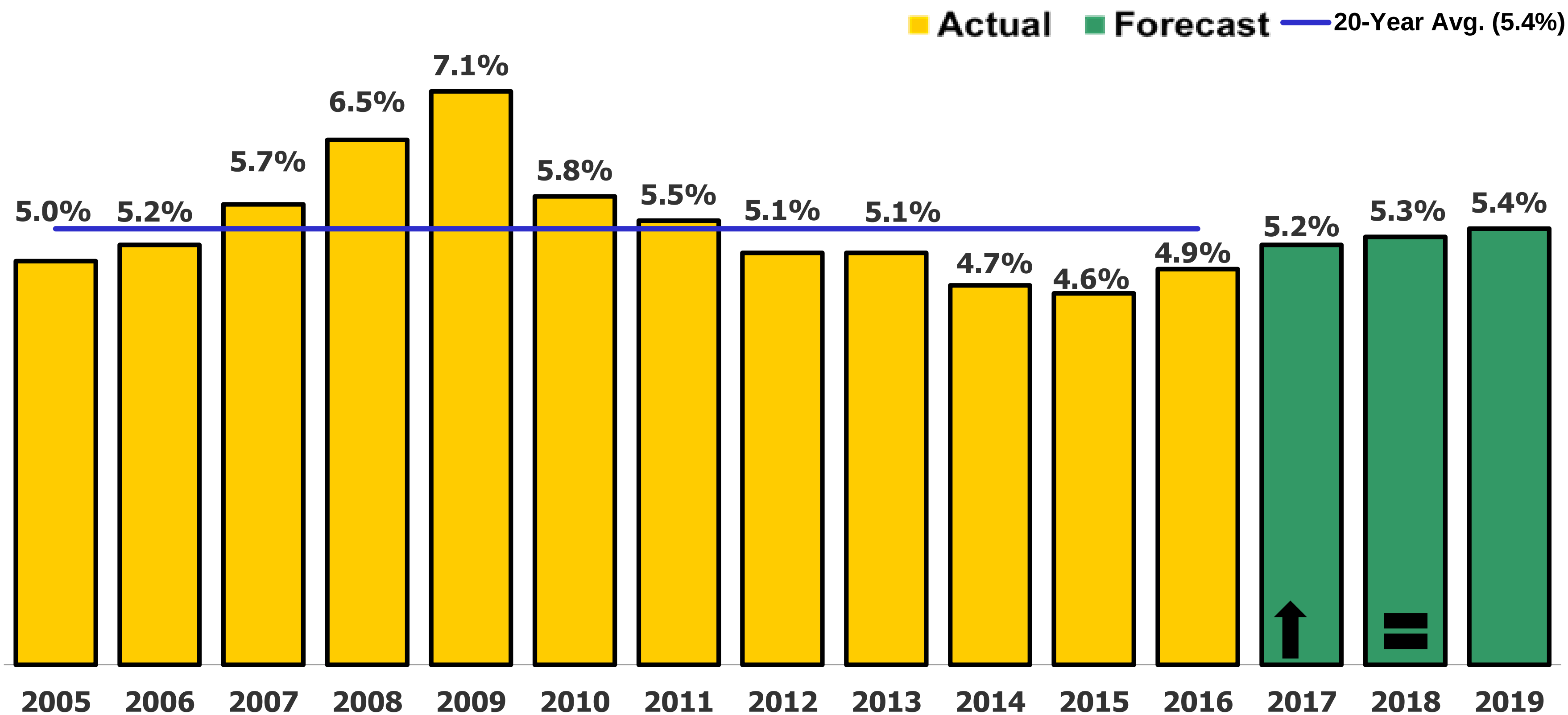
# Apartment Sector Fundamentals

- Even with continued strong construction activity, the apartment sector has performed very well the past several years. Vacancy rates decreased from 7.1% in 2009 to 4.6% in 2015, before a slight uptick to 4.9% in 2016, still remaining below the 20-year average. Vacancy rates are expected to continue upward the next 3 years, to 5.2% in 2017, 5.3% in 2018, reaching the 20-year average of 5.4% in 2019.

- Apartment rental rate growth slowed significantly in 2016, growing 0.2% after 6 straight years of growth over 3%. Rental rate growth is expected to increase to 2.0% in '17, and stay flat at 2.0% in both 2018 and 2019.

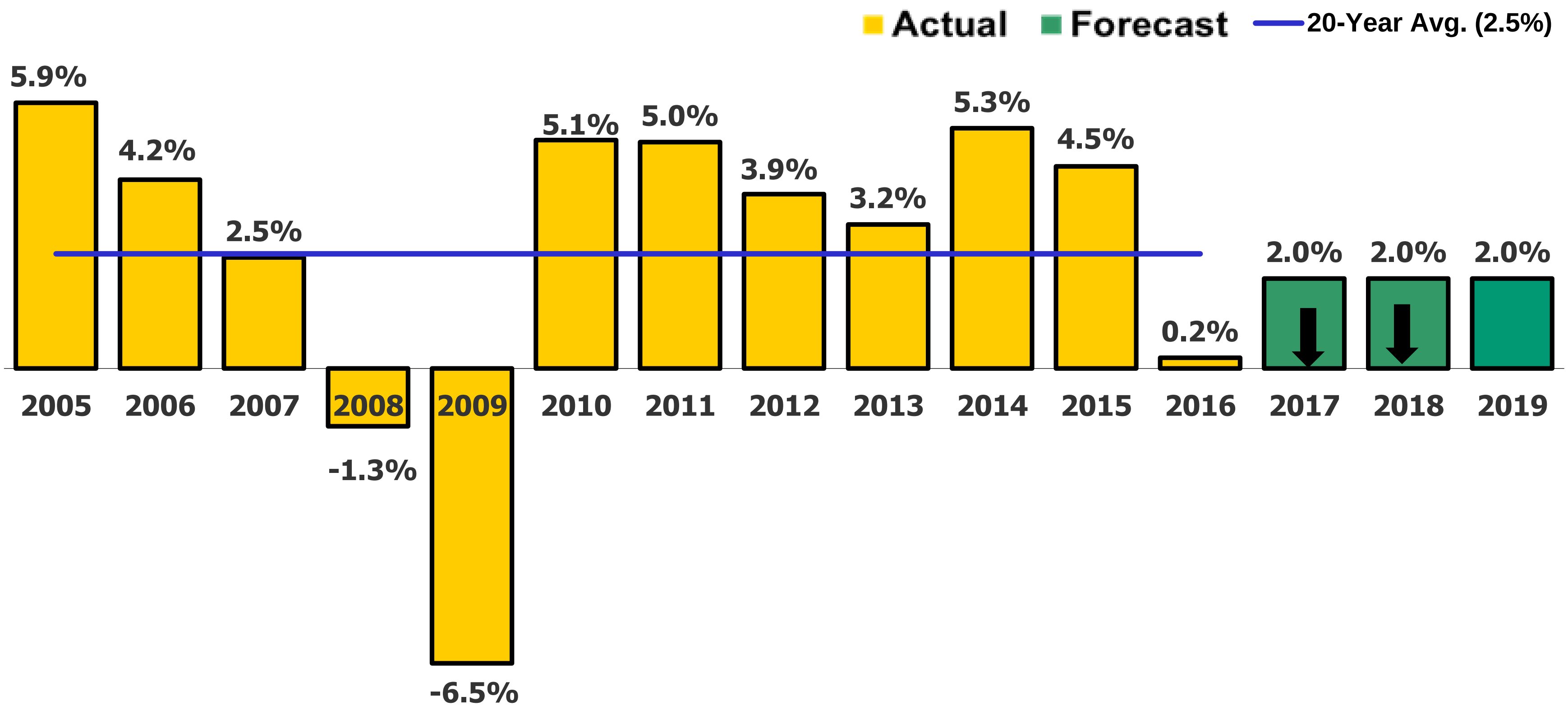
- Compared to 6 months ago, the forecasted vacancy rate for 2017 is slightly less optimistic, while the forecast for 2018 remains unchanged. The forecasted rental rate growth for both 2017 and 2018 is lower than previously forecasted.

# Apartment Vacancy Rates




**Sources: 1997-2016 (Q4), CBRE; 2017-2019 (Q4), ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 5.0%, and 5.3%, respectively, for 2017 and 2018.

# Apartment Rental Rate Change




**Sources: 1997-2016, CBRE; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 3.0% and 2.9% respectively, for 2017 and 2018.

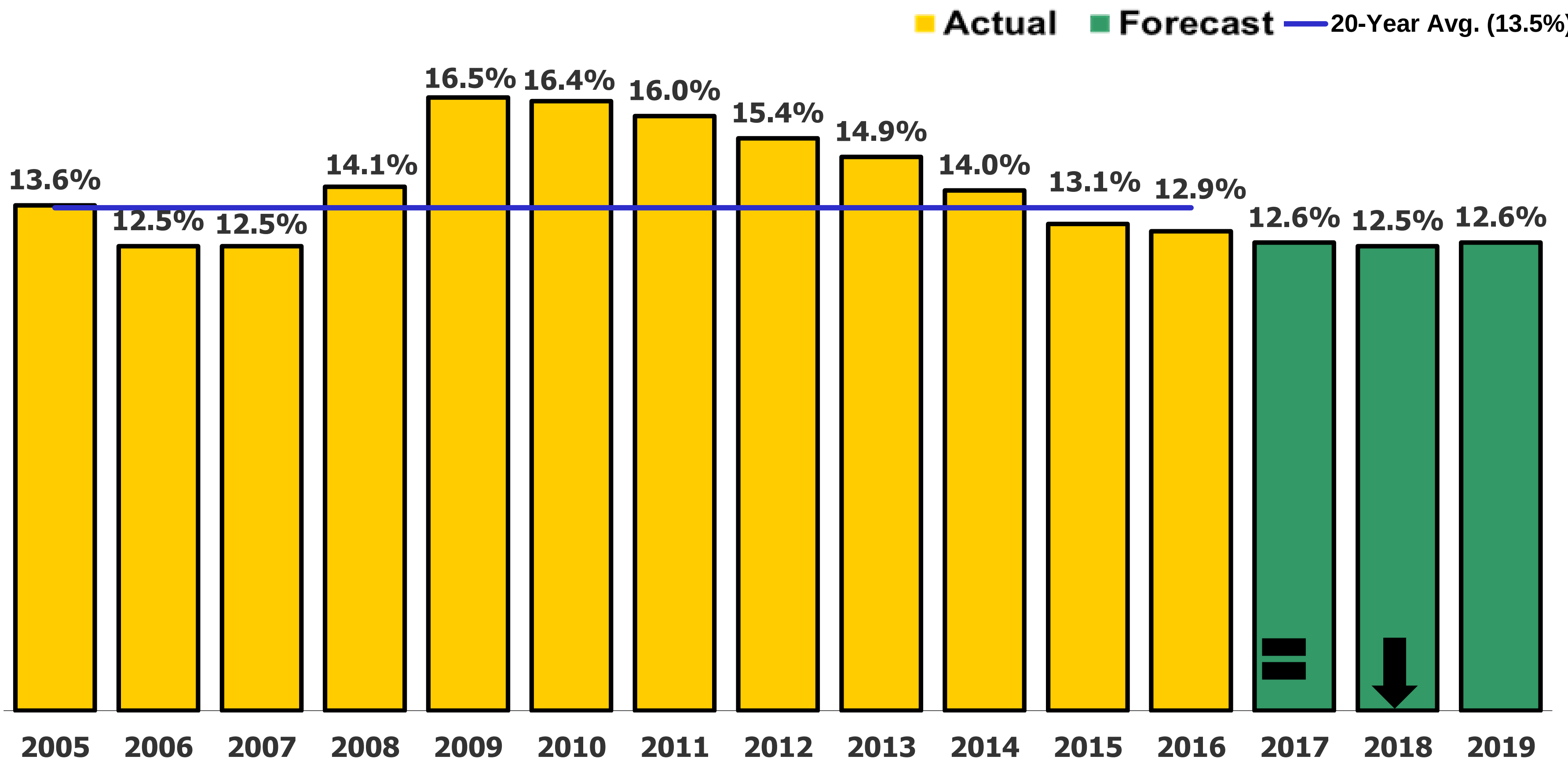
# Office Sector Fundamentals

- Office vacancy rates declined for the seventh straight year in 2016 to 12.9%, the lowest they have been since 2007. Rates are forecast to decline further to 12.6% in 2017 and then essentially plateau during the forecast period.

- Office rental rates increased 1.3% in 2016, a significant drop-off from the 4.0% increase in 2015. Rental rate growth is expected to recover to 2.5% in 2017, before moderating to 2.3% in ‘18 and falling below the long-term average to 2.0% in ‘19.

- Compared to 6 months ago, the forecasts for office vacancy rates in ’17 remained the same, but decreased slightly for ’18. The rental rate growth forecasts are less optimistic for ‘17, but slightly more optimistic for ‘18 than projected six months ago.

# Office Vacancy Rates

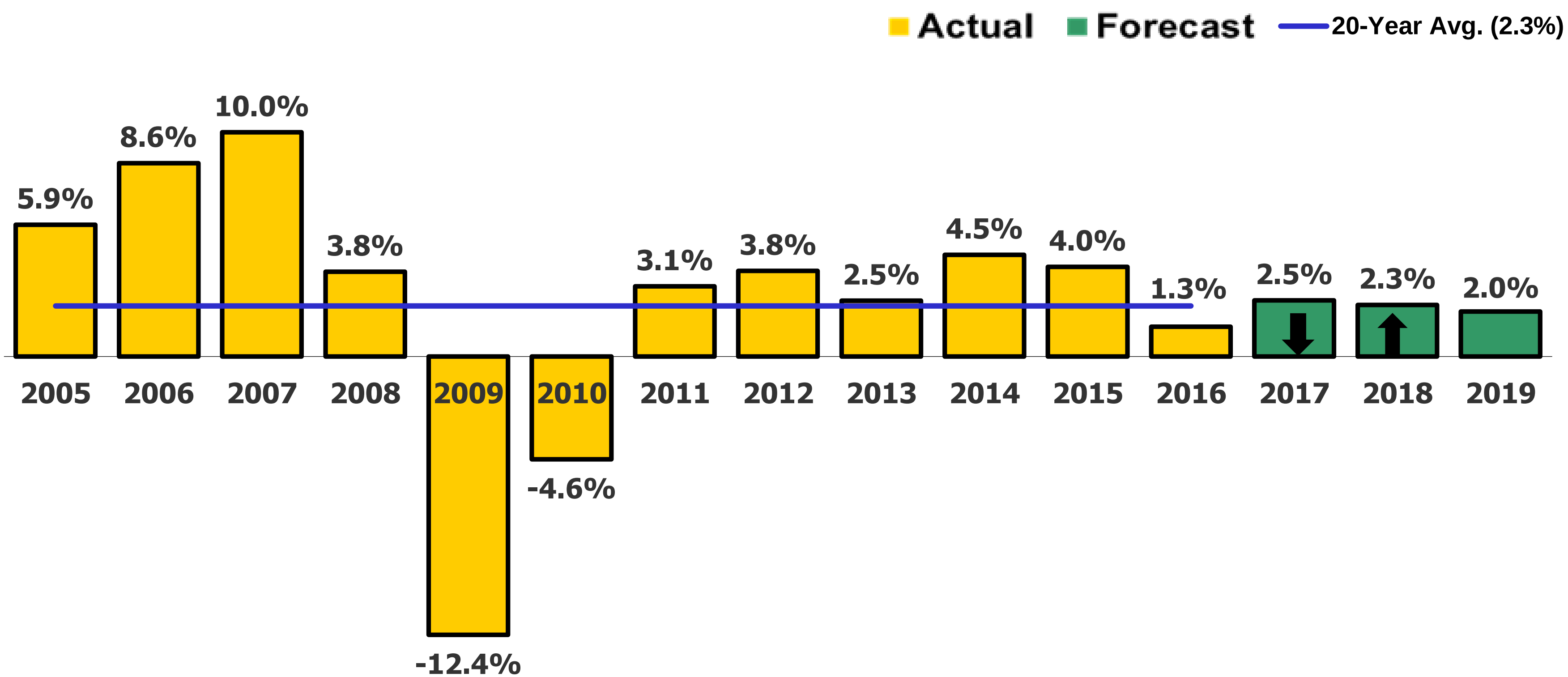



**Sources: 1997-2016 (Q4), CBRE; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 12.6% and 12.8%, respectively, for 2017 and 2018.

# Office Rental Rate Change






**Sources: 1997-2016, CBRE; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 2.9% and 2.2%, respectively, for 2017 and 2018.

# Retail Sector Fundamentals

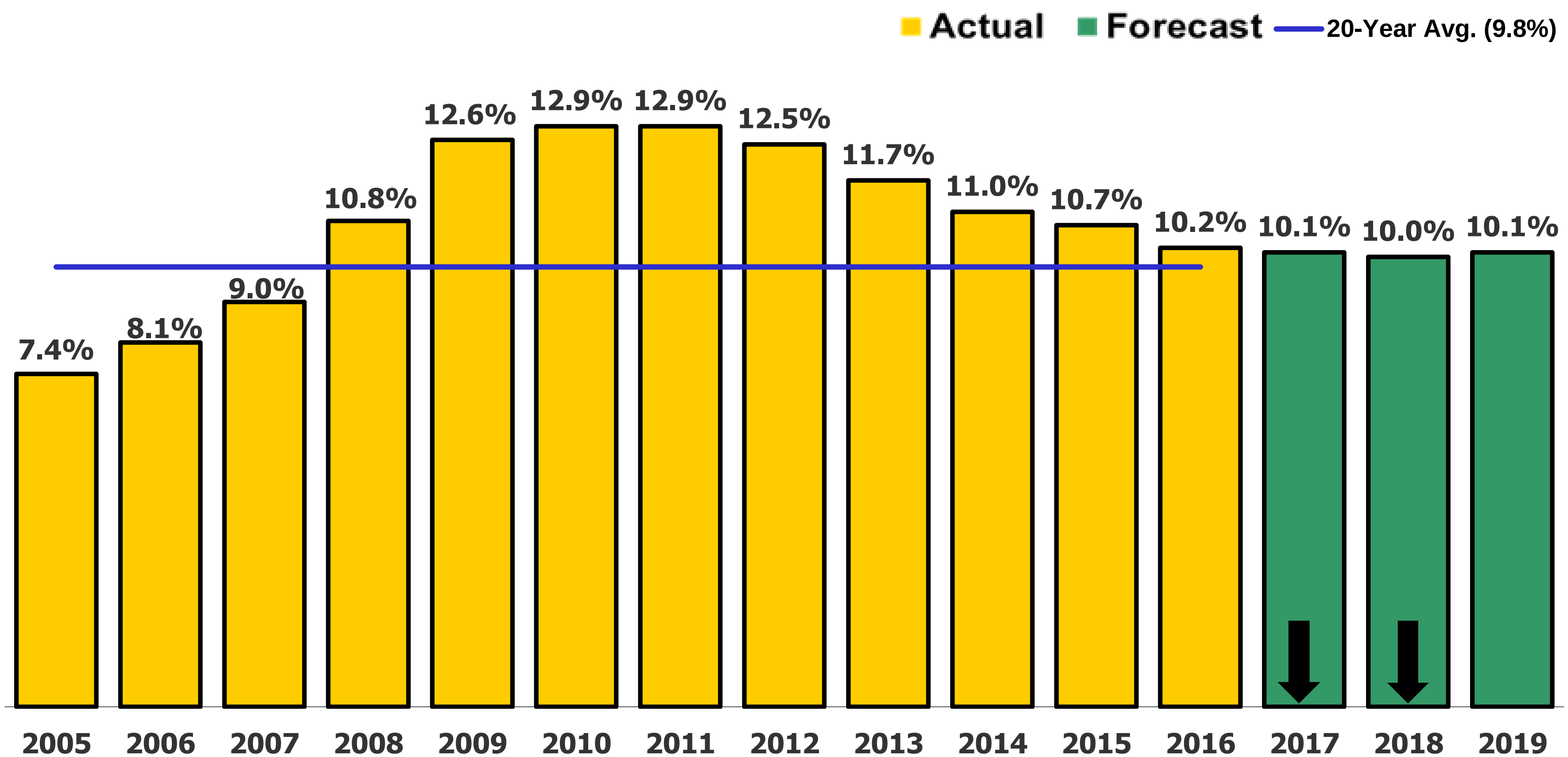


- Retail availability rates have been on a steady decline from a peak of 12.9% in 2011 to 10.2% in 2016. The forecast anticipates some continued improvement over the next two years, with year-end availability rates expected to decline to 10.1% by ‘17 and 10.0% by ‘18. Availability rates are forecast to tick up to 10.1% in ‘18. All these rates remain above the 20-year average.

- Retail rental rate growth was positive for the first time in seven years in 2014 and continued to be positive in 2015 and 2016, when it reached 2.7%. The forecast expects growth to moderate slightly in 2017 to 2.5%, and then further in 2018 to 2.0% and remain at 2.0% for 2019.

- Compared to 6 months ago, the forecasts of availability rates and rental rate growth are both more optimistic for both 2017 and 2018.

# Retail Availability Rates

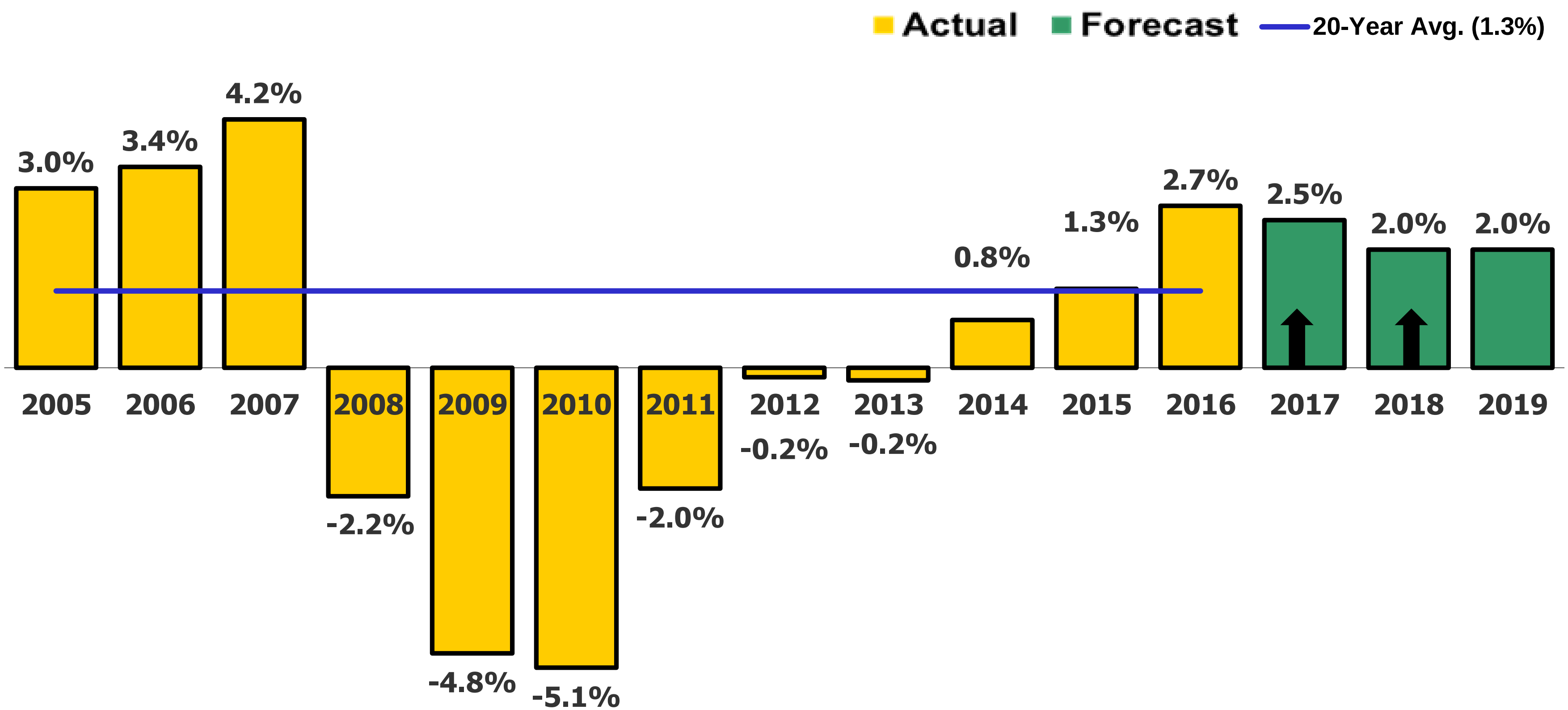



**Sources: 1997-2016 (Q4), CBRE; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 10.6% and 10.7% respectively, for 2017 and 2018.

# Retail Rental Rate Change






**Sources: 1997-2016, CBRE; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 1.6%, and 1.3%, respectively, for 2017 and 2018.

# Hotel Sector Fundamentals

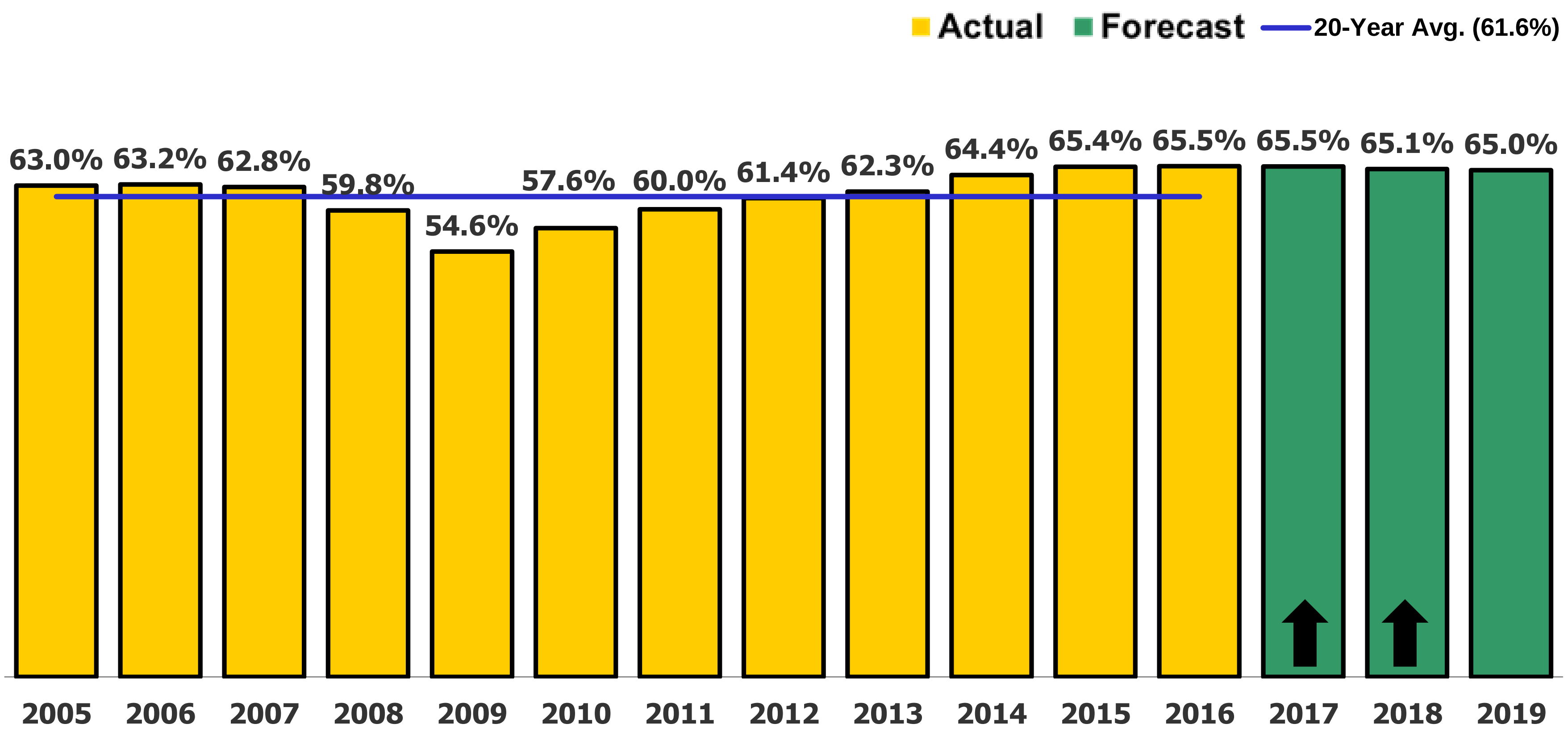
- Hotel occupancy rates, according to STR, have been steadily improving since reaching a recession low of 54.6% in 2009. Occupancy rates surpassed the twenty-year average in 2013 at 62.3% and came in at 65.5% in 2016. Rates are forecasted to remain strong over the next three years, although plateauing at 65.5% in '17 and then inching down to 65.1% in '18 and 65.0% in '19.

- Following six years of above-average hotel revenue per available room (RevPAR), RevPAR growth began to moderate in 2016 and is expected to continue moderating over the next three years, dipping below the long-term average in 2017 to 2.5%, and decreasing further in 2018 to 2.0% before a small rebound to 2.4% in '19.

- Compared to the forecast of 6 months ago, the current '17 and '18 forecasts for occupancy rates are more optimistic, but they are less optimistic for RevPAR growth in both years.

# Hotel Occupancy Rates

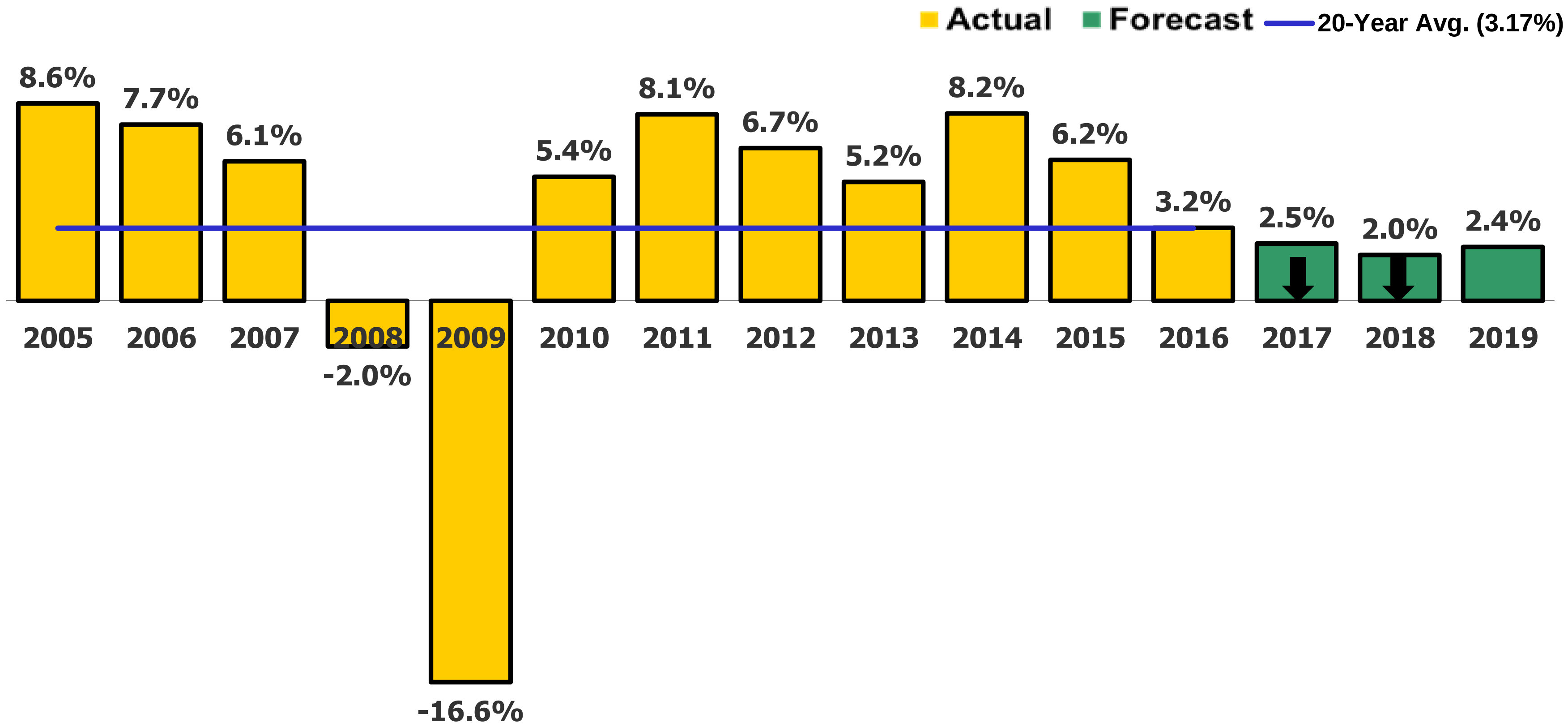





**Sources: 1997-2016, (December, 12-month rolling average), STR; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 65.2% and 65.0%, respectively, for 2017 and 2018.

# Hotel Revenue per Available Room (RevPAR) Change




**Sources: 1997-2016, (December, 12-month rolling average), STR; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 3.1% and 3.0%, respectively, for 2017 and 2018.

# Housing Sector

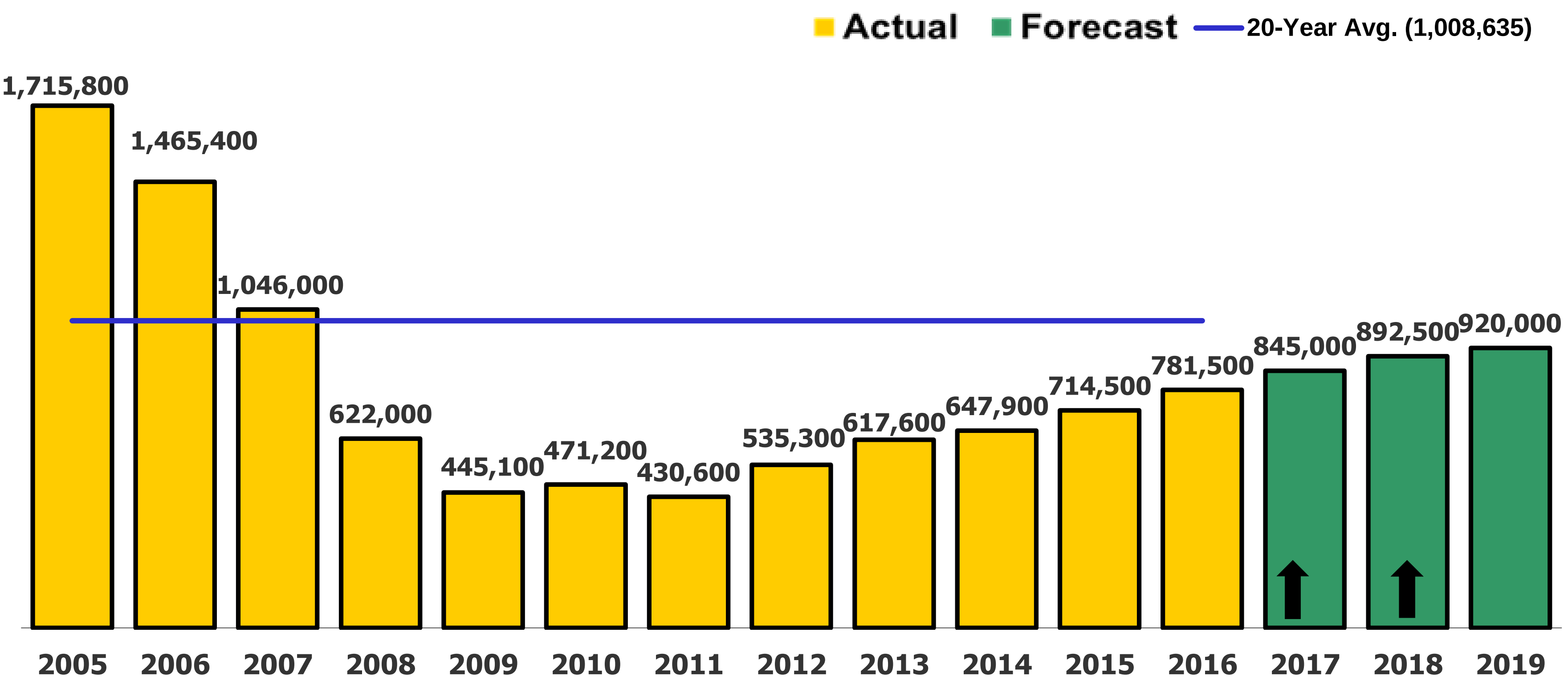


- The single-family housing sector experienced positive growth in starts for the fifth straight year in 2016. Growth is expected to continue, increasing to 845,000 in ‘17, 892,500 in ‘18, and 920,000 in ’19. The 2019 level brings starts to within 10% of the 20-year average for the first time since 2007.

- According to the FHFA, growth in existing home prices increased on average by 6.2% in 2016. Price growth is expected to moderate to 5.0% in ‘17, 4.0% in ‘18, and 3.0% in ‘19.

- Compared to six months ago, forecasts for housing starts in ‘17 and ‘18 are slightly more optimistic, while forecasts for existing housing prices increases were unchanged.

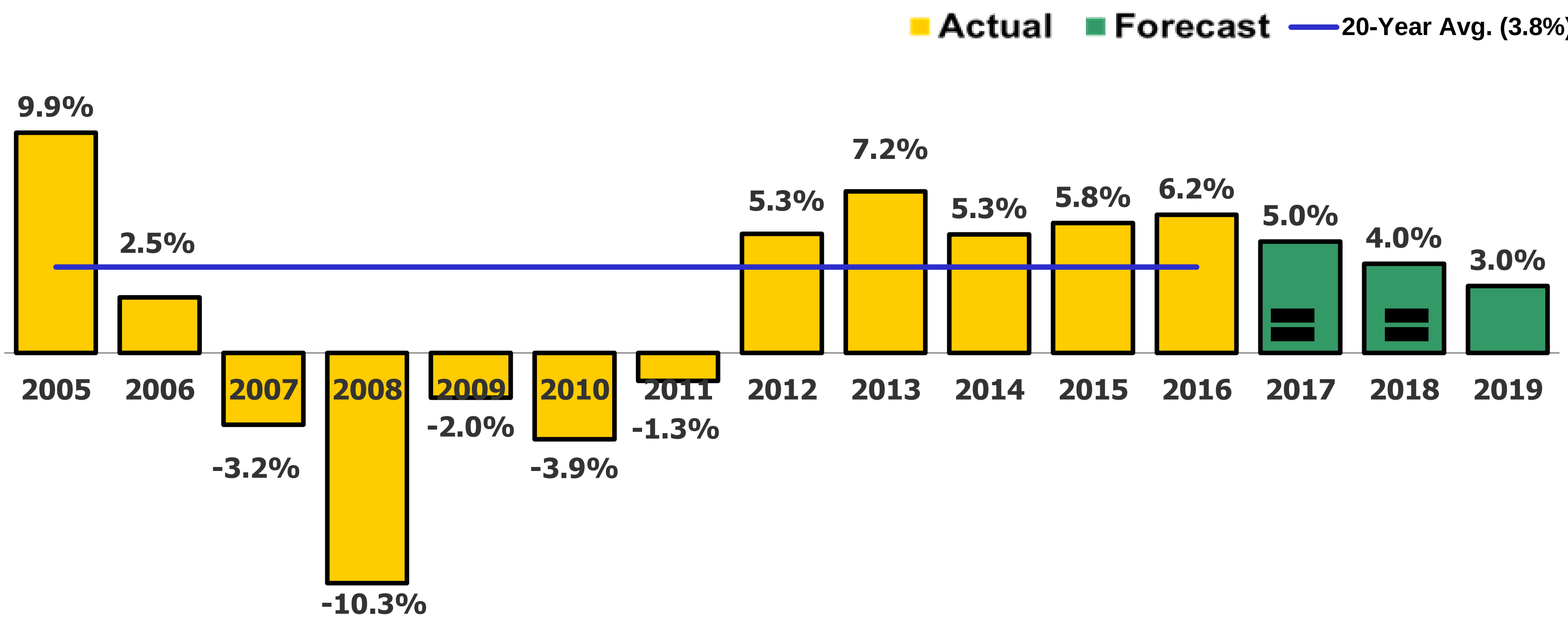
# Single-Family Housing Starts




**Sources: 1997-2016, (Structures w/ 1 Unit), U.S. Census; 2017-2019, ULI Consensus Forecast.**

Note: The previous ULI Consensus Forecast (released in October, 2016) projected 837,000 and 875,000, respectively, for 2017 and 2018.

# Average Home Price Change




**Sources: 1997-2016, (Seasonally Adjusted, December Y/Y), Federal Housing Finance Agency; 2017-2019, ULI Consensus Forecast.**
Note: The previous ULI Consensus Forecast (released in October, 2016) projected 5.0% and 4.0% respectively, for 2017 and 2018.

# Firms That Participated in the ULI Real Estate Consensus Forecast

| Organization | Lead Economist/Analyst | Title |
|---|---|---|
| Alvarez & Marsal | Steven Laposa | Principal, Global Real Estate Knowledge Center |
| AvalonBay Communities | Craig Thomas | Senior VP, Market Research |
| Barclays | Ross Smotrich | Managing Director |
| Bentall Kennedy | Douglas Poutasse | EVP, Head of Strategy and Research |
| Berkshire Group | Gleb Nechayev | SVP, Head of Economic and Market Research |
| CBRE | Jeanette Rice | Americas, Head of Multifamily Research |
| | Jeffrey Havsy | Americas, Chief Economist and Managing Director |
| | Tim Savage | Senior Managing Economist |
| | Serguei Chervachidze | Head of Forecasting |
| Clarion Partners | Tim Wang | Director & Head of Investment Research |
| CoreLogic, Inc. | Frank E. Nothaft | SVP and Chief Economist |
| CoStar Portfolio Strategy | Hans Nordby | Managing Director |
| | Shaw Lupton | Managing Consultant |
| Cushman & Wakefield | Kevin Thorpe | Global Chief Economist |
| | Rebecca Rockey | Economist, Head of Forecasting (Americas) |
| Deutsche Asset & Wealth Management | Kevin White | Head of Americas Strategy, Alternatives |
| Dividend Capital | Glenn Mueller | Real Estate Investment Strategist |
| Everest Medical Core Properties | David J. Lynn | CEO |

continued……

# Firms That Participated in the ULI Real Estate Consensus Forecast

| Organization | Lead Economist/Analyst | Title |
| --- | --- | --- |
| Green Street Advisors | Andrew McCulloch | Managing Director, Real Estate Analytics |
| | Peter Rothemund | Senior Analyst |
| Harrison Street Real Estate Capital | Thomas Errath | SVP, Research and Strategy |
| Heitman | Mary K. Ludgin | Managing Director |
| | Olin Needle | Director of North American Research |
| | Chris Fruy | Senior Vice President |
| Hines | Josh Scoville | Senior Managing Director |
| JLL | Ryan Severino | Chief Economist, Americas Research |
| | Josh Gelormini | Vice President, Americas Research |
| LaSalle Investment Management | William Maher | Director, Americas Research & Strategy |
| Linneman Associates | Peter Linneman | Principal |
| Lionstone Investments | Doug Prickett | Vice President, Research |
| MetLife Investment Management | Melissa Reagen | Head of Real Estate and Agricultural Research |
| Morgan Stanley Investment Management | Tony Charles | Managing Director |
| | Stephen Siena | Senior Associate |
| NAREIT | Calvin Schnure | Senior Vice President, Research & Economic Analysis |
| National Association of REALTORS | Lawrence Yun | Chief Economist |
| Newmark Grubb Knight Frank | Robert Bach | Director of Research, Americas |

continued……

# Firms That Participated in the ULI Real Estate Consensus Forecast

| Organization | Lead Economist/Analyst | Title |
|---|---|---|
| Oxford Economics | Matthew Mowell | Senior Economist |
| | Aran Ryan | Tourism Economics, Director of Lodging Analytics |
| PGIM Real Estate | Lee Menifee | Managing Director, Head Of Americas Research |
| PNC Financial | Stuart Hoffman | Chief Economist |
| Principal Global Investors | Jodi Airhart | Manager, Commercial Real Estate Research |
| PwC, LLP | Andrew Warren | Director, Real Estate Research |
| RCLCO | Taylor Mammen | Managing Director/Director, Institutional Advisory Services |
| Reis | Dr. Victor Calanog | VP, Research & Head of Economics |
| | Shan Ahmed | Senior Analyst |
| Rosen Consulting Group | Kenneth T. Rosen | Chairman |
| | Randall Sakamoto | Executive Vice President |
| Situs-RERC | Ken Riggs | President |
| | Jacey Heuer | AVP, Data Analytics |
| | Shradha Shrestha | Associate |
| Standard Life Investments | Donald Hall | Real Estate Investment Analyst, Americas |
| Trepp LLC | Matthew Anderson | Managing Director |
| Wells Fargo | Anika Khan | Senior Economist |
| Whitegate Real Estate Advisors | Paige Mueller | Founder |

# Urban Land Institute

***About the Urban Land Institute***
The Urban Land Institute is a nonprofit education and research institute supported by its members. Its mission is to provide leadership in the responsible use of land and in sustaining and creating thriving communities worldwide. Established in 1936, the Institute has more than 40,000 members representing all aspects of land use and development disciplines. For more information, please visit www.uli.org.

Patrick Phillips, Global Chief Executive Officer

Urban Land Institute



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# ULI Real Estate Consensus Forecast

A Survey of Leading Real Estate Economists/Analysts

**uli.org/consensusforecast**

April 2017

ULI Center for Capital Markets and Real Estate

| | |
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