FTI INSIGHTS

Report

FTI CONSULTING

4th Quarter 2017

Economic & Real Estate Report

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Introduction

Although the 4Q17 GDP advance estimate indicated that growth softened, many key economic indicators signaled strength within the U.S. economy to end 2017, including a) unemployment rates remaining at a 17-year low, b) the escalation of job creation to its strongest quarterly pace during the year, c) steady business investment, d) consumer confidence levels lingering near 17-year highs, e) increasing home values, f) rising retail sales and g) robust construction outlays. Stock indices continued to reach new highs during 4Q17, fueled by the anticipation of corporate tax cuts resulting from the passage of the Tax Cuts and Jobs Act (TCJA), strong corporate earnings and future economic growth.

Strengthening domestic demand also reflected in a widening trade deficit to end the year. Stronger global growth and a weakening U.S. dollar have benefitted U.S. exporters, which has bolstered the U.S. manufacturing sector and driven orders higher for factory, industrial and durable goods; however, imports have increased at a faster rate due to brisk consumer outlays, which have, in part, sent the savings rate to a 12-year low. Economists believe the weaker dollar has resulted from a resurgent European economy that is driving more investors to the Euro and increased U.S. political dysfunction.

In November, Jerome Powell was chosen to replace current Fed Chair Janet Yellen in February 2018. At its December Federal Open Market Committee meeting, the Fed raised its benchmark interest rate (between 1.25% and 1.50%) for the third time in 2017 after expressing optimism regarding the labor market. During 4Q17, the Fed also began the reduction of the $4.5 trillion balance sheet it acquired in the wake of the financial crisis.

Leading commercial information providers and real estate brokerages generally reported positive market fundamentals within the major sectors despite challenges distinct to each asset class. Commercial property indices from CoStar, Green Street and NCREIF revealed surging pricing growth for industrial assets and generally moderating growth for most of the other major commercial property types. The growing gap between buyer and seller pricing expectations continued to contribute to softer sales volume during 4Q17.

Real estate debt market conditions remained favorable during 4Q17. CMBS issuances increased to their highest level since 4Q17 while CMBS delinquencies further declined. According to the Mortgage Bankers Association, commercial and multi-family loan lending escalated from the prior quarter and year, but the Fed reported demand for CRE loans was largely unchanged. Sustained investor demand allowed capital raising by REITs to increase more than 30.0% year-over-year (YoY).

Summary of Key Economic Indicators

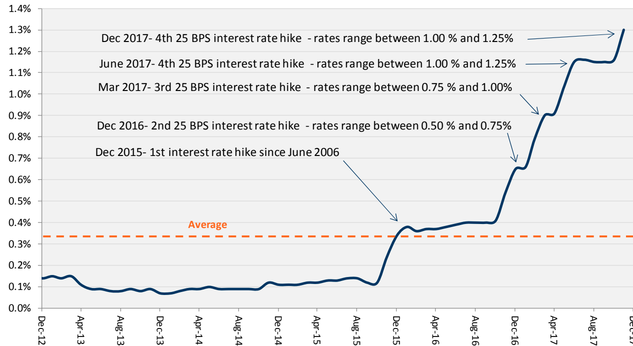
- **GDP Growth Slows** The advance estimate showed that 4Q17 U.S. GDP increased at a 2.6% seasonally adjusted annualized rate, down from 3.2% in 3Q17.
- **No Change in Unemployment Rate.** Despite job gains, the December unemployment rate remained at 4.1% for the third consecutive month.
- **Job Openings Decline.** Despite more workers increasingly leaving jobs, indicative of greater confidence in finding new positions, job openings fell to a seven-month low in December. Still, there were about 5.8 million job openings at the end of December, a 4.9% YoY increase.
- **Employment Cost Index (ECI) Surges**. Total employment costs, including wages and benefits, increased 2.6% in 2017, matching the 2015 increase. Of significance, this represented the strongest growth since 2008. Strength was evident in private sector where wages and salaries posted a 2.8% YoY increase, matching the best gain of this current economic expansion.
- **Small Business Optimism Falls.** According to the NFIB Small Business Optimism Index, small business confidence declined in December from the record high level of the prior month. Recent weakness was largely driven by declines in expected business conditions, but more business owners reported escalating sales during the month. It was reported that staffing challenges remain a concern.
- **Consumer Confidence Slips.** Although December's consumer confidence, as measured by the Conference Board and University of Michigan Index, pulled back, readings remain at historically high levels.
- **Dodge Momentum Index (DMI) Increases**. After recording its third consecutive month of gains, the DMI is at its highest level of the current expansion. The latest reading indicated escalating demand for non-residential projects. Month-over-month (MoM) the institutional building component increased 10.4 points and the commercial building component rose 1.2 points.
- **The Leading Economic Index (LEI) Rises**. In December, the LEI increased 0.6%, marking the 16th consecutive monthly rise. The gains among the leading indicators were widespread, but were mostly driven by strength in new manufacturing orders, improving stock markets and financial conditions.
- **Retail Sales Increase.** Retail sales rose 0.4% in December, the fourth consecutive monthly gain. During 4Q17, retail sales increased 5.5% YoY, driven by the strongest holiday season since 2010 (National Retail Federation). Total 2017 retail sales increased 4.2% YoY and reflected the strongest year for sales growth since 2014. In 2017, sales at non-store retailers, mostly online-shopping outlets, also increased 12.7% from the prior year.
- **Consumer Inflation Slows**. The headline Consumer Price Index (CPI) increased 0.1% in December, following a 0.4% rise in November, which was primarily due to a 2.7% decline in gasoline prices. Core inflation, which strips out food and energy prices, rose 0.3% in December, its largest gain since January 2017, and has increased 1.8% during the past 12-month period.
- **Industrial Production Rises.** U.S. industrial output increased 0.9% in December, primarily due to a surge in demand for heating. Manufacturing output, accounting for more than 70% of industrial production, rose at a 7.0% rate in 4Q17, the largest gain since 2Q10. For all of 2017, industrial output increased 1.8%, its first gain since 2014.
- **Durable Goods Orders Increase.** Driven by a 55.3% increase in orders for military aircraft and a 15.9% jump in civilian-airplane orders, U.S. durable goods orders increased 2.9% in December, the largest gain in six months. During 2017, durable-goods orders increased 5.8% YoY.
- **Factory Orders Rise.** For the fifth consecutive month, factory orders increased. December's 1.7% advance was fueled by sharply higher sales of defense and non-defense aircrafts and parts. YoY, factory orders were up 8.4%. Of concern, core capital goods (non-defense capital goods excluding aircrafts) fell 0.6% in December.
- **ISM Nonmanufacturing Index Declines.** Although the service sector index fell in December, primarily due to the slowdown in new orders, the index still signaled moderate growth to end the year.
- **Consumer Borrowing Stays strong.** In December, consumer credit increased $18.4 billion, driven by a 6.0% increase in revolving credit (credit cards) to its highest level on record. During 4Q17, consumer credit increased at a 7.7% annual rate, the strongest pace of the year.

5-Year Graphical Snapshots of Selected Economic Indicators

The following charts depict historical trends for several key economic indicators.

Effective Federal Funds Rate

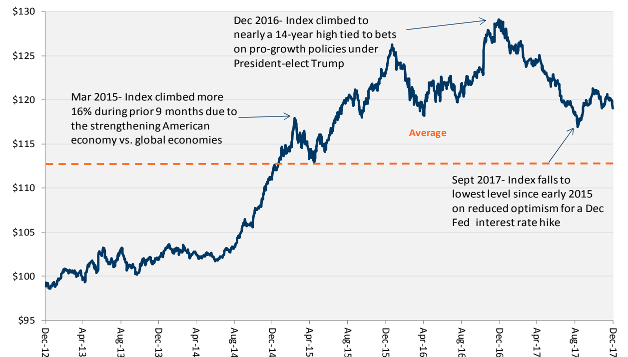
Historic and Current Figures



Source: St. Louis Federal Reserve Board

Trade Weighted U.S. Dollar Index (DTWEXB)

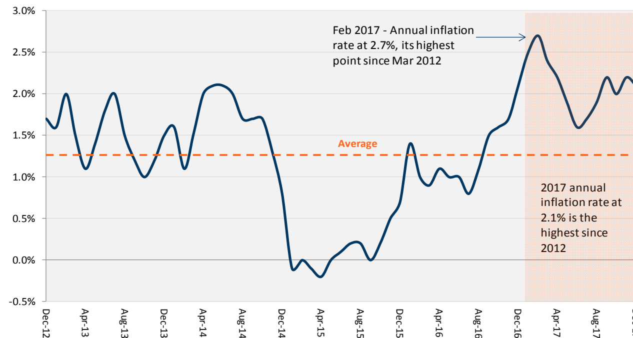
US Dollar Value Against Major U.S. Trading Partners



Source: St. Louis Federal Reserve Board

Inflation - All Urban Consumers – (CPI-U)

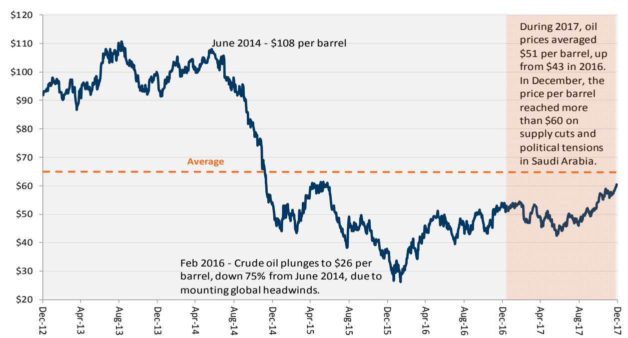
Historic and Current Figures (YoY)



Source: St. Louis Federal Reserve Board

West Texas Intermediate (WTI) Crude Oil Prices

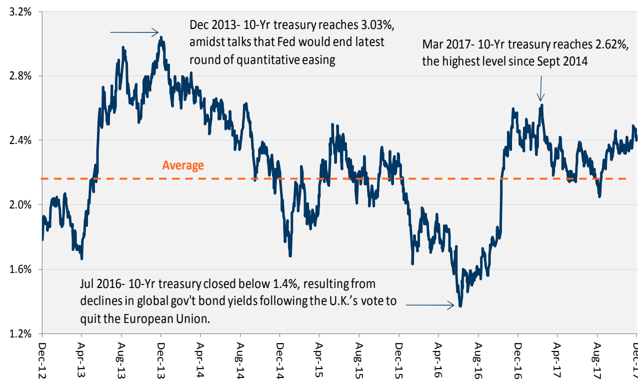
Price Per Barrel



Source: St. Louis Federal Reserve Board

10-Yr Treasury Rates

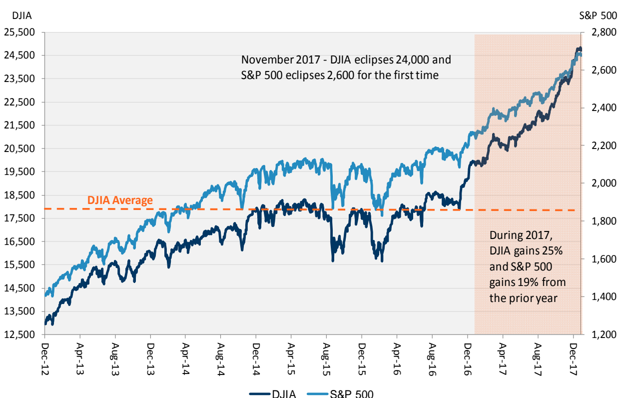
Historic and Current Figures



Source: St. Louis Federal Reserve Board

Dow Jones and S&P 500 Averages

Historic and Current Figures (Closing Average for Day)



Source: Yahoo Finance

Labor Market

Despite a hiring slowdown at the end of 2017, labor market fundamentals remain favorable. During December, employers added 148,000 jobs, which marked the 87th consecutive month of job growth. During 4Q17, job gains averaged 204,000 per month. A total of 2.06 million jobs were added to the economy in 2017, marking the seventh straight year of more than 2 million job additions. As the economy trends toward full employment, economists believe it is reasonable to experience a slowdown in job gains.

Employment gains were broad-based during 2017, as the professional and business services sector added 527,000 positions, followed by job gains within the education and health services (+438,000), leisure and hospitality (+306,000) and construction (+210,000) sectors. After posting job losses in 2016, the manufacturing sector added 196,000 positions and 59.000 new jobs were created within the mining and logging sector. The pace of government job additions slowed from 201,000 to 42,000 during and information services was the only sector to shed jobs (40,000).

The ADP National Employment Report showed a gain of 220,000 non-farm private sector jobs during 4Q17, including an increase of 250,000 in December. During 2017, a monthly average of 212,000 non-farm, private jobs were created, eclipsing the 181,000-monthly pace of 2016.

The December unemployment rate remained at 4.1% for the third consecutive month, staying at its lowest level since December 2000. The December U-6 rate, a broader measure of unemployment that includes Americans in part-time jobs or not looking for work, registered 8.1% and has declined 100 BPS YoY. In December, average hourly earnings rose modestly and annual wage growth increased 2.5%. Despite the addition of two million jobs, the labor force participation rate held steady at 62.7% during the past year and continues to trend near a 40-year low.

Below is a comparison of industry employment during the past five years.

U.S. Non-Farm Employment by Industry

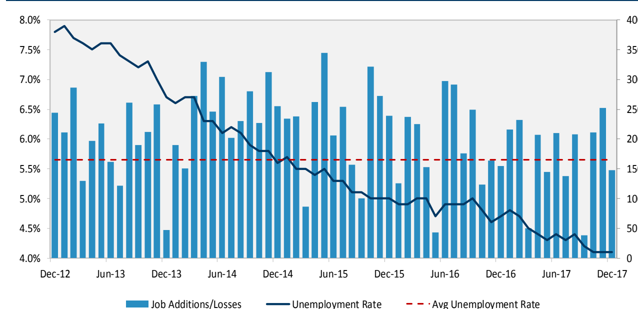
Historic and Current Figures (thousands)

Industry Sector	Dec.2017 Employment	Dec. 2012 Employment	Total Change	Percent Change
Construction	6,993	5,724	1,269	22.2%
Prof & Bus. Services	20,943	18,158	2,785	15.3%
Leisure & Hospitality	16,050	13,978	2,072	14.8%
Educ. & Health Services	23,309	20,932	2,377	11.4%
Financial Activities	8,498	7,826	672	8.6%
Trade, Trans & Utilities	27,448	25,631	1,817	7.1%
Other Services	5,810	5,452	358	6.6%
Manufacturing	12,539	11,960	579	4.8%
Government	22,341	21,887	454	2.1%
Information	2,722	2,676	46	1.7%
Mining and Logging	727	848	(121)	-14.3%
Total Nonfarm	**147,380**	**135,072**	**12,308**	9.1%

Source: Bureau of Labor Statistics

As shown below, the unemployment rate has declined 370 BPS since December 2012. The current unemployment rate is 160 BPS below the 5.7% average recorded between December2012 and 2017 and has been below 5% for the past 15 months.

U.S. Unemployment Rate Trends



Source: Bureau of Labor Statistics

Consumer confidence indices are considered key indicators of economic conditions.

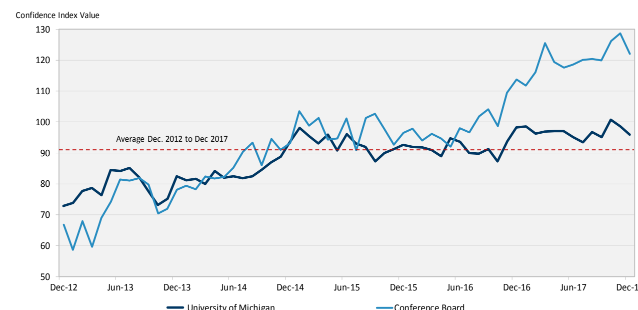
The Conference Board. After reaching a 17-year high in November, consumer confidence fell in December, largely due to the drop in the expectations component. The cutoff for the survey was December 15th and the impact of the proposed tax reform package increased uncertainty and likely weighed on consumers' outlooks. On the positive, Lynn Franco, Director of Economic Indicators at The Conference Board, indicated that consumers' assessment of current conditions improved moderately and consumers' expectations remain at historically strong levels, suggesting economic growth will continue throughout 2018.

University of Michigan Index. Despite falling in December, the average level of consumer sentiment for 2017 was the highest since 2000. Positive sentiment regarding current economic conditions was offset by a slight increase in uncertainty about future economic conditions. Despite remaining unchanged, buying plans for motor vehicles and large-ticket items are at favorable levels as the net assessment of current household finances stands a 17-year high.

Below are consumer confidence trends since December 2012.

Consumer Confidence Overview

Historic and Current Figures (thousands)



Source: Conference Board, University of Michigan

Gross Domestic Product (GDP)

The advance estimate of 4Q17 GDP showed that the U.S. economy slowed to end 2017, growing at a seasonally adjusted annualized rate of 2.6% after advancing 3.2% in 3Q17. For 2017, GDP expanded 2.3%, up from 1.6% last year, but lower than 2.9% growth recorded in 2015.

Although annual growth was held back by a weak first quarter, consumer momentum remained strong throughout 2017. Consumer spending advanced 3.8% during 4Q17, up 2.2% from the prior quarter and reflecting the strongest pace since 2Q16. Outlays on durable goods increased from 8.6% to 14.2%, marking the third consecutive quarter of strong growth, while spending advances on non-durable goods improved from 2.3% to 5.2% and service spending rose from 1.1% to 1.8%.

Growth in non-residential fixed investment, a measure of corporate business spending, increased from 4.7% from 6.8% in 4Q17, driven by a 10.8% increase in business equipment spending, which was the strongest pace since 3Q14. Businesses have ramped up their outlays, partly driven by a recovery in oil drilling and a resurgent global economy. Investment jumped more modestly in structures and intellectual property products such as software and research and development.

Several indicators held back momentum to end the year, including a widening trade gap. A significant increase in imports (13.9%), the largest since 3Q10, was fueled by strong consumer spending and more than offset a 6.9% rise in exports, which benefitted from a weak dollar. Reduced inventory accumulation, spurred by a strong holiday season, also restrained growth during the quarter. It was reported that the values of inventories fell by $29 billion during 4Q17.

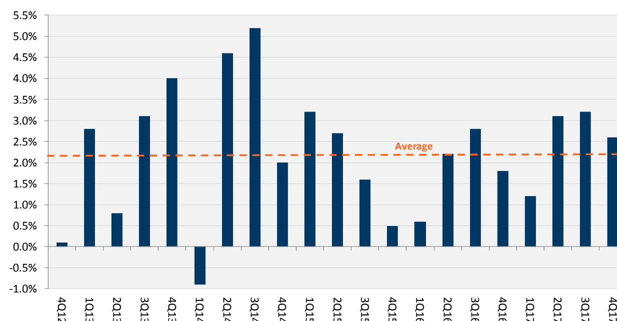
Other 4Q17 GDP Key Trends

- Homebuilding rebounded after contracting for two straight quarters as residential investment increased 11.6%, its strongest advance since 2Q15.
- Overall government spending increased for second consecutive quarter and the 3.0% recorded growth was the fastest pace since 2Q15. Federal outlays increased 3.0%, driven by a 6.5% advance in defense spending. State and local government expenditures grew 2.6%.
- Inflation increased as the personal consumption expenditures index, excluding food and energy, advanced 1.9%, its quickest pace of growth in more than a year.
- Of concern, the personal savings rate declined to 2.6%, the lowest level since 2005 and the third-lowest on record.
- Disposable personal income accelerated to a 3.9% growth rate in 4Q17, up 2.1% from 3Q17.

The following chart summarizes U.S. GDP growth since 4Q12.

Gross Domestic Product

Quarter-to-Quarter Growth in Real GDP



Source: Bureau of Economic Analysis

Institute for Supply Management (ISM) Manufacturing Index

Manufacturing activity accelerated during 4Q17 as the headline Purchaser's Manufacturing Index (PMI) increased to its second-highest reading of 2017 in December. Driven by steady consumer spending, increased domestic business spending and an improving global economy, 2017 marked the strongest year for manufacturing conditions since 2004. Of the 18 manufacturing industries tracked, 16 reported growth. The only two industries reporting contraction during the period included wood products and textile mills.

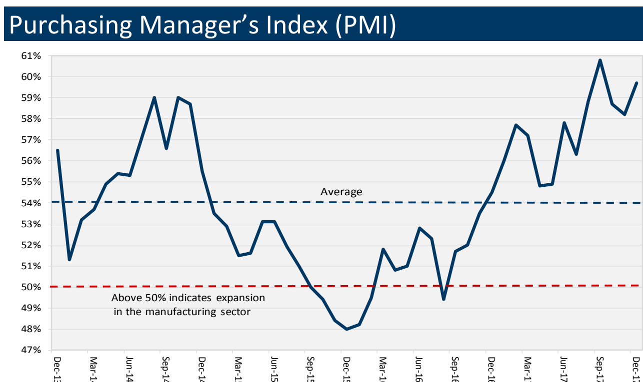
Numerous indicators signaled a strengthening manufacturing sector. New orders, commonly viewed as the leading economic driver of manufacturing growth, reached its highest level since January 2004 and growth in production reached its highest reading since May 2010. Customer inventories fell, indicating that stockpiles were declining at a faster pace.

Firms were most concerned with the difficulty of finding highly skilled labor and the payment of higher wages required to attract such talent.

ISM member respondents were mostly positive regarding business conditions. Sentiment generally reflected increased sales activity, positive business conditions and rising domestic and international sales. Headwinds generally reflected difficulty in finding qualified labor and commodity pricing pressures.

The graph below shows fluctuations within the PMI since December 2013.

Purchasing Manager's Index (PMI)



Source: Institute for Supply Management

The following summarizes key components of the ISM Index.

- **Purchasing Managers' Index (PMI).** A reading above 50.0% indicates that the manufacturing economy is generally expanding; below 50.0% indicates that it is generally contracting. Manufacturing has expanded for 16 consecutive months. The PMI has averaged 57.6% over the past 12 months, ranging from 54.8% to 60.8% and the December reading was 59.7%.

- **New Orders Index.** A New Orders Index above 52.1%, over time, is generally consistent with an increase in the Census Bureau's series on manufacturing orders. The index increased 5.4% to 69.4% in December, as growth was recorded for the 16th consecutive month.

- **Production Index.** An index above 51.0%, over time, is generally consistent with an increase in the Fed's industrial production figures. The index increased 1.9% in December to 65.8%, marking the 16th consecutive month of growth.

- **Employment Index.** An Employment Index above 50.6%, over time, is generally consistent with an increase in manufacturing employment. Although a decrease of 2.7% sent the index to 57.0%, growth was recorded for the 15th consecutive month in December.

- **Prices index.** A Prices Index above 52.4%, over time, is generally consistent with an increase in the BLS Producer Price Index for Intermediate Materials. In December, an increase of 3.5% raised the index to 69.0%. Raw materials prices have increased for 22 straight months.

- **Supplier Delivery Index.** A reading below 50.0% indicates faster deliveries, while a reading above 50.0% indicates slower deliveries. The delivery performance of suppliers registered 57.9% in December, marking the 20th consecutive month of slowing supplier deliveries.

Construction Spending

In December, U.S. construction spending grew 0.7% to a record high annualized level, marking the fifth consecutive monthly gain. The latest advance was driven by record-high investment in private construction projects and a rebound in federal government outlays. During 2017, total construction spending grew 3.8% from the prior year to $1.23 trillion. While spending on residential projects advanced by 10.4% during 2017, outlays fell 0.6% for non-residential projects.

Private Construction

- Comprising 77.0% of total construction expenditures, outlays increased 0.8% in December to a record high of $963 billion and advanced 2.1% YoY.

- Outlays on residential projects increased 0.5% in December to the highest level since March 2007. YoY, residential spending increased 6.2%. Outlays on new, single-family home projects advanced 8.7 YoY in comparison to 4.6% YoY gain for new multi-family homes.

- YoY, non-residential construction spending fell 2.5%. Spending on commercial projects increased (5.7%), while spending on office and manufacturing projects declined (5.0% and 11.7%).

Public Construction

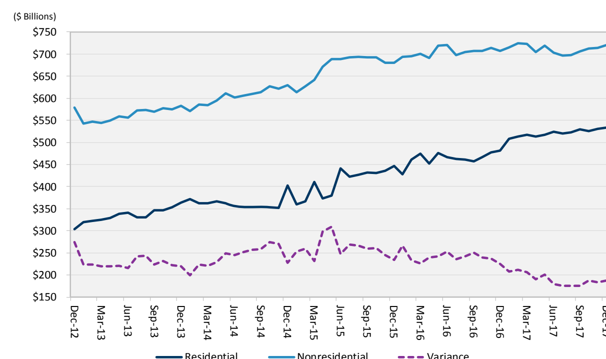
- Institutional outlays increased 0.3% in December and grew 4.4% YoY. Spending on residential projects fell 1.3% in December, but still advanced 4.1% YoY.

- YoY, non-residential expenditures increased 4.4%. Of note, spending on office and commercial projects increased 14.3% and 4.3%, respectively.

The following chart highlights annualized residential and non-residential construction outlays since December 2012. During 2017, the variance tightened for most of the year before rising during 4Q17.

U.S. Construction Spending

Value of Construction (Seasonally Adjusted Annual Rate)



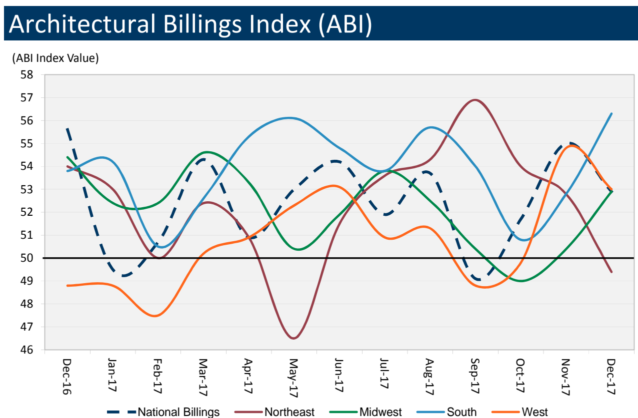
Source: U.S. Census Bureau

The Architecture Billings Index (ABI)

The Architecture Billings Index (ABI) is a diffusion index derived from the monthly Work-on-the-Boards survey, conducted by the American Institute of Architects (AIA) Economics & Market Research Group. The ABI is a leading economic indicator of non-residential construction activity, reflecting an approximate nine to twelve-month lag time between architecture billings and construction spending. Any measure below 50 indicates a decline in firm billings from the prior month and a score above 50 indicates an increase in firm billings from the prior month.

- Demand for design services remained strong to end the year as the ABI averaged 53.2 during 4Q17. During 2017, architecture firms reported increases in billing for 10 out of 12 months.
- New design contracts and project inquiries remained robust to end 2017 as firms reported work backlogs of about six months in December, indicating that the pipeline of work will remain strong into the foreseeable future.
- For the fifth consecutive year, billings growth was reported during every month of 2017 in the South region of the U.S. Following a modest slowdown during the summer, business conditions improved in the West while growth remained strong in the Midwest to close the year. Firms in the Northeast reported a modest decline in billings and generally witnessed softer conditions than other regions.
- In December, billings growth was positive in all specializations/sectors, and strongest in the residential (55.4) and commercial/industrial (54.0) sectors.
- Chief concerns among participants included increasing firm profitability, finding qualified labor, the negotiation of project fees, the management of the rising costs of running a firm, and the identification of new clients and markets.

The following graph shows fluctuations within the ABI on a national level and by U.S. region since December 2016.



Source: The American Institute of Architects

State of the Housing Market

Although existing home sales softened to end the year, U.S. housing market fundamentals remained robust during 2017, lifted by a strong labor market, favorable interest rates and healthy gains in disposable income; however, as strong buyer interest continued to boost demand for housing, the lack of supply, constrained by rising construction and lot development costs, has driven up home prices which has led to an unbalanced U.S. housing market.

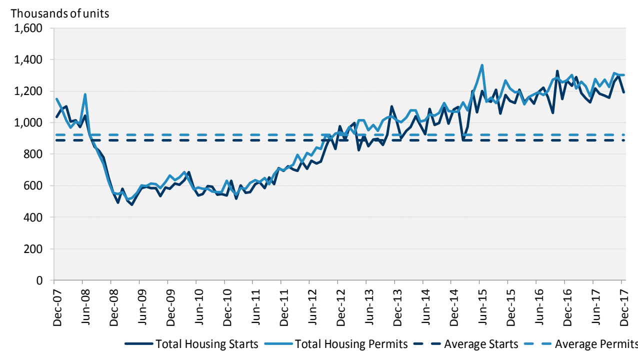
The National Association of Realtors (NAR) reported that existing home sales moderated for the first time in five months, falling 3.6% in December. Still, existing home sales increased 1.1% YoY during 2017 to a 5.51 million pace, marking the strongest year since 2006. Home sales were limited during the year by supply shortages, specifically at the lower-end of the market, which has resulted in growing affordability issues. NAR reported that the total inventory of existing homes fell 10.3% YoY, the 31st consecutive monthly YoY decline, to a 3.2-month supply, which represents the lowest level since the NAR began tracking this metric in 1999.

Below are several key points pertaining to the housing market.

- Median existing home prices increased 5.8%, which marked the 70th consecutive month of YoY price gains. Low mortgage rates and a strong economy have supported elevated home pricing levels.
- According to Freddie Mac, the average commitment rate for a 30-year, conventional, fixed-rate mortgage increased to 3.95% in December. The average rate for 2017 was 3.99%.
- According to ATTOM Data Solutions, 2017 foreclosure filings declined 27.0% YoY to the lowest level since 2005 and are down 76.0% from the 2010 peak.
- The NAR reported that distressed sales comprised 5.0% of total December sales, down 7.0% from a year earlier.
- Driven by steady sales and a limited supply, the November 2017 S&P/CoreLogic Case-Shiller U.S. National Home Price Index reported a 6.2% annual gain, the 16th consecutive month of gains of 5.0% or greater.
- New home sales, which represent about 10.0% of the housing market, fell 9.3% in December, but increased 8.3% in 2017 to 608,000, the highest level since 2007. Builders continue to report a shortage of workers and materials, which could limit future building.
- The CoreLogic Home Price Index reported that U.S. home prices increased 6.6% YoY in December. The largest 2017 price gains were concentrated in western states, including California, Idaho, Nevada Utah and Washington.

Below is a breakdown of housing starts versus permits since December 2007. The strength in permits relative to starts suggests homebuilding will likely escalate in the coming months.

Housing Starts vs Permits



Source: U.S. Census Bureau

Housing Starts

- Likely due to winter weather conditions, housing starts decreased 8.2% in December to a seasonally adjusted annual rate of 1.19 million units. Despite the decline, overall 2017 starts increased 2.4% YoY.
- Single-family housing starts pulled back 11.8% in December, but still were up 8.5% YoY. Industry experts still believe that more construction is needed to satisfy pent-up demand. Multi-family housing starts increased 1.4% from the prior month, but 2017 starts were down nearly 10.0% YoY.

Building Permits

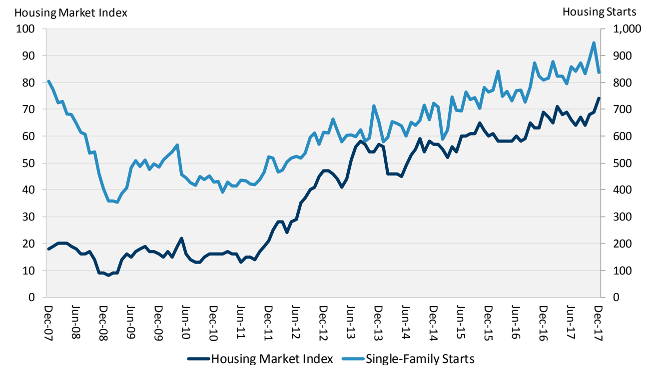
- In December, building permit activity fell slightly from the prior month. During 2017, an estimated 1,263,400 housing units were authorized, up 4.7% YoY.
- Single-family permits improved 1.8% from the prior month and are up 8.9% YoY. Multi-family permits fell 3.9% in December and fell about 2.0% YoY.

Builder Confidence

Marking the third consecutive monthly increase, builder confidence in the market for newly-built, single-family homes soared to its highest level since July 1999 in December. All three index components (sales expectations, buyer traffic and current sales conditions) increased, including a considerable rise in buyer traffic, which was driven by favorable demographics, rising consumer confidence, low inventories and a strong labor market. Looking at the three-month moving averages for regional housing market index scores, developer confidence increased by the highest amount in the Midwest in December. Overall confidence is highest in the West followed by the South, Midwest and Northeast regions. NAHB Chairman Granger MacDonald remarked, "Housing market conditions are improving partially because of new policies aimed at providing regulatory relief to the business community."

The following is a historical chart comparing the NAHB/Wells Fargo Housing Market Index and single-family starts.

NAHB/Wells Fargo Housing Market Index



Source: NAHB/Wells Fargo; U.S. Census Bureau

Notable Housing Sale and Pricing Trends

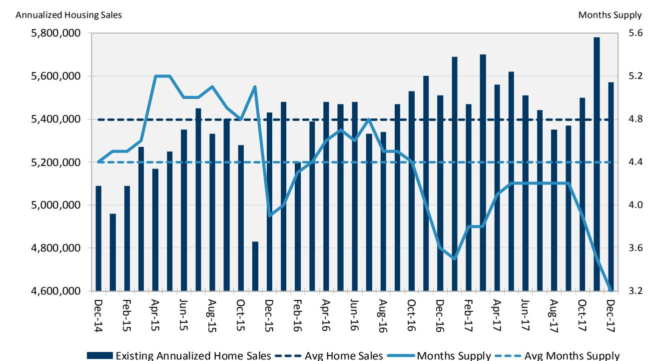
Below are key housing market statistics as of December 2017.

- YoY, existing home sales increased 3.1% in the South and 1.5% in the Midwest, but fell 2.6% in the Northeast and 0.8% in the West.
- YoY, the median price of an existing home increased 7.8% in the Midwest, followed by gains of 7.3% in the West, 5.8% in the South and 3.0% in the Northeast.
- First-time buyers accounted for 32.0% of sales in December, which was unchanged YoY.
- Properties stayed on the market for 40 days in December, down from 52 days YoY.

Below is a breakdown of existing annualized housing sales vs. supply since December 2017.

Housing Sales

Existing Annualized Housing Sales vs. Monthly Supply



Source: National Association of Realtors

PwC Real Estate Investor Survey

- Institutional and private investors surveyed for the 4Q17 PwC Real Estate Investor Survey reported that overall cap rates (OARs) decreased in 17, increased in 13 and held steady in 3 of the survey's 33 tracked markets compared to 3Q17. This represented the highest amount of markets recording increases during 2017. Collectively, OAR's increased 11 BPS across the major property types since 4Q16.
- Terminal cap rates increased 7 BPS to 6.67% in 4Q17, representing their largest quarterly increase in 12 months.
- Discount rates (IRRs) increased 7 BPS to 7.51% in 4Q17 and recorded no YoY change.
- It was reported that due to inactivity among surveyed investors, data was not updated within the flex/R&D market in 4Q17.

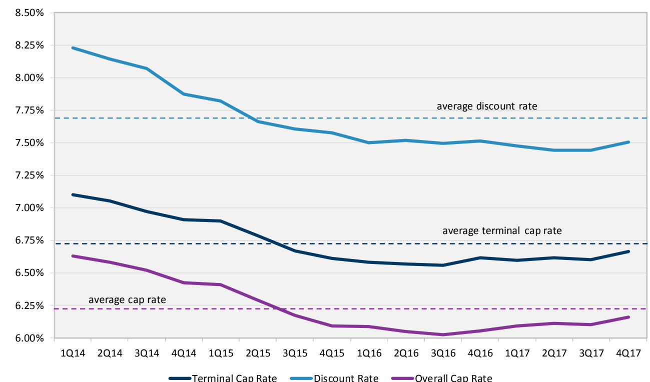
4Q17 Survey Highlights

- OARs increased within five of the major property sectors, led by 33 and 19 BPS increases within the power center and strip center sectors, respectively. The warehouse (21 BPS) and apartment (8 BPS) sectors recorded declines.
- The warehouse sector had the lowest OAR at 5.1% followed by 5.3% in apartment sector. Flex/R&D properties had the highest average OARs at 7.1%, followed by the power center and suburban office sectors. The simple average across all sectors was 6.16%.
- Terminal capitalization rates increased within four of the major commercial property sectors, including 17 to 23 BPS increases in the strip center, suburban office and power center sectors. Slight losses were recorded in the warehouse, apartment and regional mall sectors.
- The apartment (5.7%) and warehouse (5.9%) sectors had the lowest terminal capitalization rates. Suburban office (7.6%) assets had the highest terminal capitalization rate.
- IRRs increased from the prior quarter in three of the major commercial property sectors, including 31 and 25 BPS escalations within suburban office and strip center sectors, respectively. The largest decreases were recorded in the CBD-office (8 BPS) and warehouse (5 BPS) sectors, respectively.
- Warehouse properties had the lowest IRRs, followed by the CBD-office sector. The highest IRR's were recorded within the suburban office and flex/R&D sectors.

Simple averages of overall capitalization, terminal capitalization and discount rates are presented in the following table. The averages reflect the following property types: industrial (flex/R&D, warehouse), office (central business district (CBD) office, suburban office), apartment and retail (strip center, regional malls and power centers).

PwC Real Estate Investor Survey Historical Results

Investment Rate Analysis



Additional 4Q17 Report Insights/Findings

- Despite a prolonged expansion, investors are still generally bullish regarding CRE fundamentals in 2018 and continue to be focused on investment opportunities to maximize yields.
- Desirable warehouse market fundamentals have continued to push occupancy levels to record-high levels, but investors are increasingly concerned regarding more foreign capital increasing prices and the limited, quality product for sale.

PwC Real Estate Barometer 4Q17

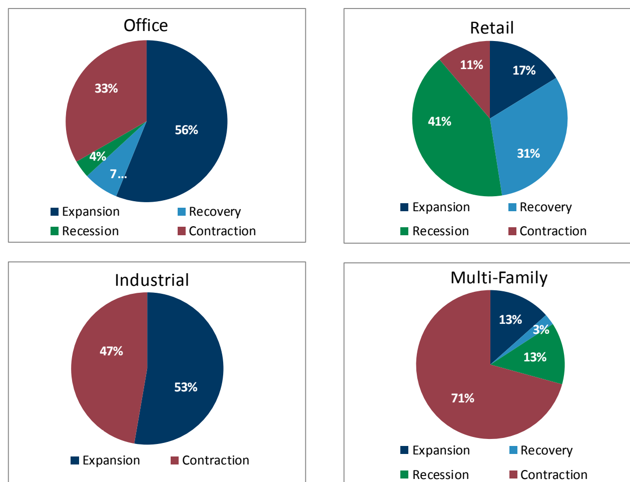
The PwC Real Estate Barometer was introduced as a system for analyzing historical/forecasted CRE data within the four major U.S. property sectors. The barometer indicates where a major property type is positioned within the real estate cycle, which consists of the following four phases: contraction, recession, recovery and expansion.

- More than half of the tracked office markets were in the expansion phase of the real estate cycle, the highest among the major sectors. Market fundamentals are projected to soften somewhat during 2018 as new supply may exceed demand in selected markets, but the adjustment may be minor as new supply remains generally constrained as compared to previous cycles.
- About 41.0% of the tracked retail markets are in the recession phase of the real estate cycle, which is considerably higher YoY. Store closings and retail bankruptcies are expected to further shrink brick and mortar footprints. On the positive, 31.0% of the tracked

markets are in the recovery phase, consistent with the prior quarter.

- Despite strong market fundamentals, nearly half of the tracked industrial markets are in the contraction phase, as new supply is outpacing demand. During 2018, more markets are expected to enter the contraction phase as rents moderate and vacancies rise.
- Approximately 70.0% of multi-family markets are in the contraction phase, primarily resulting from new supply additions having outpaced demand; however, investors noted that oversupply issues are expected to be short-lived due to sustained demand and a preference to own rather than rent.

Below is a snapshot of each major property type as of 4Q17.



Source: PwC

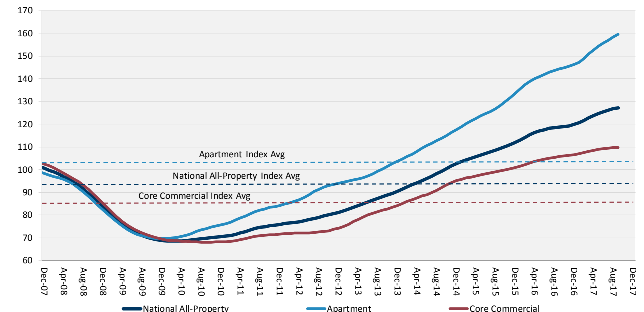
RCA Commercial Property Price Index (CPPI)

The RCA Commercial Property Price Index (CPPI) is a periodic same-property investment price change index of the U.S. commercial investment market based on Real Capital Analytics (RCA) data. RCA collects price information for every U.S. commercial property transaction over $2.5 million. The index tracks same-property realized round-trip price changes based purely on the documented prices in completed, contemporary property transactions. The methodology is an extension of market-accepted regression-based, repeat-sales indices and uses no appraisal valuations.

Below are changes within the major RCA commercial property indices since December 2007.

RCA Commercial Property Price Index

National All Property vs. Apartment vs. Core Commercial Index



- The National All-Property Composite Index (the "Index") increased 1.3% during 4Q17. Growth was stronger within the apartment sector, which gained 2.6% versus a 0.5% increase for the core commercial sector.
- Within the core commercial sectors, pricing within the suburban office sector increased 0.6% during 4Q17.
- 4Q17 price appreciation was slightly stronger in non-major markets (1.5%) than in major markets (1.4%).
- The Index increased 7.1% YoY. Prices are reported to be more than 23.0% above their pre-recession peak.
- The apartment sector was the top performing sector, as pricing increased 10.6%, representing an increase of 350 BPS over the Index gain.
- The retail sector posted a YoY gain of 1.1%, considerably lower than the other sectors, due in part to the growing presence of online retailers and store closures/downsizings.
- YoY, pricing increased faster within major markets (8.5%) than in non-major markets (7.1%).

The following chart illustrates cumulative price returns for the primary sectors in the CPPI from one month to ten years.

RCA CPPI Cumulative Returns by Sector/Type						
Index	**1 Month**	**3 Months**	**1 Year**	**3 Years**	**5 Years**	**10 Years**
Apartment	0.9%	2.6%	10.6%	40.3%	72.8%	59.6%
Core Commercial	0.1%	0.5%	3.7%	19.2%	50.7%	4.5%
Industrial	-0.2%	0.0%	6.1%	24.9%	55.6%	12.2%
Office	0.1%	0.5%	3.0%	19.3%	52.5%	2.7%
CBD	0.1%	0.6%	4.4%	25.9%	68.2%	33.8%
Suburban	0.1%	0.1%	1.9%	18.8%	50.2%	-2.4%
Retail	0.0%	0.3%	1.1%	12.5%	40.2%	-1.5%
Major Markets	0.4%	1.4%	8.5%	28.6%	64.6%	39.4%
Non-Major Markets	0.4%	1.5%	6.5%	28.2%	58.8%	15.7%
National All-Property	**0.3%**	**1.3%**	**7.1%**	**28.1%**	**59.9%**	**23.7%**

* Represents data as of December 31, 2017

Green Street Commercial Property Price Index

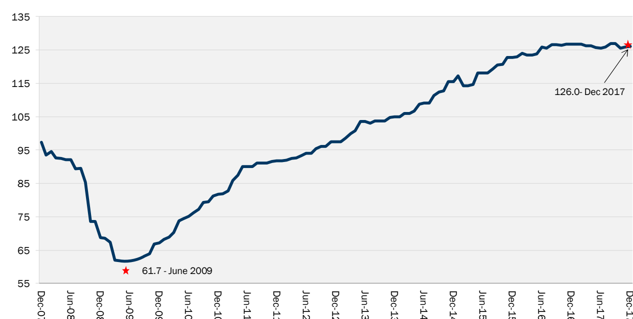
Green Street's Commercial Property Price Index is a time series of unleveraged U.S. commercial property values that captures the prices at which CRE transactions are currently being negotiated and contracted. Features that differentiate this index are its timeliness, emphasis on institutional quality properties, and ability to capture changes in the aggregate value of the commercial property sector.

Little change in aggregate pricing occurred during 2017. Basically, the index has flattened out, as growing income has been offset by higher capitalization rates. During the past year, pricing in the industrial sector outpaced the other major sectors and increased 9.0%. Gains of 1% to 3% were recorded within the apartment, lodging and office sectors. In contrast, the mall sector saw values fall by 11% and strip retail declined 3%. Specialty sectors not included in the aggregate CPPI, such as student housing and health care, witnessed healthy gains of 7% and 4%, respectively.

Below are changes since December 2007.

Green Street Commercial Property Price Index

National Index – All Properties



Commercial Property Sales Analysis

RCA reported that investment sales activity fell slightly during 4Q17 to $117.5 billion (excluding land). Volume fell 13.0% YoY on a quarterly basis as all the major property sectors recorded volume declines. For 2017, RCA noted that sales activity registered $445 billion (excluding land), which represents a 7.0% YoY decline. Although this represents a second consecutive annual decline, 2017 sales activity was still nearly 10.0% higher than the prior five-year average. Investors continued to focus on industrial assets, making it the only sector to record a volume increase.

Following a recent trend, the growing gap between buyer and seller pricing expectations has slowed volume, as buyers are becoming more selective and are showing more caution in response to an uptick in interest and capitalization rates. Investors are also continuing to look toward secondary and tertiary markets in search of greater returns, which is evidenced by the stable volume in these areas versus a 14.0% YoY volume decrease in major metro areas.

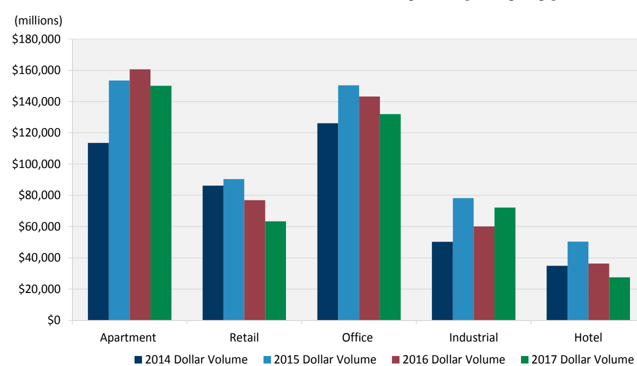
For the first time in 15 years, RCA reported that Manhattan was surpassed by Los Angeles as the top market in terms of deal volume. Dallas, Chicago and Atlanta rounded out the top five markets. The Suburban Washington D.C./Virginia and Houston markets recorded the largest YoY increases in sales volume, while the largest declines were noted in the Manhattan, San Francisco and Miami/Dade County markets.

According to RCA, Blackstone, the largest worldwide private equity firm, was the largest buyer and seller of commercial real estate in 2017, in terms of both investment volume and the number of properties.

2014 to 2017 sales activity by property type is summarized below.

Investment Sales Activity

Dollar Value of Sales Transactions by Property Type



Source: Real Capital Analytics

Below we look at sales activity, per RCA, by product type.

- **Apartment.** Following seven consecutive annual increases, sales volume fell 7% YoY in 2017. Still, the $150 billion in activity was the third highest since 2000. Portfolio and entity-level transactions fell 19% YoY in comparison to a 3% decline for single assets sales. Garden apartment sales, accounting for 66% of sector activity, decreased 12% YoY while volume in mid/high-rise assets pulled back 4%. Investors were increasingly drawn to secondary and tertiary areas, where more than 70% of deal volume was transacted. Highlighting activity, Greystar Real Estate Partners acquired Monogram Residential Trust Inc. and Starwood Capital acquired Milestone Apartments REIT in deals valued at approximately $3 billion apiece.

- **Retail.** Sales volume fell 18% YoY on sales of about $63 billion in 2017. Despite the $4.6-billion-dollar acquisition of Equity One Inc. by Regency Centers Corp., there was a 26% decline in portfolio and entity-level transactions. Investment activity in the centers sector (multiple tenant space of 30,000 sf or more) fell 23% as compared to an 8% decline in the shops sector (usually single tenant of under 30,000 sf). Among the retail subtypes, sales of grocery-anchored centers and single-tenant properties improved 13% and 9% YoY, respectively; however, declines of 75% and 21%, respectively, were recorded for regional mall and urban/storefront properties.
- **Office.** Investors continued to gravitate towards suburban locations, where pricing is more favorable. During 2017, office sales fell 8% YoY to $132 billion, driven by a 21% decrease in CBD office sales. In contrast, investment activity increased 2% YoY in the suburbs, where nearly 65% of all sales were transacted. While more deals were executed in secondary/tertiary markets, major metropolitan areas saw a 15% YoY decline in sales volume. Still, Manhattan witnessed the highest investment volume, helped by the $2.2 billion sale of 245 Park Avenue to the HNA Group. The medical office subsector recorded a 23% YoY increase in deal volume, driven by the Healthcare Trust of America Inc. acquisition of Duke Realty for an estimated $2.8 billion.
- **Industrial.** There was robust investor demand for industrial assets, fueled by the growing needs of users and investors for modern warehouse space. Transaction volume totaled $72 billion in 2017, up 20% from the prior year, making this the only major property sector to post an annual gain. Driven by a 44% YoY increase in portfolio and entity-level transactions, total activity was the second highest on record. Sales of warehouse properties accounted for 70% of total volume. Highlighting activity, Digital Realty acquired data center developer Dupont Fabros Technology and its buildings for a reported $7.8 billion.
- **Hotel.** Deal volume weakened 24% during 2017 in comparison to the prior year as about $27.5 billion of sales were executed. Portfolio and entity-level sales volume fell 62% YoY in comparison to just a 3% YoY decline for single assets. Full-service hotels recorded a 34% YoY decrease in sales volume versus a 1% increase for limited-service hotel assets. Volume stayed steady in secondary and tertiary markets, where about 70% of deal volume occurred.

Below are the top buyers of commercial real estate, per RCA, during 2017.

Top Buyers (Largest to Smallest) 2017 (by Investment Volume)		
Office	**Industrial**	**Retail**
Blackstone	Digital Realty	Regency Centers
CBRE Global Investors	Blackstone	Madison International
HNA Group	Fireside Investments	TIAA
HTA (REIT)	DRA Advisors	Cardinal Capital
Brookfield AM	Gramercy	Fortress Cap Investors
Rockpoint Group	Duke Realty	CBRE Global Investors
GIC	Medina Capital	Realty Income Corp.
Apartment	**Hotel**	**Overall**
GIC	RLJ Lodging Trust	Blackstone
Greystar	Blackstone	GIC
Blackstone	Xenia	Starwood Capital
Starwood Capital	AHIP REIT	Regency Centers
APG Group	Summit Hotel Properties	Digital Realty
Harbor Group Int'l	Hospitality Props Trust	Greystar
CPP Investment Board	Carey Watermark 2	CBRE Global Investors

Below are the top sellers of commercial real estate, per RCA, during 2017.

Top Sellers (Largest to Smallest) 2017 (by Investment Volume)		
Office	**Industrial**	**Retail**
Beacon Capital Partners	OakTree	Equity One (REIT)
Brookfield AM	TPG Capital	DDR
Blackstone	Related Companies	Forest City
Clarion Partners	Bain Capital	Retail Props of America
Duke Realty	TA Realty	Blackstone
JP Morgan	Prologis	Albertsons LLC
NYSTRS	Blackstone	Sears Holding Corp.
Apartment	**Hotel**	**Overall**
Monogram Res Trust	FelCor Lodging	Blackstone
Milestone APTS REIT	Blackstone	Equity One (REIT)
Starwood Capital	Hyatt Hotels	Brookfield AM
Lone Star	Marriot	JP Morgan
Harrison Street RE Cap	MCR Development	Beacon Capital Partners
Fairfield Residential	Nobel Investment Group	Clarion Partners
Blackstone	Pacific Hospitality Group	TA Realty

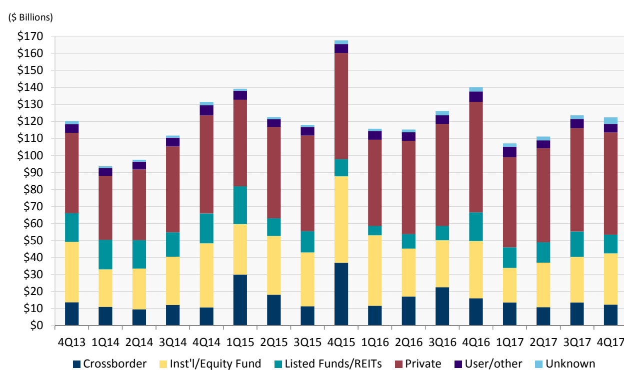
In addition to the preceding data, we have also analyzed RCA historical sales activity by buyer type.

- Private buyers continued as the most active buyers of real estate in 2017, acquiring $229 billion of CRE assets. This represented near half of total transaction volume and was comparable to 2016 volume.
- Acquisition volume by institutional/equity buyers totaled nearly $103 billion during 2017, down 21% from 2016. Market share declined from 26% to 22% of total volume during the past 12 months.
- International investment in U.S. CRE totaled about $51 billion in 2017, accounting for 11% of total sales volume and down about 25% from last year.
- Investment volume totaled nearly $50 billion in 2017 for listed funds/REITs, up from $40 billion in 2016.

4Q13 to 4Q17 sales activity by buyer type is summarized below.

Investment Sales Activity

Summary of Transactions by Buyer



Source: Real Capital Analytics

Below are the top metropolitan areas for sales activity per RCA.

Top Metro Areas		
2017 Investment Volume (Total $)		
Office	**Industrial/Flex/R&D**	**Retail**
Manhattan	Los Angeles	Los Angeles
Los Angeles	Chicago	Chicago
Boston	DC VA Suburbs	Manhattan
Houston	Dallas	Dallas
San Francisco	Atlanta	Houston
Apartment	**Hotel**	**Overall**
Dallas	Los Angeles	Los Angeles
Atlanta	Manhattan	Manhattan
Los Angeles	Dallas	Dallas
Denver	Atlanta	Chicago
Chicago	DC VA Suburbs	Atlanta

Significant 4Q17 Sales Transactions

The following tables summarize noteworthy sales executed during 4Q17 in the major CRE sectors per CoStar.

Office Sale Transactions

Address/Name	City, State	Size (SF)	Sale Price ($ mil)	Buyer(s)
825 Eighth Ave - One Worldwide Plaza	New York, NY	2,080,000	$1,725.1	RXR Realty
100-200-222 N Sepulveda Blvd	El Segundo, CA	1,588,089	$605.5	Starwood Capital Group
685 Third Ave	New York, NY	650,995	$467.5	Unizo Holdings Company, Limited
1800 M Street NW	Washington DC	580,930	$421.0	Allianz Real Estate of America LLC
425 106th Ave NE - Centre 425	Bellevue, WA	356,909	$313.0	RFR Realty LLC
1812 Boren Ave - Tilt49	Seattle, WA	290,573	$268.5	Takenaka Corporation (U.S.A.)
1401 Lawrence St	Denver, CO	311,015	$225.0	Heitman

Industrial/Flex/Data Center Sale Transactions

Address/Name	City, State	Size (SF)	Sale Price ($ mil)	Buyer(s)
505 N Railroad Ave - Chicago Data Center	Northlake, IL	251,141	$315.0	Digital Realty Trust
44 and 48 Station Rd	Cranbury, NJ	1,240,967	$168.5	Clarion Partners
Northgate Industrial Portfolio (2)	San Bernardino, CA	1,025,324	$95.6	Westcore Properties
Southwest Commerce Center (6)	Reno, NV	1,029,700	$93.2	AEW Capital Management
2315 and 2335 NW 107th Ave	Doral, FL	1,007,019	$85.5	Foundry Commercial
135 William T Morrissey Blvd	Dorchester, MA	703,000	$81.0	Alcion Ventures
20901 Krameria Ave - Building A	Riverside, CA	1,000,000	$80.1	Invesco Advisors, Inc.

Retail Sale Transactions

Address/Name	City, State	Size (SF)	Sale Price ($ mil)	Buyer(s)
Centerton Square (9)	Mount Laurel, NJ	426,415	$129.6	Prestige Properties & Development Co.
Whittwood Town Center (17)	Whittier, CA	785,615	$123.0	Kimco Realty Corporation
Belden Park Crossings (6)	North Canton, OH	482,534	$67.0	Stark Enterprises, Inc.
Vestavia Hills City Center (7)	Vestavia Hills, AL	394,294	$60.3	Katz Properties LLC
Southern Hills Mall (3)	Sioux City, IA	571,001	$55.0	Washington Prime Group Inc.
Lake Nona Landing (2)	Orlando, FL	178,719	$52.4	Clarion Partners
Plaza Del Lago	Wilmette, IL	100,000	$48.3	Retail Properties of America Inc

Multi-Family Sale Transactions

Name	City, State	Units	Sale Price ($ mil)	Buyer(s)
Westlake & One Lake Front Apts	Seattle, WA	642	$325.0	The Blackstone Group LP
Summer House	Alameda, CA	615	$230.6	The Blackstone Group LP
EOS-21 Apartments	Alexandria, VA	1,180	$227.8	CIM Group LP
Tower 12 Apartments	Seattle, WA	314	$225.3	Weidner Apartment Homes
Shorewood Heights	Mercer Island, WA	645	$210.0	Greystar Real Estate Partners
Tower at One Greenway	Boston, MA	217	$144.5	PGIM Real Estate
Steele Creek	Denver, CO	212	$141.5	UDR, Inc.

Hospitality Sale Transactions

Name	City, State	Rooms	Sale Price ($ mil)	Buyer(s)
Gansevoort Park Avenue	New York, NY	249	$200.0	Highgate Hotels, L.P.
Fairmont Copley Plaza	Boston, MA	383	$170.0	Ashkenazy Acquisition Corporation
WinStar Resort Hotel	Thackerville, OK	1,395	$146.5	Global Gaming Solutions
Marriott at Legacy Town Center	Plano, TX	404	$104.0	ROCH Capital
Atlanta Westin North at Perimeter	Atlanta, GA	372	$85.5	Crescent Real Estate Equities LLC
Hilton Indianapolis Hotel & Suites	Indianapolis, IN	332	$82.5	Southwest Value Partners
Embassy Suites Springfield at Ft Belvoir	Springfield, VA	219	$68.0	Chatham Lodging Trust

NCREIF Property Index

The NCREIF (National Council of Real Estate Investment Fiduciaries) Property Index (NPI) is a quarterly time series composite total rate of return measure of investment performance of individual CRE properties acquired in the private market for investment purposes only. Properties in the NPI are accounted for using market value accounting standards. NCREIF requires that properties included in the NPI be valued at least quarterly using standard CRE appraisal methodology. Each property must be independently appraised a minimum of once every three years. The capital value component of return is predominately the product of property appraisals. When entering the NPI, properties must be 60% occupied; investment returns are reported on a non-leveraged basis and properties must be owned/controlled by a qualified tax-exempt institutional investor or its designated agent.

NPI General Recap

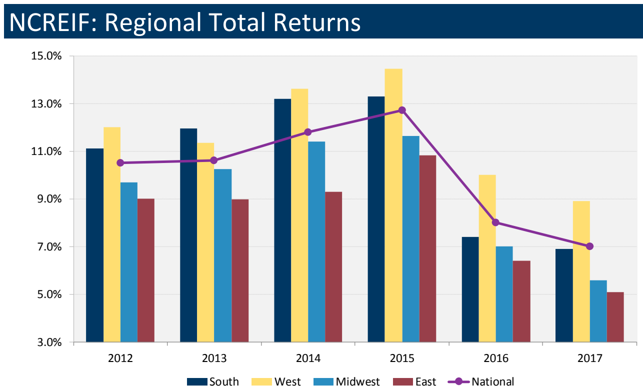
- Although gains remained modest, NPI total returns increased 10 BPS from last quarter to 1.80%, comprised of a 1.16% income return and a 0.64% capital appreciation return. Total returns registered 1.73% (1.14% income return and a 0.59% capital appreciation return) during 4Q16.
- Total one-year returns registered 7.0%, 100 BPS lower YoY. The average quarterly return during the past 5 years was nearly 2.5%.
- Despite modest growth, it was reported that overall market fundamentals remained favorable during 4Q17.
    - Occupancy rates (93.6%) increased to a 16-year high for NCREIF-tracked properties. Industrial assets had the highest occupancy (96.4%), followed by retail assets (93.1%).
    - 4Q17 trailing year NOI growth was 5.2%, led by gains in the office and industrial sectors. Retail and apartment growth lagged the overall average.
    - 4Q17 trailing year rental growth was 3.5%, led by gains of around 6.0% within the industrial sector. Office gains were nearly 5.0% while the retail and apartment sectors trended near 2.0%.

NPI Annualized Returns by Region

- The West and South regions had the greatest returns (2.3% and 1.7%, respectively) during 4Q17. One-year returns have been strongest in the West at 8.9%, which was 200 BPS higher than in the South.
- Property gains continued to lag in the East. The region's one-year returns of 5.1% trailed the broader index by 190 BPS. Returns of 1.3% were realized during 4Q17.
- Quarter over Quarter (QoQ) gains in the Midwest declined slightly in 4Q17 and the region returned 5.6% during the past year.

Below is a graph illustrating total returns by region since 2012.

NCREIF: Regional Total Returns



NCREIF Composition by Market Value

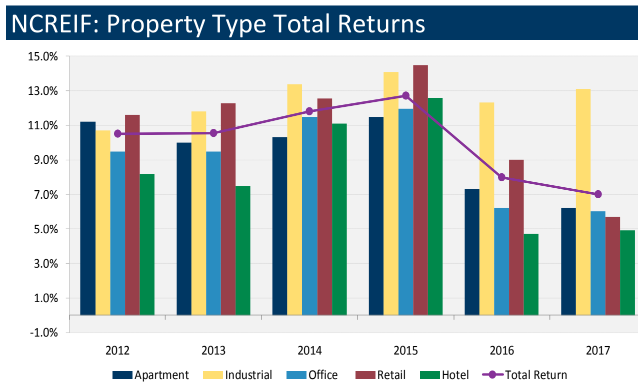
Property Type		Region	
Office	37.0%	West	38.5%
Apartment	23.8%	East	32.8%
Retail	23.2%	South	19.9%
Industrial	15.3%	Midwest	8.7%
Hotel	0.8%		

NPI Annualized Returns by Property Type

- Spreads between the best and worst performing asset types registered about 232 BPS (3.28% vs. 0.96%), higher than the 209 BPS spread (3.29% vs. 1.20%) last quarter.
- Continuing the recent trend, the industrial sector recorded the strongest price appreciation with a 3.3% return during 4Q17. The one-year return of 13.1% outpaced all other property types by at least 690 BPS.
- Within the apartment sector, a 1.6% return was recorded during 4Q17, which was slightly lower than the prior quarter. The one-year return of 6.2% is 110 BPS lower than the annual return of 2016.
- Growth within the retail sector increased 7 BPS from the prior quarter to nearly 1.3%. The one-year return of 5.7% lagged the 9.0% annual return posted in 2016.
- Returns within the office sector increased 25 BPS QoQ to nearly 1.7% during 4Q17. The one-year return of 6.0% trailed the annual return recorded in 2016 by 20 BPS.
- Returns within the hotel sector weakened during 4Q17, falling 134 BPS QoQ to about 1.0%. This asset class had the strongest income return for the quarter at 1.9%, but recorded its eighth consecutive quarter of depreciation. The one-year return of 4.9% was 20 BPS higher than the annual return recorded in 2016.

Below is a graph showing total returns by property type since 2012.

NCREIF: Property Type Total Returns



Equity REIT Analysis

FTSE National Association of REITs U.S. Real Estate Index

Comprised of 167 REITs, the Financial Times of London and London Stock Exchange (FTSE) NAREIT All Equity REITs Index ("The Index") gained 2.5% during 4Q17, despite a slight December decline. Analysts believed the recent REIT weakness resulted from expectations that the industry will not benefit from the TCJA as much as other corporate sectors, which has shifted some investment into more growth-oriented sectors. For the year, the Index has increased 8.7%, similar to 2016.

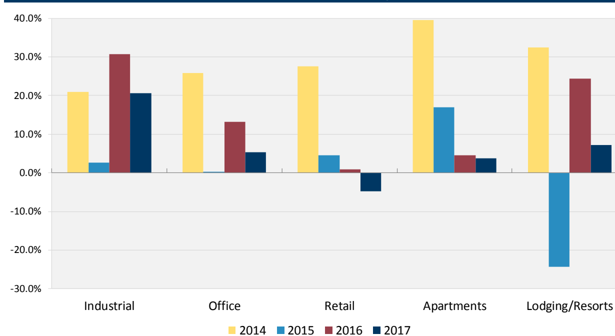
Still, REITs underperformed the broader stock market during 2017, largely due to concerns regarding performance in a rising interest rate environment. According to a January 3, 2018 article from REIT.com, Alexander Goldfarb, managing director at Sandler O'Neill & Partners, feels that REITs could come back in favor in 2018, assuming no signs of a market downturn, as the valuation gap with the broader market widens.

Below is a brief overview of selected CRE sector performance.

- Continuing momentum from its 31% return last year, industrial REITs were again coveted by investors, and gained nearly 21% in 2017, the highest among the major property types. Sustained demand for big box distribution space, resulting from the growth of e-commerce, has resulted in the continued migration of warehouse users into urban metro areas to be closer to consumers.
    - Often tied to industrial market performance, data center and self-storage REITs returned approximately 28% and 4%in 2017.
- Office REIT performance ended 2017 on a positive note, returning 3.3% during 4Q17. Still, the 5.3% return for 2017 underperformed the prior year, when investors saw gains of 13.2%. Analysts continue to be concerned about employment and rental rate growth.
- Despite posting a 1.5% loss during 4Q17, apartment REITs gained 6.5% during 2017 versus 4.5% in 2016. Favorable demographics and the increasingly high cost of homeownership have sustained demand despite a growing supply, which has moderated rental growth in many metro areas.
- Although retail REITS posted a 4.8% loss in 2017, the sector rebounded in 4Q17 with a 6.8% gain, the highest among the major property sectors. The regional mall subsector returned 10.3% during the quarter, but posted a 2.7% loss for the year. During the year, the shopping center subsector posted an 11.4% decline while gains of 3.1% were achieved within the free-standing subsector.
- After little change through the first nine months of the year, lodging/resorts REITs gained 5.4% during 4Q17. Total 2017 returns were 7.2%, well off the 24.3% gain last year. As steady business and leisure travel is projected to support occupancy and RevPAR gains, the increasing cost and availability of labor loom as concerns to ownership.

Below is a graph illustrating total returns by property sector from 2014 to 2017.

FTSE NAREIT REIT Performance by Sector



Largest REIT by Market Cap 2017 Returns

Below is a summary of the performance of the largest U.S. equity REITS during 2017. Leading Infrastructure REITs provided significant returns (ranging from 33% to 58%) to investors and the two largest data center REITs returned between 20% and 29%for 2017. In contrast, returns within the largest retail REITs were small.

Largest U.S. Equity REITs

Name	Symbol	Sector	Market Cap (billions)	2017 Return
American Tower REIT	AMT	Infrastructure	$60.6	38%
Simon Property Group Inc.	SPG	Retail	$53.6	1%
Crown Castle International Corp.	CCI	Infrastructure	$44.7	33%
Public Storage	PSA	Storage	$36.3	-3%
Equinix, inc.	EQIX	Data Center	$35.3	29%
Prologis Inc.	PLD	Industrial	$34.2	6%
Weyerhaeuser Co.	WY	Timber	$26.5	22%
Avalonbay Communities Inc.	AVB	Residential	$24.6	3%
Welltower Inc.	HCN	Healthcare	$23.4	1%
Equity Residential	EQR	Residential	$23.3	2%
Digital Realty Trust Inc.	DLR	Data Center	$23.3	20%
GGP Inc.	GGP	Retail	$22.1	-3%
Ventas Inc.	VTR	Healthcare	$21.3	1%
Boston Properties Inc.	BXP	Office	$20.0	6%
SBA Communications Corp.	SBAC	Infrastructure	$19.8	58%
Realty Income Corp.	O	Retail	$16.1	4%
Essex Property Trust Inc.	ESS	Residential	$15.8	7%
Vornado Realty Trust	VNO	Diversified	$14.8	-4%
Host Hotels & Resorts Inc.	HST	Hotel/Lodging	$14.7	10%
Alexandria Real Estate Equities Inc.	ARE	Office	$12.5	21%

Source: Yahoo Finance, REIT.com

Stock Market Recap

Stocks continued to provide robust returns for investors and advanced to record high levels during 4Q17. Both the Dow Jones Industrial Average (+10.3%) and the S&P 500 (+6.2%) recorded their ninth consecutive quarterly advance and The NASDAQ (+6.2%) recorded its sixth straight quarterly gain. Volatility remained light and the CBOE Volatility index fell to its lowest level since 1993. Mid-and large cap stocks outperformed small cap stocks and technology, financial and consumer discretionary were the best performing sectors within the S&P 500.

Bullish sentiment, driven by investor confidence regarding positive corporate earnings, steady economic growth and the anticipation of the passage of the TCJA, which would reduce the corporate tax rate from 35% to 21%, continued to drive stock market strength and resulted in what many observers referred to as a market "melt up" during the second half of the quarter.

The following chart highlights the annual returns of Equity REITs in comparison to several of the leading stock market indices. During 2017, the technology-heavy NASDAQ returned 28.2%, outperforming other leading indices and equity REITs.

Index	2012	2013	2014	2015	2016	2017	2012-2016 avg
Equity REIT	19.7%	2.9%	28.0%	2.8%	8.6%	8.7%	12.4%
NASDAQ	14.6%	12.1%	13.4%	5.7%	8.9%	28.2%	10.9%
S&P 500	15.9%	38.3%	11.4%	-0.7%	12.0%	19.4%	15.4%
DJIA	13.4%	29.6%	7.5%	-2.2%	16.5%	25.1%	13.0%

Source: Yahoo Finance:

Capital Raising

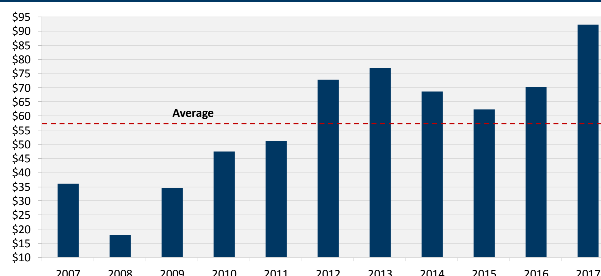
At a time of continued low interest rates, REITs continued to benefit from investor demand for their attractive dividends by raising money in financial markets. This wave of issuance has been well-received by investors.

After raising $70.2 billion last year, publicly traded U.S. equity REITs raised $92.2 billion throughout 391 capital offerings in 2017, a YoY increase of 31%. Crown Castle International Corp., a communications REIT, raised $3.85 billion, representing the largest capital offering of 2017.

In 2017, the specialty sector (comprising data center, student housing and communications REITs) raised nearly $26.7 billion, followed by the $15.6 billion raised by retail REITs, $11.8 billion raised by residential REITs (comprised of multi-family, single-family, student housing and manufactured home REITs), $10.6 billion raised by healthcare REITs and the $8.9 billion raised by office REITs. Senior debt offerings totaled $53.3 billion, followed by $30.4 billion through common stock offerings and $8.5 billion through preferred stock offerings.

Below is a graph showing the capital raised by REITs since 2007.

Total Capital Raised by REITs (in billions)



Source: NAREIT/ SNL Financial

Commercial Lending

As per 2017 preliminary estimates from the Mortgage Bankers Association's (MBA) Quarterly Survey of Commercial/Multi-Family Mortgage Bankers Originations, commercial and multi-family loan organizations increased 15.0% YoY. 4Q17 commercial and multi-family mortgage loan originations increased 10% YoY and 9% QoQ.

Based on preliminary data, 2017 originations for hotel (+26.0%) and industrial properties (+22.0%) recorded the largest increases among property types YoY. Retail was the only property type to record a decline, falling 21%. Among investor types, loans originated for CMBS (+43.0%) and Government Sponsored Enterprises (+23.0%) recorded the largest increases.

Jamie Woodwell, MBA's VP of CRE Research, reported that 2017 was a record year for borrowing and lending backed by commercial real estate properties, based on preliminary numbers, adding the increase was driven by multi-family lending along with overall growth in originations for commercial mortgage-backed securities (CMBS). He remarked, "Entering 2018, there continues to be strong interest to lend by just about every major capital source."

According to the January 2018 Senior Loan Officer Opinion Survey on Bank Lending Practices, banks reported that lending standards for CRE loans secured by multi-family residential properties tightened while loan standards for non-farm, non-residential properties changed little during 4Q17. Banks also reported weaker demand for multi-family and construction/land development loans during the quarter.

CBRE's Lending Momentum Index, which tracks loans originated or brokered by CBRE Capital Markets, fell by 1.2% during 4Q17, but increased 14.5% in 2017 versus 2016. The report noted that loan underwriting became slightly more aggressive in 4Q17 as loan-to-value ratios increased while debt yields declined.

The following chart, per the Mortgage Bankers Association, summarizes lending activity by property and investor type. Of note, originations for hotel assets increased significantly during both periods while sizeable YoY gains were recorded for CMBS/Conduits and GSE's

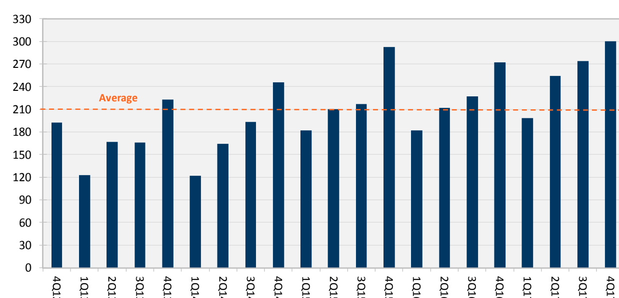
Lending Activity 4Q 2017

Type	% Change since 4Q 2016	% Change since 3Q 2017
Property Type		
Industrial	-17.0%	25.0%
Multi-Family	16.0%	17.0%
Office	7.0%	9.0%
Retail	-40.0%	-21.0%
Hotel	40.0%	31.0%
Health Care	-36.0%	-28.0%
Investor Type		
CMBS/Conduits	27.0%	-6.0%
Commercial Banks	-5.0%	8.0%
Life Insurance Co.	-4.0%	11.0%
GSE's (FNMA/FHLMC)	17.0%	4.0%
Overall	**10.0%**	**9.0%**

Below is a graph depicting the frequency of commercial/multi-family loan originations since 4Q12.

Commercial/Multi-Family Mortgage Bankers Origination Index

2001 Quarterly Average = 100



Source: Commercial Mortgage Bankers Association

Commercial Mortgage Backed Securities (CMBS) Market

The revitalization of the CMBS market continues as a vital action for the recovery of the commercial real-estate market.

CMBS Issuances

According to data from Commercial Mortgage Alert (CMA), CMBS issuances registered $29.0 billion during 4Q17, the highest quarterly output since 4Q07. According to Trepp, the lodging sector (35.0%) accounted for the largest percentage of CMBS issuances during the quarter, followed by the office (24.5%), retail (12.4%) and mixed-use (11.6%) sectors.

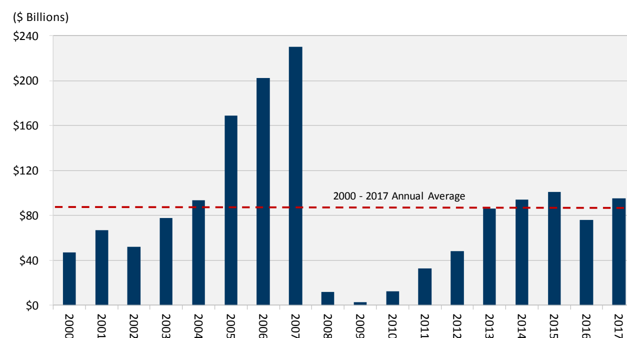
CMBS issuance registered about $95 billion in 2017, up about 25.0% from 2016, and ramped up quarterly during the year.

According to Trepp, about 30% of 2017 CMBS issuance was concentrated in office properties, followed by the lodging (28.0%), retail (13.5%), mixed-use (13.0%), multi-family (5.30%) and industrial (3.0%) sectors.

2017 issuance exceeded analyst expectations as the CMBS market has seemingly adapted to the risk retention rules enacted in late 2016. Analysts believed these rules would slow issuance by negatively impacting the ability of real estate owners to refinance loans on their properties; however, during 2017, investors increasingly purchased commercial real estate debt and were benefitted by low interest rates, minimum volatility, tighter spreads and a sizeable pipeline of loans in need of refinancing.

Looking ahead, Trepp is predicting that U.S. issuance will decline to about $80 billion in 2018, in part to challenge the sourcing of new loans from a declining deal pipeline related to loan maturities.

U.S. CMBS Issuances



Source: Commercial Mortgage Alert

CMBS Delinquency

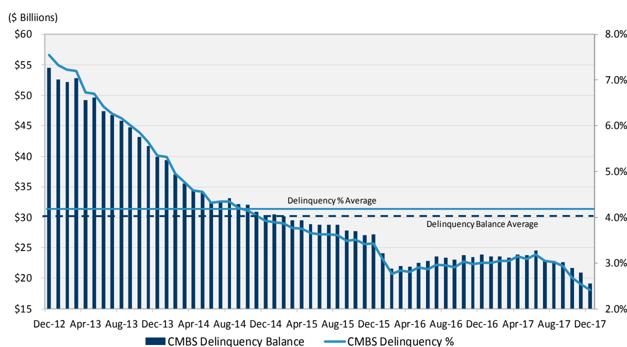
According to Morningstar, the CMBS delinquency rate declined for the sixth consecutive month in December to the lowest level since May 2009 as originations outpaced new problem loans and servicers continued to wind down their legacy portfolios. The September 2017 U.S. CMBS delinquency rate registered 2.41%, which is 59 BPS lower on a YoY basis. Other notable information from the December report is summarized below.

- The delinquent unpaid balance for CMBS totaled $19.2 billion in December 2017, which was $4 billion lower YoY.
- By property type, multi-family properties had the lowest delinquency rates at 0.6%. Office properties had the highest delinquencies (6.3%) followed by retail (5.6%), industrial (4.9%) and hotel (3.0%) assets.
- Retail loan delinquencies, at 37.3% of the total, have been the greatest contributor to CMBS delinquencies during the past 12 months and fell 18.2% to $7.1 billion.

- Office loan delinquencies accounted for 35.0% of the total, but decreased $1.8 billion or 21.5% YoY to $6.7 billion.
- Hotel loan delinquencies, representing 9.2% of the total, fell 24.5% YoY to $1.8 billion.
- Multi-family loan delinquencies, representing 6.6% of the total, decreased 17.7% YoY to $1.3 billion.
- Industrial loan delinquencies, representing 4.9% of the total, decreased 13.2% YoY to $934 million.
- Delinquencies from deals issued in 2006 and 2007 represented 77.0% of all delinquencies by balance.
- The top three states ranked by delinquency exposure were Virginia, California and Ohio, which accounted for 20.0% of CMBS delinquencies.
- In December, the volume of newly delinquent loans was below $1.0 billion for only the second time since 2014.

Below is a chart depicting monthly CMBS delinquencies since December 2012.

CMBS Delinquency Balance vs. Percentage



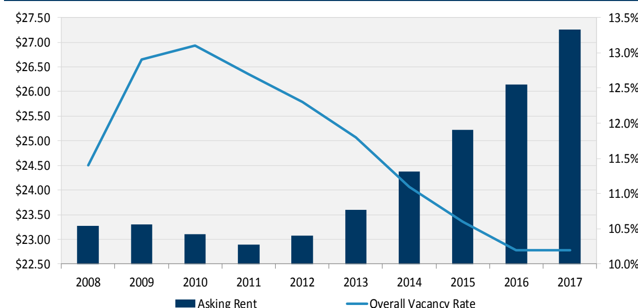
Source: Morningstar

Property Sector Overviews

Office

- 4Q17 office vacancies remained unchanged at 10.2% on both a YoY and QoQ basis.
- YoY, asking rental rates increased 4.2%, representing the sixth consecutive year of growth. CoStar reported that Class A asking rental rates were about $8.50/sf higher than for Class B space.
- According to leading brokerages, tenants continued to expand and lease increasing amounts of space in areas with large concentrations of technology companies.
- Nearly 151 million square feet (msf) was under construction as of 4Q17, a slight decrease YoY. In Manhattan, development continues to progress on six buildings totaling nearly 13.0 msf, including several buildings within the growing Hudson Yards neighborhood. In San Francisco, Salesforce Tower and First Street Tower, totaling near 2.6 msf, are nearing completion.
- Approximately 621,000 jobs were created in the office-using employment sectors during 2017, down 12.5% YoY. Most of the new positions were created in the professional and business services sector.

Office Market: Rents vs. Vacancy Rates



Source: CoStar (reflects select markets)

- About 89 msf was completed during 2017, an increase of 10.5% YoY (CoStar). Apple Park, the 2.8-msf headquarters campus for Apple, in Cupertino, CA, was the most notable completion. Other top deliveries included 150 North Riverside Drive (1.2 msf) in Chicago and the 1.1 msf Northwestern Mutual Tower in Milwaukee, WI.
- During 2017, net absorption softened from 113.0 to 76.5 msf from the prior year. Since 2016, nearly all the absorption was recorded in suburban markets (68.0 msf) and most absorption was recorded for Class A assets (48.8 msf).

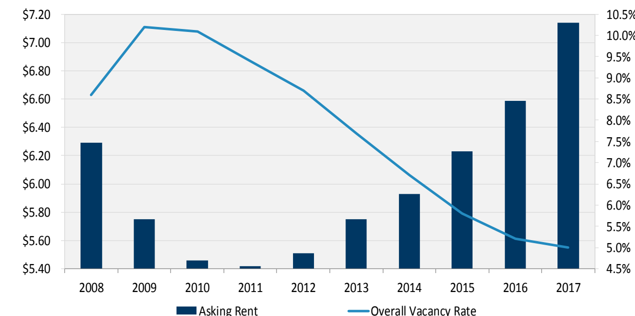
Below is CoStar's ranking of key market indicators among the largest office markets.

4Q17 Top 25 Office Markets Comparison					
YTD Net Absorption		Vacancy Rate		YTD Construction Deliveries	
Million SF		Best Performing Markets		Million SF	
Dallas/Ft Worth	5.56	Tampa/St. Pete	7.0%	Dallas/Ft Worth	9.09
Washington D.C.	4.37	San Francisco	7.0%	Chicago	3.34
Chicago	3.95	St. Louis	7.1%	Houston	3.24
Seattle	2.70	Long Island	7.2%	Denver	3.19
Boston	2.63	Minneapolis	7.3%	Seattle	3.16
Philadelphia	2.25	Seattle	7.6%	Boston	3.12
Phoenix	2.00	Kansas City	7.7%	Washington D.C.	3.11
St. Louis	1.89	Boston	7.9%	Atlanta	2.67
Atlanta	1.89	New York City	8.1%	Los Angeles	2.31
Detroit	1.77	Philadelphia	8.3%	Orange County	2.13

Industrial

- Steady demand for modern distribution space driven by rising e-commerce sales, a strengthening manufacturing sector and improving global trade has positively impacted the industrial sector.
- Vacancy rates declined 20 BPS YoY to 5.0% and are at a historically low level.
- Despite healthy market fundamentals, net absorption slowed to approximately 310 msf during the year, down about 10.0% from 2016 levels.

Industrial Market: Rents vs. Vacancy Rates

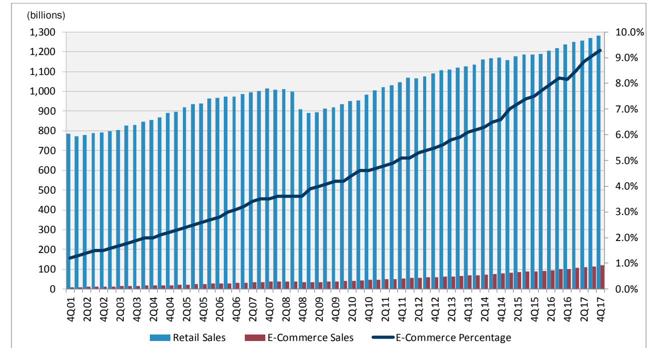


Source: Costar (reflects select markets)

- To satisfy growing demand, developers delivered about 276 msf during 2017, a 4.0% YoY increase. It was estimated that nearly 40 industrial facilities greater than 1.0 msf were delivered in 2017, including several fulfillment centers for Amazon.
- About 280 msf was under construction as of 4Q17, an 11.0% YoY increase. Work continues on Tesla's 3.8 million square foot Gigafactory in Northern Nevada, significant facilities for Michelin (3.0 msf) and Volvo (2.3 msf) are progressing in South Carolina, and development of a 2.8-msf data center for Facebook is advancing in New Mexico.
- Leasing was strong to end 2017. Best Buy, Amazon, NFI, Allied Beverage Group, S&S Activewear, Geodis and Home Depot all executed leasing transactions in excess of 500,000 sf during 4Q17.
- Due to limited available modern product, "last mile" distribution facilities, many of which are older facilities in infill and secondary locations, continue to emerge to shorten the supply chain and to facilitate the faster delivery of goods to consumers and businesses.
- Supported by the $5 billion Panama Canal expansion, U.S. seaport and inland port markets continue to drive industrial development and experience significant growth in inbound container volumes.

E-commerce, which now accounts for little more than 9.0% of total retail sales, is a significant economic driver that has driven demand for industrial space as retailers continue to adjust their supply chain policies to ensure faster delivery times.

E-Commerce as a Percentage of Total Retail Sales



Source: Census Bureau

Below is CoStar's ranking of key market indicators among the largest industrial markets.

4Q17 Top 25 Industrial Markets Comparison

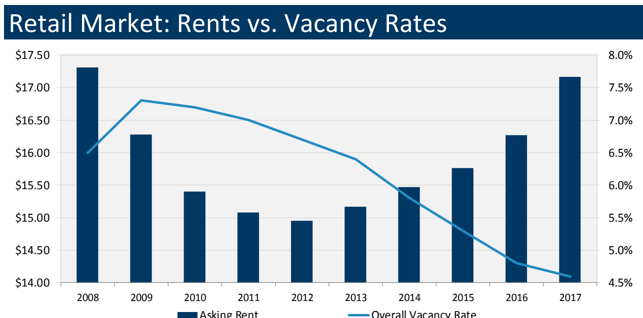
YTD Net Absorption		Vacancy Rate		YTD Construction Deliveries	
Million SF		Best Performing Markets		Million SF	
Dallas/Ft Worth	22.89	West Michigan	1.7%	Dallas/Ft Worth	28.73
Philadelphia	21.38	Los Angeles	2.0%	Inland Empire CA	20.38
Atlanta	20.55	Orange County CA	2.7%	Chicago	18.77
Chicago	17.94	Seattle	3.0%	Philadelphia	15.71
Inland Empire CA	14.76	Detroit	3.0%	Atlanta	15.06
Northern NJ	10.30	Cincinnati	3.1%	Northern NJ	9.13
Phoenix	9.78	Cleveland	3.9%	Houston	8.20
Cincinnati	7.61	Long Island	3.9%	Los Angeles	6.63
Los Angeles	7.29	Milwaukee	4.1%	Phoenix	6.25
Houston	6.75	Minneapolis	4.1%	Denver	6.23

Source: CoStar

Retail

- Retail sales increased 5.5% YoY in 4Q17 and reached their highest level since 2014 on increased consumer optimism regarding the labor market and economy.
- Despite an increasing number of retail closings and bankruptcies, the overall retail vacancy rate fell 20 BPS YoY to 4.9% as of 4Q17. The neighborhood shopping center sector, which comprises about 70% of all retail inventory, had higher vacancies (7.4%) than the smaller mall (3.9%) and power center (4.7%) sectors.
- As space has tightened, asking rental rates increased about 5.5% YoY.

Retail Market: Rents vs. Vacancy Rates



Source: CoStar (reflects select markets)

- New development remains modest, as cautious developers wait for projects to be extensively pre-leased before breaking ground, typically for single-tenant formats, in locations with strong demographic profiles.
- Although the pace of Chapter 11 filings slowed in 4Q17, numerous retailers declared for bankruptcy protection in 2017 in response to consumers' desire to purchase more goods online, spend more on travel and experience-related activities, and focus more shopping more at discount and off-price retailers. In September, Toys "R" Us filed the third largest retail bankruptcy, only behind 2002 Kmart and 1990 Federated Department Stores filings.

Significant 2017 Retail Chapter 11 Bankruptcy Filings

Company	
Charming Charlie (4Q17)	Papaya Clothing (2Q17)
Styles for Less (4Q17)	RadioShack (1Q17)
Toys R Us (3Q17)	Gander Mountain (1Q17)
Aerosoles (3Q17)	Gordmans Stores (1Q17)
Vitamin World (3Q17)	hhGregg (1Q17)
Perfumania (3Q17)	BCBG Max Azria (1Q17)
True Religion Apparel (3Q17)	Wet Seal (1Q17)
Alfred Angelo (3Q17)*	Marbles - The Brain Store (1Q17)
Gymboree (2Q17)	Vanity (1Q17)
rue21 (2Q17)	Eastern Outfitters (1Q17)
Payless ShoeSource (2Q17)	Limited Stores (1Q17)

* Represents Chapter 7

Sources: CNBC, businessinsider.com

- As the supply of physical stores continues to overshadow shopper demand, retailer profits have continued to be negatively impacted, contributing to a surge of store closings. During 2017, it was estimated that 7,000 store closings were announced, which surpassed the previous high set during recession.

Significant Announced Retail Store Closings

Company	Stores	Company	Stores
Radio Shack	1,470	American Apparel	110
Payless ShoeSource	700	Gordman's Stores	101
Rue21	400	Michael Kors	100
Ascena Retail Group	400	Charming Charlie	100
Sears and Kmart	358	The Children's Place	100
Gymboree	330	Dollar Tree	74
The Limited	250	Aerossoles	74
hhgregg	220	Macy's	74
GameStop	190	Gap	70
Bebe Stores Inc.	180	Staples	70
Wet Seal	171	CVS	70
Crocs	160	Aaron's	64
J.C. Penney	138	MC Sports	68
Vitamin World	124	Perfrumania	65
BCBG Max Azria	120	Alfred Angelo	61

Source: Fung Global Retail & Technology

Source: Fung Global Retail & Technology

- Dollar store chains (such as Dollar General and Dollar Tree), national discounters (such as TJ Maxx, Ross and Walmart), and new U.S. grocery chains (Aldi and Lidl) continue to be the primary drivers of brick and mortar retail growth. Significant U.S. store openings are summarized below.

Significant Announced Retail Store Openings

Company	Stores	Company	Stores
Dollar General	1,285	Gap	90
Dollar Tree	650	Walmart	89
Aldi	400	Sephora	70
TJX	111	Hobby Lobby	60
Five Below	100	H&M	46
Ulta	100	Dick's Sporting Goods	43
Lidl	100	Target	32
Ross Stores	100	Costco	24

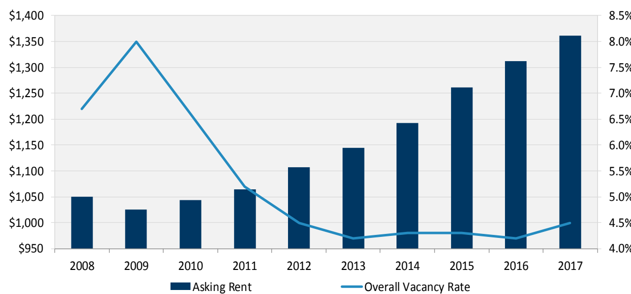
Source: Fung Global Retail & Technology

Source: Fung Global Retail & Technology

Apartment

- According to Reis, Inc. the national vacancy rate increased 10 BPS QoQ and 30 BPS YoY to 4.5%, primarily due to new supply being delivered. Vacancies have been slowly rising after bottoming at a cyclical low in 3Q16.
- Despite the uptick in available units, average asking rental rates grew by 0.5% QoQ during 4Q17 and 4.2% YoY according to Reis, Inc. Effective rents increased 0.5% QoQ and 3.6% YoY.
- As steady demand for apartments has continued, partly in response to the challenges of home ownership, landlord concessions have lessened, resulting in higher effective rents; however, effective rent growth has slowed in recent quarters as concessions have increased due to increasing competition.
  - Apartment deliveries increased to about 66,000 units during 4Q17 and totaled about 220,000 units during the year, slightly higher than last year's total (Reis, Inc.).
    - According to Realpage, the number of apartments completed in the U.S. hit a 30-year high in 2017, driven by completions in the Dallas, New York and Houston metro areas.

Apartment Market: Rents vs. Vacancy Rates



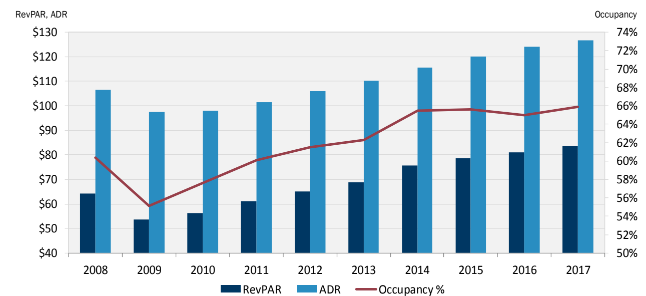
Source: Reis, Inc.

- 2017 net absorption totaled about 168,000 units, off nearly 22% from 2016 totals. Given the active pipeline currently under construction and reported delays for several projects nationwide, absorption is predicted to escalate during the next several quarters.
- Apartments incorporated into walkable, mixed-use developments and near employment centers and transit hubs in urbanized environments continue to highly coveted, but most prospective tenants are driving demand for Class B product in suburban or secondary locations, where rents are more affordable.
- Steady demand continues to be fueled by new millennial household formations, downsizing baby boomers and existing renters who cannot qualify for a mortgage.

Hotel

- During 2017, Smith Travel Research (STR) reported that hotel occupancies increased 0.9% to 65.9%, the average daily rate increased 2.1% to nearly $126.72 and RevPAR, increased 3.0% to about $83.57. The absolute values in these three primary performance metrics were each the highest STR has ever benchmarked.
    - There were also records set for demand (1.23 billion room-nights sold) and supply (1.87 billion room-nights available).
- According to STR, there were about 1,400 U.S. projects, totaling nearly 180,000 rooms, under construction as of December 2017. This represents a 3.7% YoY decrease and the third consecutive monthly decline. It was speculated that the decline was due in part to greater difficulty in obtaining financing for new projects.
- New hotel construction continues to be focused within the upscale segment, which includes select-service and extended-stay hotels. Economy class projects have been limited due to rising construction costs and weaker performance metrics.
    - STR reported that New York had about 12,000 rooms being built across 69 hotels, followed by the Dallas (5,770 rooms in 45 hotels) and Nashville (5,030 rooms in 33 hotels) markets.

Lodging Market: RevPAR, ADR & Occupancy



Source: Smith Travel Research

- Of the top 25 markets, 18 reported YoY RevPAR growth as per STR. Houston posted the largest 2017 annual increases in RevPAR (+10.5%) and occupancy (+7.1%), driven by the effects of Hurricane Harvey, which boosted demand to accommodate displaced residents, relief workers and insurance adjustors. Orlando reported the only other double-digit rise in RevPAR and Nashville posted the largest YoY rise in ADR (+6.2%).
- In absolute values, New York, NY recorded the highest levels in occupancy (86.7%), ADR (US$256) and RevPAR (US$222) in 2017.

Forecast

Economic

- Steady economic growth in the near term will be supported, in part, by tax cuts to both business and individuals. These tax cuts along with rising disposable income (from stock market and housing value gains) should further stimulate consumer spending.
- Strong global growth along with corporate tax reductions are expected to boost business spending and investment.
- After the Federal Reserve raised the federal funds rate three times in 2017, indications are that a March rate hike is likely.
- An unbalanced housing market is expected to persist in the near-term as historically low inventory levels will not be able to satisfy demand, which will drive prices higher.
- As the economy nears full employment, job growth is expected to moderate, but annual wage growth, which had trended around 2.5% for the past several years, is projected to accelerate modestly.
- After rising 2.1% in 2017, inflation is expected to rise modestly in 2018, reflecting higher gasoline and energy prices.

General Property

- Spreads between real estate cap rates and interest rates are expected to further compress with additional anticipated interest rate hikes. As a result, investors will continue looking towards secondary markets, expanding property acquisition beyond core assets and into Class B product and niche property sectors to maximize yields.
- A divide between seller expectations and buyer valuations will likely continuing weigh on sales volume despite a large amount of capital ready to be deployed by potential investors.
- U.S. commercial real estate assets will continue to attract international investors and support pricing; however, investors have increasingly expressed more caution towards U.S. real estate assets due to interest rate risks, elevated valuations, oversupply (in select markets) and political turmoil.
- Although REITs will continue attracting the interest of investors, returns may be challenged by rising interest rates.
- U.S. CMBS issuance is expected to decline modestly, due in part to a thinning deal pipeline from loan maturities.

Property Sector

- **Retail:** Although steady consumer spending is expected to persist, brick and mortar establishments will continue to consolidate and close stores. As landlords attempt to fill these vacancies, new tenants are expected to ask for more concessions and flexible lease terms. Rather than build, developers will continue repositioning older/obsolete retail assets into new, consumer driven venues.
- **Apartment:** Favorable demographic drivers should sustain demand for rentals as millennial household formation continues to rise while more empty nester baby boomers will look to downsize from owned-homes into amenity-filled rentals. Economically, rising home prices will continue to present affordability challenges to ownership and force potential buyers to remain in rental housing.
- **Office:** As positions become more difficult to fill, a tighter labor market is projected to challenge growth in office-using job sectors. Raised construction levels are expected to drive up vacancies and to constrain rental growth in select metropolitan markets. Investors and tenants will continue exploring suburban locations where less price appreciation has occurred relative to CBD locations.
- **Industrial:** E-commerce will continue to drive demand for modern distribution space/fulfillment centers and result in supply chain modernization to deliver products to consumers in the fastest and most efficient way. As more speculative supply enters the market, vacancy rates are expected to increase in select metropolitan markets and rental rate appreciation will slow modestly.
- **Hotel:** RevPAR and ADR are projected to grow modestly while the luxury and independent chain-scale segments are likely to report the largest increases in occupancy. President Trump's travel bans and immigration crackdowns may lead to a decline in international travel. The rising cost of labor and the continued rise of home sharing companies (with lower overhead costs and less regulations) will continue to challenge leading hotel flags.

Real Estate and Infrastructure

Every real estate client or stakeholder has unique objectives, constraints, operational circumstances and economic realities. The FTI Consulting Real Estate and Infrastructure group has the deep bench of expertise and experience to help real estate owners, users, investors and lenders better navigate the market's complexities and manage the inherent risks in this climate. For more than three decades clients have relied on our creative and sound business solutions to turn these complexities into opportunities.

As unbiased and independent advisors, we represent leading public and private real estate entities and stakeholders including REITs, financial institutions, investment banks, opportunity funds, insurance companies, hedge funds, pension advisors and owners/developers to align strategy with business goals.

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