

# Investors Carry Positive Sentiment into 2018

## PwC Real Estate Investor Survey™

Fourth Quarter 2017



**30<sup>th</sup> Anniversary**



Dear Reader:

While concerns exist for each main sector of the U.S. commercial real estate industry, most investors are embracing the unusual length of the current real estate cycle and anticipating many favorable trends to continue in the coming year. Our lead story, “Investors Carry Positive Sentiment into 2018,” provides insight into what they see as challenges, as well as bright spots.

In this issue we also continue with our new quarterly feature titled *Survey Trends*, focusing on the warehouse sector this quarter by using the long history of our Survey data to highlight trends and unique findings. This section starts on page 18.

The semiannual *National Development Land Market* and *National Student Housing Market* are also included in this issue. And, if you haven’t already received a copy of *Emerging Trends in Real Estate*® 2018, please click the link below, which will take you to the webpage where you can download a complimentary copy of the report.

<https://www.pwc.com/us/en/asset-management/real-estate/emerging-trends-in-real-estate.html>

Just a reminder, you can follow the Survey’s senior editor, Amy Olson, on Twitter @amyolsonatl, and receive other real estate industry tweets from PwC following @PwC\_LLPL and @mitch\_roschelle.

As we enter our 31st year of production, I thank you for subscribing to our quarterly publication. We are working on some exciting new additions to the Survey for 2018!

I wish you a joyful holiday season and a happy new year.

Cheers,

A handwritten signature in black ink that reads "Susan Smith". The signature is written in a cursive, flowing style.

Susan M. Smith  
Editor-in-Chief

## *In need of data for your commercial real estate analyses and reports?*

With over 30 years of quarterly history, data from the *PwC Real Estate Investor Survey* could be just what you need.

Survey averages are available for the following key stats:

Overall capitalization rates

Discount rates

Residual capitalization rates

Initial-year market rent change rates

Initial-year expense change rates



A complete list of survey markets and their debut dates can be found by clicking [here](#).

Special packages that include the complete histories for various national markets and city-specific office markets are also available.

For more details, click [www.pwc.com/us/realestatesurvey](http://www.pwc.com/us/realestatesurvey) then click “Order” at the bottom and then click “Historical Data in Excel Format”

If you have questions, or to customize a package for a specific time period and/or property type, please email [susan.m.smith@pwc.com](mailto:susan.m.smith@pwc.com).

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\*Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

# PwC Real Estate Investor Survey

## National Highlights

### INVESTORS CARRY POSITIVE SENTIMENT INTO 2018

Favorable economic and demographic trends have benefitted the U.S. commercial real estate industry for some time, lengthening the current cycle beyond what some investors believe is “normal” or even “prudent” based on past experiences. “Is it reasonable to assume we’ll have the boom without the bust based on our history?” asks an investor. For the most part, our surveyed investors believe the short answer is yes. While this assertion means that few are expecting an abrupt shift in the cycle path over the near term, it does not suggest that investors aren’t closely monitoring trends or being more conservative in anticipation of a correction because many of them certainly sense that the expansion is winding down. They also acknowledge that challenges exist and concerns are natural at this point in the cycle. But, they also recognize that there are many bright spots across each property sector, as well as geographies.

In the warehouse sector, “fundamentals have never been better” and supply and demand are in balance in many cities despite additions to supply. In the third quarter of 2017, completions totaled 34.4 million square feet – a 41.0% increase over the prior two quarters, as per Reis. However, net absorption exceeded the rate of new construction by a 4:3 ratio. “Steady leasing activity driven mainly by e-commerce is a bright spot for warehouse,” says a participant. “Occupancy will likely remain near record-high levels,” says a Pacific region investor. As for concerns, surveyed investors note that heightened foreign capital interest is driving up pricing; quality for-sale product and vacant sites for development are difficult to find; and moderating rents in the near term could mean purchases fall short of performance expectations.

Elevated levels of new office construction are a top concern for investors in the national CBD office market and various other cities, like Charlotte, Dallas, and Denver. “The delivery of new space will create some challenges here,” believes an investor in Charlotte. “Lots of supply is coming online and it may be too much, too fast,” adds one in Dallas. Linked to their oversupply concerns is the fear that rent growth wanes, the pricing gap widens, and buying opportunities fade. On a positive note, investors are impressed with the strength of the national and local economies, which continue to spur employment growth and tenant demand. “Job growth and leasing velocity are two bright spots in Atlanta,” remarks an investor. “We expect continued growth in both employment and population in Portland,” predicts another. Nevertheless, an unknown in Portland, as well as in other cities, is if the economy can create enough office-space-using jobs to keep demand ahead of supply – and that’s a concern.

In the U.S. apartment sector, the surge in new units and a subsequent slowdown in rent growth are top worries for investors. They are also keeping an eye on interest rates “since a rise in rates could put upward pressure on cap rates and downward pressure on values.” Ironically, a bright spot noted by apartment investors is that oversupply issues will be short lived due to persistent demand, a decline in new supply, and a growing preference to rent instead of own. “It will take about 18 months for this sector to digest the new supply and reset itself,” estimates an investor.

It’s these types of “we-will-persevere” comments that suggest many investors are letting the bright spots eclipse the clouds as they see the current cycle position in a new light. Yes, recent and pending additions to supply are understandably a main concern at this point in the cycle, but after spending most of the last couple of years focused on what could end the expansion, investors today are more focused on finding investment opportunities that will maximize yields in a unique cycle phase that may last through 2018 and beyond. ♦

# Overall Cap Rate Analysis

In the fourth quarter of 2017, the average overall capitalization (cap) rate decreases in 17 Survey markets, increases in 13, and holds steady in three compared to the third quarter of 2017. This is the highest number of Survey markets posting quarterly increases this year.

The increases are scattered across each property type with the exception of the Survey's three retail markets, which each report cap rate increases this quarter. As shown in Exhibit 1, the national power center market posts the highest increase at 33 basis points.

## LOOKING FORWARD

Over the next six months, most surveyed investors foresee overall cap rates holding steady in 32 of the 34 markets analyzed (see Exhibit 2). Most participants foresee cap rates rising for regional malls and in the Houston office market.

Exhibit 1

### OVERALL CAPITALIZATION RATES

Fourth Quarter 2017

National Markets	Average	Quarterly Change*
Warehouse	5.06%	- 16
Apartment	5.32%	- 3
CBD Office	5.73%	7
Regional Mall	6.25%	2
Strip Shopping Center	6.38%	19
MOB**	6.69%	- 2
Suburban Office	6.72%	3
Power Center	6.73%	33
Net Lease	6.80%	9
Secondary Office	7.51%	5
<b>Regional Warehouse</b>		
Pacific Region	4.90%	7
ENC*** Region	5.35%	0
<b>Apartment Markets</b>		
Pacific Region	4.45%	- 4
Southeast Region	5.13%	0
Mid-Atlantic Region	5.17%	13
<b>Office Markets</b>		
Manhattan	4.60%	- 34
Washington, DC	5.08%	- 19
San Francisco	5.47%	2
Seattle	5.61%	- 18
Los Angeles	5.90%	16
Boston	6.01%	- 26
Austin	6.02%	n/a
Pacific Northwest	6.05%	6
Dallas	6.47%	- 1
San Diego	6.51%	0
Phoenix	6.52%	- 1
Denver	6.53%	- 3
Charlotte	6.75%	- 18
Northern Virginia	6.77%	0
Southeast Florida	6.93%	- 33
Atlanta	7.14%	- 5
Philadelphia	7.20%	- 9
Houston	7.26%	- 5
Chicago	7.38%	10

\* Basis points; \*\* Medical office buildings;

\*\*\* East North Central

Source: PwC Real Estate Investor Survey

Exhibit 2

### OVERALL CAPITALIZATION RATE FORECASTS

Fourth Quarter 2017

MARKET	OVERALL CAP RATE	SIX-MONTH EXPECTATIONS		
	4Q 2017	INCREASE	DECREASE	HOLD STEADY
<b>National</b>				
Regional Mall	6.25%	60%	0%	40%
Power Center	6.73%	29%	14%	57%
Strip Shopping Center	6.38%	43%	0%	57%
CBD Office	5.73%	14%	14%	71%
Suburban Office	6.72%	14%	0%	86%
Net Lease	6.80%	40%	0%	60%
Medical Office Buildings	6.69%	20%	0%	80%
Secondary Office	7.51%	38%	0%	63%
<b>Industrial</b>				
National Warehouse	5.06%	0%	10%	90%
ENC Region Warehouse	5.35%	0%	0%	100%
Pacific Region Warehouse	4.90%	0%	0%	100%
<b>Apartment</b>				
National	5.32%	44%	0%	56%
Mid-Atlantic Region	5.17%	20%	0%	80%
Pacific Region	4.45%	0%	0%	100%
Southeast Region	5.13%	20%	0%	80%
<b>Office</b>				
Atlanta	7.14%	0%	0%	100%
Austin	6.02%	0%	20%	80%
Boston	6.01%	17%	0%	83%
Charlotte	6.75%	0%	0%	100%
Chicago	7.38%	43%	0%	57%
Dallas	6.47%	17%	17%	67%
Denver	6.53%	40%	0%	60%
Houston	7.26%	50%	17%	33%
Los Angeles	5.90%	14%	0%	86%
Manhattan	4.60%	0%	0%	100%
Northern Virginia	6.77%	0%	17%	83%
Pacific Northwest	6.05%	0%	0%	100%
Philadelphia	7.20%	20%	0%	80%
Phoenix	6.52%	17%	33%	50%
San Diego	6.51%	40%	0%	60%
San Francisco	5.47%	20%	0%	80%
Seattle	5.61%	0%	0%	100%
Southeast Florida	6.93%	20%	0%	80%
Washington, DC	5.08%	0%	0%	100%

Source: PwC Real Estate Investor Survey

## BREAKOUT OF KEY INDICATORS

Overall cap rates, discount rates, and residual cap rates for the CBD and suburban submarkets of each individual office market are presented in Exhibit 3.

As shown, average overall cap rates remain lower for all CBD submarkets than for their suburban counterparts since higher barriers to entry and a lack of land for new development tend to keep supply and demand a bit more balanced in a market's CBD. As a result, CBD

assets typically maintain higher rental rates and occupancy levels.

In addition, downtown cores tend to provide better forms of mass transportation and embody 18- or 24-hour, live-work lifestyles that appeal to many individuals and firms. As a result, CBD assets are generally perceived as providing less investment risk to the owner – less risk, lower overall cap rate.

This quarter, a 107-basis-point spread exists between the composite average for the overall cap rates of the

CBDs included in our table and the composite average for the suburbs.

For the Survey's individual office markets that have both a CBD and suburban component, the Chicago office market reports the largest gap between its CBD and suburban average overall cap rates this quarter – a difference of 250 basis points. The next highest is Boston with a gap of 195 basis points followed closely by Denver and the Pacific Northwest with spreads of 138 and 130 basis points, respectively. ♦

Exhibit 3

### BREAKOUT OF KEY INDICATORS

Fourth Quarter 2017

CBD OF:	DISCOUNT RATE		OVERALL CAPITALIZATION RATE		RESIDUAL CAPITALIZATION RATE	
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
Atlanta	6.00% – 9.25%	8.03%	5.25% – 8.00%	6.63%	6.00% – 8.50%	7.03%
Austin	5.50% – 9.50%	7.19%	4.50% – 7.75%	5.66%	5.50% – 7.00%	6.06%
Boston	5.75% – 8.00%	6.75%	4.00% – 6.50%	5.03%	5.00% – 7.00%	5.85%
Charlotte	6.50% – 10.00%	7.92%	5.00% – 7.50%	6.52%	5.50% – 7.50%	6.48%
Chicago	6.00% – 10.00%	7.58%	4.75% – 8.00%	6.13%	5.50% – 9.00%	6.54%
Dallas	6.00% – 11.00%	7.58%	5.00% – 8.50%	6.19%	6.00% – 8.00%	6.88%
Denver	6.50% – 10.00%	7.66%	5.00% – 7.00%	5.84%	5.50% – 8.50%	6.75%
Houston	6.50% – 12.00%	8.23%	5.75% – 8.00%	6.78%	6.25% – 9.50%	7.21%
Los Angeles	5.50% – 11.00%	7.59%	4.00% – 8.00%	5.63%	5.00% – 7.50%	6.23%
Manhattan	5.50% – 9.00%	6.81%	3.00% – 6.00%	4.60%	3.00% – 6.75%	5.27%
Pacific Northwest	5.25% – 9.00%	7.00%	4.25% – 8.00%	5.40%	5.00% – 9.00%	6.11%
Philadelphia	7.00% – 10.00%	8.10%	5.00% – 8.00%	6.70%	6.00% – 9.25%	7.15%
Phoenix	7.00% – 11.00%	8.93%	5.00% – 8.00%	6.38%	5.50% – 8.00%	6.58%
San Diego	6.50% – 10.50%	8.25%	5.50% – 8.50%	6.50%	5.75% – 8.75%	6.91%
San Francisco	5.00% – 8.00%	6.40%	3.50% – 7.00%	5.00%	5.00% – 8.00%	5.70%
Seattle	5.25% – 9.00%	6.90%	4.25% – 8.00%	5.23%	5.00% – 9.00%	6.08%
Southeast Florida	6.00% – 10.00%	7.88%	5.00% – 8.00%	6.31%	5.00% – 10.00%	6.81%
Washington, DC	5.00% – 7.00%	6.19%	4.25% – 6.50%	5.08%	5.00% – 6.50%	5.60%
Secondary Office	6.50% – 11.00%	8.70%	6.50% – 9.50%	7.19%	6.50% – 9.00%	7.50%
SUBURBS OF:	DISCOUNT RATE		OVERALL CAPITALIZATION RATE		RESIDUAL CAPITALIZATION RATE	
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
Atlanta	7.00% – 10.75%	8.55%	6.00% – 9.00%	7.65%	6.50% – 9.00%	7.73%
Austin	6.50% – 10.00%	8.08%	5.50% – 8.50%	6.38%	5.75% – 8.50%	7.13%
Boston	6.75% – 10.00%	8.08%	5.00% – 9.50%	6.98%	6.50% – 10.00%	7.42%
Charlotte	7.00% – 10.00%	8.44%	6.00% – 8.00%	6.98%	6.00% – 8.50%	7.15%
Chicago	8.00% – 12.00%	9.77%	7.00% – 10.00%	8.63%	7.50% – 11.00%	8.95%
Dallas	6.50% – 9.00%	8.10%	5.50% – 8.50%	6.75%	5.50% – 9.00%	7.33%
Denver	7.00% – 11.00%	8.25%	6.00% – 9.00%	7.23%	6.25% – 9.50%	7.73%
Houston	7.50% – 13.00%	9.08%	6.75% – 10.00%	7.75%	6.75% – 10.00%	8.05%
Los Angeles	5.00% – 11.00%	7.88%	4.25% – 8.00%	6.17%	5.00% – 8.00%	6.55%
Northern Virginia	6.00% – 9.50%	7.71%	5.00% – 8.50%	6.77%	5.50% – 8.50%	6.85%
Pacific Northwest	5.50% – 10.00%	7.91%	5.00% – 9.00%	6.70%	5.00% – 8.00%	6.70%
Philadelphia	8.00% – 11.00%	9.15%	5.50% – 10.00%	7.70%	6.50% – 11.00%	8.20%
Phoenix	7.00% – 11.00%	8.58%	5.50% – 8.00%	6.67%	5.50% – 8.00%	6.92%
San Diego	6.50% – 12.00%	8.28%	5.25% – 8.50%	6.53%	5.75% – 8.75%	7.00%
San Francisco	6.00% – 9.50%	7.33%	5.00% – 8.00%	5.94%	5.00% – 9.00%	6.68%
Seattle	5.50% – 10.00%	7.55%	5.00% – 6.75%	6.00%	5.00% – 7.25%	6.53%
Southeast Florida	7.00% – 10.50%	8.75%	6.50% – 9.50%	7.55%	6.50% – 10.50%	8.15%
Secondary Office	6.50% – 13.00%	9.41%	5.50% – 9.50%	7.83%	6.50% – 10.00%	8.06%

Source: PwC Real Estate Investor Survey



# Valuation Issues

## TI ALLOWANCES

Tenant improvement (TI) allowances vary for each major property sector, as well as across geographies. Based on our Survey, TIs are rarely provided to tenants in the national regional mall and power center markets, where retail tenants typically receive space as a "vanilla box" and are responsible for their own build-outs. In most other markets, TIs are commonplace and vary based on whether the leased area is shell space (raw, new space) or existing, second-generation space.

As shown in Exhibit 4, TI allow-

ances for shell space range up to \$150.00 per square foot, averaging \$50.92 per square foot. The average TI for office shell space is \$58.73 per square foot. For second-generation office space, the average TI allowance is \$33.35 per square foot. For renewals, the average is \$18.50 per square foot.

The TI allowances in Exhibit 4 show what is typical in each market. In some instances, excessive TI allowances are awarded as added inducements. For 14 of the 19 city-specific office markets, excessive TIs range up

to \$65.00 per square foot and average \$11.70 per square foot. These allowances are very tenant specific and not prevalent throughout the marketplace.

## VACANCY ASSUMPTIONS

Current vacancy assumptions used by Survey participants in their cash flow analyses are contrasted with year-ago figures in Exhibit 5. Over the past year, most markets report declines in months vacant assumption (56.0%), average tenant retention rate (47.0%), and average underlying vacancy rate (47.0%). ♦

<b>Exhibit 4</b>									
<b>TENANT IMPROVEMENT (TI) ALLOWANCES</b>									
Fourth Quarter 2017									
	SHELL SPACE (\$ per sq. ft.)			2ND-GENERATION SPACE (\$ per sq. ft.)			RENEWALS (\$ per sq. ft.)		
	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE
<b>NATIONAL MARKETS</b>									
Strip Shopping Center	\$10.00	\$150.00	\$41.43	\$0.00	\$80.00	\$17.14	\$0.00	\$25.00	\$6.43
CBD Office	\$25.00	\$100.00	\$55.83	\$10.00	\$50.00	\$30.83	\$5.00	\$35.00	\$17.50
Suburban Office	\$20.00	\$100.00	\$45.42	\$5.00	\$50.00	\$24.58	\$5.00	\$25.00	\$14.79
Medical Office Buildings	\$40.00	\$80.00	\$60.50	\$5.00	\$40.00	\$18.00	\$0.00	\$30.00	\$9.75
Secondary Office	\$15.00	\$100.00	\$40.63	\$6.00	\$50.00	\$24.44	\$5.00	\$25.00	\$11.28
<b>INDUSTRIAL MARKETS</b>									
National Flex/R&D*									
National Warehouse	\$0.25	\$75.00	\$11.33	\$0.00	\$5.00	\$1.15	\$0.00	\$2.50	\$0.80
ENC Region Warehouse	\$0.25	\$5.00	\$1.96	\$0.00	\$5.00	\$1.16	\$0.00	\$2.50	\$0.69
Pacific Region Warehouse	\$0.00	\$5.00	\$1.91	\$0.00	\$5.00	\$1.23	\$0.00	\$5.00	\$1.18
<b>OFFICE MARKETS</b>									
Atlanta	\$30.00	\$70.00	\$42.50	\$10.00	\$50.00	\$27.25	\$0.00	\$20.00	\$11.90
Austin	\$15.00	\$65.00	\$49.00	\$3.00	\$40.00	\$23.10	\$0.00	\$20.00	\$9.75
Boston	\$15.00	\$90.00	\$62.08	\$10.00	\$65.00	\$37.08	\$5.00	\$40.00	\$18.75
Charlotte	\$20.00	\$40.00	\$41.25	\$10.00	\$25.00	\$26.25	\$0.00	\$0.00	\$13.33
Chicago	\$35.00	\$125.00	\$70.00	\$10.00	\$75.00	\$36.79	\$5.00	\$40.00	\$20.24
Dallas	\$25.00	\$75.00	\$43.50	\$5.00	\$55.00	\$30.83	\$5.00	\$35.00	\$16.00
Denver	\$35.00	\$65.00	\$48.33	\$15.00	\$35.00	\$24.17	\$3.00	\$25.00	\$12.17
Houston	\$25.00	\$80.00	\$45.50	\$8.00	\$65.00	\$32.75	\$3.00	\$45.00	\$19.00
Los Angeles	\$40.00	\$125.00	\$66.07	\$8.00	\$50.00	\$28.94	\$0.00	\$50.00	\$16.25
Manhattan	\$40.00	\$125.00	\$82.92	\$10.00	\$75.00	\$42.08	\$10.00	\$50.00	\$28.33
Northern Virginia	\$35.00	\$125.00	\$67.08	\$20.00	\$75.00	\$35.42	\$5.00	\$80.00	\$22.67
Pacific Northwest	\$25.00	\$100.00	\$60.91	\$10.00	\$75.00	\$39.32	\$0.00	\$50.00	\$19.32
Philadelphia	\$20.00	\$75.00	\$50.00	\$5.00	\$40.00	\$23.75	\$5.00	\$20.00	\$10.63
Phoenix	\$20.00	\$75.00	\$75.00	\$2.00	\$45.00	\$45.00	\$0.00	\$35.00	\$35.00
San Diego	\$30.00	\$80.00	\$51.25	\$10.00	\$50.00	\$25.63	\$0.00	\$20.00	\$10.63
San Francisco	\$25.00	\$150.00	\$74.00	\$10.00	\$80.00	\$35.50	\$0.00	\$35.00	\$18.50
Seattle	\$25.00	\$100.00	\$61.25	\$10.00	\$75.00	\$40.00	\$0.00	\$50.00	\$20.42
Southeast Florida	\$5.00	\$75.00	\$40.63	\$0.00	\$50.00	\$25.63	\$5.00	\$40.00	\$15.63
Suburban Maryland*									
Washington, DC	\$50.00	\$150.00	\$84.58	\$25.00	\$125.00	\$54.17	\$10.00	\$115.00	\$32.92
ENC - east north central									
*Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.									
Source: PwC Real Estate Investor Survey									



**EXHIBIT 5**  
**VACANCY ASSUMPTIONS: OFFICE MARKETS**  
 Fourth Quarter 2017

MARKET	MONTHS VACANT			YEAR AGO			TENANT RETENTION			UNDERLYING VACANCY & CREDIT LOSS		
	CURRENT			YEAR AGO			CURRENT			CURRENT		
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National CBD	6 - 12	8	6 - 18	9	50.0% - 85.0%	69.0%	50.0% - 85.0%	69.0%	0.0% - 8.0%	4.0%	0.0% - 9.0%	4.2%
National Suburban	4 - 15	9	4 - 24	10	40.0% - 75.0%	63.4%	50.0% - 75.0%	64.0%	0.0% - 15.0%	6.4%	0.0% - 15.0%	5.8%
National Secondary	3 - 12	8	5 - 10	7	60.0% - 80.0%	73.0%	60.0% - 80.0%	72.0%	2.0% - 10.0%	6.8%	2.0% - 10.0%	6.6%
Atlanta	4 - 12	8	4 - 12	8	50.0% - 80.0%	68.0%	50.0% - 80.0%	68.0%	3.0% - 12.0%	7.4%	3.0% - 12.0%	7.2%
Austin	4 - 12	7			50.0% - 80.0%	66.0%			0.0% - 7.0%	5.1%		
Boston	4 - 10	7	5 - 10	8	50.0% - 75.0%	68.0%	50.0% - 75.0%	67.0%	3.0% - 8.0%	5.1%	1.5% - 8.0%	4.8%
Charlotte	3 - 12	8	4 - 10	8	50.0% - 80.0%	70.0%	65.0% - 80.0%	71.0%	3.0% - 10.0%	6.5%	3.0% - 10.0%	6.9%
Chicago	6 - 12	9	6 - 12	8	60.0% - 85.0%	69.0%	60.0% - 85.0%	69.0%	5.0% - 25.0%	11.1%	3.0% - 15.0%	8.7%
Dallas	5 - 10	8	6 - 10	8	60.0% - 75.0%	68.0%	60.0% - 75.0%	69.0%	1.0% - 10.0%	5.1%	1.0% - 10.0%	5.0%
Denver	5 - 10	7	5 - 10	7	50.0% - 75.0%	66.0%	50.0% - 75.0%	68.0%	1.0% - 10.0%	5.4%	1.0% - 10.0%	5.8%
Houston	6 - 36	12	5 - 36	13	50.0% - 75.0%	64.0%	50.0% - 80.0%	63.0%	1.0% - 15.0%	7.5%	1.0% - 15.0%	7.5%
Los Angeles	4 - 12	8	4 - 12	8	50.0% - 80.0%	69.0%	60.0% - 80.0%	69.0%	1.0% - 15.0%	6.9%	1.0% - 10.0%	5.2%
Manhattan	2 - 12	8	2 - 12	8	50.0% - 80.0%	68.0%	50.0% - 75.0%	66.0%	1.0% - 10.0%	4.5%	0.5% - 10.0%	4.5%
Northern Virginia	6 - 15	9	6 - 15	9	50.0% - 75.0%	67.0%	50.0% - 75.0%	66.0%	1.0% - 12.0%	5.7%	1.0% - 10.0%	4.9%
Pacific Northwest	4 - 12	8	4 - 12	8	50.0% - 80.0%	71.0%	50.0% - 80.0%	69.0%	1.0% - 10.0%	4.7%	1.0% - 10.0%	4.9%
Philadelphia	6 - 18	9	6 - 15	8	50.0% - 75.0%	67.0%	50.0% - 75.0%	65.0%	5.0% - 10.0%	6.0%	5.0% - 10.0%	6.3%
Phoenix	4 - 12	8	6 - 12	8	60.0% - 75.0%	69.0%	60.0% - 80.0%	69.0%	2.0% - 10.0%	5.5%	0.0% - 10.0%	5.4%
San Diego	5 - 12	8	5 - 12	9	60.0% - 75.0%	67.0%	60.0% - 80.0%	68.0%	1.0% - 12.0%	5.3%	0.0% - 10.0%	3.9%
San Francisco	2 - 10	8	2 - 10	8	50.0% - 80.0%	69.0%	60.0% - 80.0%	70.0%	2.5% - 10.0%	5.0%	2.5% - 10.0%	5.0%
Seattle	4 - 12	7	4 - 12	7	50.0% - 80.0%	70.0%	50.0% - 80.0%	68.0%	1.0% - 10.0%	4.7%	1.0% - 10.0%	4.8%
Southeast Florida	6 - 12	9	3 - 12	9	40.0% - 80.0%	65.0%	40.0% - 80.0%	65.0%	3.0% - 13.0%	7.3%	3.0% - 13.0%	7.1%
Suburban Maryland(1)			4 - 12	9		68.0%	50.0% - 80.0%	68.0%			0.0% - 15.0%	5.6%
Washington, DC	3 - 12	8	3 - 18	7	50.0% - 75.0%	67.0%	65.0% - 75.0%	70.0%	0.0% - 8.0%	3.8%	0.0% - 10.0%	3.9%

(1) Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



**EXHIBIT 5**

**VACANCY ASSUMPTIONS: NATIONAL AND REGIONAL MARKETS**  
Fourth Quarter 2017

MARKET	MONTHS VACANT CURRENT			YEAR AGO			TENANT RETENTION CURRENT			YEAR AGO			UNDERLYING VACANCY & CREDIT LOSS CURRENT			YEAR AGO		
	RANGE	AVERAGE		RANGE	AVERAGE		RANGE	AVERAGE		RANGE	AVERAGE		RANGE	AVERAGE		RANGE	AVERAGE	
National Regional Mall	4 - 18	8		4 - 24	9		50.0% - 85.0%	72.0%		50.0% - 85.0%	73.0%		1.0% - 8.0%	4.6%		1.0% - 8.0%	4.7%	
National Power Center	1 - 18	7		1 - 12	7		50.0% - 80.0%	69.0%		55.0% - 80.0%	69.0%		1.0% - 10.0%	5.3%		1.0% - 10.0%	5.6%	
National Strip Shopping Center	3 - 24	10		4 - 18	10		50.0% - 100.0%	71.0%		50.0% - 100.0%	72.0%		1.0% - 10.0%	5.0%		1.0% - 10.0%	5.1%	
National Flex/R&D <sup>(1)</sup>				6 - 18	10					50.0% - 80.0%	67.0%					2.0% - 10.0%	5.8%	
Warehouse (National)	3 - 12	8		4 - 18	8		50.0% - 80.0%	68.0%		50.0% - 80.0%	68.0%		0.0% - 7.0%	2.8%		0.0% - 7.0%	3.0%	
Warehouse (ENC Region)	4 - 12	7		2 - 12	8		50.0% - 75.0%	65.0%		50.0% - 75.0%	65.0%		0.0% - 7.0%	3.4%		0.0% - 8.0%	4.4%	
Warehouse (Pacific Region)	3 - 12	6		4 - 12	8		50.0% - 75.0%	62.0%		50.0% - 75.0%	62.0%		2.0% - 7.0%	4.2%		2.0% - 7.0%	4.2%	
Apartment (National)													3.0% - 10.0%	5.9%		2.0% - 10.0%	6.0%	
Apartment (Mid-Atlantic Region)													2.0% - 7.0%	5.4%		2.0% - 7.0%	5.3%	
Apartment (Pacific Region)													3.0% - 6.0%	4.5%		3.0% - 6.0%	4.6%	
Apartment (Southeast Region)													4.0% - 7.0%	5.5%		4.0% - 7.0%	5.5%	
National Net Lease	5 - 18	10		0 - 10	4		50.0% - 100.0%	77.0%		70.0% - 100.0%	83.0%		0.0% - 15.0%	5.0%		0.0% - 5.0%	2.2%	
National Medical Office Buildings	6 - 18	10		4 - 18	9		70.0% - 90.0%	81.0%		70.0% - 90.0%	79.0%		0.0% - 10.0%	4.7%		0.0% - 10.0%	4.4%	

<sup>(1)</sup>Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



# PwC Real Estate Barometer

Real estate cycles vary across markets and geographic areas, as well as within markets and geographic locations based on property type – office, retail, industrial, and multifamily. This observation means that national cycles differ for the same property type across individual markets. It also means that within a specific location, the cycle for each property type can be in a different phase at any given time.

Real estate markets are dynamic over time and influenced by a host of factors. An in-depth analysis of historical and forecast stock data provided by CBRE Economic Advisors and Reis allows us to gauge each sector's likely shifts over the near term. The results of our PwC real estate barometer research are shown in Chart REB-1 through Chart REB-4.

These charts represent the cumulative number of U.S. metro areas analyzed for each property type and the aggregate positions in our barometer analysis. Individual barometer readings for U.S. regions, as well as various metro areas, are shown for each sector in Forecast-1 through Forecast-4.

## OFFICE

Underlying fundamentals for the U.S. office sector are forecast to end 2017 in good shape. As shown in Forecast-1, 32 of the 75 office metros in our analysis are expected to be in the expansion phase of the cycle by year-end 2017, including Philadelphia, St. Louis, Charlotte, and Orlando. Softer fundamentals are forecast for 2018 through 2020 as new supply could exceed net demand in a growing number of markets, such as San Francisco. However, the near-term adjustment to the U.S. office sector's cycle may be mild since new supply remains relatively restrained compared to previous cycles.

## RETAIL

As the U.S. retail sector moves through 2018, a rising number of retail metros are forecast to see supply outpace leasing demand as merchants continue to address the changing buying habits of consumers, resulting in more downsizings and store closures. As shown in Forecast-2, 65.0% of the metros analyzed are expected to be in recession by year-end 2018. The Northeast is forecast to have the highest percentage of metros in recession by year-end 2018, including Long Island, Westchester, and Fairfield County. In contrast, the South is forecast to have the smallest portion.

## INDUSTRIAL

2017 will be a strong performance year for the U.S. industrial sector, and net leasing demand is expected to remain positive through 2018 even though new supply will outpace new demand in various cities. By year-end 2018, 85.0% of the metros analyzed will be in the contraction phase of the cycle, characterized by increasing vacancy rates, rising overall cap rates, and slowing rent growth (see Chart REB-3). With vacancy rates at or near historical lows in many individual markets, it could take some time for the excess new supply to negatively impact rental rates.

## MULTIFAMILY

Many multifamily markets spent the latter part of 2017 successfully absorbing new supply. While strong multifamily demand in most metros will continue to allow new units to be leased, the portion of the multifamily sector in recession is expected to range between 21.0% and 23.0% between 2018 and 2020 (see Chart REB-4). Over this time period, the national multifamily vacancy rate is projected to slowly rise, putting downward pressure on rent growth. ♦

## DEFINITIONS

**Contraction:** The phase following the market peak, characterized by softening market conditions and a shift in the supply/demand balance leading to increasing vacancy rates, slowing rent growth, and rising overall cap rates.

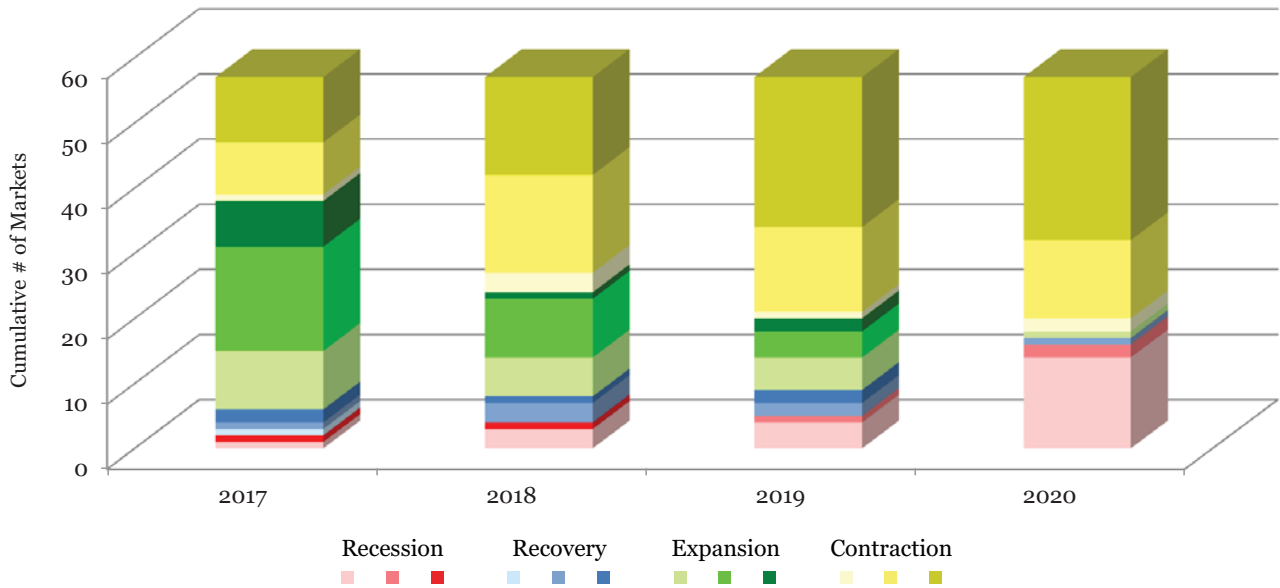
**Expansion:** The phase following recovery, characterized by strong demand and increasingly tight market conditions leading to low vacancy rates, robust rent growth, and decreasing overall cap rates.

**Recession:** The phase following contraction, characterized by very low demand and high levels of supply that were added during the previous two phases. Typically involves high vacancies, negative rent growth, and high overall cap rates.

**Recovery:** The phase following the market bottom, characterized by tightening market conditions and a shift in supply/demand balance leading to reduced vacancy rates, more balanced rent growth, and a stabilization of overall cap rates.

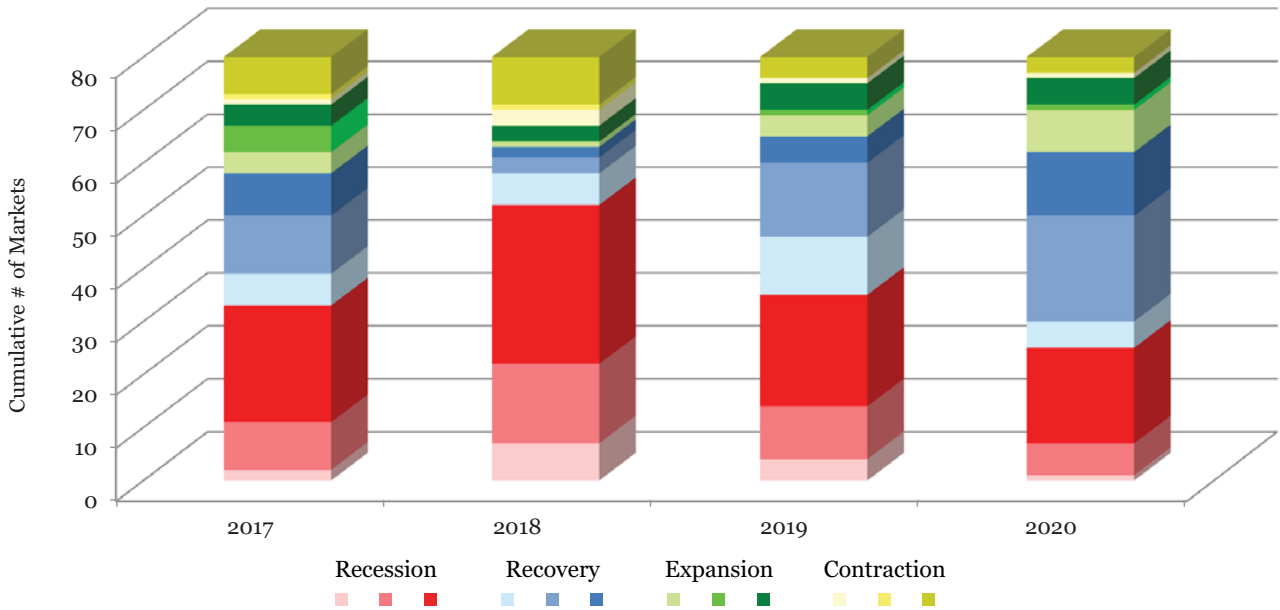
**Stock:** The total inventory of space, in square feet or units, in a given market.

**Chart REB-1**  
**PwC REAL ESTATE BAROMETER**  
 U.S. Office Markets – 2017 to 2020



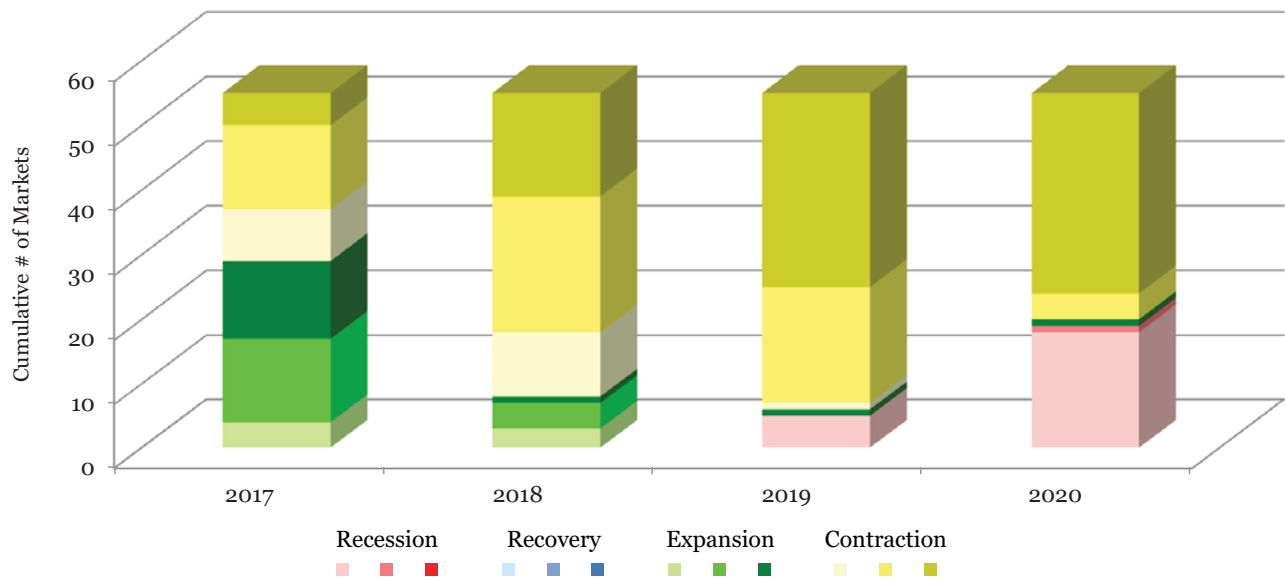
Source: Data provided by CBRE; compiled and analyzed by PwC

**Chart REB-2**  
**PwC REAL ESTATE BAROMETER**  
 U.S. Retail Markets – 2017 to 2020



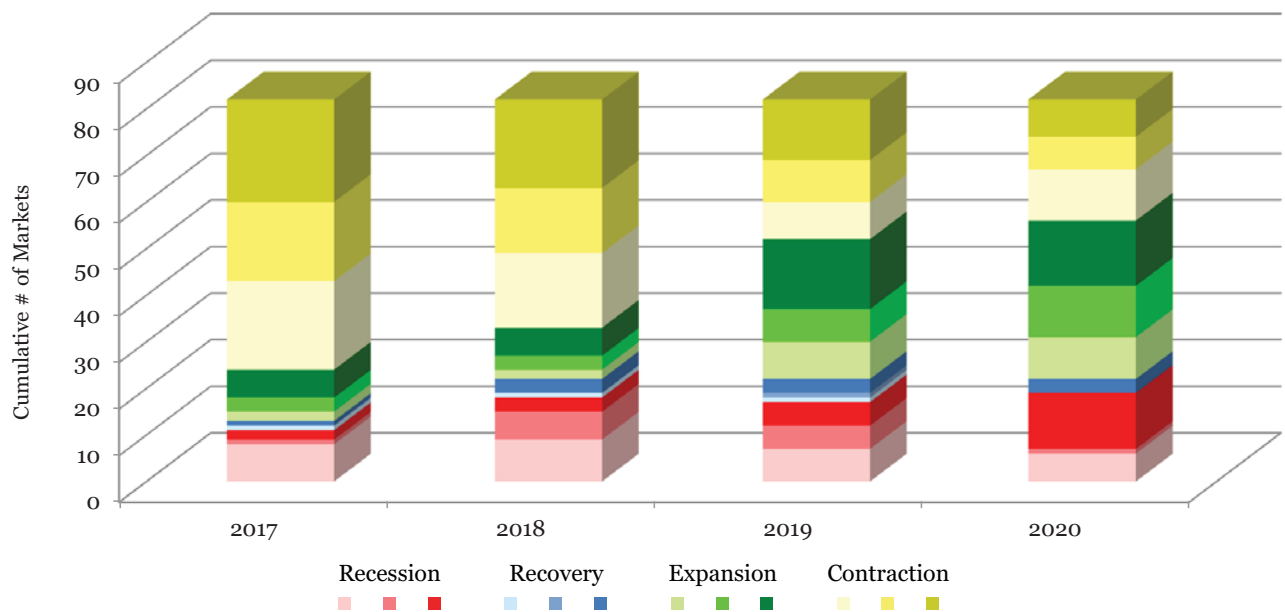
Source: Data provided by Reis; compiled and analyzed by PwC

**Chart REB-3**  
**PwC REAL ESTATE BAROMETER**  
 U.S. Industrial Markets – 2017 to 2020



Source: Data provided by CBRE; compiled and analyzed by PwC

**Chart REB-4**  
**PwC REAL ESTATE BAROMETER**  
 U.S. Multifamily Markets – 2017 to 2020



Source: Data provided by Reis; compiled and analyzed by PwC

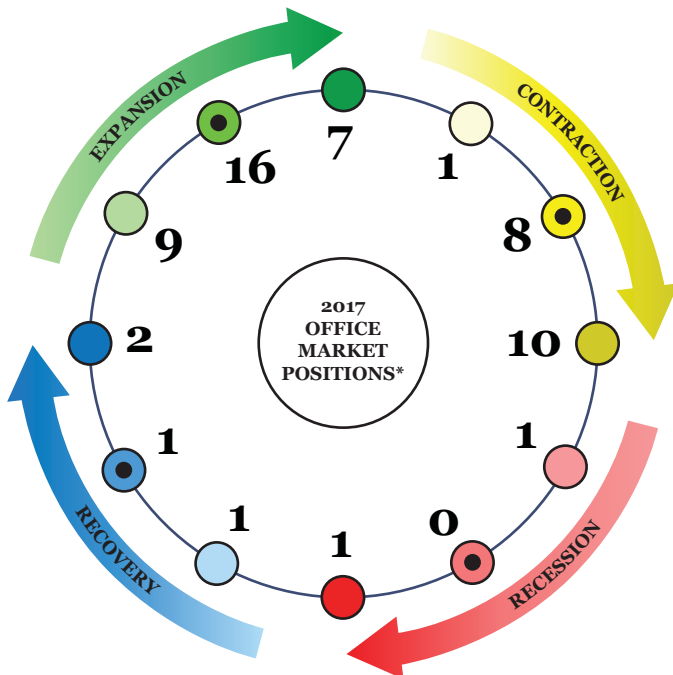
	2017	2018	2019	2020
United States	●	●	●	●

NORTHEAST REGION				
MSA Name	2017	2018	2019	2020
Boston	●	●	●	●
Hartford	●	●	●	●
Long Island	●	○	●	●
New York	●	●	●	●
Newark	●	●	●	●
Philadelphia	●	●	●	●
Pittsburgh	●	●	●	○
Stamford	●	●	●	●
Trenton	●	●	●	●

MIDWEST REGION				
MSA Name	2017	2018	2019	2020
Chicago	●	●	●	●
Cincinnati	●	●	●	●
Cleveland	●	●	●	●
Columbus	●	●	●	●
Detroit	●	●	●	●
Indianapolis	●	●	●	●
Kansas City	●	●	●	●
Minneapolis	●	●	●	●
St. Louis	●	○	○	●
Toledo	●	●	●	●

WEST REGION				
MSA Name	2017	2018	2019	2020
Albuquerque	●	●	●	●
Denver	●	●	●	●
Honolulu	●	●	●	●
Las Vegas	●	●	●	●
Los Angeles	●	●	●	●
Oakland	●	●	●	●
Orange County	●	●	●	●
Phoenix	●	●	●	●
Portland	●	●	●	●
Riverside	●	●	●	●
Sacramento	●	●	●	●
Salt Lake City	●	●	●	●
San Diego	●	●	●	●
San Francisco	●	●	●	●
San Jose	●	●	●	●
Seattle	●	●	●	●
Tucson	●	●	●	●
Ventura	●	●	●	●

SOUTH REGION				
MSA Name	2017	2018	2019	2020
Atlanta	●	●	●	●
Austin	●	●	●	●
Baltimore	●	●	●	●
Charlotte	●	●	●	●
Dallas	●	●	●	●
Fort Lauderdale	●	●	●	●
Fort Worth	●	●	●	●
Houston	●	●	●	●
Jacksonville	●	●	●	●
Memphis	●	●	●	●
Miami	●	●	●	●
Nashville	●	●	●	●
Orlando	●	●	●	●
Raleigh	○	●	●	●
Richmond	●	○	●	●
San Antonio	●	●	●	●
Tampa	●	●	●	○
Washington, DC	●	●	●	●
West Palm Beach	●	●	●	●
Wilmington	●	●	●	●



\*=Number of MSAs in position in 2017

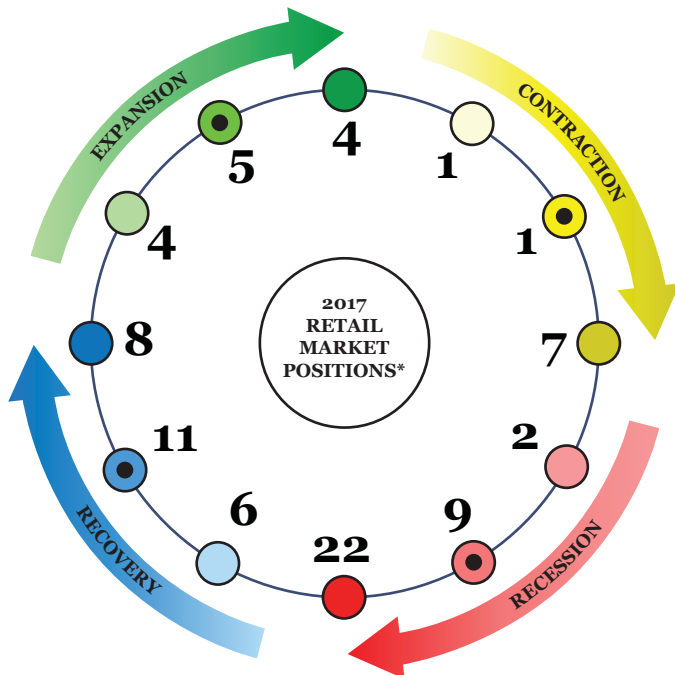
	2017	2018	2019	2020
United States	●	●	●	●

NORTHEAST REGION				
MSA Name	2017	2018	2019	2020
Boston	●	●	●	●
Buffalo	●	●	●	●
Central New Jersey	●	●	●	●
Fairfield County	●	●	●	●
Hartford	●	●	●	●
Long Island	●	●	●	●
New Haven	●	●	●	●
Northern New Jersey	●	●	●	●
Philadelphia	●	●	●	●
Pittsburgh	●	●	●	●
Rochester	●	●	●	●
Syracuse	●	●	●	●
Westchester	●	●	●	●

MIDWEST REGION				
MSA Name	2017	2018	2019	2020
Chicago	●	●	●	●
Cincinnati	●	●	●	●
Cleveland	●	●	●	●
Columbus	●	●	●	●
Dayton	●	●	●	●
Detroit	●	●	●	●
Indianapolis	●	●	●	●
Kansas City	●	●	●	●
Milwaukee	●	●	●	●
Minneapolis	●	●	●	●
Omaha	●	●	●	●
St. Louis	●	●	●	●
Wichita	●	●	●	●

WEST REGION				
MSA Name	2017	2018	2019	2020
Albuquerque	●	●	●	●
Colorado Springs	●	●	●	●
Denver	●	●	●	●
Las Vegas	●	●	●	●
Los Angeles	●	●	●	●
Oakland-East Bay	●	●	●	●
Orange County	●	●	●	●
Phoenix	●	●	●	●
Portland	●	●	●	●
Sacramento	●	●	●	●
Salt Lake City	●	●	●	●
San Bernardino	●	●	●	●
San Diego	●	●	●	●
San Francisco	●	●	●	●
San Jose	●	●	●	●
Seattle	●	●	●	●
Tacoma	●	●	●	●
Tucson	●	●	●	●
Ventura	●	●	●	●

SOUTH REGION				
MSA Name	2017	2018	2019	2020
Atlanta	●	●	●	●
Austin	●	●	●	●
Baltimore	●	●	●	●
Birmingham	●	●	●	●
Charleston	●	●	●	●
Charlotte	●	●	●	●
Chattanooga	●	●	●	●
Columbia	●	●	●	●
Dallas	●	●	●	●
Fort Lauderdale	●	●	●	●
Fort Worth	●	●	●	●
Greensboro/Winston-Salem	●	●	●	●
Greenville	●	●	●	●
Houston	●	●	●	●
Jacksonville	●	●	●	●
Knoxville	●	●	●	●
Lexington	●	●	●	●
Little Rock	●	●	●	●
Louisville	●	●	●	●
Memphis	●	●	●	●
Miami	●	●	●	●
Nashville	●	●	●	●
New Orleans	●	●	●	●
Norfolk	●	●	●	●
Oklahoma City	●	●	●	●
Orlando	●	●	●	●
Palm Beach County	●	●	●	●
Providence	●	●	●	●
Raleigh	●	●	●	●
Richmond	●	●	●	●
San Antonio	●	●	●	●
Suburban Maryland	●	●	●	●
Suburban Virginia	●	●	●	●
Tampa	●	●	●	●
Tulsa	●	●	●	●



\*=Number of MSAs in position in 2017



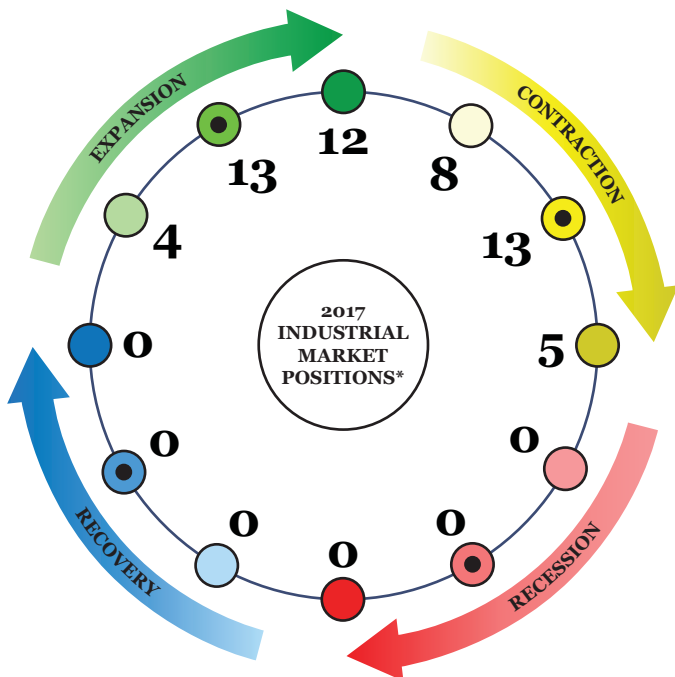
	2017	2018	2019	2020
United States	●	●	●	●

NORTHEAST REGION				
MSA Name	2017	2018	2019	2020
Allentown	●	○	●	●
Boston	●	●	●	●
Hartford	●	○	●	●
Long Island	○	●	●	●
New York	●	●	●	●
Newark	●	●	●	●
Philadelphia	●	●	●	●
Pittsburgh	●	●	●	●
Stamford	●	●	●	●
Trenton	○	●	●	●

MIDWEST REGION				
MSA Name	2017	2018	2019	2020
Chicago	●	●	●	●
Cincinnati	●	●	●	●
Cleveland	●	●	●	●
Columbus	●	●	●	●
Detroit	●	○	○	○
Indianapolis	●	●	●	●
Kansas City	●	○	●	●
Minneapolis	●	●	●	●
St. Louis	●	●	●	●

WEST REGION				
MSA Name	2017	2018	2019	2020
Albuquerque	○	●	●	●
Denver	●	●	●	●
Las Vegas	●	●	●	●
Los Angeles	○	○	●	●
Oakland	○	●	●	●
Orange County	○	○	●	●
Phoenix	●	●	●	●
Portland	○	●	●	●
Riverside	●	●	●	●
Sacramento	●	○	●	●
Salt Lake City	●	●	●	●
San Diego	○	●	●	●
San Francisco	●	●	●	●
San Jose	●	●	●	●
Seattle	○	○	●	●
Tucson	○	○	●	●
Vallejo	●	○	●	●
Ventura	●	○	●	●

SOUTH REGION				
MSA Name	2017	2018	2019	2020
Atlanta	●	●	●	●
Austin	●	●	●	●
Baltimore	○	●	●	●
Charlotte	●	●	●	●
Dallas	●	●	●	●
Fort Lauderdale	●	●	●	●
Fort Worth	●	●	●	●
Houston	●	●	●	●
Jacksonville	●	●	●	●
Memphis	●	○	●	●
Miami	●	●	●	●
Nashville	●	●	●	●
Orlando	●	●	●	●
Raleigh	●	●	●	●
Tampa	●	●	●	●
Washington, DC	●	●	●	●
West Palm Beach	●	●	●	●
Wilmington	○	○	●	●



\*=Number of MSAs in position in 2017

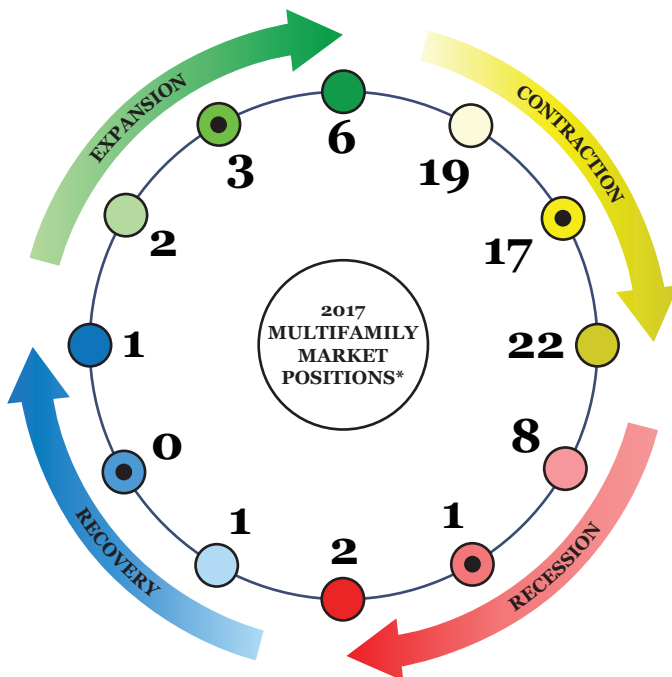
	2017	2018	2019	2020
United States	●	●	●	●

NORTHEAST REGION				
MSA Name	2017	2018	2019	2020
Boston	●	●	●	●
Buffalo	●	●	●	●
Central New Jersey	●	●	●	●
Fairfield County	●	●	●	●
Hartford	●	●	●	●
Long Island	●	●	●	●
New Haven	●	●	●	●
New York	●	●	●	●
Northern New Jersey	●	●	●	●
Philadelphia	●	●	●	●
Pittsburgh	●	●	●	●
Providence	●	●	●	●
Rochester	●	●	●	●
Syracuse	●	●	●	●
Westchester	●	●	●	●

MIDWEST REGION				
MSA Name	2017	2018	2019	2020
Chicago	●	●	●	●
Cincinnati	●	●	●	●
Cleveland	●	●	●	●
Columbus	●	●	●	●
Dayton	●	●	●	●
Detroit	●	●	●	●
Indianapolis	●	●	●	●
Kansas City	●	●	●	●
Milwaukee	●	●	●	●
Minneapolis	●	●	●	●
Omaha	●	●	●	●
St. Louis	●	●	●	●
Wichita	●	●	●	●

WEST REGION				
MSA Name	2017	2018	2019	2020
Albuquerque	●	●	●	●
Colorado Springs	●	●	●	●
Denver	●	●	●	●
Las Vegas	●	●	●	●
Los Angeles	●	●	●	●
Oakland-East Bay	●	●	●	●
Orange County	●	●	●	●
Phoenix	●	●	●	●
Portland	●	●	●	●
Sacramento	●	●	●	●
Salt Lake City	●	●	●	●
San Bernardino	●	●	●	●
San Diego	●	●	●	●
San Francisco	●	●	●	●
San Jose	●	●	●	●
Seattle	●	●	●	●
Tacoma	●	●	●	●
Tucson	●	●	●	●
Ventura County	●	●	●	●

SOUTH REGION				
MSA Name	2017	2018	2019	2020
Atlanta	●	●	●	●
Austin	●	●	●	●
Baltimore	●	●	●	●
Birmingham	●	●	●	●
Charleston	●	●	●	●
Charlotte	●	●	●	●
Chattanooga	●	●	●	●
Columbia	●	●	●	●
Dallas	●	●	●	●
District of Columbia	●	●	●	●
Fort Lauderdale	●	●	●	●
Fort Worth	●	●	●	●
Greensboro/Winston-Salem	●	●	●	●
Greenville	●	●	●	●
Houston	●	●	●	●
Jacksonville	●	●	●	●
Knoxville	●	●	●	●
Lexington	●	●	●	●
Little Rock	●	●	●	●
Louisville	●	●	●	●
Memphis	●	●	●	●
Miami	●	●	●	●
Nashville	●	●	●	●
New Orleans	●	●	●	●
Norfolk	●	●	●	●
Oklahoma City	●	●	●	●
Orlando	●	●	●	●
Palm Beach County	●	●	●	●
Raleigh	●	●	●	●
Richmond	●	●	●	●
San Antonio	●	●	●	●
Suburban Maryland	●	●	●	●
Suburban Virginia	●	●	●	●
Tampa	●	●	●	●
Tulsa	●	●	●	●



\*=Number of MSAs in position in 2017

# U.S. CRE Stock Acquisition Trends

*This quarterly feature investigates CRE acquisition trends for the four major property sectors of the commercial real estate (CRE) industry – office, retail, industrial, and apartments. This analysis is unique in that trends are analyzed based on stock transaction volume as a percent of total stock, not dollar volume.*

*To analyze each sector peer to peer, the metro data is first divided into quartiles, defined as "one of the three points that divide a range of data or population into four equal parts."*

*Charts CAT-1 through CAT-4 display the stock acquisition trends for the four main property types divided into their appropriate quartiles. Our analysis covers the rolling 12-month period ending with the third quarter of 2017.*

Analyzing CRE acquisitions is a common practice among industry professionals as it reflects the health of the industry, each property type, and geographic areas. During cyclical downturns and times of uncertainty, CRE transaction volume usually slows as investors are more indecisive about the future and pricing can be more difficult to determine. The opposite typically occurs during cyclical recoveries as investors look to "buy low" and capitalize on a recovering industry.

Most CRE reports focus on dollar volumes, giving accolades to U.S. metros that report the highest levels of capital sales. Not surprisingly, high-priced U.S. metros, like Manhattan and San Francisco, generally rise to the "top" of these sales volume reports not only because they tend to be more preferred by investors, but because they are pricier compared to most other markets on a dollar-per-square-foot basis. On the other hand, U.S. cities like Dallas and Charlotte tend to be viewed as "less preferred" because their dollar volumes and price-per-square-foot achievements are generally lower.

Many factors drive pricing, such as local economic performances, tenancy, building amenities, and supply-demand dynamics. These variables are often reflected in a property's price per square foot, lending support to why most assets in "top" markets, like Manhattan and San Francisco, garner the prices they do. But sales volume can sometimes tell only one side of the CRE capital story.

## STOCK ACQUISITION ANALYSIS

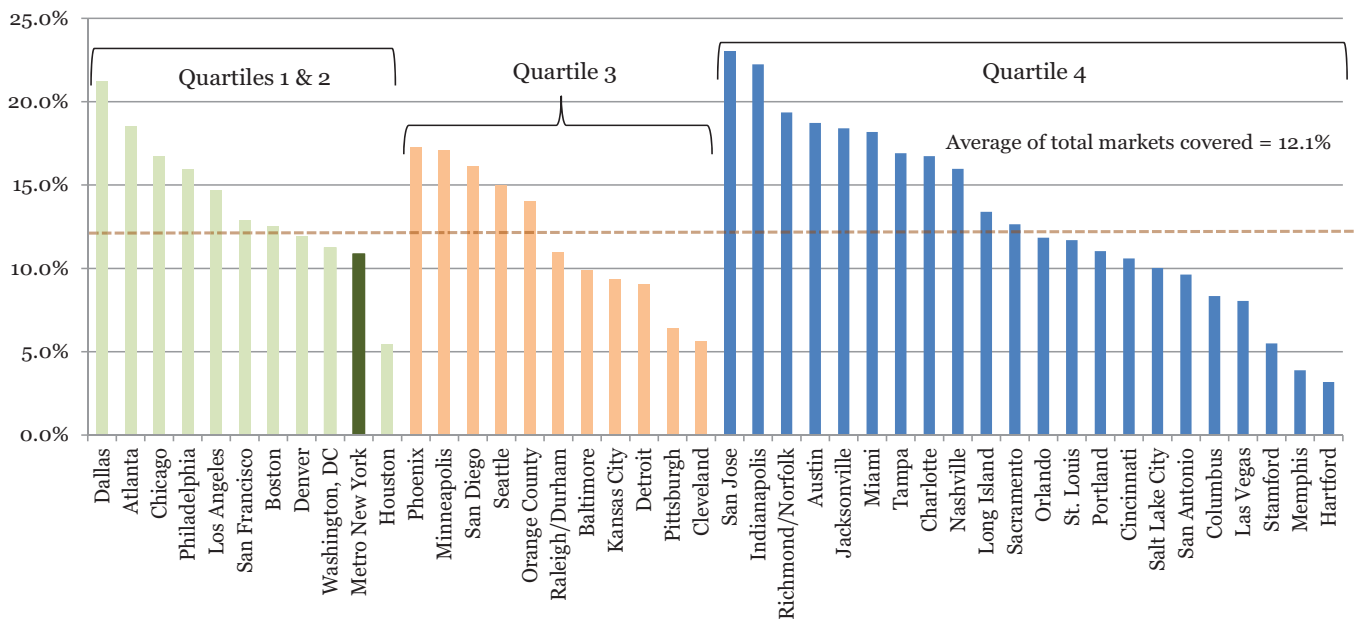
Our analysis reveals the following trends.

- ◆ Compared to the same period a year ago, the current stock acquisition percentages are lower for each property sector.
- ◆ Over the past year, the greatest decline in stock acquisition percentages occurs in the retail sector, moving from 14.1% to 12.4% (see Chart CAT-2).
- ◆ At 12.4%, the retail sector reports the highest average stock acquisition percentage among the four property types – just above the office sector's total of 12.1% (see Chart CAT-1).
- ◆ In the industrial sector, the average stock acquisition percentage increases slightly from the prior quarter to 4.7% (see Chart CAT-3).
- ◆ The apartment sector continues to contend with growing supply, causing some investors to pause acquisitions. As a result, its average stock acquisition percentage dips to 9.4% this quarter (see Chart CAT-4).
- ◆ Similar to last quarter, just under half of the cities analyzed in the retail sector have stock acquisition percentages above this sector's average of 12.4%. Strong performers include Westchester County, San Francisco, and Seattle.
- ◆ Only five cities have above-average stock acquisition percentages in each of the four property sectors – Atlanta, Dallas, Seattle, Charlotte, and Nashville.

## LOCATIONAL DIFFERENCES

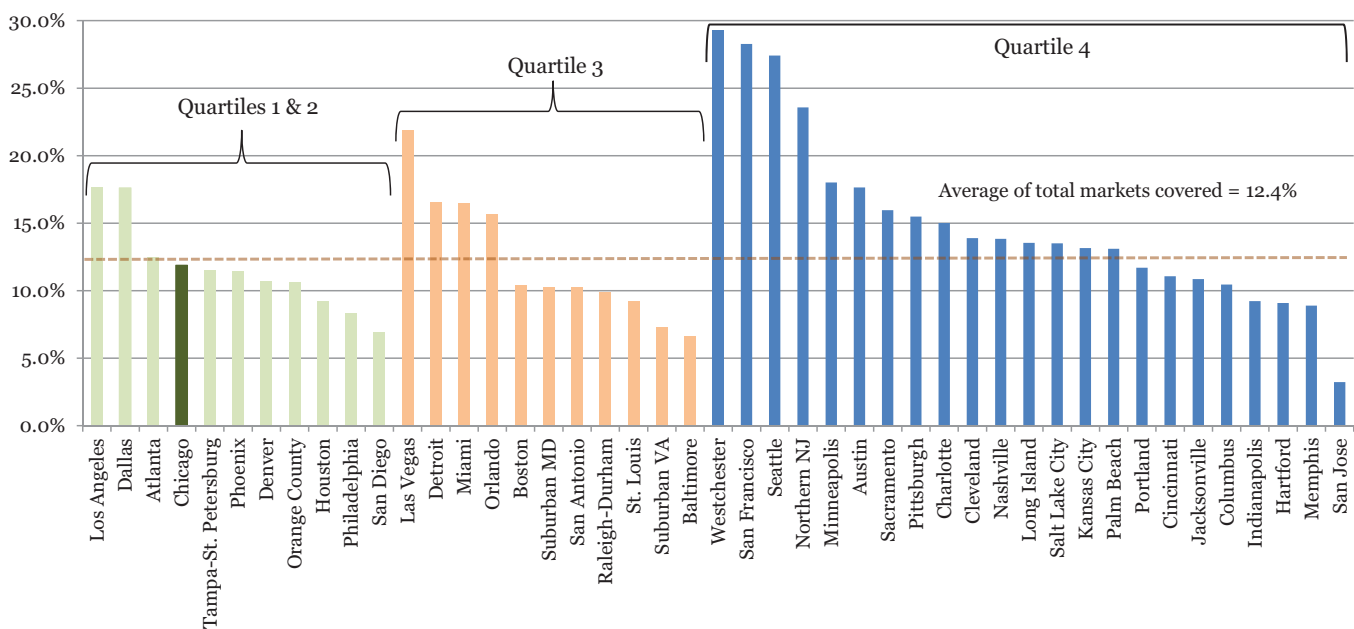
While economic and demographic trends within a specific metro may pique investor interest for a certain property type, those same trends may not have the same impact on the other property types within that market. In our analysis, many top-performing markets were diverse in each property type with the exception of the five markets previously noted. Such diversity opens up broad investment options for investors not just in terms of geography, but with regard to property type as well. ◆

**Chart CAT-1**  
**OFFICE CRE TRANSACTIONS TO TOTAL STOCK**  
 4-Quarter Rolling Percentages through 3Q 2017



Source: Data provided by Real Capital Analytics and CBRE; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

**Chart CAT-2**  
**RETAIL CRE TRANSACTIONS TO TOTAL STOCK**  
 4-Quarter Rolling Percentages through 3Q 2017

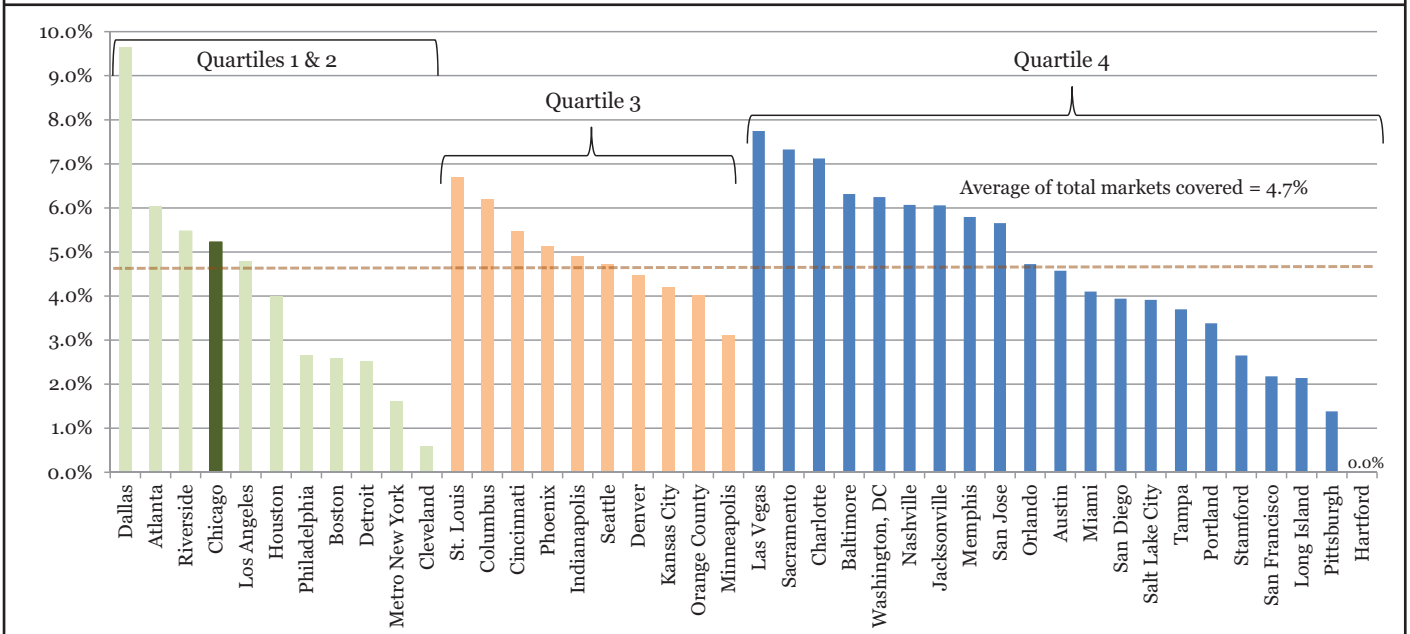


Source: Data provided by Real Capital Analytics and Reis; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

Chart CAT-3

**INDUSTRIAL CRE TRANSACTIONS TO TOTAL STOCK**

4-Quarter Rolling Percentages through 3Q 2017

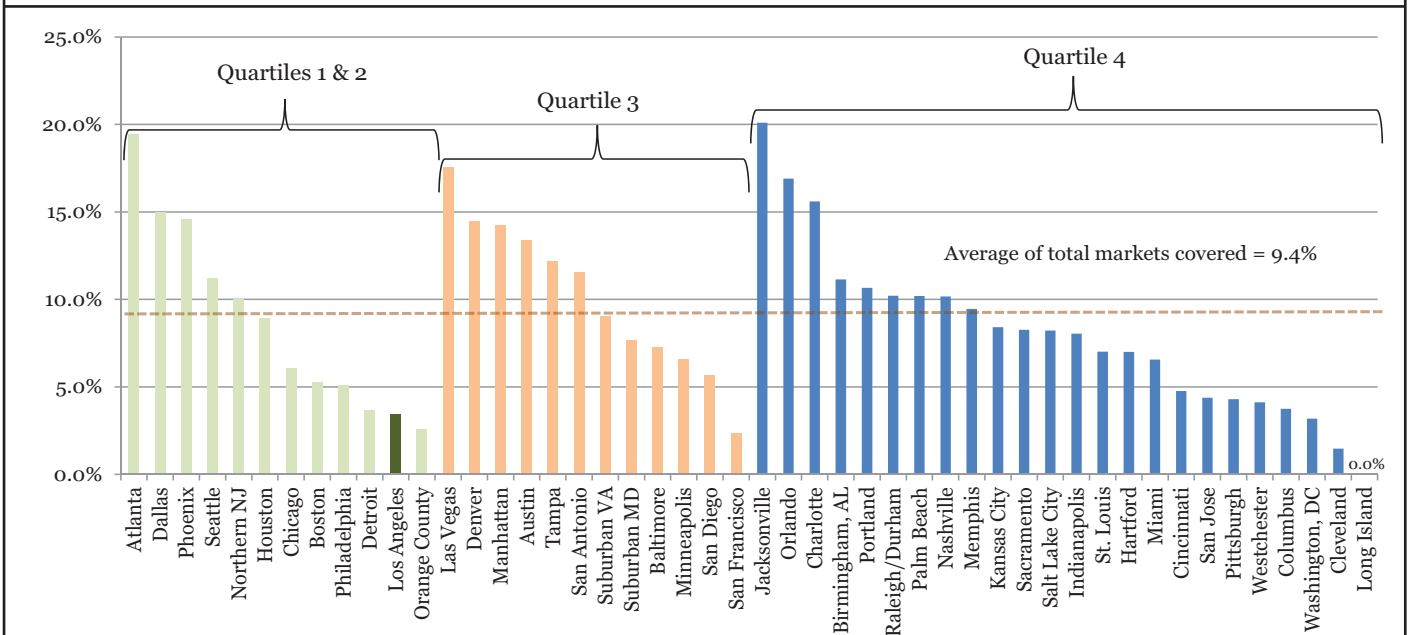


Source: Data provided by Real Capital Analytics and CBRE; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

Chart CAT-4

**APARTMENT CRE TRANSACTIONS TO TOTAL STOCK**

4-Quarter Rolling Percentages through 3Q 2017



Source: Data provided by Real Capital Analytics and Reis; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

# Survey Trends: Warehouse Sector

As the U.S. warehouse sector continues to benefit from growth in e-commerce, many investors are raising allocations for acquisitions, as well as new development.

- The national warehouse market was separated from the Survey’s national industrial market starting in the second quarter of 2002. At that time, its average overall cap rate was 9.00% – the highest average cap rate ever reported for this market (see Trends Tracker).
- During the economic expansion between 2005 and 2007, cap rate compression occurred until the Great Recession forced rates to trend upward (see Chart ST-1).
- By year-end 2009, the average overall cap rate for the national warehouse market rose to 8.80% and the average rent growth assumption was -0.90%.
- At the same time, e-commerce was preparing to surge, growing annually by double digits starting in 2010.

The positive relationship between e-commerce’s burgeoning growth and investors’ optimism for the national warehouse market is easily illustrated in Chart ST-1. Between 2005 and 2016, e-commerce has grown an average of 14.3% per year. At the same time, the average overall cap rate for the national warehouse market has dropped 202 basis points. If you consider the current quarter’s average of 5.06%, it has declined 223 basis points since 2005. While investors are watching this sector’s expanding construction pipeline, few are immediately concerned. ♦

## TRENDS TRACKER National Warehouse Market

### Average Overall Cap Rate (OAR):

4Q 2002	8.93%	=
4Q 2006	6.82%	▼
4Q 2009	8.80%	▲
4Q 2012	6.73%	▼
4Q 2015	5.48%	▼
4Q 2017	5.06%	▼

### Low versus High<sup>(1)</sup>:

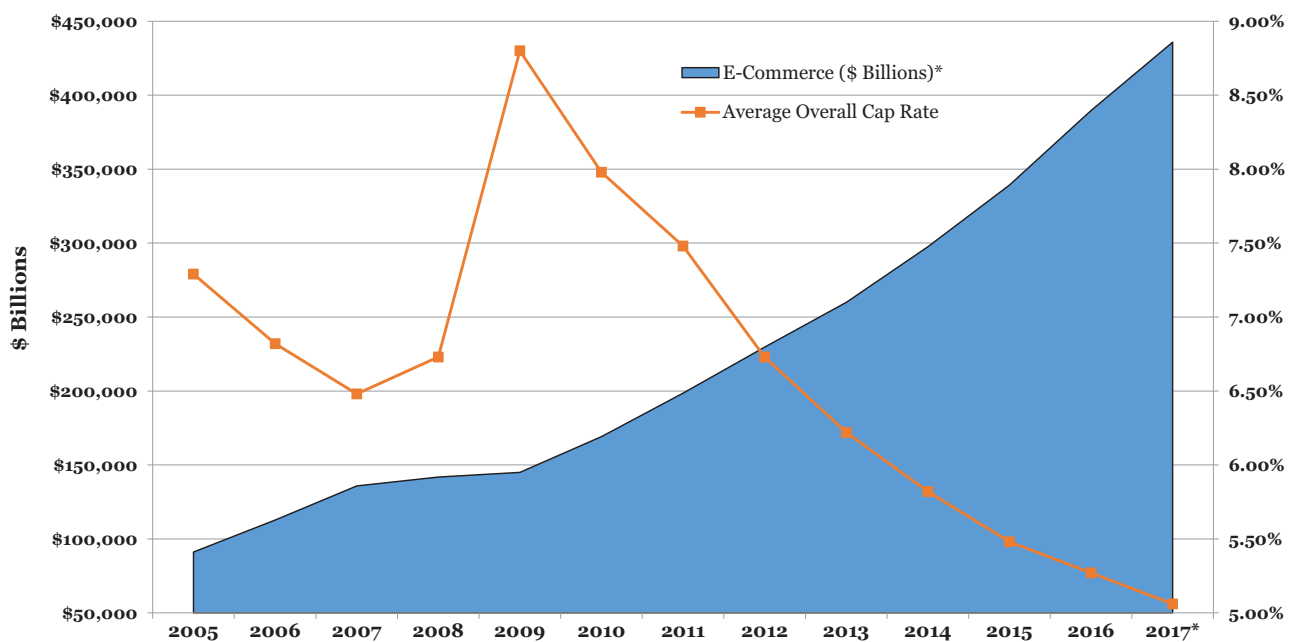
Lowest OAR: 5.06% in 4Q 2017  
Highest OAR: 9.00% in 2Q 2002

### Low versus High<sup>(1)</sup>:

Lowest AMR: -0.90% in 4Q 2009  
Highest AMR: 3.23% in 4Q07 & 1Q08

\* ▼, ▲, = change from prior quarter  
(1) over 16-year history  
AMR - average initial-year market rent change rate assumption

**Chart ST-1**  
**E-COMMERCE vs. OVERALL CAP RATES**  
4Q 2005 to 4Q 2017



Source: Retail Indicators Branch, U.S. Census Bureau; PwC Real Estate Investor Survey; \*estimated based on 2 quarters of actual data

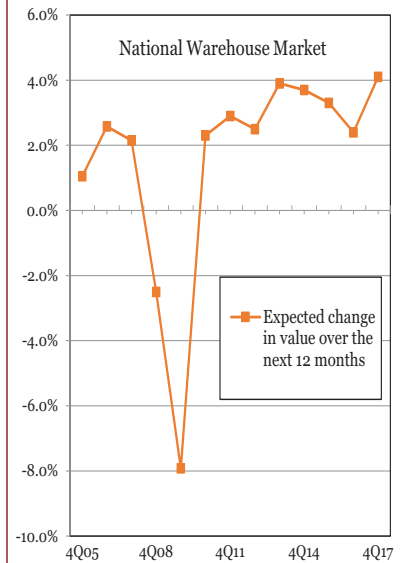
# Survey Trends: Warehouse Sector

The warehouse sector's fluctuating performance over the last ten-plus years is reflected in our investors' expectations of value change during the same period.

- Just prior to the impact of the U.S. economic recession in 2007, investors expected values of warehouse assets to increase an average of about 2.0% (see Chart ST-3).
- Value expectations dropped sharply during the Great Recession and investors expected an average decline of close to 8.0% at year-end 2009.
- Since the end of 2010, investors have expected property value appreciation averaging between 2.3% and 3.9% due to the warehouse sector's recovery and the benefit it is receiving from tremendous growth in e-commerce.
- This quarter, investors' average expectation for property value appreciation has reached a new high at 4.0%.

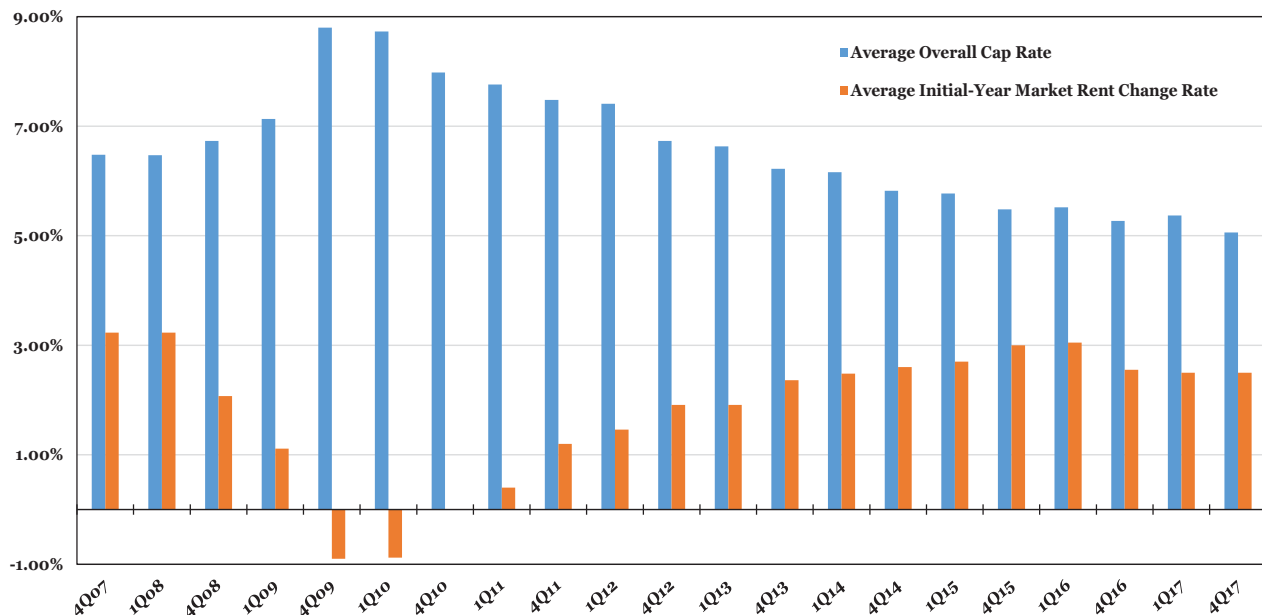
When you look at trends for the overall cap rates and market rent change rate assumptions for the national warehouse market, it suggests that the expectation of value growth is being driven primarily by cap rate compression. As shown in Chart ST-2, the average overall cap rate slips for the third consecutive quarter to 5.06% – the lowest average ever reported for this market. At the same time, the average initial-year market rent change rate assumption slips slightly this quarter to 2.5%. As new supply enters this market, these trends bare watching. ♦

**Chart ST-3**  
**AVERAGE EXPECTED VALUE CHANGE**  
4Q 2005 to 4Q 2017



Source: PwC Real Estate Investor Survey

**Chart ST-2**  
**TRENDS: AVERAGE OVERALL CAP RATES & MARKET RENT CHANGE RATES**  
4Q 2007 to 4Q 2017



Source: PwC Real Estate Investor Survey



# National Student Housing Market

A recession-resistant nature and stability of income are two key factors making the national student housing market attractive to a broadening range of investors. “Recent investors have included apartment developers, regulated investment companies, high-net-worth individuals, and banks,” as per *Emerging Trends in Real Estate*® 2018. The report also cites ‘a better understanding of the state of the student housing market due to increased transparency, as well as the maturation of the asset class,’ as key elements luring investors.

The investment appeal of student

housing and its recent robust transaction activity have left fewer assets available for sale, making the acquisition environment highly competitive.

Shifts in two key cash flow assumptions for this market since mid-year 2017 demonstrate investors’ ongoing optimism. First, the average overall cap rate falls 16 basis points to 5.86% (see Table STH-1). Over the next six months, most surveyed investors foresee cap rates holding steady. Second, the average initial-year market rent change rate surges 22 basis points to 2.66%. This figure exceeds the aggregate average of

2.23% for the 11 national markets in our Survey.

Despite vigorous buyer demand for this product and enthusiastic investor interest in this market, there are some concerns. One is the influx of new supply in the past few years, particularly at the top of the market and at tier-one schools. Another worry is the increasing challenge of obtaining favorable financing. “Construction lending terms are getting less friendly for borrowers,” states a participant. However, most investors view the rigors of securing financing as a safeguard against oversupply issues in the near term. ♦

**Table STH-1**  
**NATIONAL STUDENT HOUSING MARKET\***  
Fourth Quarter 2017

	CURRENT	2Q 2017	YEAR AGO	2 YEARS AGO	3 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 11.00%	7.25% – 11.00%
Average	8.05%	8.18%	8.18%	8.31%	9.03%
Change (Basis Points)		- 13	- 13	- 26	- 98
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.50% – 7.50%	4.50% – 7.50%	4.50% – 7.50%	4.50% – 7.50%	4.50% – 7.75%
Average	5.86%	6.02%	6.02%	6.02%	6.39%
Change (Basis Points)		- 16	- 16	- 16	- 53
<b>RESIDUAL CAP RATE</b>					
Range	4.75% – 7.50%	4.75% – 7.50%	4.75% – 7.50%	4.75% – 7.75%	4.75% – 8.00%
Average	6.30%	6.30%	6.36%	6.23%	6.74%
Change (Basis Points)		0	- 6	+ 7	- 44
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%
Average	2.66%	2.44%	2.44%	2.38%	2.75%
Change (Basis Points)		+ 22	+ 22	+ 28	- 9
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.50% – 3.00%	0.00% – 11.00%	0.00% – 11.00%	0.00% – 12.00%	0.00% – 12.00%
Average	2.41%	3.09%	3.09%	3.06%	2.97%
Change (Basis Points)		- 68	- 68	- 65	- 56
<b>MARKETING TIME<sup>c</sup></b>					
Range	0 – 12	0 – 6	0 – 6	0 – 6	2 – 4
Average	3.9	3.4	3.3	2.9	4.3
Change (▼, ▲, =)		▲	▲	▲	▼
* Off-campus assets					
a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months					

**NATIONAL STUDENT HOUSING MARKET – SELECT SURVEY RESPONSES\***  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		VACANCY		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		REPLACEMENT RESERVE		PREFERRED LEASE TERM		MARKETING	
	MARKET RENT	EXPENSES	TOTAL VACANCY	CAP RATE	SELLING	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	PER BED	PER BED	MONTHS	MONTHS	MONTHS	MONTHS		
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve is deducted; doesn't use a separate structural replacement reserve; sees overall cap rates holding steady over the next six months.	3.0% to 4.5%	2.0% to 2.5%	3.0% to 5.0%	4.75% to 5.50%	0.8% to 1.0%	7.00% to 9.00%	4.50% to 5.25%		\$125 to \$150		12		0 to 3			
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 4 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve is deducted; uses a separate structural replacement reserve of \$1,000 to \$3,000 per bed; sees overall cap rates holding steady over the next six months.	1.0% to 4.0%	2.0% to 3.0%	4.0% to 6.0%	6.00% to 6.50%	1.0% to 2.0%	6.75% to 8.00%	5.00% to 5.50%		\$200 to \$300		12		1 to 12			
<b>PRIVATE INVESTOR ♦ Forecast Period: 5 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before capital replacement reserve is deducted; uses a separate structural replacement reserve; sees overall cap rates increasing 25 to 50 basis points over the next six months.	2.0% to 3.0%	2.0% to 3.0%	4.0% to 10.0%	5.75% to 7.50%	1.0%	9.00% to 10.00%	5.50% to 7.50%		\$100 to \$175		12		2 to 6			
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 2 to 5 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve is deducted; uses a separate structural replacement reserve; sees overall cap rates holding steady over the next six months; invests in the South region of the country.	2.5% to 3.0%	2.0% to 3.0%	5.0% to 8.0%	6.25% to 7.50%	0.7% to 1.0%	8.00% to 9.50%	5.00% to 6.75%		\$100 to \$125		12		2 to 4			
<b>PRIVATE INVESTOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve is deducted; does not use a separate structural replacement reserve; sees overall cap rates holding steady over the next six months.	3.0% to 3.5%	2.0% to 2.5%	4.0% to 5.0%	5.50% to 6.00%	0.8% to 1.0%	7.50% to 9.00%	5.50% to 6.25%		Does not use		12		0 to 4			
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 7 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve is deducted; uses a separate structural replacement reserve of \$200 to \$400 per bed; sees overall cap rates holding steady over the next six months.	2.0% to 5.0%	2.0% to 3.0%	4.0% to 6.0%	5.50% to 6.50%	1.0% to 2.0%	6.50% to 7.50%	4.50% to 6.00%		\$200 to \$400		12		2 to 9			

\*off-campus assets only

Source: Personal survey conducted by PwC during April 2017.



# National Secondary Office Market

The national secondary office market continues to benefit from the competitiveness and elevated pricing in primary office markets, as evidenced by the top cities in *Emerging Trends in Real Estate*® 2018. In fact, Seattle, Austin, Salt Lake City, and Raleigh-Durham are ranked as the top four metros for overall investment prospects in the coming year. Investors began exploring secondary office markets in search of yield and that trend continues as many believe “these markets could offer more upside.”

This quarter’s investor comments highlight the unique features of some secondary office market as draws for investment, including demand from

high-tech users in San Jose and Pittsburgh, robust residential and commercial growth in Sacramento’s CBD and Midtown submarkets, and the addition of national sports teams in Las Vegas.

Amid this enthusiasm, concerns exist that include the uneven relationship between rents and replacement cost, the timeline relative to a potential downturn, and the lack of large blocks of available space in certain metros. Despite these challenges, the results of *Emerging Trends* strongly suggest that investors will continue to look at secondary office markets as part of their investment strategies in the near term. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	73.0%	▲
Range	60.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	1 to 10	
% of participants using	75.0%	▼

### Average Overall Cap Rates:

Market (as a whole)	7.51%	▲
CBD	7.19%	▲
Suburbs	7.83%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table SEC-1**  
**NATIONAL SECONDARY OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.50% – 13.00%	6.50% – 13.00%	6.00% – 13.00%	6.25% – 13.00%	6.75% – 14.00%
Average	9.05%	8.99%	8.88%	9.03%	9.50%
Change (Basis Points)		+ 6	+ 17	+ 2	- 45
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 9.50%	4.50% – 10.00%	4.50% – 10.00%	4.50% – 10.00%	4.00% – 11.00%
Average	7.51%	7.46%	7.36%	7.66%	8.08%
Change (Basis Points)		+ 5	+ 15	- 15	- 57
<b>RESIDUAL CAP RATE</b>					
Range	6.50% – 10.00%	6.00% – 11.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.50%
Average	7.78%	7.79%	7.69%	7.86%	8.26%
Change (Basis Points)		- 1	+ 9	- 8	- 48
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 7.00%	0.00% – 10.00%	0.00% – 10.00%
Average	2.34%	2.84%	3.35%	3.75%	3.20%
Change (Basis Points)		- 50	- 101	- 141	- 86
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.50% – 3.00%	1.50% – 3.50%	1.50% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.53%	2.52%	2.48%	2.58%	2.54%
Change (Basis Points)		+ 1	+ 5	- 5	- 1
<b>MARKETING TIME<sup>c</sup></b>					
Range	3 – 12	3 – 9	3 – 9	2 – 9	2 – 12
Average	5.9	5.8	5.9	6.0	6.1
Change (▼, ▲, =)		▲	=	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# National Regional Mall Market

The U.S. retail sector stands at its most significant inflection point since the introduction of the enclosed mall more than 60 years ago. On one side of the equation is strong U.S. retail sales that continue to post healthy annual growth rates. On the other, however, are vacancy rates that are either flat or up, depending on the specific retail format. In the national regional mall market, for example, vacancy increased to 8.3% in the third quarter of 2017, up from 8.1% last quarter and the highest quarter-average since 2013, as per Reis.

While steady growth in e-commerce has negatively impacted the performance of the retail sector and

remains a top concern for our surveyed investors going forward, it is just one major trend converging to reshape this sector as it faces truly generational change. Other trends include historic changes in apparel spending; department store deconstruction and obsolescence; industry maturity; and changing consumer demographics.

As the retail sector continues its evolution, it will likely present new challenges and require investors to modify their investment strategies in order to remain successful. As one participant says, "Malls aren't dead; the old-fashioned way of thinking about how to own them is dead." ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	72.0%	=
Range	50.0% to 85.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	(2)
Range	(2)
% of participants using	(2)

### Average Overall Cap Rates:

Class A+	4.75%	▲
Class A	5.44%	=
Class B+	6.59%	=

\* ▼, ▲, = change from prior quarter

(1) on a ten-year lease

(2) 60% are not using free rent

**Table 1**  
**NATIONAL REGIONAL MALL MARKET<sup>(d)</sup>**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.00% – 11.50%	5.00% – 11.50%	5.50% – 11.50%	5.50% – 11.00%	5.75% – 14.00%
Average	7.60%	7.60%	7.75%	8.15%	9.25%
Change (Basis Points)		0	-15	-55	-165
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.00% – 10.00%	4.00% – 10.00%	4.00% – 10.00%	4.00% – 10.00%	4.50% – 10.00%
Average	6.25%	6.23%	6.10%	6.21%	6.83%
Change (Basis Points)		+2	+15	+4	-58
<b>RESIDUAL CAP RATE</b>					
Range	4.00% – 10.00%	4.00% – 10.00%	4.00% – 10.00%	4.75% – 10.00%	4.75% – 12.00%
Average	6.68%	6.70%	6.65%	6.79%	7.23%
Change (Basis Points)		-2	+3	-11	-55
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 5.00%	0.00% – 6.00%
Average	2.40%	2.50%	2.60%	2.58%	2.58%
Change (Basis Points)		-10	-20	-18	-18
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 5.00%	0.00% – 3.00%	0.00% – 3.00%
Average	3.00%	3.00%	3.00%	2.29%	2.00%
Change (Basis Points)		0	0	+71	+100
<b>MARKETING TIME<sup>c</sup></b>					
Range	3 – 18	3 – 18	3 – 18	4 – 18	3 – 24
Average	9.0	9.0	8.4	9.2	9.4
Change (▼, ▲, =)		=	▲	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

d. relates to Class A+, A, B+, and B malls

# National Power Center Market

According to one surveyed investor this quarter, a bright spot in the national power center market is that “there seems to have been an overreaction to e-commerce’s effect on brick and mortar, which has created select arbitrage opportunities.” While others may also feel that e-commerce’s negative impact on big-box retailers has been “blown out of proportion,” there is no denying that the growth of e-commerce and the changes in consumers’ shopping habits are forever altering the U.S. retail sector’s landscape.

These ever-changing consumer trends are also influencing how owners look at current and prospective

power center investments. “Centers need to provide entertainment and experiences in order to increase foot traffic,” says an investor. Another investor wonders, “Who will be my tenants in ten years?” Investors’ concerns about how power centers will perform over the near term are reflected in its average overall cap rate, which increases 33 basis points this quarter to 6.73% (see Table 2).

In the coming year, 61.4% of industry respondents in *Emerging Trends in Real Estate*® 2018 recommend selling power center assets – the second highest sell rating of the six retail subsectors included in the annual report. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average 69.0% =  
Range 50.0% to 80.0%

### Months of Free Rent<sup>(1)</sup>:

Average 4 ▼  
Range 0 to 12  
% of participants using 57.0% =

### Average Overall Cap Rates:

75.0% big-box space 6.59% ▲  
85.0% big-box space 6.80% ▲  
100.0% big-box space 6.98% ▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 2**  
**NATIONAL POWER CENTER MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%
Average	7.62%	7.53%	7.67%	8.02%	8.17%
Change (Basis Points)		+ 9	- 5	- 40	- 55
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.25% – 9.00%	5.25% – 8.00%	5.00% – 8.00%	5.50% – 8.00%	6.00% – 8.75%
Average	6.73%	6.40%	6.37%	6.60%	6.98%
Change (Basis Points)		+ 33	+ 36	+ 13	- 25
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 9.00%	5.50% – 9.00%	5.50% – 9.00%	6.00% – 9.00%	6.00% – 9.00%
Average	7.05%	6.88%	6.94%	7.08%	7.27%
Change (Basis Points)		+ 17	+ 11	- 3	- 22
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 3.00%	0.00% – 3.00%
Average	1.68%	1.97%	1.96%	1.67%	1.17%
Change (Basis Points)		- 29	- 28	+ 1	+ 51
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 5.00%	1.00% – 5.00%	0.00% – 3.00%	2.00% – 3.00%	0.00% – 3.00%
Average	2.93%	2.89%	2.58%	2.83%	2.46%
Change (Basis Points)		+ 4	+ 35	+ 10	+ 47
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 18	2 – 18	2 – 18	2 – 18	2 – 18
Average	5.9	5.2	5.8	6.3	7.5
Change (▼, ▲, =)		▲	▲	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# National Strip Shopping Center Market

Good news abounds for the U.S. economy. GDP grew 3.3% in the third quarter of 2017; the labor market remains strong; and growth in consumer spending, which makes up more than two-thirds of the U.S. economy, grew 3.3% in the second quarter – the fastest in a year, as per the U.S. Commerce Department. Unfortunately, these positive trends are not benefiting the national strip shopping center market as much as in the past due to changing consumer habits.

First, the aging Baby Boomer population, the largest single U.S. consumer group, has entered a new life stage and is consuming less and spending a higher portion of income

on dining out, entertainment, and travel. In addition, Millennials are spending less on apparel and housewares and a greater percentage of their incomes on entertainment and dining out. Second, online shopping for goods and groceries continues to grow in popularity. “Internet sales are eroding walk-thru traffic at centers,” says a participant.

This quarter, the continued proliferation of e-commerce and its negative impact on traditionally “internet-resistant” retail uses is a top concern among surveyed investors. One Survey participant asks, “How do I get Amazon to take in-line space at our shopping centers?” ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average 71.0% ▼  
Range 50.0% to 100.0%

### Months of Free Rent<sup>(1)</sup>:

Average 3 ▲  
Range 0 to 6  
% of participants using 44.0% =

### Market Conditions Favor:

Buyers 11.0% =  
Sellers 44.0% =  
Neither 45.0% =

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 3**  
**NATIONAL STRIP SHOPPING CENTER MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 10.50%	5.50% – 10.50%	5.50% – 10.75%	6.00% – 11.00%	6.50% – 12.50%
Average	7.50%	7.25%	7.39%	8.11%	8.43%
Change (Basis Points)		+ 25	+ 11	- 61	- 93
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.00% – 9.50%	4.00% – 9.50%	4.00% – 9.50%	5.00% – 10.00%	5.25% – 9.50%
Average	6.38%	6.19%	6.18%	7.05%	7.06%
Change (Basis Points)		+ 19	+ 20	- 67	- 68
<b>RESIDUAL CAP RATE</b>					
Range	4.75% – 9.75%	4.75% – 9.75%	4.75% – 9.75%	5.00% – 10.00%	6.00% – 12.00%
Average	6.80%	6.57%	6.47%	7.22%	7.66%
Change (Basis Points)		+ 23	+ 33	- 42	- 89
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 5.00%	0.00% – 4.00%
Average	1.82%	1.69%	1.83%	1.97%	1.75%
Change (Basis Points)		+ 13	- 1	- 15	+ 7
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 4.00%
Average	2.57%	2.67%	2.69%	2.72%	3.03%
Change (Basis Points)		- 10	- 12	- 15	- 46
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 18	2 – 18	2 – 12	2 – 12	2 – 18
Average	6.8	6.1	5.9	6.1	7.1
Change (▼, ▲, =)		▲	▲	▲	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# National CBD Office Market

While overall fundamentals are still positive for the national CBD office market, a slowdown in leasing activity and an increase in new construction are combining to put downward pressure on rental rates. “Vacancy is rising and rents are decreasing in various downtown cores,” says an investor. “New supply is elevated in many major CBDs,” adds another. As of the third quarter of 2017, close to ten million square feet of office space were completed in the national CBD office sector, of which 88.0% was speculative space, according toushman & Wakefield.

Downtown hubs with the highest levels of new supply include Seattle,

New York City, and Chicago. The good news is that new supply is expected to continue to be concentrated within seven cities accounting for half of it, including Washington, DC and San Francisco. The bad news, however, is that available space is rapidly rising in CBDs with significant amounts of new construction. In Chicago, for example, availability increased from 12.0% to 14.0% in the past year due to new supply outpacing demand.

Bright spots noted by investors active in the national CBD office market include more realistic (more cautious) underwriting and the anticipation of a decline in both pricing and tenant improvement allowances. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	69.0%	=
Range	50.0% to 85.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▼
Range	1 to 15	
% of participants using	100.0%	▲

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	43.0%	=
Neither	57.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 4**  
**NATIONAL CBD OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 9.00%	5.50% – 9.50%	5.50% – 10.00%	5.50% – 11.00%	5.25% – 12.00%
Average	7.05%	7.13%	7.16%	7.45%	8.41%
Change (Basis Points)		- 8	- 11	- 40	- 136
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.50% – 8.00%	3.50% – 7.50%	3.50% – 7.50%	3.75% – 8.00%	4.25% – 10.00%
Average	5.73%	5.66%	5.57%	6.16%	6.70%
Change (Basis Points)		+ 7	+ 16	- 43	- 97
<b>RESIDUAL CAP RATE</b>					
Range	4.75% – 8.00%	4.75% – 7.50%	4.75% – 7.50%	5.00% – 9.00%	5.25% – 11.00%
Average	6.16%	6.11%	6.14%	6.59%	7.48%
Change (Basis Points)		+ 5	+ 2	- 43	- 132
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 6.00%	0.00% – 7.00%	0.00% – 8.00%
Average	2.61%	2.54%	2.71%	2.57%	2.56%
Change (Basis Points)		+ 7	- 10	+ 4	+ 5
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 4.00%	2.00% – 4.00%	0.00% – 4.00%	1.00% – 3.00%	2.00% – 3.00%
Average	2.82%	2.82%	2.64%	2.61%	2.69%
Change (Basis Points)		0	+ 18	+ 21	+ 13
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 18	2 – 18	2 – 12	2 – 15	2 – 18
Average	6.8	6.8	6.4	6.9	7.6
Change (▼, ▲, =)		=	▲	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months



# National Suburban Office Market

Overall vacancy held relatively steady for the national suburban office market in the third quarter of 2017 compared to a year ago as more areas are reporting year-over-year declines in vacancy rather than increases. Specifically, overall vacancy was 13.7%, as per Cushman & Wakefield.

While a few surveyed investors list steady leasing activity and generally low levels of new construction as reasons for this market's stability, another states that the trend of repurposing older office product into other uses is helping to maintain vacancy and even lower it in certain areas.

Nevertheless, occupancy and retaining tenants remain top concerns

for owners of suburban office product. "Keeping assets stabilized and determining the future space needs of tenants are priorities," says an investor.

Tracking tenant trends has been difficult for many suburban office property owners over the past few years as the workforce and employers showed a greater preference for downtown locations. Now, it appears the pendulum is starting to swing in favor of the suburbs again as suburban landlords upgrade office parks to include amenities like food trucks, concert venues, and coffee lounges, which mimic urban life and appeal to an aging, family-forming millennial population. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	63.0%	=
Range	40.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▼
Range	0 to 15	
% of participants using	88.0%	=

### Market Conditions Favor:

Buyers	43.0%	▲
Sellers	0.0%	▼
Neither	57.0%	▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 5**  
**NATIONAL SUBURBAN OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 12.00%	6.00% – 11.50%	6.00% – 10.50%	6.25% – 10.50%	6.00% – 12.50%
Average	8.34%	8.03%	7.86%	7.92%	8.49%
Change (Basis Points)		+ 31	+ 48	+ 42	- 15
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.20% – 10.00%	5.00% – 10.00%	5.00% – 9.50%	5.00% – 9.00%	5.00% – 10.50%
Average	6.72%	6.69%	6.63%	6.66%	7.42%
Change (Basis Points)		+ 3	+ 9	+ 6	- 70
<b>RESIDUAL CAP RATE</b>					
Range	6.00% – 11.50%	5.75% – 11.50%	6.00% – 10.50%	6.00% – 9.50%	6.00% – 11.00%
Average	7.61%	7.42%	7.59%	7.27%	7.89%
Change (Basis Points)		+ 19	+ 2	+ 34	- 28
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	(3.00%) – 4.00%
Average	1.86%	2.00%	2.13%	2.63%	1.55%
Change (Basis Points)		- 14	- 27	- 77	+ 31
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	1.00% – 3.50%	2.00% – 4.00%
Average	2.68%	2.72%	2.72%	2.75%	2.73%
Change (Basis Points)		- 4	- 4	- 7	- 5
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 12	1 – 12	3 – 12	2 – 18
Average	6.5	6.0	6.0	7.1	9.0
Change (▼, ▲, =)		▲	▲	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Atlanta Office Market

This quarter's Survey results reveal that most investors view conditions in the Atlanta office market as neutral – equally favoring buyers and sellers. Moreover, in *Emerging Trends in Real Estate*® 2018, 51.0% of industry respondents recommend holding office assets here in the coming year, versus buying (30.0%) or selling (19.0%).

Further illustrating a reserved investor sentiment, Atlanta is one of four city office markets in our Survey with an average overall cap rate above 7.00%. As shown in Table 6, its average this quarter is 7.14%. The other cities with the highest averages include Philadelphia at 7.20%, Houston at

7.26%, and Chicago at 7.38%. In comparison, the average overall cap rate for the Survey's 19 city-specific office markets is 6.33%.

Despite its comparatively high average cap rate, Survey participants do highlight leasing velocity, positive net absorption, rent growth, and limited new construction as bright spots in this market. "Overall, local office dynamics are very positive for the foreseeable future," boasts a participant. In the coming year, investors estimate property values increasing as much as 6.0%. The average expected increase is 2.6% – above the aggregate average of 2.0% for the 19 city-specific markets surveyed. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	68.0%	=
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	1 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	7.14%	▼
CBD	6.63%	▼
Suburbs	7.65%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 6**  
**ATLANTA OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 10.75%	6.00% – 10.50%	6.00% – 10.00%	6.00% – 10.00%	7.50% – 11.00%
Average	8.29%	8.29%	8.28%	8.50%	9.02%
Change (Basis Points)		0	+ 1	- 21	- 73
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.25% – 9.00%	5.25% – 9.00%	5.25% – 9.00%	6.00% – 9.25%	6.00% – 9.25%
Average	7.14%	7.19%	7.16%	7.74%	8.03%
Change (Basis Points)		- 5	- 2	- 60	- 89
<b>RESIDUAL CAP RATE</b>					
Range	6.00% – 9.00%	6.00% – 9.00%	6.00% – 9.00%	6.50% – 9.25%	6.00% – 10.00%
Average	7.38%	7.38%	7.33%	7.71%	8.21%
Change (Basis Points)		0	+ 5	- 33	- 83
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 5.00%	(1.00%) – 3.00%
Average	2.50%	2.60%	3.21%	2.29%	0.83%
Change (Basis Points)		- 10	- 71	+ 21	+ 167
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.50% – 3.50%	1.50% – 3.50%	1.50% – 5.00%	0.00% – 3.50%	0.00% – 3.00%
Average	2.68%	2.68%	2.90%	2.35%	2.38%
Change (Basis Points)		0	- 22	+ 33	+ 30
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 12	2 – 12	1 – 12	1 – 12	1 – 12
Average	6.1	6.1	5.3	4.1	5.8
Change (▼, ▲, =)		=	▲	▲	▲

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Austin Office Market

*Editor's Note: We are delighted to debut the Austin office market this quarter. Austin has become a highly sought after location for office building investments, and we hope that our readers will be glad to see it included in our Survey.*

Thanks to job and population growth, the in-migration of tech-oriented companies, and a vibrant live-work-play environment downtown, robust tenant demand exists in the Austin office market. In turn, investment interest in this city has continued to grow, earning Austin a second-place ranking in *Emerging Trends in Real Estate*® 2018 for overall real estate prospects in the coming year.

Positive demand trends are benefiting occupancies in both the CBD and suburbs. As of the third quarter of 2017, the CBD's overall vacancy of 9.7% sits well below the national level of 12.7%. "Demand downtown is exceeding both current and pipeline office supply," states an investor. Similarly, the local suburban vacancy rate was 10.7%, compared to 13.7% for the nation, as per Cushman & Wakefield (C&W).

Strong leasing activity has enabled owners to increase rental rates. C&W estimates that the average asking rental rate increased 7.9% year over year in the third quarter of 2017. Moreover, our Survey results reveal an upbeat investor outlook for future rent growth in this market. As shown in Table 7, the average initial-year market rent change rate is 4.35% this quarter – the highest average among the Survey's 19 city-specific office markets.

Austin's appealing attributes are luring a broad range of buyers and creating a competitive transaction

environment. As shown in Table 7, this market's average overall cap rate is 6.02% – toward the low end of the range for other secondary office markets in our Survey. For the CBD, the average overall cap rate is 5.66% while it is 6.38% for the suburbs (see Key 4Q17 Survey Stats).

Overall, investor sentiment is optimistic with regard to future property values in the Austin office market. In the coming year, our surveyed investors foresee only increases in property values – of as much as 15.0%. The average expected increase is 3.1%, outpacing the composite average of 2.0% for the 19 city-specific office markets in our Survey. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	66.0%
Range	50.0% to 80.0%

### Months of Free Rent<sup>(1)</sup>:

Average	4
Range	1 to 7
% of participants using	100.0%

### Average Overall Cap Rates:

Market (as a whole)	6.02%
CBD	5.66%
Suburbs	6.38%

(1) on a ten-year lease

Table 7 AUSTIN OFFICE MARKET Fourth Quarter 2017			
	CURRENT	LAST QUARTER	YEAR AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>			
Range	5.50% – 10.00%		
Average	7.63%		
Change (Basis Points)			
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>			
Range	4.50% – 8.50%		
Average	6.02%		
Change (Basis Points)			
<b>RESIDUAL CAP RATE</b>			
Range	5.50% – 8.50%		
Average	6.59%		
Change (Basis Points)			
<b>MARKET RENT CHANGE<sup>b</sup></b>			
Range	1.50% – 10.00%		
Average	4.35%		
Change (Basis Points)			
<b>EXPENSE CHANGE<sup>b</sup></b>			
Range	2.00% – 5.00%		
Average	2.85%		
Change (Basis Points)			
<b>MARKETING TIME<sup>c</sup></b>			
Range	3 – 9		
Average	5.5		
Change (▼, ▲, =)			
a. Rate on unleveraged, all-cash transactions      b. Initial rate of change      c. In months			

# Boston Office Market

The Boston office market boasted an overall vacancy rate of 8.00% for its CBD and 12.00% for its suburbs in the third quarter of 2017, both below the national averages, as per Cushman & Wakefield. In addition, Boston is one of only two primary markets to rank as a top-ten city in terms of overall real estate prospects in the year ahead, according to *Emerging Trends in Real Estate*® 2018. Los Angeles was the other primary city. As one investor states, “Boston is continuing to grow and transform into a world-class city.”

Another bright spot for this office market mentioned by a participant is “continued strong tenant demand for

the year ahead.” Amid this optimism, however, some concerns exist. “The labor market is incredibly tight and it’s difficult for employers to lure prospective employees because of the area’s high cost of living,” comments a participant. Another notes that this market’s vast exposure to the technology sector is a worry while one other mentions the U.S. economy and the path of interest rates and overall cap rates as top concerns.

For now, the average overall cap rate for the Boston office market sits at 6.01% – the lowest average posted for this market since it debuted in the Survey in the fourth quarter of 1999. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	68.0%	▲
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	1 to 10	
% of participants using	83.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.01%	▼
CBD	5.03%	▼
Suburbs	6.98%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 8**  
**BOSTON OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.75% – 10.00%	5.75% – 10.00%	5.75% – 10.00%	6.25% – 11.00%	6.50% – 15.00%
Average	7.42%	7.43%	7.45%	8.00%	9.29%
Change (Basis Points)		- 1	- 3	- 58	- 187
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.00% – 9.50%	4.00% – 10.00%	4.00% – 9.50%	4.00% – 9.50%	4.75% – 12.00%
Average	6.01%	6.27%	6.26%	6.43%	7.67%
Change (Basis Points)		- 26	- 25	- 42	- 166
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 10.00%	5.00% – 10.50%	5.00% – 10.00%	5.50% – 11.00%	6.00% – 12.00%
Average	6.64%	6.82%	6.83%	7.14%	7.89%
Change (Basis Points)		- 18	- 19	- 50	- 125
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 6.00%	0.00% – 6.00%	0.00% – 5.00%
Average	3.17%	3.33%	3.58%	3.54%	1.67%
Change (Basis Points)		- 16	- 41	- 37	+ 150
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 4.00%	0.00% – 4.50%
Average	2.79%	2.71%	2.71%	3.04%	2.88%
Change (Basis Points)		+ 8	+ 8	- 25	- 9
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 8	2 – 9	2 – 12	2 – 12	2 – 12
Average	5.1	5.5	6.2	6.3	7.1
Change (▼, ▲, =)		▼	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Charlotte Office Market

Amid significant new deliveries of space in the Charlotte office market, the outlook for future rent growth dips to a level not seen since the fourth quarter of 2014. Specifically, this market's average initial-year market rent change rate declines 39 basis points to 2.71%. "Our top concern for this market is the amount of speculative construction occurring in Uptown," states an investor. A total of 1.8 million square feet will be added to the local market this year, as per Cushman & Wakefield. In the next two years, estimates total 1.1 million square feet of new office space.

While these additions to supply increase options for tenants, they

also present challenges for landlords. As a result, our surveyed investors unanimously agree that incentives, such as free rent, are offered in this market. This quarter, free rent ranges from one to ten months on a ten-year lease and averages six months.

Even though investors see some stumbling blocks in the coming year, the overall appeal of this market is demonstrated in its average overall cap rate, which slips 18 basis points this quarter (see Table 9). Survey participants include job and population growth, affordable occupancy costs for users, and comparatively low prices as positive attributes for investing here. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	70.0%	▼
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	1 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.75%	▼
CBD	6.52%	▼
Suburbs	6.98%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 9**  
**CHARLOTTE OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.50% – 10.00%	6.50% – 10.00%	6.50% – 11.00%	7.00% – 11.50%	7.50% – 12.00%
Average	8.18%	8.36%	8.45%	8.80%	9.39%
Change (Basis Points)		- 18	- 27	- 62	- 121
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 8.00%	5.00% – 8.75%	5.00% – 8.75%	5.50% – 9.00%	6.00% – 9.50%
Average	6.75%	6.93%	6.91%	7.35%	7.88%
Change (Basis Points)		- 18	- 16	- 60	- 113
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 8.50%	5.50% – 8.50%	5.50% – 8.50%	5.50% – 9.00%	6.00% – 9.00%
Average	6.81%	7.06%	7.20%	7.44%	7.86%
Change (Basis Points)		- 25	- 39	- 63	- 105
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.50%	2.00% – 4.50%	2.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%
Average	2.71%	3.10%	3.25%	2.71%	1.78%
Change (Basis Points)		- 39	- 54	0	+ 93
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.50% – 4.00%	1.50% – 4.00%	1.50% – 3.00%	1.75% – 3.00%	2.00% – 4.00%
Average	2.71%	2.45%	2.35%	2.58%	2.94%
Change (Basis Points)		+ 26	+ 36	+ 13	- 23
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 9	1 – 9	1 – 12	2 – 12
Average	4.3	3.9	4.2	4.1	5.5
Change (▼, ▲, =)		▲	▲	▲	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Chicago Office Market

While construction activity in the Chicago office market's CBD is likely to negatively impact fundamentals in the near term, a lack of new supply in its suburbs will hopefully be a positive. "A lack of additions to supply in the suburbs should result in a decline in vacancy," comments a participant. Currently, 2.1 million square feet are being built in the CBD and slated to deliver in 2018, as per Cushman & Wakefield. In 2019, the completion of the Old Main Post Office redevelopment will add 2.4 million square feet, while 110 North Wacker will add 1.3 million square feet in 2020.

Much of this new CBD space is being delivered unleashed at a time

when growth is slowing in certain office-space-using job sectors. "New supply is a concern when fewer jobs are being created in the professional-and-business-services sector due to mergers and a smaller tech presence here compared to other cities," explains a participant. Other concerns noted by our investors for this market are rising construction costs, increasing real estate taxes, crime, and dysfunction in Washington, DC.

The main bright spot is the opportunity for Chicago to be Amazon's choice for its second headquarters location. "Chicago has a great chance of landing Amazon HQ2!" exclaims a participant. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	69.0%	▼
Range	60.0% to 85.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	10	=
Range	6 to 15	
% of participants using	100.0%	

### Average Overall Cap Rates:

Market (as a whole)	7.38%	▲
CBD	6.13%	▲
Suburbs	8.63%	▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 10**  
**CHICAGO OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 12.00%	5.50% – 12.00%	5.75% – 12.00%	6.25% – 12.00%	6.50% – 13.00%
Average	8.68%	8.61%	8.63%	8.93%	9.31%
Change (Basis Points)		+ 7	+ 5	- 25	- 63
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.75% – 10.00%	4.50% – 10.00%	4.50% – 10.00%	4.75% – 11.00%	5.75% – 11.00%
Average	7.38%	7.28%	7.26%	7.71%	8.08%
Change (Basis Points)		+ 10	+ 12	- 33	- 70
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 11.00%	5.50% – 10.50%	5.50% – 11.00%	5.50% – 11.00%	6.50% – 11.00%
Average	7.74%	7.75%	7.79%	7.93%	8.22%
Change (Basis Points)		- 1	- 5	- 19	- 48
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 5.00%	0.00% – 5.00%	(10.00%) – 3.00%
Average	1.57%	1.71%	2.14%	1.86%	0.63%
Change (Basis Points)		- 14	- 57	- 29	+ 94
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 6.00%	2.00% – 6.00%	2.00% – 6.00%	2.00% – 3.00%	1.00% – 3.00%
Average	3.14%	3.21%	3.29%	2.86%	2.75%
Change (Basis Points)		- 7	- 15	+ 28	+ 39
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 12	2 – 9	2 – 9	2 – 8	3 – 12
Average	5.6	4.7	4.5	4.1	5.8
Change (▼, ▲, =)		▲	▲	▲	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Dallas Office Market

Hearty job growth in office-space-using sectors is helping to counteract abundant additions to supply in the Dallas office market. In the professional-and-business-services sector, there were 28,300 jobs added between October 2016 and October 2017 in the Dallas-Plano-Irving metropolitan division. During the same time, 4,700 jobs were added in the financial-services sector, as per the U.S. Bureau of Labor Statistics.

These positive trends in the local economy are attracting eager buyers. In fact, this quarter's Survey results reveal that most investors (67.0%) believe that local market conditions favor sellers. "Across the nation,

urban office is highly liquid and there are a lot of buyers looking for these opportunities in Dallas," confirms a participant. In fact, sales volume has been on the rise since 2010. In the 12 months leading up to September 2017, sale transactions reached \$6.2 billion – an 18.6% increase over the prior year, as per Real Capital Analytics.

Given such favorable trends in this market, our surveyed investors are optimistic about future property values. In the coming year, they estimate values increasing an average of 2.8%, surpassing the aggregate average of 2.0% for the Survey's 19 city-specific office markets. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	68.0%	=
Range	60.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	3 to 10	
% of participants using	67.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.47%	▼
CBD	6.19%	▼
Suburbs	6.75%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 11**  
**DALLAS OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 11.00%	6.00% – 11.00%	6.00% – 11.00%	6.00% – 11.00%	6.00% – 11.00%
Average	7.84%	7.86%	8.02%	8.23%	8.61%
Change (Basis Points)		- 2	- 18	- 39	- 77
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 8.50%	5.00% – 8.50%	5.00% – 9.00%	5.00% – 9.00%	5.50% – 10.00%
Average	6.47%	6.48%	6.84%	7.08%	7.66%
Change (Basis Points)		- 1	- 37	- 61	- 119
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 9.00%	5.50% – 9.00%	6.00% – 9.00%	6.00% – 9.00%	6.75% – 11.00%
Average	7.10%	7.12%	7.28%	7.41%	8.16%
Change (Basis Points)		- 2	- 18	- 31	- 106
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	2.00% – 5.00%	2.00% – 6.00%	1.00% – 6.00%	1.00% – 10.00%	0.00% – 5.00%
Average	2.79%	3.46%	3.46%	4.25%	1.92%
Change (Basis Points)		- 67	- 67	- 146	+ 87
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%
Average	2.88%	2.88%	2.89%	2.88%	2.75%
Change (Basis Points)		0	- 1	0	+ 13
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 12	1 – 12	1 – 12	3 – 24
Average	5.3	5.3	5.0	4.4	7.3
Change (▼, ▲, =)		=	▲	▲	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months



# Denver Office Market

Our PwC real estate barometer places the Denver office market in the contraction phase of the market cycle through the end of this year and into 2018 mainly due to supply outpacing demand. Through the third quarter of 2017, nearly 1.4 million square feet of speculative space were added to this market and the overall vacancy rate increased 320 basis points to 15.3% over the prior year, as per Cushman & Wakefield. “This market may be at its tipping point of significant new supply,” remarks an investor.

In addition to growing vacancy rates, slowing rental rate growth also characterizes the contraction phase of the cycle. As shown in Table 12,

Denver’s average initial-year market rent change rate falls ten basis points to 2.40% this quarter – just below the aggregate average of 2.59% for the 19 city-specific office markets in our Survey.

Even though this market’s average overall cap rate has fluctuated over the past several quarters, it has not revealed any dramatic changes. Over the next six months, 80.0% of Survey participants foresee cap rates holding steady and emphasize strong demographic and labor trends, economic diversity, a high quality of life, and the potential to be Amazon’s second headquarters location as bright spots. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	66.0%	▼
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	4	=
Range	0 to 10	
% of participants using	100.0% =	

### Average Overall Cap Rates:

Market (as a whole)	6.53%	▼
CBD	5.84%	▼
Suburbs	7.23%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 12**  
**DENVER OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.50% – 11.00%	6.50% – 11.00%	6.50% – 11.00%	6.50% – 11.00%	7.00% – 15.00%
Average	7.95%	7.95%	7.98%	7.98%	9.76%
Change (Basis Points)		0	- 3	- 3	- 181
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.50% – 11.00%
Average	6.53%	6.56%	6.52%	6.70%	7.77%
Change (Basis Points)		- 3	+ 1	- 17	- 124
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 9.50%	5.75% – 9.50%	5.75% – 9.50%	6.50% – 9.50%	6.50% – 11.00%
Average	7.24%	7.30%	7.40%	7.56%	8.17%
Change (Basis Points)		- 6	- 16	- 32	- 93
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 4.00%	3.00% – 5.00%	2.00% – 8.00%	(20.00%) – 5.00%
Average	2.40%	2.50%	3.42%	4.20%	(0.30%)
Change (Basis Points)		- 10	- 102	- 180	+ 270
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	3.00% – 3.00%
Average	2.90%	2.90%	2.83%	2.90%	3.00%
Change (Basis Points)		0	+ 7	0	- 10
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 6	1 – 6	1 – 6	1 – 6	2 – 12
Average	3.9	3.7	3.9	3.9	5.2
Change (▼, ▲, =)		▲	=	=	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Houston Office Market

Investors are closely monitoring the short- and long-term impacts of Hurricane Harvey on the Houston office market. While a recent analysis by Reis predicts a near-term bump in tenant demand due to a decline in supply as a result of hurricane damage, one participant notes that significant lease up is needed to stabilize this market. At the same time, another participant asks, “How will office properties flooded during Harvey be viewed by tenants going forward?” For the long term, the report mentions the issue of job losses and its lasting effects. Plus, participants continue to watch crude oil prices.

Despite these headwinds, certain

investors believe a recovery is underway. “Houston appears to have bottomed and growth has resumed,” remarks a participant. Even though office absorption remained negative through the third quarter of 2017, some local investors are hopeful that positive absorption will return in 2018.

For now, most property owners are using a lower tenant retention rate assumption compared to a year ago and on average still anticipate little movement in market rent over the next 12 months. At -1.50%, Houston’s average initial-year market rent change rate remains the only negative average of the Survey’s 19 city-specific office markets. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	64.0%	▲
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	10	=
Range	2 to 24	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	7.26%	▼
CBD	6.78%	▲
Suburbs	7.75%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 13**  
**HOUSTON OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.50% – 13.00%	6.50% – 13.50%	6.50% – 13.00%	6.50% – 12.00%	7.00% – 14.00%
Average	8.65%	9.02%	8.80%	8.38%	9.12%
Change (Basis Points)		- 37	- 15	+ 27	- 47
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.75% – 10.00%	5.00% – 10.00%	5.75% – 10.00%	5.00% – 10.00%	5.00% – 12.00%
Average	7.26%	7.31%	7.27%	6.60%	7.76%
Change (Basis Points)		- 5	- 1	+ 66	- 50
<b>RESIDUAL CAP RATE</b>					
Range	6.25% – 10.00%	5.75% – 10.00%	6.25% – 10.00%	5.50% – 11.00%	5.00% – 11.00%
Average	7.63%	7.46%	7.54%	7.25%	7.94%
Change (Basis Points)		+ 17	+ 9	+ 38	- 31
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	(8.00%) – 3.00%	(8.00%) – 3.00%	(8.00%) – 3.00%	2.00% – 8.00%	2.00% – 7.00%
Average	(1.50%)	(1.53%)	(1.36%)	4.25%	3.25%
Change (Basis Points)		+ 3	- 14	- 575	- 475
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.50%	2.51%	2.50%	2.83%	2.67%
Change (Basis Points)		- 1	0	- 33	- 17
<b>MARKETING TIME<sup>c</sup></b>					
Range	4 – 12	3 – 12	3 – 12	2 – 12	3 – 12
Average	9.0	8.5	8.9	5.8	6.7
Change (▼, ▲, =)		▲	▲	▲	▲

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Los Angeles Office Market

Many investors are quite pleased with the performance of the Los Angeles office market despite their advice to approach deals with due diligence and care. “I think local investors are cautious, though not timid, and that’s a positive,” remarks a participant. While a guarded attitude may seem natural at this point in the market’s prolonged cycle, Los Angeles is still considered a “must location” for investors. In fact, Los Angeles is one of only two primary markets to rank as a top-ten city in terms of overall real estate prospects in the year ahead, as per *Emerging Trends in Real Estate*® 2018.

When investing in this market, a

participant emphasizes the need to carefully review each submarket’s supply/demand statistics as some areas are very tight, like West Los Angeles, while others have excess supply, like the CBD. “The downtown is on fire residentially, but its office sector’s performance lags a bit,” confirms a participant. In the third quarter of 2017, the CBD’s overall vacancy rate increased due to a slowdown in leasing and the delivery of new space.

Outside the CBD, leasing momentum continues, putting upward pressure on rents and prices and creating a competitive investment environment since few quality office properties are being offered for sale. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average 69.0% =  
Range 50.0% to 80.0%

### Months of Free Rent<sup>(1)</sup>:

Average 6 =  
Range 0 to 10  
% of participants using 100.0% ▲

### Average Overall Cap Rates:

Market (as a whole) 5.90% ▲  
CBD 5.63% ▲  
Suburbs 6.17% ▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 14**  
**LOS ANGELES OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.00% – 11.00%	5.00% – 11.00%	5.00% – 8.50%	6.00% – 10.00%	6.00% – 10.00%
Average	7.73%	7.41%	6.93%	7.44%	7.98%
Change (Basis Points)		+ 32	+ 80	+ 29	– 25
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.00% – 8.00%	4.00% – 8.00%	4.50% – 7.50%	4.75% – 7.25%	4.50% – 8.50%
Average	5.90%	5.74%	5.74%	5.91%	6.74%
Change (Basis Points)		+ 16	+ 16	– 1	– 84
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	6.00% – 9.00%
Average	6.39%	6.46%	6.56%	6.71%	7.31%
Change (Basis Points)		– 7	– 17	– 32	– 92
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	1.50% – 6.00%	1.50% – 6.00%	2.00% – 6.00%	0.00% – 7.00%	0.00% – 7.50%
Average	3.81%	3.75%	3.70%	3.90%	2.54%
Change (Basis Points)		+ 6	+ 11	– 9	+ 127
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.50%	2.00% – 3.50%	2.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.84%	2.78%	2.70%	2.70%	2.75%
Change (Basis Points)		+ 6	+ 14	+ 14	+ 9
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 12	1 – 12	1 – 12	1 – 12
Average	4.3	4.2	4.4	4.7	5.5
Change (▼, ▲, =)		▲	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Manhattan Office Market

Manhattan's office market and local economy continue to post impressive statistics in terms of job creation, absorption, and sales activity. In terms of job growth, employment has increased in the two major office-using sectors since the start of the year. While financial activities gained 15,800 workers in the New York-Jersey City-White Plains, NY-NJ metro division, professional-and-business services grew by 45,300 workers, as per the U.S. Bureau of Labor Statistics. "A bright spot is that the economy remains strong," enthuses a participant. In turn, "absorption has turned positive and has accelerated in the recent quarter after nine quarters of negative

absorption," contends another.

Amid all these favorable trends, investors note that oversupply is a growing concern within the Manhattan office market as it is "keeping a lid on rent growth." This quarter, its average initial-year market rent change rate assumption falls 29 basis points to 2.67% – its lowest average since the first quarter of 2011 and just above this market's 30-year Survey average of 2.61%. Other concerns mentioned by surveyed investors for Manhattan include tenant rightsizing, the increasing cost of tenant improvements, limited offerings, and a lack of available quality office properties that match return requirements. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	68.0%	▼
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	9	=
Range	0 to 13	
% of participants using	100.0%	=

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	50.0%	=
Neither	50.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 15**  
**MANHATTAN OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 9.00%	5.50% – 9.00%	5.75% – 9.00%	6.00% – 9.00%	6.00% – 10.00%
Average	6.81%	6.81%	6.82%	6.98%	7.46%
Change (Basis Points)		0	-1	-17	-65
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.00% – 6.00%	3.00% – 8.50%	3.50% – 8.50%	3.75% – 8.00%	4.00% – 8.00%
Average	4.60%	4.94%	5.00%	5.13%	5.23%
Change (Basis Points)		-34	-40	-53	-63
<b>RESIDUAL CAP RATE</b>					
Range	3.00% – 6.75%	3.00% – 8.50%	3.50% – 8.50%	5.00% – 8.00%	5.00% – 7.50%
Average	5.27%	5.63%	5.68%	5.95%	6.02%
Change (Basis Points)		-36	-41	-68	-75
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	(3.00%) – 6.00%	0.00% – 7.00%	3.00% – 10.00%
Average	2.67%	2.96%	3.04%	3.79%	4.92%
Change (Basis Points)		-29	-37	-112	-225
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	1.00% – 4.00%	2.00% – 3.00%
Average	2.67%	2.75%	2.64%	2.93%	2.92%
Change (Basis Points)		-8	+3	-26	-25
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 9	1 – 9	1 – 6	1 – 12	3 – 6
Average	4.7	4.8	4.3	4.8	4.1
Change (▼, ▲, =)		▼	▲	▼	▲

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Northern Virginia Office Market

Even though the Northern Virginia office market continues to log an impressive number of large renewal deals and expansions, as well as post very low unemployment stats in various cities, it has yet to take sizeable steps toward reducing its lofty overall vacancy rate as more space is returned to the market than is leased. “Vacancy remains high in a number of suburbs due to soft demand,” attests a participant. In the third quarter of 2017, this market’s overall vacancy stood at 22.0%, as per Cushman & Wakefield.

A bright spot for this market’s fundamentals, however, is a decline in new construction. As of the third quarter of 2017, 3.3 million square

feet were underway, of which about 50.0% was speculative space. A year earlier, 4.1 million square feet were being built. Deliveries in the third quarter included the 72,000-square-foot 20408 Bashan Drive in Loudoun County, roughly 60.0% preleased, and the 355,000-square-foot 1900 Reston Metro Plaza, delivered 100.0% unleased.

Despite its stagnant performance as of late, certain areas, like Herndon and Tysons Corner, continue to appeal to buyers due to their below-market vacancy rates. In a recent sale, the 481,000-square-foot Tysons International Plaza reportedly sold for \$283.00 per square foot. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	8	=
Range	2 to 13	
% of participants using	100.0%	=

### Market Conditions Favor:

Buyers	33.0%	=
Sellers	17.0%	=
Neither	50.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 16**  
**NORTHERN VIRGINIA OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 9.50%	6.00% – 9.50%	6.00% – 9.50%	6.50% – 9.50%	7.00% – 9.50%
Average	7.71%	7.71%	7.63%	8.00%	8.33%
Change (Basis Points)		0	+ 8	- 29	- 62
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 8.50%	5.00% – 8.50%	5.00% – 8.50%	5.00% – 8.50%	5.75% – 8.75%
Average	6.77%	6.77%	6.70%	7.03%	7.23%
Change (Basis Points)		0	+ 7	- 26	- 46
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 8.50%	5.50% – 8.50%	5.75% – 9.00%	6.00% – 9.00%	5.00% – 9.00%
Average	6.85%	6.85%	7.20%	7.38%	7.44%
Change (Basis Points)		0	- 35	- 53	- 59
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	(5.00%) – 3.00%	0.00% – 3.00%
Average	1.63%	1.63%	1.30%	1.00%	1.75%
Change (Basis Points)		0	+ 33	+ 63	- 12
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	2.00% – 3.00%
Average	2.17%	2.17%	2.40%	2.60%	2.82%
Change (Basis Points)		0	- 23	- 43	- 65
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 8	1 – 8	3 – 9	3 – 9	2 – 9
Average	4.1	4.1	5.0	4.9	5.5
Change (▼, ▲, =)		=	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Pacific Northwest Office Market

Many investors remain drawn to the Pacific Northwest office market due to strong economic and demographic trends that support favorable fundamentals for owners. “Portland is seeing strong employment growth,” says an investor. Such growth has resulted in steady leasing activity and investment sales with some high price tags. “Portland is attracting institutional buyers on a larger scale and recent trades have provided more clarity on local pricing,” remarks a participant.

Even though a few investors in Portland note that there are few buying opportunities in the metro due to its size, the sales arena has been quite active this year. 208-250 NW 13th

Avenue sold for \$556.00 per square foot; 1455 NW Irving Street sold for \$563.00 per square foot; and 1320 Southwest Broadway Street sold for \$540.00 per square feet. In Bellevue, there have also been high-priced sales, such as 13133 Bel-Red Road which sold for \$581.00 per square foot and Centre 425 which reportedly sold for \$884.00 per square foot.

One concern that investors have for this market is new supply, especially in Portland. “The significant pipeline is a top concern,” says an investor, who anticipates softer market conditions once the nearly two million square feet of new office space is delivered over the next two years. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	71.0%	▲
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▲
Range	1 to 12	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.05%	▲
CBD	5.40%	▼
Suburbs	6.70%	▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 17**  
**PACIFIC NORTHWEST OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.25% – 10.00%	5.25% – 10.00%	5.25% – 10.50%	5.75% – 10.50%	6.50% – 12.00%
Average	7.45%	7.44%	7.36%	7.74%	8.20%
Change (Basis Points)		+ 1	+ 9	- 29	- 75
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.25% – 9.00%	4.25% – 8.00%	4.50% – 8.00%	4.00% – 9.00%	4.50% – 10.00%
Average	6.05%	5.99%	6.00%	6.31%	6.96%
Change (Basis Points)		+ 6	+ 5	- 26	- 91
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 10.00%
Average	6.41%	6.42%	6.44%	6.73%	7.11%
Change (Basis Points)		- 1	- 3	- 32	- 70
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 5.00%	0.00% – 10.00%	0.00% – 10.00%
Average	3.07%	3.24%	3.52%	4.20%	4.75%
Change (Basis Points)		- 17	- 45	- 113	- 168
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.50% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.95%	2.91%	2.86%	2.84%	2.71%
Change (Basis Points)		+ 4	+ 9	+ 11	+ 24
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 12	1 – 12	1 – 12	1 – 12
Average	4.5	4.8	4.9	4.7	5.0
Change (▼, ▲, =)		▼	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Philadelphia Office Market

Investors' outlook for future rent growth in the Philadelphia office market is bright, buoyed by fervent leasing activity in both the CBD and suburbs. Specifically, this market's average initial-year market rent change rate surges 47 basis points this quarter – the highest level seen since midyear 2001 and the largest quarterly increase among the 19 city-specific office markets in our Survey (see Table 18).

Through the third quarter of 2017 here, leasing activity increased 18.1% over the prior year, as per Cushman & Wakefield. "Leasing momentum has continued and there's no sign of it slowing down," remarks an investor. The largest lease deals in the

suburbs included renewals by Philadelphia Insurance Companies (285,000 square feet) and State Farm Insurance (272,523 square feet). Plus, new leases were signed by financial investment management firm SEI Investments and software solutions provider SofterWare. In the CBD, most of the third-quarter leasing activity occurred in the West of Broad submarket.

Although leasing velocity has been steady here, surveyed investors unanimously agree that incentives, such as free rent, are still offered in this market. This quarter, free rent ranges from three to ten months on a ten-year lease and averages seven months. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	7	=
Range	3 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	7.20%	▼
CBD	6.70%	▼
Suburbs	7.70%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 18**  
**PHILADELPHIA OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	7.00% – 11.00%	7.00% – 11.00%	7.00% – 11.00%	7.00% – 12.00%	8.00% – 11.00%
Average	8.63%	8.63%	8.60%	8.88%	9.15%
Change (Basis Points)		0	+ 3	- 25	- 52
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 10.00%	5.00% – 9.50%	6.00% – 9.50%	6.00% – 10.50%	7.00% – 10.00%
Average	7.20%	7.29%	7.53%	7.84%	8.45%
Change (Basis Points)		- 9	- 33	- 64	- 125
<b>RESIDUAL CAP RATE</b>					
Range	6.00% – 11.00%	6.00% – 10.00%	6.00% – 10.00%	6.50% – 11.00%	7.00% – 11.00%
Average	7.68%	7.79%	8.03%	8.25%	8.69%
Change (Basis Points)		- 11	- 35	- 57	- 101
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%
Average	2.60%	2.13%	1.85%	1.60%	1.08%
Change (Basis Points)		+ 47	+ 75	+ 100	+ 152
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 3.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%	2.75% – 3.00%
Average	2.50%	2.50%	2.30%	2.30%	2.96%
Change (Basis Points)		0	+ 20	+ 20	- 46
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 12	2 – 12	3 – 12	3 – 12	4 – 18
Average	5.6	5.5	5.6	5.9	7.6
Change (▼, ▲, =)		▲	=	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months



# Phoenix Office Market

Significant additions to supply are underway in the Phoenix office market, putting downward pressure on market rents and causing some surveyed investors to question the feasibility of the projects relative to rental rate requirements. New deliveries are expected to reach 439,901 square feet in 2017 and nearly double that for 2018. At the same time, the market's direct average asking rental rate decreased 2.00% on a quarterly basis in the third quarter of 2017 – the first time the direct average asking rental rate decreased since the first quarter of 2013, as per Cushman & Wakefield.

Survey participants' expectations

of rent growth have also changed dramatically over the past three months. As shown in Table 19, this market's average initial-year market rent change rate drops 50 basis points this quarter to 3.50% – the lowest average for this market since midyear 2015.

Despite the negative impact of supply-side issues, most investors foresee property values increasing in the coming year. Over the next 12 months, surveyed investors expect local values to either increase as much as 15.0% and decline as much as 5.0%; the average change is +3.5% – the second highest of the Survey's 19 city-specific office markets. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	69.0%	=
Range	60.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▼
Range	2 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.52%	▼
CBD	6.38%	▼
Suburbs	6.67%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 19**  
**PHOENIX OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	7.00% – 11.00%	7.00% – 11.00%	6.00% – 10.50%	7.00% – 14.50%	7.75% – 16.00%
Average	8.75%	8.78%	8.33%	9.21%	11.00%
Change (Basis Points)		- 3	+ 42	- 46	- 225
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	5.50% – 9.00%	7.00% – 11.00%
Average	6.52%	6.53%	6.74%	7.29%	9.20%
Change (Basis Points)		- 1	- 22	- 77	- 268
<b>RESIDUAL CAP RATE</b>					
Range	5.50% – 8.00%	5.50% – 8.00%	5.50% – 8.25%	6.25% – 9.50%	7.00% – 10.00%
Average	6.75%	6.80%	7.12%	7.46%	8.85%
Change (Basis Points)		- 5	- 37	- 71	- 210
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	2.00% – 6.00%	2.00% – 7.00%	2.00% – 7.00%	0.00% – 5.00%	(1.20%) – 1.00%
Average	3.50%	4.00%	4.00%	1.88%	(0.02%)
Change (Basis Points)		- 50	- 50	+ 162	+ 370
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 3.00%	1.00% – 3.00%	2.00% – 3.00%
Average	2.67%	2.67%	2.50%	2.75%	2.80%
Change (Basis Points)		0	+ 17	- 8	- 13
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 18	1 – 18	1 – 18	1 – 9	2 – 12
Average	7.0	7.1	6.8	5.5	5.9
Change (▼, ▲, =)		▼	▲	▲	▲

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# San Diego Office Market

Investors view the strong fundamentals in the San Diego office market as a primary bright spot for the coming year. “Good tenant demand exists here,” enthuses a participant. The catalyst is robust growth in local office-space-using employment sectors. For instance, the professional-and-business-services sector added 2,400 jobs in the San Diego-Carlsbad metro area in the 12 months preceding October 2017. During the same time, the financial-activities sector added 2,100 jobs, according to the U.S. Bureau of Labor Statistics.

These job gains have boosted overall leasing activity, resulting in a 40-basis-point quarterly decline in the

market’s overall vacancy in the third quarter of 2017 – the sixth consecutive quarterly decline for this market, as per Cushman & Wakefield. Notable recent lease deals include the renewal and expansion of medical tech firm Nuvasive, the renewal of brokerage firm TD Ameritrade, and the new leases signed by digital marketing firm iMatrix and online retailer Amazon.

In addition to reducing vacancy, these leasing trends also enhanced investors’ outlook for rent growth. This quarter, the average for this key assumption rises ten basis points to 3.60%, making it the third highest rent change assumption among the Survey’s 19 city-specific office markets. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	67.0%	=
Range	60.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	4	=
Range	1 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.51%	=
CBD	6.50%	=
Suburbs	6.53%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 20**  
**SAN DIEGO OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.50% – 12.00%	6.50% – 11.00%	6.25% – 10.50%	6.25% – 11.50%	6.75% – 12.50%
Average	8.26%	8.21%	7.83%	8.05%	9.21%
Change (Basis Points)		+ 5	+ 43	+ 21	– 95
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.25% – 8.50%	5.25% – 8.50%	5.00% – 8.50%	5.50% – 8.50%	6.00% – 10.00%
Average	6.51%	6.51%	6.73%	6.97%	7.85%
Change (Basis Points)		0	– 22	– 46	– 134
<b>RESIDUAL CAP RATE</b>					
Range	5.75% – 8.75%	5.75% – 8.75%	5.75% – 8.75%	6.00% – 8.00%	6.75% – 9.00%
Average	6.95%	6.93%	7.11%	7.03%	7.85%
Change (Basis Points)		+ 2	– 16	– 8	– 90
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 6.00%	0.00% – 6.00%	(10.00%) – 5.00%
Average	3.60%	3.50%	3.80%	3.60%	0.30%
Change (Basis Points)		+ 10	– 20	0	+ 330
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.80%	2.80%	2.80%	2.90%	2.90%
Change (Basis Points)		0	0	– 10	– 10
<b>MARKETING TIME<sup>c</sup></b>					
Range	3 – 12	3 – 12	1 – 6	1 – 6	1 – 9
Average	5.1	5.1	4.1	4.3	4.5
Change (▼, ▲, =)		=	▲	▲	▲

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# San Francisco Office Market

Robust tenant demand, particularly from large-space users, continues unabated in the San Francisco office market. New CBD leasing closed the third quarter of 2017 at 1.8 million square feet with the year-to-date figure totaling 5.6 million square feet, as per Cushman & Wakefield (C&W). At the current pace, C&W estimates that 2017 could be the most active leasing year in the CBD since 2014. Nevertheless, space returned to this market was slightly ahead of spaced leased, causing overall vacancy to rise slightly in both its CBD and suburbs.

Even though overall vacancy has crept up over the past 12 months, investors remark that “leasing fun-

damentals are tight,” which is perceived as both a good thing and a bad. “Tenants continue to lease space, which is a bright spot, but some tenants are considering alternative Bay Area locations because rental rates are at an all-time high,” comments an investor. Another echoes, “My top concern is that rents and values here are way above trend.” Lastly, another laments, “I hope the city doesn’t lose too much momentum with its high cost structure.”

Over the next 12 months, surveyed investors expect values in this market to increase as much as 5.0% or decline as much as 10.0%; the average expected change is +0.6%. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	69.0%	=
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▲
Range	0 to 10	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	5.47%	▲
CBD	5.00%	=
Suburbs	5.94%	▲

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 21**  
**SAN FRANCISCO OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.00% – 9.50%	5.00% – 9.50%	5.00% – 9.50%	5.75% – 10.00%	6.00% – 11.00%
Average	6.86%	6.86%	6.80%	7.09%	7.93%
Change (Basis Points)		0	+ 6	- 23	- 107
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.50% – 8.00%	3.50% – 8.00%	3.50% – 8.00%	3.50% – 9.00%	4.00% – 9.00%
Average	5.47%	5.45%	5.39%	5.88%	6.54%
Change (Basis Points)		+ 2	+ 8	- 41	- 107
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 10.00%
Average	6.19%	6.21%	6.25%	6.31%	7.04%
Change (Basis Points)		- 2	- 6	- 12	- 85
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	1.00% – 5.00%	1.00% – 5.00%	0.00% – 5.00%	2.00% – 10.00%	2.00% – 10.00%
Average	3.10%	3.00%	3.10%	5.75%	6.50%
Change (Basis Points)		+ 10	0	- 265	- 340
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%	0.00% – 4.00%
Average	2.60%	2.60%	2.60%	2.75%	2.71%
Change (Basis Points)		0	0	- 15	- 11
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 6	1 – 6	1 – 6	1 – 8	1 – 8
Average	3.9	3.9	3.9	4.0	4.3
Change (▼, ▲, =)		=	=	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Seattle Office Market

Ranked as the number-two metro in terms of real estate investment prospects in the coming year in *Emerging Trends in Real Estate*® 2018, buyer demand in the Seattle office market will likely stay strong for the foreseeable future, especially since some Survey participants anticipate asset values increasing as much as 15.0% in the coming year – the average expected value increase is 4.3%. “Seattle continues to be one of the strongest office markets in the country and also one of the most attractive markets for office investments,” confirms a participant.

While strong leasing activity should help to further reduce vacancy

levels, there is a tremendous amount of new supply coming soon. As a result, one participant warns buyers “to be cautious as to where they are investing as it relates to this new supply.” Another suggests that “buyers’ rent growth expectations are fading,” although some sellers would likely disagree.

This quarter, the average initial-year market rent change rate for the Seattle office market slips 17 basis points to 3.21% – the fifth highest average of the Survey’s 19 city-specific office markets, but much lower than the average for this market a year ago when it was 3.71% (see Table 22). ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	70.0%	=
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	▲
Range	1 to 12	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	5.61%	▼
CBD	5.23%	▼
Suburbs	6.00%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 22**  
**SEATTLE OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>				
Range	5.25% – 10.00%	5.25% – 10.00%	5.25% – 10.00%	5.75% – 11.00%
Average	7.22%	7.24%	7.18%	7.81%
Change (Basis Points)		- 2	+ 4	- 59
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>				
Range	4.25% – 8.00%	4.25% – 8.00%	4.50% – 8.00%	4.00% – 9.00%
Average	5.61%	5.79%	5.79%	6.38%
Change (Basis Points)		- 18	- 18	- 77
<b>RESIDUAL CAP RATE</b>				
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%
Average	6.31%	6.27%	6.24%	6.60%
Change (Basis Points)		+ 4	+ 7	- 29
<b>MARKET RENT CHANGE<sup>b</sup></b>				
Range	2.00% – 5.00%	2.50% – 5.00%	2.50% – 5.00%	2.50% – 8.00%
Average	3.21%	3.38%	3.71%	4.25%
Change (Basis Points)		- 17	- 50	- 104
<b>EXPENSE CHANGE<sup>b</sup></b>				
Range	2.50% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%
Average	2.96%	2.88%	2.79%	2.75%
Change (Basis Points)		+ 8	+ 17	+ 21
<b>MARKETING TIME<sup>c</sup></b>				
Range	1 – 12	1 – 12	1 – 12	1 – 12
Average	4.5	4.5	4.8	5.0
Change (▼, ▲, =)		=	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Southeast Florida Office Market

Steady population growth, economic diversity, and the area's reputation as an international gateway continue to lure both domestic and international investors to the Southeast Florida office market. In *Emerging Trends in Real Estate*® 2018, two of the three main cities that comprise this market were ranked 11th or better out of 78 metros in terms of overall real estate prospects in the coming year. Fort Lauderdale placed sixth, while Miami was ranked eleventh.

International capital flows to this market remain an important part of its success and are considered a bright spot over the near term. Another positive attribute is that "there is almost

no new office construction, which bodes well for continued growth." New construction underway as of the third quarter of 2017 was limited to 150,000 square feet in Broward County and about 751,000 square feet in Miami-Dade, as per Cushman & Wakefield.

Limited additions to supply are helping to reduce vacancy and expand rental rates throughout the region. In West Palm Beach's CBD, for example, the average Class-A rental rate rose 27.6% year over year in the third quarter of 2017. In downtown Fort Lauderdale, the average overall rental rate increased 9.1% over that time period, reaching a record level of \$45.98 per square foot. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	65.0%	=
Range	40.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	6	=
Range	1 to 12	
% of participants using	100.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.93%	▼
CBD	6.31%	▼
Suburbs	7.55%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 23**  
**SOUTHEAST FLORIDA OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 10.50%	6.00% – 10.50%	6.00% – 10.50%	6.50% – 11.50%	7.00% – 12.00%
Average	8.31%	8.31%	8.23%	8.52%	9.08%
Change (Basis Points)		0	+ 8	- 21	- 77
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.00% – 9.50%	5.00% – 10.00%	5.00% – 10.00%	4.50% – 10.00%	6.00% – 12.00%
Average	6.93%	7.26%	7.04%	7.28%	8.39%
Change (Basis Points)		- 33	- 11	- 35	- 146
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 10.50%	5.00% – 10.50%	5.00% – 10.50%	4.50% – 10.25%	7.00% – 10.50%
Average	7.48%	7.49%	7.36%	7.43%	8.42%
Change (Basis Points)		- 1	+ 12	+ 5	- 94
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	(10.00%) – 4.00%
Average	2.30%	2.20%	2.25%	1.71%	(0.17%)
Change (Basis Points)		+ 10	+ 5	+ 59	+ 247
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.70%	2.70%	2.75%	2.63%	2.58%
Change (Basis Points)		0	- 5	+ 7	+ 12
<b>MARKETING TIME<sup>c</sup></b>					
Range	3 – 12	3 – 12	2 – 12	2 – 12	2 – 18
Average	5.4	5.4	5.1	5.5	6.6
Change (▼, ▲, =)		=	▲	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Suburban Maryland Office Market

*Editor's Note:* Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time. The data below reflects the findings for this market as of its last published date – the third quarter of 2017.

## VACANCY ASSUMPTIONS

Months Vacant: 4 to 12; average 9  
 Tenant Retention Rate: 50.0% - 80.0%; average 68.0%  
 Underlying Vacancy & Credit Loss: 0.0% - 15.0%; average 5.6%

## MONTHS OF FREE RENT (Ten-year Term)

Range: 5 to 12 months; average 9 months  
 % of Participants Using: 100.0%

## MARKET CONDITIONS FAVOR

Buyers: 20.0%  
 Sellers: 20.0%  
 Neither: 60.0%

## TENANT IMPROVEMENT ALLOWANCES (per sq. ft.)

Shell Space: \$40.00 - \$85.00; average \$65.00  
 2nd-Generation Space: \$25.00 - \$85.00; average \$54.17  
 Renewals: \$15.00 - \$75.00; average \$34.17

## MANAGEMENT FEES (as a % of EGR)

Range: 1.0% - 3.0%  
 Average: 2.5%

## LEASING COMMISSIONS (as a % of EGR)

New Lease: 3.5% - 7.5%; average 5.3%  
 Renewal: 1.0% - 3.0%; average 2.7%

## REPLACEMENT RESERVE (per sq. ft.)

Range: \$0.25 - \$0.75  
 Average: \$0.38

## RENT SPIKE

Percentage of Participants Using: 0.0%  
 Insufficient spike data is available.

Table 24 SUBURBAN MARYLAND OFFICE MARKET Third Quarter 2017					
	3Q2017	2Q2017	3Q2016	3Q2014	3Q2012
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	7.00% - 10.00%	7.00% - 10.00%	7.25% - 10.00%	7.00% - 10.00%	7.25% - 10.00%
Average	8.65%	8.65%	8.78%	8.68%	8.78%
Change (Basis Points)		0	-13	-3	-13
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.50% - 9.00%	5.50% - 9.00%	5.50% - 9.00%	5.25% - 9.00%	5.00% - 9.00%
Average	7.35%	7.48%	7.28%	7.45%	7.58%
Change (Basis Points)		-13	+7	-10	-23
<b>RESIDUAL CAP RATE</b>					
Range	6.00% - 9.50%	6.50% - 9.50%	6.50% - 9.75%	6.50% - 9.75%	5.00% - 9.75%
Average	7.73%	7.73%	7.88%	8.03%	7.98%
Change (Basis Points)		0	-15	-30	-25
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% - 1.50%	0.00% - 1.50%	0.00% - 1.50%	(2.00%) - 3.00%	(2.00%) - 3.00%
Average	0.25%	0.35%	0.35%	0.60%	0.83%
Change (Basis Points)		-10	-10	-35	-58
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% - 3.00%	1.00% - 3.00%	1.00% - 3.00%	1.00% - 3.00%	2.00% - 3.00%
Average	2.00%	2.00%	2.00%	2.60%	2.83%
Change (Basis Points)		0	0	-60	-83
<b>MARKETING TIME<sup>c</sup></b>					
Range	3 - 9	3 - 9	3 - 9	3 - 9	1 - 9
Average	6.1	6.1	6.1	6.1	5.5
Change (▼, ▲, =)		=	=	=	▲

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# Washington, DC Office Market

According to our surveyed investors, the main concerns for the Washington, DC office market relate to tenant demand. “Tepid job growth is an issue when estimating absorption here,” shares a participant. “Tenant demand remains relatively muted,” says another, who adds that tenants are continuing to use space more efficiently, looking for buildings with cost-effective layouts. Lastly, another participant remarks, “There is still not a lot of organic growth; just mainly tenant shuffling.”

The third quarter overall vacancy rate for the Washington, DC office market highlights its leasing challenges. At 12.3%, the overall vacancy

rate was 37 basis points higher than a year ago and slightly above the average of 12.2% for the national CBD office market. In the local Class-A sector, the overall vacancy rate was higher at 13.5%. Recent deliveries in the Class-A submarket have done little to positively impact vacancy. And unfortunately, more Class-A deliveries are expected over the near term in the form of both renovations and new construction, which will likely keep the District’s market conditions soft.

Despite these challenges, bright spots noted by investors for this market include strong liquidity, high sale prices and low overall cap rates, and robust buyer interest. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	67.0%	▼
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	8	=
Range	0 to 18	
% of participants using	100.0%	=

### Market Conditions Favor:

Buyers	0.0%	▼
Sellers	67.0%	▲
Neither	33.0%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 25**  
**WASHINGTON, DC OFFICE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.00% – 7.00%	5.00% – 8.00%	5.00% – 8.00%	6.00% – 8.00%	6.00% – 9.00%
Average	6.19%	6.48%	6.65%	6.78%	7.42%
Change (Basis Points)		- 29	- 46	- 59	- 123
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.25% – 6.50%	4.25% – 6.50%	4.25% – 6.50%	4.25% – 6.50%	4.25% – 8.00%
Average	5.08%	5.27%	5.29%	5.48%	5.88%
Change (Basis Points)		- 19	- 21	- 40	- 80
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 6.50%	5.00% – 6.50%	5.00% – 6.50%	5.00% – 6.50%	5.25% – 8.25%
Average	5.60%	5.65%	5.75%	5.90%	6.40%
Change (Basis Points)		- 5	- 15	- 30	- 80
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 6.00%
Average	1.67%	1.58%	1.50%	1.67%	2.50%
Change (Basis Points)		+ 9	+ 17	0	- 83
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.50% – 3.00%
Average	2.33%	2.33%	2.75%	2.92%	2.89%
Change (Basis Points)		0	- 42	- 59	- 56
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 6	1 – 6	2 – 6	2 – 6	2 – 8
Average	3.6	3.6	4.0	4.1	4.4
Change (▼, ▲, =)		=	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months



# National Flex/R&D Market

*Editor's Note:* Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time. The data below reflects the findings for this market as of its last published date – the third quarter of 2017.

## VACANCY ASSUMPTIONS

Months Vacant: 6 to 15; average 9

Tenant Retention Rate: 50.0% – 80.0%; average 67.0%

Underlying Vacancy & Credit Loss: 2.0% – 10.0%; average 5.8%

## MONTHS OF FREE RENT (Ten-year Term)

Range: up to 6 months; average 3 months

% of Participants Using: 100.0%

## MARKET CONDITIONS FAVOR

Buyers: 0.0%

Sellers: 0.0%

Neither: 100.0%

## TENANT IMPROVEMENT ALLOWANCES (per sq. ft.)

Shell Space: \$0.00 – \$25.00; average \$10.17

2nd-Generation Space: \$0.00 – \$15.00; average \$6.50

Renewals: \$0.00 – \$12.00; average \$4.08

## MANAGEMENT FEES (as a % of EGR)

Range: 1.5% – 4.0%

Average: 2.8%

## LEASING COMMISSIONS (as a % of EGR)

New Lease: 4.0% – 7.5%; average 6.2%

Renewal: 2.0% – 6.0%; average 3.9%

## REPLACEMENT RESERVE (per sq. ft.)

Range: \$0.10 – \$0.50

Average: \$0.27

## RENT SPIKE

Percentage of Participants Using: 50.0%

Insufficient spike data is available.

Table 26 NATIONAL FLEX/R&D MARKET Third Quarter 2017					
	3Q2017	2Q2017	3Q2016	3Q2014	3Q2012
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.75% – 10.00%	6.75% – 10.00%	6.75% – 10.50%	7.25% – 12.00%	7.50% – 13.00%
Average	8.08%	8.08%	8.13%	8.83%	9.27%
Change (Basis Points)		0	- 5	- 75	- 119
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.50% – 9.50%	5.50% – 9.50%	5.50% – 9.00%	6.00% – 10.00%	7.00% – 12.00%
Average	7.10%	7.10%	7.10%	7.58%	8.54%
Change (Basis Points)		0	0	- 48	- 144
<b>RESIDUAL CAP RATE</b>					
Range	6.00% – 9.50%	6.00% – 9.50%	6.00% – 9.00%	6.50% – 10.00%	7.00% – 10.00%
Average	7.38%	7.38%	7.38%	7.80%	8.31%
Change (Basis Points)		0	0	- 42	- 93
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 3.00%
Average	2.50%	2.50%	2.50%	2.40%	1.33%
Change (Basis Points)		0	0	+ 10	+ 117
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.60%	2.60%	2.70%	2.90%	2.92%
Change (Basis Points)		0	- 10	- 30	- 32
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 12	2 – 12	2 – 12	2 – 12	2 – 18
Average	6.6	6.6	6.7	6.7	7.4
Change (▼, ▲, =)		=	▼	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# National Warehouse Market

The national warehouse market seems to have everything investors want – strong leasing velocity, admirable rent growth, and a positive near-term outlook. But all this “good” is creating something investors are less keen on – competition. A tremendous amount of capital, both domestic and foreign, is looking for investment opportunities in the warehouse sector, compressing cap rates and elevating prices. “Investment demand is pushing up pricing,” confirms an investor.

This quarter, the average overall cap rate for this market slips to 5.06%, the lowest average ever posted for this market since its Survey debut 16

years ago. This average is 21 basis points lower than it was a year ago and 76 basis points below its average three years ago (see Table 27). In addition, it is the lowest quarterly average of the Survey’s ten national markets.

Investors’ fondness for the warehouse sector is reflected in this year’s *Emerging Trends in Real Estate*® 2018, where industrial is rated as providing “the best opportunity for investment and development” of all commercial property types in the year ahead. Industrial has been the top-ranked property sector in *Emerging Trends* for five years now, which could create an even more competitive buying environment. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	68.0%	=
Range	50.0% to 80.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	3	=
Range	0 to 7	
% of participants using	80.0%	=

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	60.0%	=
Neither	40.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 27**  
**NATIONAL WAREHOUSE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 9.00%	5.50% – 9.00%	5.50% – 9.25%	5.75% – 9.00%	5.75% – 10.00%
Average	6.60%	6.65%	6.84%	7.17%	7.73%
Change (Basis Points)		– 5	– 24	– 57	– 113
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.30% – 6.90%	4.00% – 6.90%	3.00% – 7.00%	4.50% – 7.00%	5.00% – 10.00%
Average	5.06%	5.22%	5.27%	5.82%	6.73%
Change (Basis Points)		– 16	– 21	– 76	– 167
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 7.50%	5.00% – 7.00%	5.00% – 8.50%	5.50% – 8.00%	6.00% – 10.00%
Average	5.90%	5.96%	6.05%	6.49%	7.30%
Change (Basis Points)		– 6	– 15	– 59	– 140
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 7.00%	0.00% – 6.00%	0.00% – 6.00%	0.00% – 5.00%	0.00% – 5.00%
Average	2.50%	2.55%	2.55%	2.60%	1.91%
Change (Basis Points)		– 5	– 5	– 10	+ 59
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 3.00%	2.00% – 3.00%
Average	2.33%	2.48%	2.40%	2.98%	2.86%
Change (Basis Points)		– 15	– 7	– 65	– 53
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 9	1 – 9	1 – 9	2 – 12	2 – 18
Average	3.8	3.8	3.8	4.7	7.1
Change (▼, ▲, =)		=	=	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# ENC Region Warehouse Market

While there appears to be “no end in sight for leasing demand driven by e-commerce growth,” investors note that the most sought after properties are still those that offer the best characteristics, like ample parking, technological and automation features, sustainability, and prime locations. “Tenant demand is not universal and the newest, most functional assets are seeing the greatest interest from both tenants and buyers,” states an investor.

Buyers in this market, however, are facing strong competition when bidding on offerings as our surveyed investors unanimously agree that market conditions favor sellers. As a

result, there is concern about “over-paying given the current euphoria.” In addition, certain investors find themselves asking, “What are we all missing?” As one participant writes, “The market has been so strong for so long that intuitively there should be excess somewhere, but I have no idea where.”

For now, current and prospective warehouse owners in the ENC region are content to let the current real estate cycle run on a little longer and benefit from steady leasing demand, rising rental rates, and fervent buyer interest. “It’s a great time to own and sell product here,” shares an investor. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	65.0%	=
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	3	=
Range	0 to 5	
% of participants using	100.0%	=

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	100.0%	=
Neither	0.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 28**  
**EAST NORTH CENTRAL (ENC) REGION WAREHOUSE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 7.00%	5.75% – 7.00%	5.75% – 7.50%	6.50% – 8.00%	6.25% – 9.00%
Average	6.33%	6.38%	6.68%	7.25%	7.58%
Change (Basis Points)		- 5	- 35	- 92	- 125
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.25% – 6.00%	4.25% – 6.00%	4.50% – 6.00%	5.25% – 7.00%	5.75% – 7.50%
Average	5.33%	5.35%	5.45%	6.08%	6.75%
Change (Basis Points)		- 2	- 12	- 75	- 142
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 7.00%	5.00% – 7.00%	5.50% – 7.00%	5.75% – 8.25%	6.00% – 8.50%
Average	6.05%	6.05%	6.40%	6.85%	7.28%
Change (Basis Points)		0	- 35	- 80	- 123
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 3.00%
Average	2.70%	2.70%	2.90%	2.67%	2.20%
Change (Basis Points)		0	- 20	+ 3	+ 50
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.50% – 3.00%	2.50% – 3.00%	2.00% – 4.00%	3.00% – 4.00%	2.50% – 3.00%
Average	2.90%	2.90%	3.00%	3.08%	2.95%
Change (Basis Points)		0	- 10	- 18	- 5
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 9	2 – 9	2 – 9	2 – 9	2 – 18
Average	4.7	4.7	5.0	4.8	7.1
Change (▼, ▲, =)		=	▼	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Pacific Region Warehouse Market

The Pacific region warehouse market has been in the Survey since the first quarter of 2012 – debuting nearly six years ago. During that time, its average overall cap rate has declined from 6.50% to 4.90% (160 basis points). Its current average cap rate is below the averages for both the national warehouse market and the ENC region warehouse market. And that’s a concern for some surveyed investors. “Our top worry is cap rates remaining low and interest rates slowly going up,” remarks a participant.

In a related concern, an investor comments, “Buyers may experience underperformance when measuring assets against their acquisition pro

forma if rent increases moderate in 2018, which we believe is likely.” Currently, 80.0% of surveyed investors in this market believe that market conditions favor sellers. This trend is not likely to change in the near term as a deep pool of investors look to acquire warehouses in the Pacific region, keeping most sellers in the driver’s seat with regard to pricing. “Unlimited investor demand favors sellers,” says a participant.

Over the next 12 months, surveyed investors expect property values in this market to increase as much as 10.0%. None expect property value declines; the average rate of appreciation is 2.2%. ◆

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	62.0%	=
Range	50.0% to 75.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	3	=
Range	1 to 6	
% of participants using	100.0%	=

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	80.0%	=
Neither	20.0%	=

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 29**  
**PACIFIC REGION WAREHOUSE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 8.50%	5.50% – 8.50%	5.50% – 8.50%	6.00% – 8.00%	6.50% – 8.50%
Average	6.45%	6.48%	6.58%	7.10%	7.44%
Change (Basis Points)		- 3	- 13	- 65	- 99
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.75% – 7.25%	3.75% – 7.00%	3.75% – 7.00%	4.00% – 7.00%	5.00% – 7.50%
Average	4.90%	4.83%	5.10%	5.58%	6.29%
Change (Basis Points)		+ 7	- 20	- 68	- 139
<b>RESIDUAL CAP RATE</b>					
Range	4.50% – 8.00%	4.50% – 8.00%	4.50% – 8.00%	5.25% – 7.50%	6.00% – 8.50%
Average	5.85%	5.70%	5.75%	6.25%	6.77%
Change (Basis Points)		+ 15	+ 10	- 40	- 92
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 3.00%
Average	2.25%	2.25%	2.15%	3.08%	2.17%
Change (Basis Points)		0	+ 10	- 83	+ 8
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.80%	2.80%	2.80%	2.92%	2.88%
Change (Basis Points)		0	0	- 12	- 8
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 6	1 – 6	1 – 6	1 – 6	1 – 18
Average	3.3	3.3	3.3	3.3	5.0
Change (▼, ▲, =)		=	=	=	▼
a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months					

# National Apartment Market

The national apartment market remains a favorable play among investors despite an eight-year run that many anticipated would have come to end by now. One of the greatest attributes of this sector's strength is a growing propensity to rent instead of own a home. According to the U.S. Census Bureau, the percentage of renters in the country increased from 34.0% in the third quarter of 1997 to 36.1% in the third quarter of 2017.

An increase in rental demand in the face of a surge in additions to supply continues to have a positive impact on apartment rental rates at many properties. This quarter, the average initial-year market rent change

rate is 2.58% for the national apartment market. Even though this assumption slips 11 basis points this quarter, it sneaks past the average of 2.50% for the national warehouse market, which ranks as the top property pick among industry leaders in *Emerging Trends in Real Estate*® 2018.

While Reis forecasts the largest additions to supply in 2017, increasing the overall vacancy rate to 4.8% from 4.2% at year-end 2016, most surveyed investors believe the impact on vacancy and rent growth will be temporary. "We recognize supply issues, but foresee it getting better in 18 months or so," estimates an investor. ♦

## KEY 4Q17 SURVEY STATS\*

### Total Vacancy Assumption:

Average	6.0%	=
Range	3.0% to 10.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	1	=
Range	0 to 2	
% of participants using	78.0%	=

### Market Conditions Favor:

Buyers	0.0%	=
Sellers	33.0%	▼
Neither	67.0%	▲

\* ▼, ▲, = change from prior quarter  
(1) on a one-year lease

**Table 30**  
**NATIONAL APARTMENT MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 10.00%	5.00% – 10.00%	5.50% – 10.00%	5.50% – 10.00%	5.25% – 14.00%
Average	7.26%	7.28%	7.30%	7.34%	8.17%
Change (Basis Points)		- 2	- 4	- 8	- 91
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.50% – 7.50%	3.50% – 7.50%	3.50% – 7.50%	3.50% – 8.00%	3.75% – 10.00%
Average	5.32%	5.35%	5.26%	5.36%	5.72%
Change (Basis Points)		- 3	+ 6	- 4	- 40
<b>RESIDUAL CAP RATE</b>					
Range	4.25% – 7.75%	4.25% – 7.75%	4.25% – 7.50%	4.25% – 9.00%	4.50% – 9.75%
Average	5.74%	5.79%	5.71%	6.03%	6.17%
Change (Basis Points)		- 5	+ 3	- 29	- 43
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	(1.00%) – 5.00%	(1.00%) – 5.00%	0.00% – 5.00%	0.00% – 8.00%	(2.00%) – 6.00%
Average	2.58%	2.69%	2.85%	2.83%	2.57%
Change (Basis Points)		- 11	- 27	- 25	+ 1
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 4.00%	1.00% – 4.00%	1.00% – 3.50%
Average	2.72%	2.72%	2.78%	2.74%	2.71%
Change (Basis Points)		0	- 6	- 2	+ 1
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 9	1 – 9	1 – 9	1 – 9	0 – 18
Average	3.8	3.8	3.8	4.1	5.1
Change (▼, ▲, =)		=	=	▼	▼

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# Regional Apartment Markets

Like the national apartment market, the Mid-Atlantic, Pacific, and Southeast apartment regions continue to report strong fundamentals, prompting acquisitions among investors. However, it seems that more buyers are considering the potential risks for this market going forward and have slowed their pace of acquisitions. Real Capital Analytics reports that the third quarter saw a 5.0% year-over-year increase in total sales volume, but growth was primarily due to Greystar's acquisition of Monogram Residential Trust. When digging deeper into the sales activity, single-asset deal volume actually declined 5.0%.

Overall, the three apartment

regions surveyed remain some of the most active in the nation with Los Angeles, Atlanta, Seattle, and the DC-Virginia Suburbs ranking in the top ten for total sales volume through the first three quarters of 2017. The DC-Virginia Suburbs posted an incredible 101.0% year-over-year increase in sales volume through the third quarter of 2017. In contrast, the Manhattan apartment market posted the sharpest decline in activity, reporting a 60.0% year-over-year drop in deal volume.

Despite solid leasing trends, investors' outlook for future rent growth slows in the Mid-Atlantic and Pacific regions and holds steady in the Southeast region this quarter (see Tables 31

and 32). Another key cash flow assumption, the average overall cap rate, slips four basis points in the Pacific region, rises 13 in the Mid-Atlantic region, and holds steady in the Southeast region. The combined impact of these trends could make it difficult for investors to meet investment criteria. As one investor warns, "Our concern is the ability to acquire properties in the Southeast region with our return targets amid rising interest rates, growing insurance costs, and decelerating rental rate growth."

In the coming year, most investors foresee property values increasing in each apartment region, albeit at a slower rate than a year ago. ♦

**Table 31**  
**SOUTHEAST REGION APARTMENT MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.75% – 10.00%	5.75% – 10.00%	5.75% – 10.00%	6.00% – 10.00%	6.50% – 10.50%
Average	7.50%	7.50%	7.53%	7.60%	8.00%
Change (Basis Points)		0	-3	-10	-50
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	3.50% – 6.50%	3.50% – 6.50%	3.50% – 6.50%	3.75% – 7.25%	4.50% – 7.00%
Average	5.13%	5.13%	5.10%	5.50%	5.94%
Change (Basis Points)		0	+3	-37	-81
<b>RESIDUAL CAP RATE</b>					
Range	4.50% – 7.00%	4.50% – 7.00%	4.50% – 7.00%	5.00% – 7.00%	5.25% – 9.75%
Average	5.75%	5.75%	5.75%	6.10%	6.60%
Change (Basis Points)		0	0	-35	-94
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	2.00% – 4.00%	(10.00%) – 4.00%
Average	3.05%	3.05%	3.05%	3.15%	1.38%
Change (Basis Points)		0	0	-10	+167
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%
Average	2.80%	2.80%	2.80%	2.80%	2.58%
Change (Basis Points)		0	0	0	+22
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 6	1 – 6	1 – 6	1 – 6	1 – 18
Average	3.3	3.3	3.1	3.0	6.5
Change (▼, ▲, =)		=	▲	▲	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

Table 3.2

## REGIONAL APARTMENT MARKETS

Fourth Quarter 2017

	MID-ATLANTIC REGION					PACIFIC REGION				
	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
	<b>DISCOUNT RATE (IRR)<sup>a</sup></b>									
Range	5.25% – 10.00%	5.25% – 10.00%	5.25% – 10.00%	6.00% – 10.00%	5.00% – 14.00%	5.00% – 10.00%	5.25% – 10.00%	5.25% – 9.00%	5.00% – 11.00%	5.25% – 12.50%
Average	7.30%	7.33%	7.58%	7.94%	9.02%	6.65%	6.73%	6.70%	7.44%	8.48%
Change (Basis Points)	- 3	- 28	- 64	- 172		- 8	- 5	- 79	- 183	
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>										
Range	3.00% – 6.75%	3.00% – 6.75%	3.00% – 7.50%	4.00% – 7.50%	4.00% – 7.50%	3.50% – 6.00%	3.50% – 6.00%	3.50% – 6.00%	3.50% – 6.50%	4.00% – 7.00%
Average	5.17%	5.04%	5.20%	5.44%	5.69%	4.45%	4.49%	4.54%	4.85%	5.06%
Change (Basis Points)	+ 13	- 3	- 27	- 52		- 4	- 9	- 40	- 61	
<b>RESIDUAL CAP RATE</b>										
Range	4.00% – 6.75%	4.00% – 6.75%	4.25% – 7.00%	4.50% – 8.50%	4.50% – 9.75%	4.00% – 6.00%	4.25% – 6.00%	4.25% – 6.50%	4.00% – 7.00%	4.00% – 7.50%
Average	5.55%	5.53%	5.63%	6.00%	6.27%	4.98%	5.00%	5.10%	5.54%	5.52%
Change (Basis Points)	+ 2	- 8	- 45	- 72		- 2	- 12	- 56	- 54	
<b>MARKET RENT CHANGE<sup>b</sup></b>										
Range	0.00% – 3.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	(5.00%) – 6.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	2.00% – 7.00%	0.00% – 10.00%
Average	1.60%	1.75%	1.90%	2.75%	2.63%	2.75%	2.85%	2.95%	4.04%	3.71%
Change (Basis Points)	- 15	- 30	- 115	- 103		- 10	- 20	- 129	- 96	
<b>EXPENSE CHANGE<sup>b</sup></b>										
Range	0.00% – 3.00%	0.00% – 4.00%	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.00%	2.50%	2.70%	2.75%	2.75%	2.23%	2.23%	2.23%	2.88%	2.79%
Change (Basis Points)	- 50	- 70	- 75	- 75		0	0	- 65	- 56	
<b>MARKETING TIME<sup>c</sup></b>										
Range	1 – 9	1 – 9	2 – 9	2 – 9	1 – 18	1 – 9	1 – 9	1 – 9	1 – 9	1 – 12
Average	3-9	3-9	4.2	4.8	5.4	4.1	4.1	4.1	4.3	4.9
Change (▼, ▲, =)	=	▼	▼	▼	▼	=	=	=	▼	▼

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months



# National Net Lease Market

This quarter's Survey results reveal that most investors believe market conditions are neutral in the national net lease market – equally favoring buyers and sellers. This sentiment has shifted from three years ago when investors unanimously viewed this market as favoring sellers. Since that time, sales activity has slowed. Investors mainly believe that the slowdown is due to a lack of quality offerings, which represents a challenge for eager buyers.

In addition, Survey participants view the potential for rising debt costs and the uncertainty surrounding changes in tax policies as other challenges for this niche market. “My

top concern is rising debt pricing, which will more than likely push overall cap rates north on premium-priced properties,” states an investor. “Rising interest rates will lead to rising cap rates,” says another. A bright spot in this market is that tenants are focusing on development in locations with strong fundamentals.

As shown in Table 33, the average overall cap rate rises nine basis points this quarter. Moreover, the low end of the range increases from 5.25% to 5.50%. In the next six months, 60.0% of surveyed investors foresee cap rates holding steady while the balance estimates increases of as much as 75 basis points. ◆

## KEY 4Q17 SURVEY STATS\*

### Market Conditions Favor:

Neutral	60.0%	=
Sellers	40.0%	=

### Months of Free Rent:

Average	(1)
Range	(1)
% of participants using	(1)

### Portfolio Allocation:

Sale leasebacks	15.0%	=
Net lease sales	39.0%	=
1031 exchanges	36.0%	=
Build to suit	10.0%	=

\* ▼, ▲, = change from prior quarter

(1) 60.0% of participants are not using free rent.

**Table 33**  
**NATIONAL NET LEASE MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	7.00% – 9.00%	7.00% – 9.00%
Average	7.92%	7.81%	8.00%	7.94%	8.16%
Change (Basis Points)		+ 11	– 8	– 2	– 24
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	5.50% – 8.50%	5.25% – 8.50%	5.25% – 9.00%	6.00% – 8.50%	6.00% – 8.75%
Average	6.80%	6.71%	6.75%	6.98%	7.35%
Change (Basis Points)		+ 9	+ 5	– 18	– 55
<b>RESIDUAL CAP RATE</b>					
Range	6.00% – 9.00%	6.00% – 9.00%	6.00% – 9.00%	7.00% – 9.00%	7.00% – 9.00%
Average	7.41%	7.40%	7.63%	7.81%	8.34%
Change (Basis Points)		+ 1	– 22	– 40	– 93
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%	(3.00%) – 3.00%
Average	1.90%	1.88%	1.70%	1.85%	0.88%
Change (Basis Points)		+ 2	+ 20	+ 5	+ 102
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%
Average	1.60%	1.67%	1.70%	2.15%	1.88%
Change (Basis Points)		– 7	– 10	– 55	– 28
<b>MARKETING TIME<sup>c</sup></b>					
Range	2 – 12	2 – 12	2 – 12	2 – 12	1 – 12
Average	5.7	5.3	4.9	4.5	4.7
Change (▼, ▲, =)		▲	▲	▲	▲

a. Rate on unleveraged, all-cash transactions

b. Initial rate of change

c. In months

# National Medical Office Buildings Market

Investors agree that new capital continues to seek opportunities in the national medical office buildings (MOB) market despite intense competition. “Several portfolios have traded and a few are on the market, illustrating the strong buyer interest in this sector,” notes a participant. Although our Survey participants view this market as healthy overall, certain assets and locations stand out. “Investment markets continue to favor core and on-campus MOB with coastal locations performing the best geographically,” explains an investor.

Further illustrating the appeal of MOB ownership, this sector received scores of 3.6 and 3.5 on a scale of 1

(abysmal) to 5 (excellent) for investment and development prospects, respectively, in *Emerging Trends in Real Estate*® 2018. In addition, MOB were the second-highest ranked niche property sector behind senior housing in both categories.

Amid the positive aura surrounding the national MOB market, investors remain uneasy about the potential impacts of rising interest rates and regulatory uncertainty. “As long as interest rates remain low, this sector will perform well,” surmises an investor. On average, Survey participants do not anticipate any movement in MOB property values in the next 12 months. ♦

## KEY 4Q17 SURVEY STATS\*

### Tenant Retention Rate:

Average	81.0%	=
Range	70.0% to 90.0%	

### Months of Free Rent<sup>(1)</sup>:

Average	2	=
Range	1 to 6	
% of participants using	80.0%	=

### Average Overall Cap Rates:

Market (as a whole)	6.69%	▼
On campus	6.38%	▼
Off campus	7.00%	▼

\* ▼, ▲, = change from prior quarter  
(1) on a ten-year lease

**Table 34**  
**NATIONAL MEDICAL OFFICE BUILDINGS MARKET**  
Fourth Quarter 2017

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
<b>DISCOUNT RATE (IRR)<sup>a</sup></b>					
Range	5.50% – 11.00%	5.75% – 11.00%	5.50% – 11.00%	6.00% – 11.00%	6.50% – 13.00%
Average	7.73%	7.80%	7.99%	8.30%	8.93%
Change (Basis Points)		- 7	- 26	- 57	- 120
<b>OVERALL CAP RATE (OAR)<sup>a</sup></b>					
Range	4.50% – 10.00%	4.75% – 10.00%	4.50% – 10.00%	4.75% – 10.00%	5.75% – 11.00%
Average	6.69%	6.71%	6.76%	7.27%	7.84%
Change (Basis Points)		- 2	- 7	- 58	- 115
<b>RESIDUAL CAP RATE</b>					
Range	5.00% – 10.25%	5.25% – 10.25%	5.25% – 10.25%	5.50% – 10.50%	6.00% – 12.00%
Average	6.85%	6.98%	7.08%	7.59%	8.05%
Change (Basis Points)		- 13	- 23	- 74	- 120
<b>MARKET RENT CHANGE<sup>b</sup></b>					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%	(5.00%) – 3.00%	(5.00%) – 3.00%
Average	2.20%	2.20%	2.46%	1.43%	1.04%
Change (Basis Points)		0	- 26	+ 77	+ 116
<b>EXPENSE CHANGE<sup>b</sup></b>					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%
Average	2.50%	2.50%	2.43%	2.46%	2.43%
Change (Basis Points)		0	+ 7	+ 4	+ 7
<b>MARKETING TIME<sup>c</sup></b>					
Range	1 – 12	1 – 12	1 – 12	1 – 12	1 – 12
Average	4.8	4.8	4.6	5.1	4.8
Change (▼, ▲, =)		=	▲	▼	=

a. Rate on unleveraged, all-cash transactions    b. Initial rate of change    c. In months

# National Development Land Market

In *Emerging Trends in Real Estate*® 2018, development ranks as the third preferred investment category/strategy among *Emerging Trends* respondents for 2018 – behind opportunistic and value-add investments but ahead of core investments. Despite its third-place finish, this year’s rating of 3.66 is 0.13 above last year’s rating. When considering development opportunities, *Emerging Trend* respondents rank land and construction costs as their top issue followed by infrastructure/transportation, housing costs and availability, and capital availability.

When looking at development prospects for each of the five major commercial real estate (CRE) sectors included in *Emerging Trends*, most rating changes are subtle (see Chart NDL-1). The largest increase over the past year occurs for the retail sector, where the rating rises from 2.42 to 2.55. The retail sector’s development rating took a big hit between 2016 and 2017 and it appears that developers are now becoming more comfort-

able with this sector’s evolution. Ironically, the only two sectors to see their development ratings decline this year, albeit slightly, are apartments and industrial, where concerns of over-supply issues have been expressed.

Outside of traditional CRE property sectors, *Emerging Trends* respondents feel development prospects in 2018 are also strong for urban mixed-use properties, data centers, infrastructure, self-storage, and suburban mixed-use town centers. Single-family development also gets a nod, as well as senior housing, where favorable demographics, compelling returns, greater liquidity, rising transparency, and mounting understanding of the benefits for residents appeal to investors.

## PREFERRED METROS

Of the 78 U.S. metros included in *Emerging Trends*, the top five individual markets with regard to development prospects in the year ahead are (in order) Seattle, Austin, Fort Lauderdale, Raleigh/Durham, Dallas/-

Fort Worth, Miami, Tampa/St. Petersburg, Los Angeles, San Jose, and Salt Lake City. Five of these cities were new to the top-ten for 2018 and include Fort Lauderdale, Miami, Tampa/St. Petersburg, San Jose, and Salt Lake City. Cities that slipped out of the top-ten from last year to this year include Nashville, Charlotte, Portland, Orange County, and Denver. However, these 5 cities still remain in the top 25.

## DISCOUNT RATES

On an unleveraged basis, discount rates (including developers’ profit) for the national development land market range from 10.00% to 20.00% and average 15.40% this quarter – 60 basis points below the average six months ago.

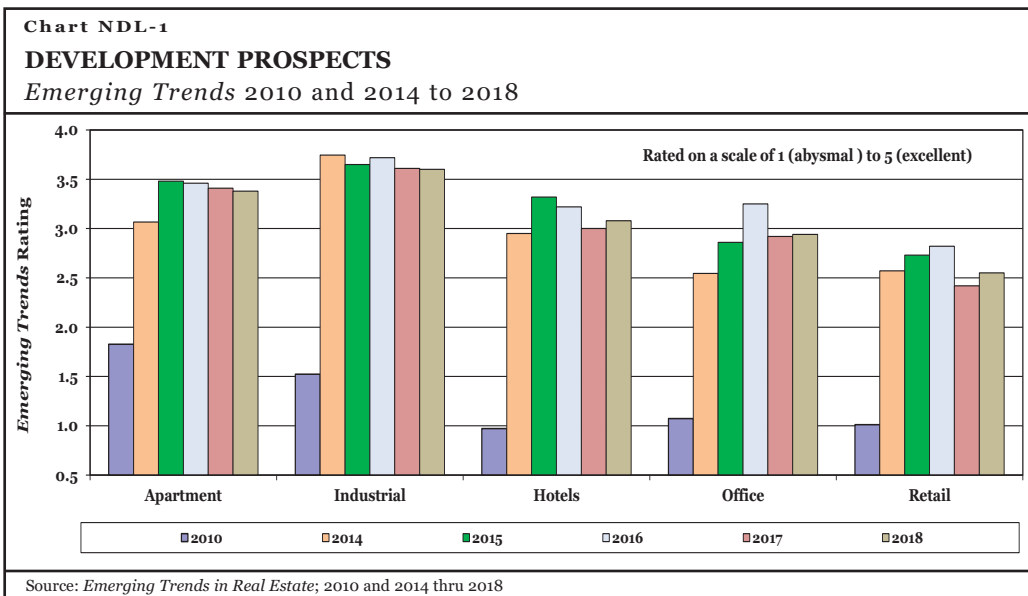
## MARKETING PERIOD

The typical time that a property is on the market prior to selling ranges from 6 to 36 months and averages 16 months.

## VALUE

### EXPECTATIONS

Looking ahead over the next 12 months, surveyed investors forecast property values in the national development land market to increase as much as 10.0% or decrease as much as 5.0%. Their average expected appreciation rate is 3.5% – well below the rate of 5.6% six months ago. ♦



**NATIONAL SECONDARY OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	GEOGRAPHY	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME
		REGION/ CITY	MARKET RENT	EXPENSES	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	
<b>FULL-SERVICE ADVISORY FIRM ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to hold steady over the next six months; does not use rent spikes.	West/ Sacramento	0.0%	2.5%	6.75% to 7.00% (CBD); 7.00% to 8.25% (suburbs)	2.5% to 5.0%	9.00% to 11.00% (CBD); 11.00% to 13.00% (suburbs)	6.00% to 7.00% (CBD); 7.00% to 8.25% (suburbs)	6	75.0%	5.0%	\$0.15 to \$0.20	9 to 12		
<b>REAL ESTATE FIRM ♦ Forecast Period: 1 to 3 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to increase 25 to 50 basis points over the next six months; does not use rent spikes.	Mountain/ Las Vegas	2.5% to 3.0%	2.5% to 3.0%	7.50% to 8.25% in both CBD & suburbs	2.0% to 3.0%	8.00% to 9.00% in both CBD & suburbs	7.00% to 7.75% in both CBD & suburbs	6 to 9	75.0%	10.0%	\$0.10 to \$0.15	3 to 5		
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 3 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to increase over the next six months; does not use rent spikes.	Southeast/ Tampa	3.0% to 5.0%	3.0%	7.25% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	1.0% to 3.0%	7.75% to 8.50% (CBD); 8.50% to 9.75% (suburbs)	6.25% to 7.50% (CBD); 7.50% to 9.00% (suburbs)	6 to 10	70.0% to 75.0%	5.0% to 7.5%	\$0.15 to \$0.25	4 to 6		
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions currently favor buyers; expects cap rates to hold steady over the next six months.	South/ Orlando	1.0% to 3.0%	2.0% to 3.0%	6.75% to 7.25% (CBD); 7.25% to 8.50% (suburbs)	2.0% to 3.0%	8.00% to 9.25% (CBD); 9.25% (CBD); 9.00% to 11.00% (suburbs)	6.00% to 7.25% (CBD); 7.25% to 8.75% (suburbs)	3 to 9	70.0% to 75.0%	2.0% to 8.0%	\$0.10 to \$0.25	6 to 9		
<b>REAL ESTATE FIRM ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions favor sellers; uses face rents and reflects concessions when they are scheduled to occur.	West/ San Jose	2.0%	2.0% to 3.0%	6.50% to 7.50% in both CBD & suburbs	1.0% to 1.5%	6.50% to 7.50% (CBD); 7.00% to 7.50% (CBD); 7.00% to 7.50% (CBD); 7.50% to 8.00% (suburbs)	5.00% to 7.00% (CBD); 7.00% to 7.50% (CBD); 7.50% to 8.00% (suburbs)	6 to 9	60.0% to 70.0%	3.0% to 7.0%	Does not use	3 to 6		
<b>REAL ESTATE INVESTOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions favor buyers; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.	East North Central/ Indianapolis	2.5% to 3.0%	2.0% to 3.0%	8.00% to 9.00% (CBD); 8.50% to 10.00% (suburbs)	1.5% to 3.0%	8.00% to 10.00% (CBD); 8.00% to 12.00% (suburbs)	8.00% to 9.50% in both CBD & suburbs	8 to 10	70.0% to 75.0%	8.0% to 10.0%	Does not use	3 to 5		
<b>REAL ESTATE SERVICE FIRM ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions currently favor sellers; expects overall cap rates to hold steady over the next six months; may use rent spikes.	Northeast/ Pittsburgh	2.0% to 2.5%	1.5% to 2.0%	6.50% to 7.25% (CBD); 7.25% to 8.25% (suburbs)	2.0% to 3.0%	8.25% to 8.50% (CBD); 8.50% to 9.75% (suburbs)	6.50% to 7.50% (CBD); 7.50% to 8.25% (suburbs)	6 to 12	70.0% to 80.0%	5.0% to 8.0%	\$0.15 to \$0.25	6 to 9		

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL REGIONAL MALL MARKET—SELECT SURVEY RESPONSES** <sup>(1)</sup>  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME
<p><b>PUBLIC REAL ESTATE COMPANY</b> ♦ <b>Forecast Period: 3 to 8 years</b> Mainly uses DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to increase 25 to 125 basis points over the next six months; does not use rent spikes.</p>	1.0% to 3.0% Year 1; 2.0% to 3.0% Year 2	2.0% to 5.0%	2.0% to 4.0%	4.00% to 10.00%	2.0% to 3.0%	5.00% to 11.50%	4.00% to 9.00%	9 to 18	60.0% to 80.0%	3.0% to 8.0%	\$0.25 to \$0.50	6 to 15			
<p><b>INVESTMENT BANKER</b> ♦ <b>Forecast Period: 1 to 10 years</b> Relies on DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; retail sales based on historical and market analysis; typical sales growth per market per year is at the inflation rate (CPI); expects overall cap rates to increase 25 basis points over the next six months.</p>	3.0% Years 1 to 3	3.0%	5.00% to 7.00%	0.8% to 1.0%	4.75% to 6.00%	5.50% to 7.00%	4 to 6	70.0%	1.0% to 2.0%	\$0.15 to \$0.30	6				
<p><b>REIT</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes; expects overall cap rates to increase over the next six months; believes market conditions favor buyers.</p>	1.0% to 2.0%	2.0% to 3.0%	3.0% to 4.0%	5.00% to 10.00%	0.5% to 1.0%	7.00% to 10.00%	5.00% to 10.00%	4 to 8	80.0% to 85.0%	3.0% to 8.0%	Does not use	9 to 18			
<p><b>PUBLIC C CORP</b> ♦ <b>Forecast Period: 7 to 10 years</b> Mainly uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; free rent is no longer awarded; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	2.5%	3.0%	3.0%	4.25% to 9.00%	1.0% to 3.0%	6.00% to 11.00%	4.00% to 9.00%	6 to 9	70.0% to 80.0%	5.0% to 7.0%	\$0.25 to \$0.50	6 to 9			
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses mainly DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; sees overall cap rates holding steady over the next six months.</p>	2.0% to 4.0% Years 1 to 3	3.0%	1.5% to 3.0%	5.00% to 7.50%	0.5% to 3.0%	5.50% to 7.50%	4.00% to 6.75%	6 to 14	50.0% to 75.0%	3.0% to 6.0%	\$0.20 to \$0.50	3 to 12			

Source: Personal survey conducted by PwC during October 2017; (1) relates to Class A+, A, B+, and B malls



**NATIONAL POWER CENTER MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE		FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<p><b>REALTY ADVISOR ♦ Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to decrease 25 to 50 basis points over the next six months.</p>	0.0% Year 1; 0.0% to 1.0% Year 2; 1.0% to 1.5% Year 3	3.0%	3.0%	6.00% to 8.00%	1.5% to 2.5%	6.00% to 10.00%	5.50% to 7.50%	3 to 10	60.0% to 80.0%	5.0% to 10.0%	\$0.20 to \$0.35	3  9
<p><b>PENSION FUND ADVISOR ♦ Forecast Period: 10 years</b> Prefers DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.</p>	0.0% to 3.0% Year 1; 3.0% Year 2	3.0%	3.0%	5.50% to 6.50%	1.0% to 2.0%	6.25% to 7.00%	5.25% to 6.50%	6 to 9	65.0% to 75.0%	5.0% to 8.0%	Does not use	2 to 6
<p><b>INSTITUTIONAL INVESTOR ♦ Forecast Period: 10 years</b> Primarily interested in high-credit deals; uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; sees overall cap rates holding steady over the next six months; no longer uses rent spikes.</p>	3.0% Years 1 to 3	3.0%	3.0%	6.25% to 6.50%	1.0% to 1.5%	6.50% to 6.75%	5.50% to 6.25%	4 to 8	65.0% to 70.0%	5.0% to 7.0%	\$0.20 to \$0.30	2 to 4
<p><b>INVESTMENT BANKER ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; prefers urban areas with easy access and good anchor tenancy; credit is key; may use a rent spike of 10.0% in year 5.</p>	0.0% to 3.0% Years 1 & 2	3.0%	3.0%	7.00% to 8.50%	2.0%	7.50% to 9.00%	6.00% to 7.00%	5 to 9	60.0% to 75.0%	5.0% to 10.0%	\$0.20	3 to 5
<p><b>PENSION FUND ♦ Forecast Period: 1 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.</p>	2.5% to 3.0%	3.0%	Did not disclose	6.50% to 7.50%	2.0%	6.50% to 7.75%	6.50% to 7.25%	1 to 3	70.0% to 5.0%	3.0% to 5.0%	\$0.10 to \$0.30	6 to 12

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL STRIP SHOPPING CENTER MARKET—SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME
<b>INSTITUTIONAL ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before deducting TIs, leasing commissions and capital replacement reserve; does not use rent spikes.	0.0% to 3.0%	2.0% to 3.0%	1.5% to 3.0%	5.25% to 7.00%	1.0% to 2.0%	5.75% to 8.00%	4.75% to 6.50%	6 to 12	50.0% to 100.0%	3.0% to 8.0%	\$0.25 to \$0.50	6 to 18			
<b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; sees overall cap rates holding steady over the next six months; does not use rent spikes.	3.0%	3.0%	3.0%	6.00% to 6.25%	2.0% to 2.5%	6.75% to 7.00%	5.25% to 5.75%	5 to 7	65.0% to 70.0%	4.0% to 6.0%	\$0.15 to \$0.25	3 to 4			
<b>REIT</b> ♦ <b>Forecast Period: 1 to 3 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before deducting TIs, leasing commissions and capital replacement reserve; does not use rent spikes; expects overall cap rates to increase 25 to 75 basis points over the next six months.	0.0% to 1.0%	3.0%	3.0%	6.00% to 9.75%	1.0% to 2.0%	8.00% to 10.50%	7.00% to 9.50%	9 to 15	70.0% to 75.0%	2.5% to 5.0%	\$0.15 to \$0.25	9 to 12			
<b>REIT</b> ♦ <b>Forecast Period: 10 years</b> Primarily uses direct capitalization in valuing assets; also uses yield capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to increase up to 25 basis points over the next six months.	2.0% to 3.0%	3.0%	3.0% to 4.0%	6.75% to 8.00%	4.0% to 5.0%	6.25% to 7.75%	5.50% to 8.50%	9 to 18	70.0% to 75.0%	3.0% to 7.0%	\$0.25 to \$0.75	3 to 6			
<b>DOMESTIC PENSION FUND</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.	2.5% to 3.0%	2.5% to 3.0%	2.5% to 3.0%	4.75% to 6.50%	0.5% to 3.0%	5.50% to 7.00%	4.00% to 6.50%	6 to 12	60.0% to 75.0%	1.0% to 5.0%	\$0.10 to \$0.25	6 to 12			
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 3 to 6 years</b> Prefers DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.	0.0% to 2.0%	0.0% to 2.0%	1.0% to 3.0%	6.00% to 8.50%	1.0% to 1.5%	7.00% to 10.00%	5.00% to 7.50%	3 to 9	65.0% to 75.0%	4.0% to 8.0%	\$0.20 to \$0.40	2 to 5			

Source: Personal survey conducted by PwC during October 2017.





**NATIONAL CBD OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME	
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses mainly DCF analysis; in direct cap, capitalizes NOI before tenant improvements, leasing commissions, and capital replacement reserve; may use a rent spike of 6.0% in year 1 and 5.0% in years 2 and 3.	2.0% to 5.0%	2.0% to 4.0%	1.5% to 3.0%	5.00% to 6.75%	0.5% to 4.0%	5.75% to 8.00%	3.75% to 6.75%	6 to 12	50.0% to 75.0%	2.5% to 6.0%	\$0.10 to \$0.50	3 to 9			
<b>PENSION FUND</b> ♦ <b>Forecast Period: 8 to 12 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.	2.0% to 4.0%	2.0% to 4.0%	1.0% to 3.0%	5.50% to 8.00%	2.0% to 3.0%	6.50% to 9.00%	5.50% to 8.00%	6 to 12	60.0% to 75.0%	2.0% to 6.0%	\$0.10 to \$0.20	3 to 18			
<b>PUBLIC REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses a rent spike.	2.0% to 4.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.25% to 7.25%	1.0% to 1.5%	6.50% to 7.50%	5.00% to 7.50%	6 to 12	60.0% to 70.0%	5.0% to 8.0%	Does not use	2 to 6			
<b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Prefers DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; may use a rent spike of 4.0% in year 3.	0.0% to 3.0%	3.0%	3.0%	5.00% to 5.50%	1.0% to 4.0%	5.75% to 6.25%	4.50% to 5.75%	6 to 9	65.0% to 75.0%	3.0% to 5.0%	\$0.15 to \$0.30	3 to 6			
<b>REIT</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that overall cap rates will decline 50 to 100 basis points over the next six months.	0.0% to 4.0%	2.0% to 3.0%	2.0% to 3.0%	5.50% to 7.50%	1.0% to 2.0%	5.50% to 7.00%	5.50% to 7.00%	6 to 9	65.0% to 85.0%	1.0% to 5.0%	\$0.25 to \$0.50	3 to 9			
<b>PRIVATE REAL ESTATE</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.	2.0% to 3.0%	3.0%	2.0% to 3.0%	5.50% to 6.50%	1.0% to 3.0%	8.00% to 9.00%	5.50% to 6.50%	6 to 10	70.0% to 75.0%	3.0% to 5.0%	\$0.25 to \$0.50	6 to 9			

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL SUBURBAN OFFICE MARKET—SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<b>INVESTMENT ADVISORS</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur.	3.0%	3.0%	3.0%	6.50% to 7.25%	2.0% to 2.5%	7.00% to 7.75%	5.50% to 6.25%	6 to 9	65.0% to 70.0%	3.0% to 5.0%	\$0.20 to \$0.25	3 to 8			
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes.	0.0% to 2.5%	2.0% to 3.0%	2.0% to 3.0%	6.50% to 9.50%	1.0% to 2.0%	6.00% to 12.00%	5.00% to 9.00%	6 to 15	50.0% to 67.0%	7.0% to 15.0%	\$0.25 to \$0.50	4 to 9			
<b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 4 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.	0.0% Year 1; 0.0% to 2.0% Year 2	0.0% to 3.0%	2.0% to 3.0%	6.50% to 7.75%	1.0% to 3.0%	7.50% to 9.00%	4.20% to 8.10%	4 to 10	65.0% to 75.0%	1.0% to 10.0%	\$0.10 to \$0.25	1 to 3			
<b>PUBLIC REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; prefers coastal markets.	1.0% to 4.0%	2.0% to 3.0%	2.0% to 3.0%	6.50% to 8.00%	1.0%	6.50% to 8.00%	5.00% to 8.00%	9 to 12	55.0% to 70.0%	5.0% to 9.0%	Does not use	3 to 6			
<b>DOMESTIC PENSION FUND</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.	2.5% to 3.0%	2.5% to 3.0%	2.5% to 3.0%	6.50% to 7.50%	0.5% to 3.0%	7.50% to 8.50%	5.50% to 7.50%	9 to 12	65.0% to 75.0%	0.0% to 7.0%	\$0.10 to \$0.25	6 to 12			
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses mainly DCF analysis; in direct cap, capitalizes NOI before tenant improvements, leasing commissions, and capital replacement reserve; may use a rent spike of 5.0% in years 1 to 3.	0.0% to 5.0%	2.0% to 4.0%	1.5% to 3.0%	6.00% to 8.00%	1.0% to 2.5%	7.00% to 9.00%	5.00% to 7.50%	8 to 12	50.0% to 70.0%	5.0% to 10.0%	\$0.20 to \$0.50	6 to 9			

Source: Personal survey conducted by PwC during October 2017.



**ATLANTA OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS			REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE		FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS		
<b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes cash flow after TIs, leasing commissions, and capital replacement reserve; uses effective rent after all concessions are extracted; expects overall cap rates to hold steady over the next six months.	2.0% to 4.0%	2.8% to 3.5%	2.5% to 3.5%	6.00% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	1.5% to 3.0%	6.00% to 8.00% (CBD); 7.00% to 8.50% (suburbs)	5.75% to 7.00% (CBD); 7.00% to 8.50% (suburbs)	7 to 9	50.0% to 75.0%	3.0% to 5.0%	\$0.15 to \$0.25	2 to 4	
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve.	3.0% Year 1; 3.0% to 4.0% Year 2	3.0%	3.0%	6.75% to 8.00% (CBD); 7.50% to 9.00% (suburbs)	2.0% to 3.0%	7.50% to 8.75% (CBD); 7.75% to 9.25% (suburbs)	5.25% to 7.50% (CBD); 6.00% to 8.50% (suburbs)	6 to 10	60.0% to 65.0%	8.0% to 10.0%	\$0.20 to \$0.25	8 to 10	
<b>INVESTMENT BANKER</b> ♦ <b>Forecast Period: 5 to 10 years</b> Prefers DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses a rent spike; expects overall cap rates to hold steady over the next six months.	2.5% to 3.0%	1.5% to 2.5%	1.5% to 2.5%	6.50% to 7.50% (CBD); 6.75% to 7.75% (suburbs)	1.0% to 2.0%	7.00% to 9.00% (CBD); 7.50% to 9.50% (suburbs)	6.00% to 7.50% (CBD); 6.50% to 7.50% (suburbs)	4 to 8	70.0% to 80.0%	5.0% to 7.0%	\$0.10 to \$0.25	3 to 4	
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.	2.0% to 2.5%	2.5%	2.0% to 2.5%	6.75% to 7.25% (CBD); 7.50% to 8.50% (suburbs)	1.5% to 2.0%	8.75% to 9.25% (CBD); 9.25% to 10.75% (suburbs)	6.50% to 7.50% (CBD); 7.50% to 8.75% (suburbs)	6 to 10	70.0% to 75.0%	8.0% to 12.0%	\$0.15 to \$0.35	9 to 12	
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses DCF, direct capitalization, and sales comparison approach; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.	0.0% to 3.0% Years 1 & 2	2.5% to 3.0%	3.0%	6.00% to 8.50% (CBD); 6.50% to 8.75% (suburbs)	0.7% to 1.5%	7.00% to 9.00% in both CBD & suburbs	5.25% to 8.00% (CBD); 6.50% to 9.00% (suburbs)	4 to 12	60.0% to 70.0%	6.0% to 10.0%	\$0.20 to \$0.35	3 to 6	

Source: Personal survey conducted by PwC during October 2017.



**AUSTIN OFFICE MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE		FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<b>INSTITUTIONAL ADVISORS</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes local market conditions favor sellers.	1.5% to 2.0% Year 1; 1.5% Year 2	2.5% to 3.0%	2.0%	6.00% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	2.0% to 3.0%	5.50% to 6.50% (CBD); 6.50% to 7.25% (suburbs)	5.00% to 5.50% (CBD); 5.50% to 6.00% (suburbs)	9 to 12	70.0% to 75.0%	3.0% to 7.0%	\$0.25 to \$0.45	3 to 4
<b>REIT</b> ♦ <b>Forecast Period: 3 to 5 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes local market conditions favor sellers.	3.0% to 4.0% Year 1; 3.0% Year 2	2.0%	2.0% to 2.5%	5.50% to 6.00% (CBD); 6.50% to 7.50% (suburbs)	1.5% to 2.5%	8.00% to 9.50% (CBD); 8.50% to 10.00% (suburbs)	5.50% to 6.50% (CBD); 6.50% to 7.50% (suburbs)	4 to 7	50.0% to 60.0%	5.0% to 7.0%	\$0.20 to \$0.30	3 to 5
<b>PUBLIC INVESTMENT COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes local market conditions favor sellers.	5.0% Year 1; 4.0% Year 2	3.0%	3.0%	5.50% to 5.75% (CBD); 6.25% (suburbs)	0.50% to 2.0%	6.00% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	5.00% to 5.50% (CBD); 5.50% to 6.00% (suburbs)	6 to 9	65.0%	0.0% to 5.0%	\$0.15 to \$0.25	6 to 9
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes local market conditions favor sellers.	5.0% to 10.0% Year 1; 3.0% to 5.0% Year 2	3.0% to 5.0%		7.75% to 8.25% (suburbs)	2.0% to 4.0%	8.00% to 10.00% (suburbs)	Did not disclose	4 to 6	50.0% to 80.0%	5.0% to 7.0%	\$0.25 to \$1.00	4 to 8
<b>FULL-SERVICE CRE FIRM</b> ♦ <b>Forecast Period: 3 to 15 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes local market conditions favor sellers.	3.0% to 5.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.00% to 7.00% (CBD); 7.25% to 8.50% (suburbs)	0.5% to 6.0%	6.50% to 9.00% (CBD); 9.00% to 10.00% (suburbs)	4.50% to 7.75% (CBD); 7.75% to 8.50% (suburbs)	5 to 9	70.0% to 75.0%	5.0% to 7.0%	\$0.10 to \$0.20	5 to 8

Source: Personal survey conducted by PwC during October 2017.



**BOSTON OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<p><b>INVESTMENT ADVISER ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	3.0%	3.0%	3.0%	5.50% to 6.75% (CBD); 6.50% to 8.25% (suburbs)	2.0% to 3.0%	6.00% to 7.25% (CBD); 7.00% to 8.50% (suburbs)	4.25% to 6.50% (CBD); 5.25% to 7.25% (suburbs)	6 to 8	65.0% to 70.0%	4.0% to 6.0%	\$0.20 to \$0.25	6 to 8			
<p><b>PENSION FUND ADVISOR ♦ Forecast Period: 3 to 5 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; may use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	0.0% to 3.0%	1.0% to 3.0%	1.0% to 3.0%	5.00% to 7.00% (CBD); 7.00% to (suburbs)	1.0% to 2.5%	6.00% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	4.50% to 6.50% (CBD); 6.50% to 9.50% (suburbs)	6 to 9	50.0% to 75.0%	4.0% to 8.0%	\$0.15 to \$0.65	2 to 5			
<p><b>REAL ESTATE ADVISOR ♦ Forecast Period: 10 years</b> Uses DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; may use rent spikes of 4.0% in year 4 and 5.0% in year 5.</p>	3.0% to 5.0%	3.0%	3.0%	5.00% to 6.75% (CBD); (suburbs)	1.0% to 2.0%	6.00% to 7.25% (CBD); 7.25% to (suburbs)	4.00% to 4.75% (CBD); 5.00% to 7.00% (suburbs)	6 to 9	70.0%	3.0% to 5.0%	\$0.20 to \$0.50	4 to 6			
<p><b>PRIVATE EQUITY INVESTOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes.</p>	3.0% to 4.0%	2.5% to 3.0%	2.0% to 2.5%	5.50% to 6.25% (CBD); 6.50% to 8.00% (suburbs)	2.0% to 2.5%	7.00% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	5.25% to 6.25% (CBD); 6.75% to 8.00% (suburbs)	4 to 9	65.0% to 70.0%	5.0%	\$0.15 to \$0.20	3 to 6			
<p><b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 10 years</b> Uses mainly direct capitalization; major focus is on the initial cash-on-cash return; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.</p>	3.0%	3.0%	3.0%	5.25% to 6.00% (CBD); 7.00% to 7.50% (suburbs)	1.3%	7.00% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	4.25% to 4.75% (CBD); 6.25% to 7.25% (suburbs)	7 to 8	70.0%	4.0%	Does not use	4 to 6			
<p><b>LIFE INSURANCE COMPANY ♦ Forecast Period: 10 to 11 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	4.0%	3.0%	3.0%	5.50% to 6.50% (CBD); 6.75% to 8.00% (suburbs)	1.0% to 3.0%	5.75% to 6.25% (CBD); 6.75% to 7.75% (suburbs)	4.40% to 5.00% (CBD); 7.00% to 8.00% (suburbs)	7 to 10	65.0% to 70.0%	5.0% to 8.0%	\$0.15 to \$0.25	4 to 7			

Source: Personal survey conducted by PwC during October 2017.



## CHARLOTTE OFFICE MARKET –SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)			VACANCY ASSUMPTIONS			REPLACEMENT RESERVE		MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE		FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 8 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	2.0% to 4.0%	3.0% to 4.0%	1.0% to 3.0%	6.00% to 7.50% (CBD); 6.50% to 8.00% (suburbs)	0.5% to 1.0%	7.00% to 8.50% (CBD); 7.50% to 9.00% (suburbs)	5.00% to 7.00% (CBD); 6.00% to 8.00% (suburbs)	5 to 10	65.0% to 75.0%	5.0% to 10.0%	\$0.10 to \$0.25	1 to 9			
<p><b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF analysis and sales comparison approach; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; prefers the CBD; no longer uses a rent spike; sees overall cap rates holding steady over the next six months.</p>	2.0% to 3.0%	1.5% to 2.5%	2.0% to 2.5%	6.50% to 7.50% (CBD); 7.00% to 8.00% (suburbs)	1.0% to 3.0%	7.50% to 9.00% (CBD); 7.50% to 9.50% (suburbs)	6.50% to 7.50% (CBD); 7.50% to 8.00% (suburbs)	3 to 9	70.0% to 75.0%	5.0% to 7.5%	\$0.10 to \$0.35	2 to 4			
<p><b>VALUE-ADDED INVESTOR</b> ♦ <b>Forecast Period: 3 to 5 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to hold steady over the next six months; may use a rent spike.</p>	2.0% to 3.0%	2.0% to 3.0%	2.5% to 3.0%	5.50% to 6.75% (CBD); 6.75% to 7.50% (suburbs)	0.8% to 1.3%	8.00% to 10.00% (CBD); 8.50% to 10.00% (suburbs)	6.50% to 7.25% (CBD); 7.00% to 8.00% (suburbs)	5 to 10	70.0% to 75.0%	5.0% to 10.0%	\$0.10 to \$0.25	2 to 4			
<p><b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF analysis; in direct capitalization, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions favor sellers; expects overall cap rates to hold steady over the next six months; no longer uses a rent spike.</p>	0.0% to 3.0%	3.0% to 3.5%		6.50% to 7.50% in both CBD & suburbs	1.0%	7.00% to 10.00% in both CBD & suburbs	6.50% to 7.00% in both CBD & suburbs	6 to 12	50.0% to 75.0%	5.0% to 10.0%	\$0.15 to \$0.25	6 to 12			
<p><b>INVESTMENT MANAGER</b> ♦ <b>Forecast Period: 3 to 10 years</b> Uses all three approaches to value; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to hold steady over the next six months; no longer uses a rent spike.</p>	2.5% to 4.5%	2.0%	2.0% to 3.0%	5.50% to 6.50% (CBD); 6.50% to 8.50% (suburbs)	1.0% to 1.5%	6.50% to 7.50% (CBD); 7.00% to 9.00% (suburbs)	5.50% to 6.50% (CBD); 6.00% to 7.00% (suburbs)	4 to 9	70.0% to 80.0%	3.0% to 6.0%	\$0.25 to \$0.50	2 to 4			

Source: Personal survey conducted by PwC during October 2017.



**CHICAGO OFFICE MARKET—SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE			FREE & CLEAR	MONTHS VACANT			TENANT RETENTION
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 5 to 10 years</b> Relies mainly on DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.	3.0% Years 1 & 2	3.0%	2.5% to 3.0%	6.00% to 8.00% (CBD); 8.50% to 10.00% (suburbs)	0.8% to 1.5%	7.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.50% to 8.00% (CBD); 7.50% to 10.00% (suburbs)	6 to 9	65.0% to 75.0%	12.0% to 18.0%	\$0.25 to \$0.50	3 to 6
<b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; no longer uses a rent spike.	0.0% Years 1 & 2	2.0% to 3.0%	2.0%	6.00% to 9.00% (CBD); 7.50% to 10.00% (suburbs)	1.0% to 2.5%	7.00% to 9.50% (CBD); 8.00% to 11.00% (suburbs)	5.50% to 8.00% (CBD); 7.00% to 10.00% (suburbs)	6 to 9	60.0% to 75.0%	10.0% to 15.0%	\$0.50 to \$0.75	4 to 6
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 10 years</b> Uses mainly direct capitalization; major focus is on the initial cash-on-cash return; typically extends forecast period to capture impact of all lease expirations; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.	0.0% Year 1; 0.0% to 3.0% Year 2	3.0%	3.0%	6.00% to 6.50% (CBD); 8.00% to 9.00% (suburbs)	1.5%	7.00% to 7.50% (CBD); 10.00% to 11.00% (suburbs)	5.00% to 6.00% (CBD); 8.00% to 9.00% (suburbs)	10 to 12	70.0% to 85.0%	8.0% to 8.0%	Does not use	4 to 8
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents; does not use rent spikes.	1.0% to 2.0%	3.0%	2.0% to 3.0%	5.50% to 7.50% (CBD); 8.50% to 10.00% (suburbs)	5.0%	9.00% to 10.00% (CBD); 11.00% to 12.00% (suburbs)	5.50% to 7.50% (CBD); 8.50% to 9.50% (suburbs)	6 to 9	60.0% to 70.0%	8.0% to 12.0%	\$0.15 to \$0.25	3 to 6
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; sees overall cap rates increasing slightly over the next six months.	3.0%	3.0%	3.0%	5.75% to 6.50% (CBD); 8.00% to 10.00% (suburbs)	0.5% to 1.0%	6.00% to 7.00% (CBD); 8.00% to 10.00% (suburbs)	5.25% to 6.50% (CBD); 8.00% to 10.00% (suburbs)	9	65.0% to 75.0%	5.0% to 8.0%	\$0.25 to \$0.50	2 to 6
<b>INVESTMENT ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Relies on DCF; uses face rents and reflects concessions as they are scheduled to occur; prefers the West Loop; does not use a rent spike; sees overall cap rates increasing up to 25 basis points over the next six months.	1.0% to 3.0%	3.0% to 6.0%	2.0% to 3.0%	5.50% to 6.25% (CBD); 7.50% to 9.00% (suburbs)	1.0% to 1.5%	6.00% to 7.00% (CBD); 8.25% to 10.50% (suburbs)	4.75% to 6.00% (CBD); 7.25% to 9.00% (suburbs)	6 to 12	60.0% to 75.0%	5.0% to 12.0%	\$0.20 to \$0.30	3 to 9

Source: Personal survey conducted by PwC during October 2017.





**DALLAS OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS			REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME		
<p><b>PRIVATE INVESTOR ♦ Forecast Period: 3 to 7 years</b> Relies on DCF; also uses direct capitalization and sales comparison approach; uses face rents; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to hold steady over the next six months; may use a rent spike of 5.0% in year 2.</p>	2.0% to 5.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	1.0% to 3.0%	6.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.00% to 8.00% (CBD); 6.00% to 8.50% (suburbs)	6 to 9	65.0% to 75.0%	2.0% to 5.0%	\$0.10 to \$0.25		3 to 6			
<p><b>REAL ESTATE ADVISOR ♦ Forecast Period: 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that local market conditions equally favor sellers and buyers; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	2.0% to 2.5% Years 1 & 2	3.0%	3.0%	6.25% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	2.0% to 2.5%	6.50% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	5.00% to 6.25% (CBD); 6.25% to 7.00% (suburbs)	6 to 9	70.0% to 75.0%	5.0% to 7.0%	\$0.20 to \$0.40		3 to 6			
<p><b>LIFE INSURANCE COMPANY ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; uses face rents and reflects concessions when they are scheduled to occur; believes market conditions favor buyers.</p>	2.0% to 3.0% Years 1 & 2	3.0%	3.0%	6.50% to 7.75% (CBD); 7.50% to 8.50% (suburbs)	2.0% to 3.0%	7.50% to 8.50% (CBD); 8.00% to 9.00% (suburbs)	5.00% to 7.00% (CBD); 7.00% to 7.75% (suburbs)	6 to 10	65.0% to 70.0%	5.0% to 10.0%	\$0.20 to \$0.25		6 to 12			
<p><b>PENSION FUND ADVISOR ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.</p>	3.0% Years 1 to 3	3.0%	Did not disclose	6.25% to 6.50% (CBD)	0.5% to 1.0%	6.75% to 7.25% (CBD)	5.25% to 6.00% (CBD)	6 to 9	65.0% to 75.0%	1.0% to 5.0%	\$0.15 to \$0.25		4 to 6			
<p><b>REAL ESTATE ADVISER ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to hold steady over the next six months.</p>	3.0% Years 1 to 3	3.0%	3.0%	6.25% to 7.00% in both CBD & suburbs	1.0%	6.50% to 7.00% in both CBD & suburbs	5.25% to 6.50% (CBD); 5.50% to 6.75% (suburbs)	5 to 9	65.0%	3.0%	\$0.50		1 to 6			

Source: Personal survey conducted by PwC during October 2017.



**DENVER OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME		
	MARKET RENT	EXPENSES	CPI	CAP RATE			SELLING EXPENSE	FREE & CLEAR			MONTHS VACANT	TENANT RETENTION
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 3 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.	2.0% to 3.0%	3.0%	3.0%	6.00% to 7.00% (CBD); 7.00% to 8.50% (suburbs)	0.5% to 3.0%	7.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.50% to 7.00% (CBD); 7.00% to 8.75% (suburbs)	5 to 10	50.0% to 70.0%	3.0% to 8.0%	\$0.10 to \$0.25	1 to 5
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 7 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes; expects overall cap rates to hold steady over the next six months.	2.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0% to 2.5%	6.00% to 7.00% (CBD); 7.50% to 9.00% (suburbs)	1.0% to 3.0%	6.75% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.00% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	6 to 7	70.0% to 75.0%	7.0% to 8.0%	\$0.15 to \$0.25	2 to 4
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.	3.0% Years 1 to 3	3.0%	3.0%	6.50% to 7.00% (suburbs)	2.0% to 3.0%	7.00% to 7.50% (suburbs)	6.00% to 6.50% (suburbs)	6 to 8	60.0% to 70.0%	1.0% to 2.0%	\$0.20 to \$0.30	3 to 6
<b>PENSION FUND INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; believes that current market conditions equally favor buyers and sellers; does not use rent spikes.	2.0% to 3.0% Years 1 to 3	3.0%	2.5% to 3.0%	5.50% to 6.50% (CBD); 6.50% to 7.50% (suburbs)	1.5% to 2.0%	6.50% to 7.25% (CBD); 7.00% to 8.00% (suburbs)	5.25% to 6.00% (CBD); 6.00% to 6.50% (suburbs)	5 to 6	60.0% to 70.0%	5.0%	Does not use	3 to 6
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 5 to 11 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to increase 10 to 50 basis points over the next six months; does not use rent spikes.	0.0% to 3.0% Years 1 to 3	3.0%	3.0%	7.50% to 8.50% (CBD); 8.50% to 9.50% (suburbs)	3.0% to 5.0%	8.00% to 10.00% (CBD); 8.00% to 11.00% (suburbs)	5.00% to 7.00% (CBD); 7.00% to 9.00% (suburbs)	6 to 9	60.0% to 70.0%	5.0% to 10.0%	\$0.15 to \$0.30	3 to 6

Source: Personal survey conducted by PwC during October 2017.



# HOUSTON OFFICE MARKET –SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<p><b>REAL ESTATE ADVISORS</b> ♦ <b>Forecast Period: 5 years</b> Relies on DCF; also uses direct capitalization and sales comparison approach; uses effective rents; in direct cap, capitalizes cash flow after TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to increase 25 to 35 basis points over the next six months.</p>	(8.0%) to (6.0%) Year 1	2.5%	1.5% to 1.8%	6.50% to 6.75% (CBD); 6.75% to 7.75% (suburbs)	1.5% to 2.5%	6.50% to 6.75% (CBD); 6.75% to 7.75% (suburbs)	6.50% to 6.75% (CBD); 6.75% to 7.75% (suburbs)	6.50% to 6.75% (CBD); 6.75% to 7.75% (suburbs)	12 to 18	50.0% to 60.0%	10.0%	\$0.25	12		
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; believes market conditions favor buyers.</p>	0.0% Year 1; 0.0% to 1.0% Year 2	3.0%	3.0%	6.75% to 7.75% (CBD); 7.75% to 8.75% (suburbs)	2.0% to 3.0%	7.25% to 8.75% (CBD); 8.75% (suburbs)	5.75% to 7.25% (CBD); 7.25% to 8.00% (suburbs)	8 to 10	60.0% to 65.0%	8.0% to 10.0%	\$0.20 to \$0.25	10 to 12			
<p><b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	0.0%	3.0%		7.25% to 7.50% (CBD)	1.0% to 2.0%	8.25% to 9.25% (CBD)	6.00% to 6.50% (CBD)	9	65.0% to 70.0%	1.0% to 5.0%	\$0.15 to \$0.25	6 to 12			
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses both DCF analysis and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that current market conditions equally favor buyers and sellers; does not use rent spikes.</p>	0.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0% to 3.0%	7.00% to 9.50% (CBD); 7.50% to 10.00% (suburbs)	1.0% to 3.0%	8.00% to 11.50% (suburbs)	6.50% to 10.00% (CBD); 8.00% (CBD); 7.00% to 10.00% (suburbs)	6 to 12	65.0% to 75.0%	7.0% to 15.0%	\$0.15 to \$0.30	4 to 9			
<p><b>REIT</b> ♦ <b>Forecast Period: 3 to 10 years</b> Uses both DCF and direct capitalization; in direct cap capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to hold steady over the next six months; does not use rent spikes.</p>	(5.0%) to (2.0%)	0.0% to 2.0%	1.5% to 2.0%	6.50% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	1.0% to 1.0%	8.00% to 13.00% (suburbs)	6.50% to 8.00% (CBD); 8.00% (CBD); 7.50% to 9.00% (suburbs)	12 to 36	50.0% to 75.0%	3.0% to 8.0%	\$0.25 to \$0.50	6 to 12			

Source: Personal survey conducted by PwC during October 2017.



**LOS ANGELES OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS	MONTHS	
<b>INVESTMENT ADVISOR</b> ♦ <b>Forecast Period: 7 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions favor sellers; does not use rent spikes; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0% Years 1 & 2	3.0%	3.0%	5.00% to 5.50% in both CBD & suburbs	0.5% to 1.0%	5.50% to 7.00% (CBD); 5.00% to 6.50% (suburbs)	4.50% to 5.50% (CBD); 5.00% to 6.00% (suburbs)	6 to 9	70.0% to 80.0%	5.0% to 7.0%	\$0.15 to \$0.25	1 to 3			
<b>REAL ESTATE COMPANY</b> ♦ <b>Forecast Period: 7 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; may use a rent spike of 5.0% in years 1 and 2; believes market conditions equally favor buyers and sellers.	3.0% to 5.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.50% to 7.50% (CBD); 6.00% to 7.50% (suburbs)	1.0% to 1.5%	6.50% to 7.50% (CBD); 6.00% to 7.50% (suburbs)	5.50% to 6.50% (CBD); 4.50% to 6.50% (suburbs)	9 to 12	60.0% to 70.0%	5.0% to 8.0%	Does not use	3 to 6			
<b>INVESTMENT BANKER</b> ♦ <b>Forecast Period: 5 to 10 years</b> Prefers DCF analysis; also uses direct cap; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; may use a rent spike of 15.0% in year 5; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0% Years 1 to 3	3.0%	2.0% to 3.0%	6.50% to 7.50% in both CBD & suburbs	2.0%	6.00% to 8.00% in both CBD & suburbs	5.00% to 6.50% in both CBD & suburbs	4 to 6	65.0% to 75.0%	5.0% to 10.0%	\$0.15 to \$0.25	3 to 4			
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 3 to 12 years</b> Relies primarily on DCF; also uses direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; may use rent spikes; expects overall cap rates to increase over the next six months.	3.0% to 4.0% Year 1; 3.0% Year 2	3.0%	2.5% to 3.5%	5.25% to 7.00% (CBD); 6.00% to 8.00% (suburbs)	1.5% to 2.0%	6.00% to 8.00% (CBD); 7.00% to 8.50% (suburbs)	5.00% to 6.00% (CBD); 6.25% to 7.50% (suburbs)	8 to 10	50.0% to 65.0%	1.0%	\$0.15 to \$0.20	1 to 3			
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0% Years 1 & 2	3.0%	2.0% to 3.0%	6.00% to 7.50% (CBD); 6.00% to 7.75% (suburbs)	2.0% to 3.0%	6.25% to 7.75% in both CBD & suburbs	4.25% to 6.25% (CBD); 4.25% to 7.25% (suburbs)	6 to 8	65.0% to 70.0%	4.0% to 6.0%	\$0.20 to \$0.25	6 to 8			

Source: Personal survey conducted by PwC during October 2017.



**MANHATTAN OFFICE MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<b>INVESTMENT BANKER ♦ Forecast Period: 3-5 to 5 years</b> Strongest interest is in Midtown; uses both DCF and direct capitalization; does not use rent spikes; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve.	1.0% to 2.0%	1.0% to 3.0%	1.0% to 3.0%	3.00% to 5.00%	4.0%	6.50% to 8.50%	3.00% to 5.00%	6 to 12	65.0% to 75.0%	5.0% to 10.0%	Does not use	2 to 4			
<b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 10 years</b> Uses mainly direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; no longer uses rent spikes.	3.0%	3.0%	3.0%	5.00% to 5.25%	4.0%	6.00% to 7.00%	4.00% to 5.00%	8 to 10	65.0% to 70.0%	2.5% to 3.0%	\$0.35 to \$0.50	3 to 4			
<b>PENSION FUND ADVISOR ♦ Forecast Period: 10 to 12 years</b> Mainly uses DCF analysis when valuing assets; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; may use a rent spike of 5.0% in year 4.	4.0% to 5.0%	3.0%	3.0%	4.50% to 5.50%	3.8% to 4.0%	5.50% to 6.25%	3.75% to 5.00%	9 to 12	60.0% to 70.0%	1.0% to 2.0%	\$0.10 to \$0.25	6 to 9			
<b>INVESTMENT ADVISOR ♦ Forecast Period: 3 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commission, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.	0.0% to 3.0%	1.0% to 3.0%	1.0% to 3.0%	4.50% to 6.50%	2.0% to 3.0%	8.00% to 9.00%	4.00% to 6.00%	2 to 6	50.0% to 75.0%	2.5% to 7.5%	\$0.15 to \$0.50	1 to 6			
<b>LIFE INSURANCE COMPANY ♦ Forecast Period: 10 to 11 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses effective rents in DCF analysis; does not use rent spikes.	3.0% to 4.0%	3.0%	3.0% to 4.0%	5.25% to 6.25%	1.0% to 3.0%	5.75% to 6.25%	4.50% to 5.50%	5 to 7	70.0% to 80.0%	5.0% to 7.0%	\$0.15 to \$0.25	5 to 6			
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; relies on DCF; uses face rents in DCF model, net effective rents in direct capitalization; prefers Midtown and Times Square; does not use rent spikes.	1.0% to 3.0%	3.0%	3.0%	5.75% to 6.75%	1.5% to 2.0%	5.75% to 7.25%	4.00% to 5.50%	5 to 8	65.0% to 70.0%	3.0% to 6.0%	\$0.20 to \$0.25	4 to 6			

Source: Personal survey conducted by PwC during October 2017.



**NORTHERN VIRGINIA OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME	
<p><b>REIT</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; expects overall cap rates to decrease over the next six months; does not use rent spikes.</p>	2.0% to 3.0% Year 1; 2.5% to 3.0% Year 2	2.0% to 3.0%	2.5% to 3.0%	7.50% to 8.50%	1.5% to 2.0%	7.50% to 8.50%	7.00% to 8.00%	6 to 15	60.0% to 70.0%	5.0% to 7.0%	\$0.25 to \$0.50	4 to 8			
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	0.0% Year 1; 2.0% Year 2	0.0%	2.0% to 2.5%	5.50% to 6.50%	1.5%	6.00% to 8.50%	5.00% to 7.00%	12	50.0% to 75.0%	5.0% to 9.0%	\$0.25 to \$0.70	1 to 3			
<p><b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Relies on DCF; also uses direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to hold steady over the next six months; does not use rent spikes.</p>	3.0% Years 1 & 2	3.0%	3.0%	6.50% to 7.00%	2.0% to 3.0%	7.00% to 7.50%	6.00% to 6.50%	6 to 7	60.0% to 70.0%	3.0% to 5.0%	\$0.15 to \$0.25	3 to 5			
<p><b>PRIVATE EQUITY INVESTOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; does not use rent spikes; believes market conditions are neutral.</p>	0.0% to 3.0% Year 1; 1.5% to 3.0% Year 2	3.0%	3.0%	5.75% to 7.50%	1.0% to 2.0%	6.00% to 8.50%	5.25% to 8.00%	6 to 9	70.0%	5.0%	\$0.15 to \$0.25	3 to 6			
<p><b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Looks at cash-on-cash return and the growth in the return over a ten-year period; does not price properties through DCF; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve.</p>	0.0% Years 1 & 2; 0.0% to 2.0% Year 3	2.0%	2.0%	6.00% to 7.50%	2.0% to 2.5%	6.50% to 9.50%	5.00% to 8.50%	8 to 12	65.0%	1.0% to 3.0%	\$0.25	3 to 6			

Source: Personal survey conducted by PwC during October 2017.



## PACIFIC NORTHWEST OFFICE MARKET – SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS		
<p><b>INVESTMENT ADVISOR</b> ♦ <b>Forecast Period: 7 to 10 years</b> Mainly uses DCF analysis; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions equally favor buyers and sellers; does not use rent spikes.</p>	3.0% to 4.0%	3.0%	3.0%	5.00% to 5.50% (CBD); 5.00% to 6.00% (suburbs)	0.5% to 1.0%	5.25% to 6.50% (CBD); 5.00% to 7.00% (suburbs)	4.25% to 5.00% (CBD); 5.00% to 6.50% (suburbs)	6 to 9	70.0% to 80.0%	5.0%	\$0.15 to \$0.25	1 to 3			
<p><b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF analysis; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects cap rates to hold steady over the next six months; does not use rent spikes.</p>	2.0% to 2.5% Years 1 & 2	3.0%	3.0%	5.50% to 6.25% (CBD); 6.25% to 7.25% (suburbs)	3.0% to 4.0%	6.75% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.00% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	6 to 9	70.0% to 75.0%	3.0% to 6.0%	\$0.15 to \$0.25	3 to 6			
<p><b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	2.0% to 2.5%	3.0%	3.0%	5.50% to 6.25% (CBD); 6.25% to 7.25% (suburbs)	3.0% to 4.0%	6.50% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	5.00% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	6 to 9	70.0% to 75.0%	3.0% to 5.0%	\$0.15 to \$0.25	3 to 6			
<p><b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	2.5% to 3.0%	2.5% to 3.0%	1.5% to 3.0%	5.00% to 9.00% (CBD)	2.0% to 4.0%	8.00% to 10.00% (suburbs)	5.00% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	6 to 12	50.0% to 75.0%	1.0% to 2.0%	\$1.00 to \$2.00	6 to 12			
<p><b>REAL ESTATE SERVICE FIRM</b> ♦ <b>Forecast Period: 5 to 12 years</b> Uses both DCF and direct capitalization; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes; expects overall cap rates to hold steady over the next six months.</p>	3.0% to 5.0% Years 1 & 2	2.5% to 3.0%	2.5% to 3.0%	5.50% to 7.00% (CBD); 8.00% to 9.00% (suburbs)	1.0% to 2.0%	6.00% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	5.00% to 6.50% (CBD); 6.50% to 7.75% (suburbs)	6 to 9	70.0% to 75.0%	5.0%	\$0.10 to \$0.20	3 to 6			
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 7 to 10 years</b> Uses both DCF and direct capitalization; in direct cap. capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	3.0%	3.0%	3.0%	6.50% to 7.50% (CBD)	2.5% to 3.0%	7.00% to 8.25% (CBD)	6.00% to 7.00% (CBD); 7.00% to 8.00% (CBD)	6 to 12	65.0% to 70.0%	5.0% to 8.0%	\$0.20 to \$0.50	3 to 6			

Source: Personal survey conducted by PwC during October 2017.





# PHILADELPHIA OFFICE MARKET – SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS			REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE			FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<p><b>PRIVATE EQUITY INVESTOR</b> ♦ <b>Forecast Period: 3 to 5 years</b>                      Uses mainly DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; uses face rents and reflects concessions when they are scheduled to occur.</p>	0.0% to 3.0% Years 1 to 3	1.0% to 3.0%	1.0% to 3.0%	6.25% to 9.25% (CBD); 7.00% to 11.00% (suburbs)	1.5% to 3.0%	9.00% to 11.00% (suburbs) 10.00% (CBD); 9.50% to 10.00% (suburbs)	6.00% to 8.00% (CBD); 7.00% to 10.00% (suburbs)	9 to 12	50.0% to 75.0%	5.0% to 10.0%	\$0.15 to \$0.65	3 to 5
<p><b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 1 to 10 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; expects overall cap rates to hold steady over the next six months; does not use rent spikes.</p>	4.0% to 5.0% Years 1 & 2	2.5% to 3.0%	2.0% to 2.5%	6.00% to 7.50% (CBD); 6.50% to 7.50% (suburbs)	2.0% to 2.5%	7.00% to 10.00% (suburbs) 9.00% (CBD); 8.00% to 10.00% (suburbs)	5.00% to 6.50% (CBD); 7.00% to 7.00% (suburbs)	6 to 9	70.0% to 75.0%	5.0% to 8.0%	Does not use	2 to 4
<p><b>OPPORTUNITY FUND INVESTOR</b> ♦ <b>Forecast Period: 5 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; prefers suburbs; does not use rent spikes.</p>	3.0% to 3.0% Years 1 to 3	3.0%	3.0%	6.50% to 8.50% (suburbs)	2.0% to 3.0%	7.00% to 9.00% (suburbs) 8.00% (CBD); 8.00% to 9.00% (suburbs)	6.00% to 7.50% (CBD); 7.00% to 7.50% (suburbs)	6 to 9	65.0% to 75.0%	5.0%	\$0.25	4 to 8
<p><b>REIT</b> ♦ <b>Forecast Period: 5 to 7 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	2.0% to 3.0%	1.5% to 2.0%	2.5% to 3.0%	6.50% to 9.00% (suburbs)	2.0% to 2.5%	7.00% to 9.50% (suburbs) 7.50% (CBD); 7.00% to 9.00% (suburbs)	6.00% to 7.00% (CBD); 7.00% to 9.00% (suburbs)	6 to 18	60.0% to 70.0%	5.0% to 7.0%	\$0.25 to \$0.50	4 to 8
<p><b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 10 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses effective rents; expects overall cap rates to hold steady over the next six months; does not use rent spikes.</p>	1.0% to 2.0%	3.0%	2.5% to 3.0%	7.00% to 9.00% (suburbs)	2.0%	8.00% to 9.00% (suburbs) 8.50% (CBD); 8.00% to 9.00% (suburbs)	7.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	6 to 8	65.0%	5.0%	\$0.20	6 to 12

Source: Personal survey conducted by PwC during October 2017.



**PHOENIX OFFICE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS
<b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 3 to 7 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.	2.0% to 4.0% Years 1 & 2	1.0% to 3.0%	3.0%	7.00% to 8.00% in both CBD & suburbs	2.0%	8.00% to 10.00% in both CBD & suburbs	6.50% to 8.00% (CBD); 7.00% to 8.00% (suburbs)	6 to 12	65.0% to 75.0%	5.0% to 10.0%	\$0.20 to \$0.25	6 to 18
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 10 to 12 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; may use a rent spike of 5.0% in year 3.	3.0% to 6.0% Year 1; 3.5% to 6.0% Year 2	3.0%	3.0%	5.50% to 6.25% in both CBD & suburbs	1.0% to 2.0%	7.75% to 8.50% in both CBD & suburbs	5.50% to 6.25% in both CBD & suburbs	6 to 12	60.0% to 70.0%	5.0% to 7.0%	\$0.20 to \$0.25	3 to 9
<b>PUBLIC REIT</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses all approaches to value; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that this market equally favors buyers and sellers; expects overall cap rates to hold steady over the next six months.	2.0% to 4.0% Years 1 to 3	1.0% to 3.0%	1.0% to 3.0%	5.50% to 7.00% (CBD); 6.50% to 8.00% (suburbs)	0.5% to 1.0%	7.00% to 9.00% (CBD); 7.00% to 10.00% (suburbs)	5.50% to 7.25% (CBD); 6.00% to 8.00% (suburbs)	6 to 9	60.0% to 75.0%	4.0% to 7.0%	\$0.10 to \$0.25	1 to 12
<b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; believes that market conditions favor buyers; may use a rent spike of 5.0% in year 3.	3.0% Years 1 to 3	3.0%	3.0%	6.75% to 7.00% (suburbs)	1.0% to 3.0%	7.25% to 7.50% (suburbs)	6.00% to 6.50% (suburbs)	6 to 8	65.0% to 70.0%	6.0% to 7.0%	\$0.20 to \$0.25	4 to 6
<b>PRIVATE EQUITY FIRM</b> ♦ <b>Forecast Period: 3 to 5 years</b> Mainly uses DCF analysis; in direct capitalization, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions currently favor buyers.	3.0% to 5.0% Years 1 & 2	2.0% to 3.0%		6.50% to 7.00% (CBD); 7.00% to 7.50% (suburbs)	1.5% to 2.0%	8.00% to 10.00% (CBD); 7.00% to 9.00% (suburbs)	6.25% to 6.50% (CBD); 7.00% to 7.25% (suburbs)	5 to 10	70.0% to 75.0%		\$0.10 to \$0.15	6 to 10

Source: Personal survey conducted by PwC during October 2017.



## SAN DIEGO OFFICE MARKET –SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS			REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE			FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 5 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to increase up to 50 basis points over the next six months; no longer uses rent spikes.</p>	2.0% to 5.0% Year 1; 1.5% to 3.0% Year 2	2.0% to 3.0%	2.0% to 3.0%	6.00% to 7.00% (CBD); 7.00% (CBD); 7.00% to 8.00% (suburbs)	1.0% to 5.0%	8.00% to 10.50% (CBD); 9.00% to 12.00% (suburbs)	5.50% to 6.50% (CBD); 6.00% to 7.50% (suburbs)	5 to 10	65.0% to 75.0%	7.0% to 12.0%	\$0.10 to \$0.20	3 to 12
<p><b>PRIVATE INVESTOR</b> ♦ <b>Forecast Period: 1 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; may use rent spikes in certain submarkets.</p>	3.0% to 5.0% Year 1; 4.0% to 6.0% Year 2	3.0%	3.0%	7.25% to 8.75% (CBD); 6.75% to 8.75% (suburbs)	1.0% to 3.0%	8.50% to 10.50% in both CBD & suburbs	7.00% to 8.50% (CBD); 6.50% to 8.50% (suburbs)	9 to 12	60.0% to 70.0%	5.0% to 10.0%	\$0.25 to \$0.35	3 to 5
<p><b>PUBLIC REAL ESTATE COMPANY</b> ♦ <b>Forecast Period: 7 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; may use a rent spike of 6.0% in year 1 and 5.0% in year 2; believes market conditions favor sellers.</p>	4.0% to 5.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.50% to 7.50% in both CBD & suburbs	1.0% to 1.5%	6.50% to 7.50% in both CBD & suburbs	6.00% to 7.00% (CBD); 5.50% to 7.00% (suburbs)	6 to 12	60.0% to 70.0%	4.0% to 8.0%	Does not use	3 to 6
<p><b>PENSION/CORE INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; does not use rent spikes; expects overall cap rates to increase up to 25 basis points over the next six months.</p>	2.0% to 3.0% Years 1 to 3	3.0%	2.5% to 3.0%	5.75% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	2.0%	6.75% to 7.75% (CBD); 7.25% to 8.00% (suburbs)	5.50% to 6.00% (CBD); 6.00% to 7.50% (suburbs)	6 to 9	60.0% to 70.0%	2.0% to 3.0%	Does not use	4 to 6
<p><b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	3.0% to 4.0% Year 1	3.0%	3.0%	5.75% to 6.25% (suburbs)	1.0% to 2.0%	6.50% to 7.00% (suburbs)	5.25% to 5.50% (suburbs)	6 to 8	65.0% to 75.0%	1.0%	\$0.15 to \$0.25	3 to 6

Source: Personal survey conducted by PwC during October 2017.



**SAN FRANCISCO OFFICE MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	VACANCY ASSUMPTIONS			REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE			FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<p><b>INVESTMENT ADVISOR ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	3.0% Years 1 to 3	3.0%	2.0% to 3.0%	5.00% to 6.00% (CBD); 6.25% to 7.50% (suburbs)	0.7% to 1.5%	5.50% to 6.50% (CBD); 6.50% to 7.75% (suburbs)	4.25% to 5.25% (CBD); 5.00% to 6.50% (suburbs)	6 to 9	50.0% to 70.0%	3.0% to 5.0%	\$0.15 to \$0.30	3 to 5
<p><b>REAL ESTATE ADVISOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to increase 25 to 50 basis points over the next six months.</p>	2.0% to 5.0% Year 1; 3.0% to 5.0% Year 2	3.0%	3.0%	5.00% to 6.00% (CBD); 6.00% to 9.00% (suburbs)	1.0% to 2.0%	5.00% to 8.00% (CBD); 7.00% to 9.50% (suburbs)	3.50% to 7.00% (CBD); 5.00% to 8.00% (suburbs)	2 to 7	65.0% to 70.0%	5.0% to 10.0%	\$0.10 to \$0.30	2 to 6
<p><b>PENSION FUND ADVISOR ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions favor sellers; does not use rent spikes.</p>	3.0% to 4.0% Year 1	0.0% to 3.0%	3.0%	5.00% to 5.50% (CBD); 6.00% to 7.00% (suburbs)	3.0% to 3.5%	6.50% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	4.50% to 5.50% (CBD)	10 to 6	70.0% to 75.0%	3.0% to 4.5%	Does not use	4 to 6
<p><b>INVESTMENT ADVISOR ♦ Forecast Period: 7 to 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions equally favor buyers and sellers; expects overall cap rates to hold steady over the next six months.</p>	3.0% to 4.0% Years 1 & 2	3.0%	3.0%	5.00% (CBD); 5.00% to 6.00% (suburbs)	0.5% to 1.0%	5.50% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	4.00% to 5.00% (CBD); 5.00% to 6.00% (suburbs)	6 to 9	75.0% to 80.0%	2.5% to 5.0%	\$0.15 to \$0.25	1 to 3
<p><b>REAL ESTATE COMPANY ♦ Forecast Period: 10 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes.</p>	1.0% to 3.0%	2.0% to 3.0%	2.0% to 3.0%	6.00% to 6.50% (CBD); 6.50% to 7.50% (suburbs)	1.0% to 1.5%	6.50% to 7.50% (CBD); 6.50% to 8.00% (suburbs)	5.00% to 6.00% (CBD); 5.50% to 6.50% (suburbs)	7 to 10	60.0% to 70.0%	5.0% to 7.0%	Does not use	3 to 6

Source: Personal survey conducted by PwC during October 2017.



## SEATTLE OFFICE MARKET –SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS	MONTHS
<b>INVESTMENT ADVISOR</b> ♦ <b>Forecast Period: 7 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.	3.0% to 4.0%	3.0%	3.0%	5.00% to 5.50% (CBD); 5.00% to 6.50% (suburbs)	0.5% to 1.0%	5.25% to 6.50% (CBD); 5.00% to 7.00% (suburbs)	4.25% to 5.00% (CBD); 5.00% to 6.25% (suburbs)	6 to 9	70.0% to 80.0%	5.0%	\$0.15 to \$0.25	1 to 3			
<b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to hold steady over the next six months; does not use rent spikes.	2.5% to 3.0%	2.5% to 3.0%	1.5% to 3.0%	5.00% to 9.00% (CBD)	2.0% to 4.0%	8.00% to 10.00% (suburbs)	5.00% to 8.00% (CBD)	6 to 12	50.0% to 75.0%	1.0% to 2.0%	\$1.00 to \$2.00	6 to 12			
<b>INVESTMENT BANKER</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to hold steady over the next six months; may use a rent spike of 15.0% in year 5.	3.0% to 5.0% Years 1 & 2	3.0%	3.0%	6.50% to 7.25% in both CBD & suburbs	2.0%	6.50% to 8.00% in both CBD & suburbs	5.00% to 6.50% in both CBD & suburbs	4 to 6	65.0% to 75.0%	5.0% to 10.0%	\$0.15 to \$0.25	3 to 4			
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 7 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to hold steady over the next six months; no longer uses rent spikes.	3.0% to 4.0%	3.0%	3.0%	6.00% to 6.50% (CBD)	2.5% to 3.0%	6.00% to 7.50% (CBD)	4.50% to 6.00% (CBD)	5 to 8	65.0% to 70.0%	5.0% to 8.0%	\$0.20 to \$0.50	1 to 3			
<b>ASSET MANAGER</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions equally favor buyers and sellers; uses face rents and reflects concessions when they are scheduled to occur.	3.0%	3.0%	3.0%	5.50% to 5.75% (CBD); 7.00% (suburbs)	2.5% to 2.8%	6.00% to 7.75% (suburbs)	4.25% (CBD); 6.50% (suburbs)	6 to 12	70.0% to 75.0%	3.0% to 4.0%	\$0.10 to \$0.25	4 to 8			
<b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions equally favor buyers and sellers; no longer uses rent spikes.	2.0% to 3.0%	3.0%	3.0%	5.00% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	3.0% to 4.0%	6.00% to 8.00% (suburbs)	4.50% to 5.50% (CBD); 5.50% to 6.75% (suburbs)	6 to 9	70.0% to 75.0%	3.0% to 5.0%	\$0.15 to \$0.25	3 to 6			

Source: Personal survey conducted by PwC during October 2017.



**SOUTHEAST FLORIDA OFFICE MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE	MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE		FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION		
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 3 to 5 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses a rent spike; sees overall cap rates holding steady over the next six months.	3.0% to 5.0% Years 1 to 3	2.5% to 3.0%	2.0% to 2.5%	6.00% to 7.50% (CBD); 7.50% to 10.00% (suburbs)	1.5% to 2.0%	8.00% to 9.00% (CBD); 9.00% to 10.00% (suburbs)	5.00% to 7.00% (CBD); 7.00% to 9.50% (suburbs)	9 to 12	60.0% to 75.0%	6.0% to 8.0%	\$0.50 to \$1.00	3 to 5
<b>REIT</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses DCF analysis only; uses face rents and reflects concessions when they are scheduled to occur; expects overall cap rates to increase 25 to 50 basis points over the next six months; does not use rent spikes.	2.0% to 3.0% Years 1 & 2	2.5% to 3.0%	2.0% to 2.5%	5.00% to 6.00% (CBD); 6.50% to 7.50% (suburbs)	1.0% to 2.5%	6.00% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	5.00% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	6 to 12	50.0% to 80.0%	3.0% to 8.0%	\$0.25 to \$0.50	4 to 8
<b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes; sees overall cap rates holding steady over the next six months.	1.0% to 5.0% Years 1 to 3	3.0%	3.0%	5.50% to 7.50% (CBD); 6.50% to 8.00% (suburbs)	1.0% to 3.0%	6.50% to 8.00% (CBD); 7.00% to 8.50% (suburbs)	5.50% to 7.00% (CBD); 7.00% to 7.50% (suburbs)	6 to 12	65.0% to 75.0%	7.0% to 11.0%	\$0.10 to \$0.30	3 to 5
<b>PRIVATE EQUITY INVESTOR</b> ♦ <b>Forecast Period: 3 to 5 years</b> Uses mainly DCF analysis; in direct cap, capitalizes cash flow after TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; uses face rents and reflects concessions when they are scheduled to occur; sees overall cap rates holding steady over the next six months.	0.0% to 3.0% Years 1 to 3	1.0% to 3.0%	1.0% to 3.0%	7.00% to 10.50% (CBD); 8.50% to 10.00% (suburbs)	1.0% to 2.5%	8.50% to 10.00% (CBD); 10.00% to 10.50% (suburbs)	6.00% to 8.00% (CBD); 8.00% to 9.50% (suburbs)	6 to 12	40.0% to 70.0%	7.0% to 13.0%	\$0.20 to \$0.50	3 to 5
<b>REIT</b> ♦ <b>Forecast Period: 10 years</b> Valuation preference is DCF analysis; also uses direct cap; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; does not use rent spikes; prefers suburbs; sees overall cap rates holding steady over the next six months.	0.0% to 1.0%	3.0%	2.0% to 3.0%	7.75% to 8.75% (suburbs)	2.0%	8.00% to 9.50% (suburbs)	7.25% to 8.25% (suburbs)	6 to 9	65.0%	5.0%	\$0.20	6 to 12

Source: Personal survey conducted by PwC during October 2017.



## WASHINGTON, DC OFFICE MARKET – SELECT SURVEY RESPONSES

Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS			REPLACEMENT RESERVE		MARKETING TIME
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME	
<p><b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 10 years</b>                      Prefers DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; may use a rent spike of 4.0% in years 2 and 3.</p>	0.0% Year 1; 2.0% to 3.0% Year 2	3.0%	3.0%	5.25% to 5.50%	2.0%	5.75% to 6.00%	4.75% to 5.50%	3 to 9	65.0% to 70.0%	6.0% to 8.0%	\$0.15 to \$0.25	2 to 4			
<p><b>LIFE INSURANCE COMPANY</b> ♦ <b>Forecast Period: 5 to 10 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; believes market conditions favor sellers.</p>	0.0% Year 1; 0.0% to 2.0% Year 2	0.0%	2.0% to 2.5%	5.00% to 6.00%	1.0% to 3.0%	5.00% to 6.50%	4.25% to 5.75%	9 to 12	50.0% to 75.0%	0.0% to 5.0%	\$0.20 to \$0.50	1 to 3			
<p><b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b>                      Relies on DCF; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses present value analysis of effective rents; no longer uses rent spikes; believes market conditions equally favor sellers and buyers.</p>	3.0% to 4.0% Year 1; 3.0% Year 2	3.0%	2.5% to 3.0%	5.00% to 5.50%	2.0% to 2.5%	5.50% to 6.25%	4.50% to 5.25%	4 to 6	65.0% to 75.0%	1.0% to 2.0%	\$0.15 to \$0.25	2 to 5			
<p><b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; does not use rent spikes; expects overall cap rates to hold steady over the next six months.</p>	0.0% to 4.0%	3.0%	3.0%	5.00% to 6.50%	1.0% to 2.0%	5.25% to 7.00%	4.25% to 6.50%	6 to 9	70.0%	5.0%	\$0.25	3 to 6			
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 10 years</b>                      Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months; believes market conditions favor sellers.</p>	3.0%	3.0%	3.0%	5.50% to 6.00%	2.5%	6.50% to 7.00%	4.75% to 5.25%	7 to 9	65.0% to 70.0%	3.0% to 5.0%	\$0.25 to \$0.50	3 to 6			

Source: Personal survey conducted by PwC during October 2017.





**NATIONAL WAREHOUSE MARKET-SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS	MONTHS
<b>REAL ESTATE SERVICES FIRM</b> ♦ <b>Forecast Period: 5 to 15 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; may use a rent spike of 7.0% in year 1, 6.0% year 2, and 5.0% year 3.	2.5% to 7.0% Year 1	2.5%	2.5%	5.00% to 6.50%	1.0% to 2.0%	5.50% to 6.50%	4.00% to 5.00%	4.00% to 5.00%	6 to 9	65.0% to 80.0%	0.0% to 5.0%	\$0.05 to \$0.15	4 to 6		
<b>DOMESTIC PENSION FUND</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes; data refers to the national warehouse sector; expects overall cap rates to hold steady over the next six months.	2.5% to 3.0% Years 1 to 3	2.5% to 3.0%	2.5% to 3.0%	5.50% to 7.00%	1.0% to 3.0%	6.00% to 7.50%	4.50% to 6.50%	4.50% to 6.50%	6 to 12	65.0% to 75.0%	0.5% to 2.0%	\$0.10 to \$0.25	6 to 9		
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Relies mainly on direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; data refers to the U.S. Southwest region.	2.0% to 3.0%	3.0%	3.0%	6.00% to 7.00%	1.0% to 3.0%	6.50% to 7.00%	5.00% to 6.00%	5.00% to 6.00%	6 to 12	50.0% to 65.0%	3.0%	\$0.10 to \$0.35	3 to 6		
<b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Prefers DCF analysis; also uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; data refers to the national warehouse sector.	0.0% Year 1; 3.0% to 4.0% Year 2	3.0%	3.0%	5.00% to 6.00%	1.0% to 3.0%	5.75% to 6.50%	4.25% to 5.50%	4.25% to 5.50%	6 to 9	60.0% to 75.0%	5.0% to 7.0%	\$0.05 to \$0.15	3 to 6		
<b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Mainly uses DCF; in direct capitalization, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; data refers to the U.S. Southeast region; expects overall cap rates to hold steady over the next six months.	0.0% Year 1; 3.0% to 4.0% Year 2	0.0%	2.0% to 3.0%	5.75% to 6.25%	1.5% to 3.0%	6.25% to 7.25%	3.30% to 6.20%	3.30% to 6.20%	9 to 12	70.0% to 75.0%	1.0% to 4.0%	\$0.10 to \$0.20	1 to 3		
<b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Relies on DCF; also uses direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; data refers to the U.S. Southeast region.	3.0% to 4.0%	3.0%	3.0%	5.75% to 6.00%	2.0% to 3.0%	6.25% to 6.75%	5.00% to 5.25%	5.00% to 5.25%	4 to 6	65.0% to 70.0%	1.0% to 2.0%	\$0.10 to \$0.20	3 to 4		

Source: Personal survey conducted by PwC during October 2017.



**EAST NORTH CENTRAL (ENC) REGION WAREHOUSE MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS	
<b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to hold steady over the next six months; may use rent spikes.	0.0% to 3.0%	3.0%	3.0%	5.00% to 6.00%	1.0% to 2.0%	5.50% to 6.00%	4.25% to 5.25%	6 to 8	60.0% to 75.0%	4.0% to 7.0%	\$0.05 to \$0.15	2 to 3		
<b>INSTITUTIONAL INVESTOR</b> ♦ <b>Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to hold steady over the next six months; no longer uses rent spikes.	2.0% to 3.0%	3.0%	2.5% to 3.0%	6.00% to 6.25%	2.0% to 3.0%	6.50% to 6.75%	5.50% to 5.75%	6 to 9	60.0% to 70.0%	2.0% to 4.0%	\$0.10 to \$0.20	3 to 6		
<b>REAL ESTATE SERVICES FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions currently favor sellers; expects overall cap rates to hold steady over the next six months; may use a rent spike of 5.0% in years 1 to 3.	2.5% to 5.0% Years 1 & 2	2.5%	2.5%	5.50% to 6.75%	1.0% to 2.0%	5.75% to 6.75%	4.75% to 5.75%	4 to 9	65.0% to 75.0%	0.0% to 5.0%	\$0.05 to \$0.15	6 to 9		
<b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions favor sellers; expects overall cap rates to hold steady over the next six months.	3.0% Years 1 to 3	3.0%	3.0%	5.75% to 6.75%	1.0% to 4.0%	6.25% to 7.00%	5.00% to 5.50%	6 to 12	50.0% to 65.0%	3.0% to 3.0%	\$0.10 to \$0.35	3 to 6		
<b>PRIVATE EQUITY INVESTOR</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to hold steady over the next six months.	2.0% to 3.5%	3.0%	3.0%	5.50% to 7.00%	1.0% to 4.0%	5.75% to 7.00%	5.50% to 6.00%	6 to 8	60.0% to 70.0%	3.0% to 3.0%	\$0.10 to \$0.20	3 to 6		

Source: Personal survey conducted by PwC during October 2017.



**PACIFIC REGION WAREHOUSE MARKET—SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		VACANCY ASSUMPTIONS		REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME	
<p><b>PRIVATE ASSET MANAGER ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes market conditions equally favor buyers and sellers; may use a rent spike of 5.0% in years 1 and 2.</p>	0.0% Year 1; 3.0% to 5.0% Year 2	3.0%	3.0%	4.75% to 5.50%	1.0% to 3.0%	5.50% to 6.00%	3.75% to 5.00%	6 to 12	60.0% to 75.0%	5.0%	\$0.05 to \$0.15	2 to 4			
<p><b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 5 to 10 years</b> Mainly uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur; believes market conditions favor sellers; does not use rent spikes.</p>	3.0% Years 1 to 3	3.0%	3.0%	6.00% to 6.50%	3.0% to 4.0%	6.00% to 7.00%	4.25% to 5.50%	6 to 9	60.0% to 70.0%	5.0% to 7.0%	Does not use	1 to 2			
<p><b>INSTITUTIONAL INVESTOR ♦ Forecast Period: 10 years</b> Relies on DCF; also uses direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; no longer uses rent spikes; believes market conditions favor sellers.</p>	3.0% Year 1; 3.0% Year 2	3.0%	3.0%	5.00% to 5.25%	2.0% to 3.0%	5.75% to 6.25%	4.25% to 4.50%	4 to 6	65.0% to 75.0%	2.0% to 4.0%	\$0.10 to \$0.20	2 to 4			
<p><b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 5 to 10 years</b> Relies mainly on direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; uses face rents and reflects concessions when they are scheduled to occur; does not use rent spikes.</p>	4.0% Years 1 & 2	3.0%	3.0%	4.50% to 5.50%	0.7% to 3.0%	5.50% to 6.00%	3.75% to 4.25%	3 to 6	50.0% to 65.0%	3.0%	\$0.10 to \$0.35	3 to 6			
<p><b>REAL ESTATE FIRM ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face rents and reflects concessions when they are scheduled to occur.</p>	0.0% to 1.5% Year 1; 1.5% to 2.0% Year 2	2.0%	1.5% to 2.5%	7.50% to 8.00%	2.0% to 3.0%	8.00% to 8.50%	6.50% to 7.25%	4 to 8	50.0% to 5.0%	3.0% to 5.0%	\$0.10 to \$0.15	3 to 6			

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL APARTMENT MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		VACANCY		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		FF&E REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	TOTAL VACANCY	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	PER UNIT	PER UNIT	MONTHS	MONTHS		
<b>INSURANCE COMPANY ♦ Forecast Period: 10 years</b> Uses both DCF and direct capitalization; in direct cap, FF&E reserve is not deducted from NOI before capitalization; uses a separate structural replacement reserve.	0.0% to 5.0%	3.0%	3.0% to 7.0%	4.25% to 6.50%	0.5% to 4.0%	5.00% to 7.25%	3.50% to 6.00%	\$200 to \$550	3 to 6					
<b>PENSION FUND ADVISOR ♦ Forecast Period: 10 years</b> Prefers DCF analysis; also uses direct capitalization; FF&E reserve is not deducted from NOI before capitalization; does not use a separate structural replacement reserve.	0.0% to 3.0%	3.0%	3.0% to 8.0%	4.50% to 6.25%	1.5% to 4.0%	5.75% to 7.00%	4.00% to 5.50%	\$150 to \$350	2 to 3					
<b>DOMESTIC PENSION FUND ♦ Forecast Period: 1 to 10 years</b> Uses both DCF and direct capitalization; FF&E reserve is not deducted from NOI before capitalization; reflects concessions as they occur; does use a separate structural replacement reserve of \$100 to \$300 per unit.	2.5% to 3.0%	2.5% to 3.0%	3.0% to 10.0%	4.50% to 6.50%	0.5% to 3.0%	5.75% to 7.25%	3.75% to 6.00%	\$100 to \$300	3 to 9					
<b>INSTITUTIONAL INVESTOR ♦ Forecast Period: 10 years</b> Relies on DCF; FF&E reserve is not deducted from NOI before capitalization; does not use an additional structural reserve; believes current market conditions equally favor sellers and buyers.	3.0%	3.0%	4.0% to 6.0%	4.50% to 5.50%	2.0% to 3.0%	5.50% to 6.25%	4.00% to 5.00%	\$200 to \$250	2 to 3					
<b>PENSION FUND ADVISOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; FF&E reserve is deducted from NOI before capitalization; buys 150- to 400-unit apartment complexes in first- and second-tier markets nationwide; does not use a separate structural reserve.	3.0%	2.0%	7.0%	6.00% to 7.00%	1.0% to 2.0%	8.25% to 9.00%	5.75% to 7.00%	\$250 to \$350	1 to 2					
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 1 to 5 years</b> Uses both DCF and direct capitalization; FF&E reserve is deducted from NOI before capitalization; sees overall cap rates holding steady; does not use a separate structural reserve.	(1.0%) to 3.0%	2.0% to 3.0%	3.0% to 8.0%	5.00% to 7.75%	3.0% to 4.0%	7.00% to 9.50%	5.00% to 7.50%	\$200 to \$350	1 to 6					

Source: Personal survey conducted by PwC during October 2017.



**MID-ATLANTIC REGION APARTMENT MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		VACANCY		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		FF&E REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	TOTAL VACANCY	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	PER UNIT	PER UNIT	MONTHS			
<b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 3 to 5 years</b> Uses both DCF and direct capitalization; FF&E reserve is deducted from NOI before capitalization; uses a separate structural replacement reserve of \$100 to \$400 per unit; believes market conditions currently favor sellers; expects overall cap rates to hold steady over the next six months.	0.0% to 3.0%	0.0% to 3.0%	5.0% to 7.0%	5.50% to 6.50%	1.0% to 2.0%	6.00% to 9.00%	5.50% to 6.50%	\$200 to \$300	3 to 5					
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 5 to 10 years</b> Prefers DCF analysis; also uses direct capitalization; FF&E reserve is deducted from NOI before capitalization; uses a separate structural replacement reserve of \$200 to \$300 per unit.	0.0% Year 1; 3.0% to 5.0% Year 2	0.0%	2.0% to 5.0%	4.00% to 5.25%	1.0% to 4.0%	5.25% to 6.75%	3.00% to 4.90%	\$200 to \$300	1 to 3					
<b>PENSION FUND INVESTOR ♦ Forecast Period: 4 to 7 years</b> Uses all three approaches to value; FF&E reserve is not deducted from NOI before capitalization; uses a separate structural replacement reserve of \$1,000 to \$1,500 per unit; believes market conditions equally favor sellers and buyers.	2.0% to 3.0% Year 1; 3.0% Year 2	3.0%	5.0% to 7.0%	5.00% to 6.75%	2.0% to 3.0%	8.00% to 10.00%	4.25% to 6.75%	\$250 to \$350	2 to 8					
<b>PRIVATE INVESTOR ♦ Forecast Period: 5 to 10 years</b> Mainly uses direct capitalization; FF&E reserve is deducted from NOI before capitalization; also uses a separate structural replacement reserve of \$200 to \$350 per unit; expects overall cap rates to hold steady over the next six months.	1.0% to 3.0% Years 1 to 3	2.0% to 3.0%	4.0% to 7.0%	4.75% to 5.75%	0.3% to 1.5%	5.25% to 6.75%	4.25% to 5.25%	\$200 to \$350	2 to 3					
<b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 5 to 8 years</b> Mainly uses direct capitalization analysis; FF&E reserve is deducted from NOI before capitalization; believes that market conditions equally favor buyers and sellers; does not use a separate structural replacement reserve.	1.0% to 3.0% Years 1 & 2	3.0%	5.0% to 7.0%	5.50% to 6.50%	1.0% to 3.0%	7.00% to 9.00%	5.00% to 6.25%	\$200 to \$300	3 to 9					

Source: Personal survey conducted by PwC during October 2017.



**PACIFIC REGION APARTMENT MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		VACANCY		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		FF&E REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	TOTAL VACANCY	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	PER UNIT	PER UNIT	MONTHS	MONTHS		
<b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 3 to 10 years</b> Uses both DCF and direct capitalization; FF&E reserve is deducted from NOI before capitalization; uses a separate structural replacement reserve of \$250 to \$350 per unit; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0%	2.5% to 3.0%	3.5% to 5.0%	4.50% to 6.00%	0.5% to 1.5%	7.00% to 10.00%	4.00% to 6.00%	\$250 to \$350	3 to 6					
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 5 to 10 years</b> Prefers DCF analysis; also uses direct capitalization; FF&E reserve is deducted from NOI before capitalization; uses a separate structural replacement reserve of \$200 to \$300 per unit; expects overall cap rates to hold steady over the next six months.	0.0% Year 1; 3.0% to 5.0% Year 2	0.0%	4.0% to 5.0%	4.25% to 5.00%	0.8% to 3.0%	5.75% to 6.00%	3.60% to 4.10%	\$200 to \$300	1 to 3					
<b>PRIVATE REAL ESTATE FIRM ♦ Forecast Period: 5 to 8 years</b> Mainly uses direct capitalization analysis; FF&E reserve is deducted from NOI before capitalization; believes market conditions equally favor buyers and sellers; does not use a separate structural reserve.	2.0% to 3.5%	3.0%	5.0% to 6.0%	5.00% to 6.00%	1.0% to 3.0%	6.00% to 9.00%	4.50% to 5.50%	\$200 to \$300	3 to 9					
<b>REAL ESTATE ADVISOR ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; does not use an FF&E reserve; uses a separate structural replacement reserve of \$200 to \$300 per unit.	4.0%	3.0%	3.0% to 5.0%	4.00% to 5.00%	1.0% to 3.0%	5.00% to 6.50%	3.50% to 4.75%	Does not use	3 to 9					
<b>PRIVATE INVESTMENT FIRM ♦ Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; FF&E reserve is deducted from NOI before capitalization; uses a separate structural replacement reserve of \$200 to \$350 per unit; believes market conditions equally favor buyers and sellers; expects overall cap rates to hold steady over the next six months.	2.0% to 4.0% Years 1 & 2	2.0% to 2.8%	3.0% to 5.0%	4.50% to 5.50%	0.3% to 1.5%	5.25% to 6.00%	3.75% to 4.75%	\$200 to \$375	1 to 3					

Source: Personal survey conducted by PwC during October 2017.



**SOUTHEAST REGION APARTMENT MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES		VACANCY		RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)		FF&E REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	TOTAL VACANCY	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	PER UNIT	PER UNIT	PER UNIT	PER UNIT	PER UNIT	PER UNIT
<p><b>PENSION FUND INVESTOR</b> ♦ <b>Forecast Period: 4 to 7 years</b> Uses all three approaches to value; FF&amp;E reserve is not deducted from NOI before capitalization; also uses a separate structural replacement reserve of \$1,200 to \$1,500 per unit; expects overall cap rates to hold steady over the next six months.</p>	3.0% to 4.0% Years 1 & 2	3.0%	5.0% to 7.0%	5.75% to 7.00%	2.0% to 3.0%	8.00% to 10.00%	4.75% to 6.50%	\$250 to \$350	2 to 6					
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 4 years</b> Uses both DCF and direct capitalization; does not use an FF&amp;E reserve; uses a separate structural replacement reserve of \$300 to \$350 per unit; expects overall cap rates to hold steady over the next six months.</p>	2.0% to 3.5% Years 1 to 3	2.0% to 3.0%	4.0% to 7.0%	6.50% to 7.00%	1.3% to 1.5%	8.00% to 10.00%	5.50% to 6.00%	Does not use	3 to 5					
<p><b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; does not use an FF&amp;E reserve; uses a separate structural replacement reserve of \$200 to \$300 per unit; expects overall cap rates to hold steady over the next six months.</p>	4.0% Year 1; 3.0% Year 2	3.0%	5.0%	4.50% to 5.00%	1.0% to 4.0%	5.75% to 6.50%	3.50% to 4.75%	Does not use	3 to 6					
<p><b>PENSION FUND ADVISOR</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF and direct capitalization; FF&amp;E reserve is not deducted from NOI before capitalization; buys 150- to 400-unit apartment complexes; uses a separate structural reserve of \$250 to \$350 per unit; expects overall cap rates to increase up to 25 basis points over the next six months.</p>	1.0% to 3.0% Years 1 & 2	2.0% to 3.0%	4.5% to 7.0%	5.50% to 6.25%	0.8% to 1.5%	6.50% to 7.25%	4.75% to 5.75%	\$200 to \$350	1 to 3					
<p><b>REAL ESTATE ADVISOR</b> ♦ <b>Forecast Period: 1 to 5 years</b> Prefers DCF analysis; also uses direct capitalization; FF&amp;E reserve is not deducted from NOI before capitalization; uses a separate structural replacement reserve of \$300 per unit; expects overall cap rates to hold steady over the next six months.</p>	3.0% Years 1 to 3	3.0%	5.0%	4.75% to 5.25%	1.0% to 1.5%	6.00% to 7.00%	4.50% to 5.25%	\$300	2					

Source: Personal survey conducted by PwC during October 2017.





**NATIONAL NET LEASE MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	PREFERRED PROPERTY TYPE	CHANGE RATES	PREFERRED CREDIT RATING	RESIDUAL	DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	UNDERLYING VACANCY & CREDIT LOSS	REPLACEMENT RESERVE	MARKETING TIME
		MARKET RENT		CAP RATE	SELLING EXPENSES	FREE & CLEAR		PER SQUARE FOOT	MONTH
		EXPENSES							
<b>INVESTOR/BROKERS</b> ♦ <b>Forecast Period: 3 to 10 years</b> Primary valuation method is direct capitalization; also uses sales comparison approach; underlying credit rating of tenant is more important than real estate value; capitalizes NOI before TIs, leasing commissions, and capital replacement reserve.	Commodity retail, office, medical	1.0% to 3.0% Years 1 to 3	BBB- to AAA	6.00% to 9.00%	3.0% to 5.0%	8.00% to 10.00%	Does not use	Does not use	3 to 6
<b>REAL ESTATE SERVICE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Primary valuation method is direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; also uses DCF analysis; mainly focuses on net lease transactions; feels that market conditions favor sellers.	Drug stores, banks, medical, retail	1.0% to 2.0% Years 1 to 3	BBB- to A+	6.00% to 8.00%	2.0% to 4.0%	7.50% to 9.00%	10.0% to 15.0%	Does not use	2 to 6
<b>PRIVATE INVESTMENT FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Primary valuation method is DCF analysis; only completes net lease sales; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; excludes reimbursements paid by tenants as both revenues and expenses.	Automotive; general (retail)	2.0% to 4.0% Years 1 to 3	Not disclosed	7.00% to 8.00%	4.0% to 6.0%	Not disclosed	0.0%	Does not use	4 to 12
<b>INVESTMENT ADVISOR</b> ♦ <b>Forecast Period: 3 to 10 years</b> Primary valuation method is direct capitalization; also uses DCF analysis; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; mainly focuses on net lease sales and 1031 exchanges; excludes reimbursements paid by tenants as both revenues and expenses.	Restaurant	1.0% to 2.0% Years 1 to 3	BBB- to AA	7.50% to 7.75%	3.0% to 3.5%	6.00% to 7.00%	0.0% to 5.0%	Does not use	4 to 6
<b>MANAGEMENT COMPANY</b> ♦ <b>Forecast Period: 10 to 20 years</b> Mainly focuses on sale-leaseback deals and net lease sales; in direct cap, capitalizes cash flow after TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to increase 50 to 75 basis points over the next six months; excludes reimbursements paid by tenants as both revenues and expenses.	All varieties	0.0% to 2.0% Years 1 to 3	B to AAA	Not disclosed	Not disclosed	Not disclosed	Does not use	Does not use	2 to 12

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL MEDICAL OFFICE BUILDINGS MARKET – SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	INITIAL-YEAR CHANGE RATES			RESIDUAL		DISCOUNT RATE (IRR)		OVERALL CAP RATE (OAR)			VACANCY ASSUMPTIONS			REPLACEMENT RESERVE		MARKETING TIME	
	MARKET RENT	EXPENSES	CPI	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	FREE & CLEAR	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	REPLACEMENT RESERVE	MARKETING TIME			
<p><b>REIT</b> ♦ <b>Forecast Period: 1 to 10 years</b> Uses both DCF analysis and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to increase over the next six months; does not use rent spikes.</p>	2.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0%	5.00% to 6.00% (on campus); 6.00% to 7.00% (off campus)	1.0% to 2.0%	6.50% to 7.50% (on campus); 7.50% to 9.00% (off campus)	5.25% to 6.50% (on campus); 5.75% to 7.00% (off campus)	9 to 12	75.0% to 90.0%	5.0% to 10.0%	\$0.15 to \$0.60	4 to 6					
<p><b>REIT</b> ♦ <b>Forecast Period: 3 to 5 years</b> Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes market conditions favor sellers; expects overall cap rates to hold steady over the next six months.</p>	2.5% Years 1 & 2	2.5%	1.5% to 2.5%	5.50% to 6.50% (on campus); 6.00% to 7.00% (off campus)	1.0% to 2.0%	6.00% to 8.00% (on campus); 7.00% to 10.00% (off campus)	5.50% to 6.50% (on campus); 6.00% to 7.00% (off campus)	9 to 12	80.0% to 90.0%	0.0%	\$0.25 to \$0.45	3 to 6					
<p><b>REAL ESTATE SERVICE FIRM</b> ♦ <b>Forecast Period: 8 to 11 years</b> Uses all approaches to value; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions; expects overall cap rates to hold steady over the next six months; does not use rent spikes.</p>	2.0% to 3.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	5.25% to 7.00% for both on campus and off campus	1.0% to 2.0%	6.00% to 7.75% (on campus); 6.00% to 8.00% (off campus)	5.00% to 6.75% for both on campus and off campus	6 to 12	70.0% to 85.0%	2.0% to 5.0%	\$0.15 to \$0.25	2 to 4					
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 3 to 7 years</b> Uses all approaches to value; indirect cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; expects overall cap rates to hold steady over the next six months.</p>	0.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0% to 3.0%	7.00% to 8.50% (on campus); 8.00% to 10.25% (off campus)	1.0% to 3.0%	7.00% to 9.00% (on campus); 8.00% to 11.00% (off campus)	6.75% to 8.50% (on campus); 7.75% to 10.00% (off campus)	6 to 18	70.0% to 80.0%	5.0% to 10.0%	\$0.10 to \$0.30	4 to 6					
<p><b>PRIVATE REAL ESTATE FIRM</b> ♦ <b>Forecast Period: 5 to 10 years</b> Uses both DCF analysis and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions.</p>	1.0% to 3.0%	1.0% to 4.0%	2.0% to 5.0%	5.25% to 9.00% (on campus); 5.50% to 10.00% (off campus)	0.5% to 4.0%	5.50% to 9.00% (on campus); 5.75% to 10.00% (off campus)	4.50% to 8.50% (on campus); 4.75% to 10.00% (off campus)	6 to 12	75.0% to 90.0%	0.0% to 10.0%	\$0.15 to \$0.30	1 to 12					

Source: Personal survey conducted by PwC during October 2017.



**NATIONAL DEVELOPMENT LAND MARKET –SELECT SURVEY RESPONSES**  
Fourth Quarter 2017

	PROPERTY TYPES	PREFERRED ABSORPTION	CHANGE RATES		MARKET CONDITIONS	DISCOUNT RATE (IRR)	DEVELOPERS' PROFIT	FORECAST VALUE CHANGE NEXT 12 MONTHS	MARKETING PERIOD
			LOT PRICES	DEVELOPMENT COSTS (1)					
<b>DEVELOPER</b> Primary method of pricing is comparable sales; analysis is prepared subject to financing; project size ranges from 300 to 2000 acres; value of land currently under development ranges from \$30.0 to \$500.0 million; development is concentrated in Hawaii, California, Mexico, Montana, New York, and Nevada.	Single-family luxury	11 to 20	3.0% to 5.0%	3.0% to 5.0%	Both buyers and sellers equally	18.00% to 20.00%	Included in the discount rate	2.0% to 3.0%	12 to 36
<b>PRIVATE INVESTMENT COMPANY</b> Primary method of pricing is DCF; analysis is prepared free and clear of financing; project size ranges from one to 15 acres; value of land currently under development ranges from \$5.0 to \$10.0 million; prefers Texas markets.	Retail	1 to 5	Did not disclose	% of specific revenue	Buyers	10.00% to 15.00%	Included in the discount rate	(5.0%) to 5.0%	6 to 24
<b>DEVELOPER</b> Primary method of pricing is comparable sales; analysis is prepared free and clear of financing; project size ranges from 5 to 250 acres; value of land currently under development totals between \$15.0 and \$20.0 million; development is concentrated in the Midwest.	Industrial and commercial	Over 20	Did not disclose	% of specific revenue	Buyers	10.00% to 15.00%	Included in the discount rate	5.0% to 10.0%	12 to 24
<b>DEVELOPER</b> Primary method of pricing is DCF; analysis is prepared free and clear of financing; project size ranges from 2 to 1,200 acres; development is concentrated in Arizona, California, Alaska, and Washington; value of land currently under development ranges from \$135.0 to \$145.0 million.	Apartment, single-family residential, and industrial	6 to 10	4.0% to 6.0%	1.0% to 6.0%	Both buyers and sellers equally	14.00% to 18.00%	Included in the discount rate	2.0% to 5.0%	8 to 12
<b>DEVELOPER</b> Primary method of pricing is comparable sales; analysis is prepared subject to financing; value of land currently under development is up to \$100.0 million; development is concentrated in Arizona, California, and Hawaii.	Single-family residential	6 to 10	1.0% to 3.0%	3.0%	Buyers	16.00% to 18.00%	Included in the discount rate	4.0%	15

Source: Personal survey conducted by PwC during October 2017; (1) If a % is given it reflects the compound annual rate of growth applied to a specific dollar amount.



## INVESTMENT AND PROPERTY CHARACTERISTICS: OFFICE MARKETS

Fourth Quarter 2017

MARKET	FORECAST VALUE CHANGE NEXT 12 MONTHS			PRICE AS % OF REPLACEMENT COST			STRUCTURAL VACANCY			YEARS TO REACH STRUCTURAL VACANCY			TENANT IMPROVEMENT ALLOWANCE (PSE) NEW DEALS (1)			AVERAGE
	RANGE	AVERAGE	RANGE	RANGE	AVERAGE	RANGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	
National CBD	(5.0%) – 15.0%	2.3%	65.0% – 125.0%	100.5%	2.0% – 15.0%	7.0%	0 – 3	1.8	\$10.00 – \$100.00	\$43.33	\$5.00 – \$35.00	\$17.50				
National Suburban	(10.0%) – 10.0%	1.4%	70.0% – 110.0%	90.5%	3.0% – 15.0%	8.8%	0 – 5	1.6	\$5.00 – \$100.00	\$35.00	\$5.00 – \$25.00	\$14.79				
National Secondary	(10.0%) – 10.0%	0.8%	50.0% – 120.0%	80.6%	0.0% – 15.0%	8.5%	1 – 5	2.6	\$6.00 – \$100.00	\$32.53	\$5.00 – \$25.00	\$11.28				
Atlanta	0.0% – 6.0%	2.6%	55.0% – 100.0%	84.0%	4.0% – 10.0%	7.6%	0 – 3	1.5	\$10.00 – \$70.00	\$34.88	\$0.00 – \$20.00	\$11.90				
Austin	0.0% – 15.0%	3.1%	100.0% – 115.0%	104.5%	5.0% – 10.0%	6.9%	0 – 3	1.1	\$3.00 – \$65.00	\$36.05	\$0.00 – \$20.00	\$9.75				
Boston	(5.0%) – 5.0%	1.9%	50.0% – 100.0%	83.8%	5.0% – 12.0%	7.9%	0 – 5	1.1	\$10.00 – \$90.00	\$49.58	\$5.00 – \$40.00	\$18.75				
Charlotte	(5.00%) – 15.0%	3.3%	80.0% – 120.0%	96.3%	0.0% – 12.0%	6.1%	0 – 4	1.8	\$10.00 – \$40.00	\$33.75	\$0.00 – \$0.00	\$13.33				
Chicago	0.0% – 10.0%	1.9%	25.0% – 120.0%	83.9%	5.0% – 20.0%	10.9%	0 – 5	2.6	\$10.00 – \$125.00	\$53.39	\$5.00 – \$40.00	\$20.24				
Dallas	(2.0%) – 20.0%	2.8%	50.0% – 110.0%	93.1%	5.0% – 15.0%	8.3%	0 – 2	0.8	\$5.00 – \$75.00	\$37.17	\$5.00 – \$35.00	\$16.00				
Denver	(10.0%) – 4.0%	0.3%	50.0% – 150.0%	102.5%	5.0% – 10.0%	6.6%	0 – 3	0.9	\$15.00 – \$65.00	\$36.25	\$3.00 – \$25.00	\$12.17				
Houston	(20.0%) – 5.0%	(4.0%)	50.0% – 110.0%	85.7%	5.0% – 15.0%	9.8%	1 – 5	3.3	\$8.00 – \$80.00	\$39.13	\$3.00 – \$45.00	\$19.00				
Los Angeles	(10.0%) – 10.0%	3.2%	50.0% – 140.0%	94.1%	2.0% – 15.0%	8.2%	0 – 7	2.1	\$8.00 – \$125.00	\$47.50	\$0.00 – \$50.00	\$16.45				
Manhattan	(1.0%) – 7.0%	2.3%	50.0% – 100.0%	84.5%	0.0% – 12.0%	6.2%	0 – 8	2.4	\$10.00 – \$125.00	\$62.50	\$10.00 – \$50.00	\$28.33				
Northern Virginia	(10.0%) – 10.0%	1.3%	60.0% – 100.0%	91.3%	5.0% – 12.0%	7.7%	0 – 10	3.4	\$20.00 – \$125.00	\$51.25	\$5.00 – \$80.00	\$22.67				
Pacific Northwest	(5.0%) – 15.0%	2.1%	50.0% – 125.0%	99.3%	3.0% – 15.0%	7.7%	1 – 5	2.1	\$10.00 – \$100.00	\$50.11	\$0.00 – \$50.00	\$19.32				
Philadelphia	0.0% – 5.0%	2.0%	50.0% – 100.0%	78.8%	4.0% – 12.0%	6.9%	1 – 7	3.0	\$5.00 – \$75.00	\$36.88	\$5.00 – \$20.00	\$10.63				
Phoenix	(5.0%) – 15.0%	3.5%	70.0% – 110.0%	89.5%	5.0% – 20.0%	10.3%	0 – 4	1.8	\$2.00 – \$75.00	\$60.00	\$0.00 – \$35.00	\$35.00				
San Diego	(5.0%) – 10.0%	2.3%	60.0% – 110.0%	92.5%	3.0% – 12.0%	6.6%	0 – 4	1.9	\$10.00 – \$80.00	\$38.44	\$0.00 – \$20.00	\$10.63				
San Francisco	(10.0%) – 5.0%	0.6%	85.0% – 130.0%	101.8%	3.0% – 10.0%	6.6%	0 – 3	0.9	\$10.00 – \$150.00	\$54.75	\$0.00 – \$35.00	\$18.50				
Seattle	0.0% – 15.0%	4.3%	50.0% – 110.0%	89.6%	3.0% – 15.0%	7.6%	0.5 – 5	2.5	\$10.00 – \$100.00	\$50.63	\$0.00 – \$50.00	\$20.42				
Southeast Florida	(2.5%) – 15.0%	3.1%	50.0% – 100.0%	77.5%	4.0% – 25.0%	9.6%	0 – 5	1.9	\$0.00 – \$75.00	\$33.13	\$5.00 – \$40.00	\$15.63				
Suburban Maryland <sup>(2)</sup>																
Washington, DC	0.0% – 5.0%	1.4%	90.0% – 115.0%	101.3%	2.0% – 8.0%	5.5%	0 – 3	0.8	\$25.00 – \$150.00	\$69.38	\$10.00 – \$115.00	\$32.92				

(1) Includes both second-generation and new space; a breakout of TI allowances is included in each fourth quarter issue of the Survey.

(2) Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



## INVESTMENT AND PROPERTY CHARACTERISTICS: NATIONAL AND REGIONAL MARKETS

Fourth Quarter 2017

MARKET	FORECAST VALUE CHANGE NEXT 12 MONTHS		PRICE AS % OF REPLACEMENT COST		CLASS-A+ and A MALLS IRRs		CLASS-B+ and B MALLS IRRs		OARs		STABILIZED OCCUPANCY			
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE		
National Regional Mall	(12.0%) – 5.0%	0.8%	50.0% – 125.0%	97.5%	5.00% – 9.00%	6.80%	4.00% – 6.50%	5.09%	7.00% – 11.50%	8.94%	5.50% – 10.00%	7.67%	80.0% – 99.0%	92.4%
National Power Center	(5.0%) – 5.0%	(0.3%)	80.0% – 110.0%	98.3%									80.0% – 96.0%	91.9%
National Strip Shopping Center	(10.0%) – 5.0%	(1.2%)	50.0% – 125.0%	97.5%									85.0% – 97.0%	92.1%
MARKET	FORECAST VALUE CHANGE NEXT 12 MONTHS		PRICE AS % OF REPLACEMENT COST		FINISHED SPACE %		TENANT IMPROVEMENT ALLOWANCES (PSF) NEW DEALS (1)		RENEWAL LEASES					
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE				
National Flex/R&D(2)														
Warehouse (National)	0.0% – 10.0%	4.1%	95.0% – 140.0%	106.8%	0.0% – 20.0%	7.5%	\$0.00 – \$75.00	\$6.24	\$0.00 – \$2.50	\$0.80				
Warehouse (ENC Region)	0.0% – 10.0%	3.5%	90.0% – 125.0%	102.5%	0.0% – 15.0%	6.6%	\$0.00 – \$5.00	\$1.56	\$0.00 – \$2.50	\$0.69				
Warehouse (Pacific Region)	0.0% – 10.0%	2.2%	80.0% – 110.0%	100.1%	0.0% – 15.0%	6.7%	\$0.00 – \$5.00	\$1.57	\$0.00 – \$5.00	\$1.18				
Apartment (National)	(5.0%) – 10.0%	2.6%	80.0% – 125.0%	100.8%										
Apartment (Mid-Atlantic Region)	(3.0%) – 5.0%	0.9%	80.0% – 125.0%	99.0%										
Apartment (Pacific Region)	(10.0%) – 15.0%	1.9%	80.0% – 135.0%	105.8%										
Apartment (Southeast Region)	0.0% – 5.0%	0.8%	85.0% – 105.0%	93.8%										
National Net Lease	(20.0%) – 5.0%	(5.0%)	90.0% – 140.0%	113.3%										
National Medical Office Buildings	(10.0%) – 10.0%	0.4%	100.0% – 150.0%	116.3%										
National Student Housing	(3.0%) – 10.0%	3.3%	90.0% – 125.0%	111.0%										

(1) Includes both second-generation and new space; a breakout of TI allowances is included in each fourth quarter issue of the Survey.

(2) Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



## YIELD COMPARISONS

October 1, 2017

	2012 AVERAGE	2013 AVERAGE	2014 AVERAGE	2015 AVERAGE	2016 AVERAGE	2017 JANUARY	2017 APRIL	2017 JULY	2017 OCTOBER
PwC Yield Indicator (PYI) <sup>a</sup>	8.77%	8.39%	8.11%	7.82%	7.70%	7.66%	7.65%	7.67%	7.63%
Long-Term Mortgages <sup>b</sup>	4.48%	4.16%	4.48%	4.31%	4.18%	4.65%	4.63%	4.53%	4.56%
10-Year Treasuries <sup>c</sup>	1.86%	2.22%	2.69%	2.34%	1.81%	2.45%	2.35%	2.35%	2.34%
Consumer Price Index Change <sup>d</sup>	2.16%	0.97%	1.66%	0.19%	1.63%	1.84%	2.78%	0.43%	3.07%
<b>SPREAD TO PYI (Basis Points)</b>									
Long-Term Mortgages	429	423	363	351	352	301	302	314	307
10-Year Treasuries	691	617	542	548	589	521	530	532	529
Consumer Price Index Change	661	742	645	763	607	582	487	724	456

a. A composite IRR average of all markets surveyed (excluding hotels, development land, and student housing).

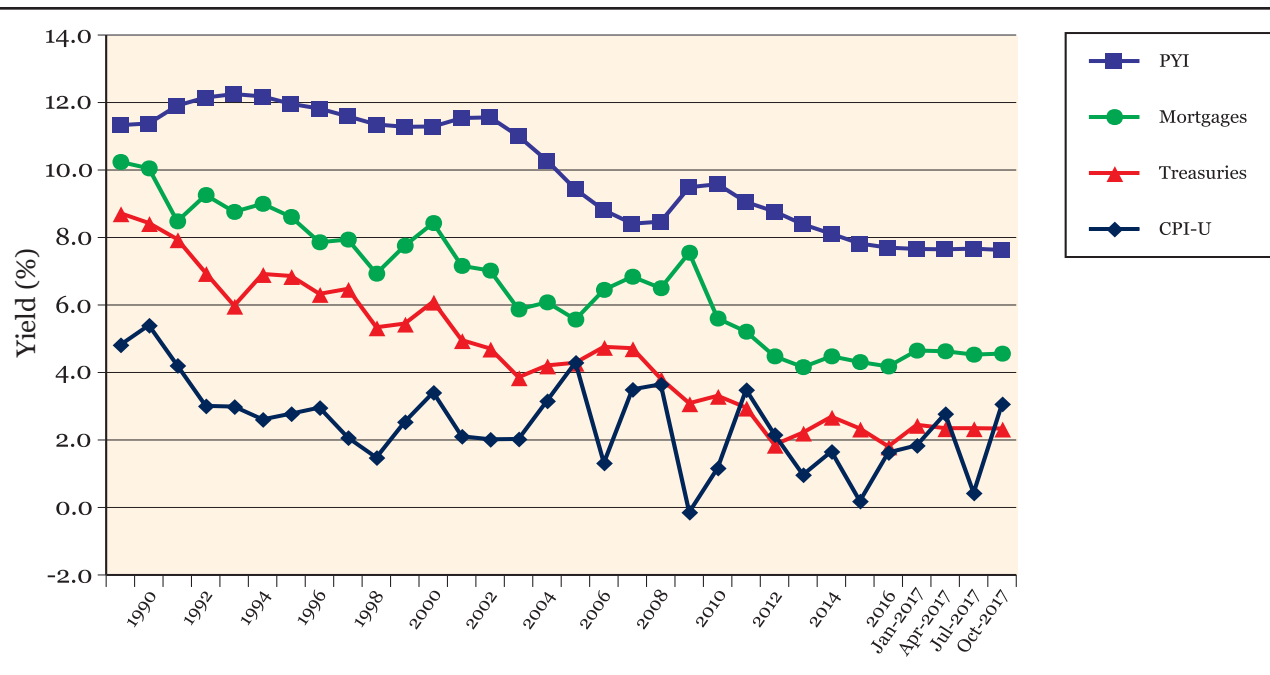
b. Source: CB Richard Ellis/L.J. Melody Capital Markets, Global Commercial Banc, Commercial Loan Direct; reflects conventional funding, 60% to 80% LTV commercial loans; fixed rates; 6- to 30-year terms.

c. Source: Federal Reserve; the annual average change is the mean of the four corresponding quarters.

d. Source: U.S. Department of Labor; quarterly changes are annualized based on the index change from the prior quarter; the annual average change is the mean of the four corresponding quarters.

## COMPARATIVE YIELDS

October 1, 2017



## DIVIDEND COMPARISONS

October 1, 2017

	2012 AVERAGE	2013 AVERAGE	2014 AVERAGE	2015 AVERAGE	2016 AVERAGE	2017 JANUARY	2017 APRIL	2017 JULY	2017 OCTOBER
PwC Dividend Indicator (PDI) <sup>a</sup>	7.27%	6.92%	6.66%	6.38%	6.26%	6.24%	6.24%	6.21%	6.13%
Equity REITs <sup>b</sup>	3.59%	3.68%	3.80%	3.64%	3.88%	4.00%	4.01%	3.99%	4.07%
S&P 500 <sup>c</sup>	2.04%	2.09%	1.92%	2.03%	2.11%	2.04%	1.96%	1.95%	1.91%
<b>SPREAD TO PDI (Basis Points)</b>									
Equity REITs	368	324	286	274	238	224	223	222	206
S&P 500	523	483	474	435	415	420	428	426	422

a. A composite OAR (initial rate of return in an all-cash transaction) average of all markets surveyed (excluding hotels and student housing).

b. Source: National Association of Real Estate Investment Trusts; dividend yields are as of the last day of the prior quarter until April 2013; then, starting month of quarter.

c. Source: Standard & Poors; dividend yields are quarterly yields as of the last day of the prior quarter.

**INSTITUTIONAL-GRADE VS. NONINSTITUTIONAL-GRADE PROPERTY RATES: OFFICE MARKETS**  
Fourth Quarter 2017

MARKET	INSTITUTIONAL IRRs			OARS			NONINSTITUTIONAL (BASIS-POINT SPREAD TO INSTITUTIONAL RATES) OARS			
	RANGE	AVERAGE	RANGE	RANGE	AVERAGE	RANGE	RANGE	AVERAGE	RANGE	AVERAGE
National CBD Office	5.50% – 9.00%	7.05%	3.50% – 8.00%	5.73%	(a)	(a)	(a)	(a)	(a)	(a)
National Suburban Office	6.00% – 12.00%	8.34%	4.20% – 10.00%	6.72%	(a)	(a)	(a)	(a)	(a)	(a)
National Secondary Office	6.50% – 13.00%	9.05%	5.00% – 9.50%	7.51%	50 – 400	50 – 250	188	50 – 250	127	(a)
Atlanta Office	6.00% – 10.75%	8.29%	5.25% – 9.00%	7.14%	(a)	(a)	(a)	(a)	(a)	(a)
Austin Office	5.50% – 10.00%	7.63%	4.50% – 8.50%	6.02%						
Boston Office	5.75% – 10.00%	7.42%	4.00% – 9.50%	6.01%	100 – 500	100 – 250	225	100 – 250	181	(a)
Charlotte Office	6.50% – 10.00%	8.18%	5.00% – 8.00%	6.75%	50 – 400	100 – 250	238	100 – 250	167	(a)
Chicago Office	6.00% – 12.00%	8.68%	4.75% – 10.00%	7.38%	50 – 800	50 – 600	275	50 – 600	173	(a)
Dallas Office	6.00% – 11.00%	7.84%	5.00% – 8.50%	6.47%	(a)	(a)	(a)	(a)	(a)	(a)
Denver Office	6.50% – 11.00%	7.95%	5.00% – 9.00%	6.53%	(a)	(a)	(a)	(a)	(a)	(a)
Houston Office	6.50% – 13.00%	8.65%	5.75% – 10.00%	7.26%	75 – 500	50 – 300	204	50 – 300	146	(a)
Los Angeles Office	5.00% – 11.00%	7.73%	4.00% – 8.00%	5.90%	25 – 300	25 – 150	128	25 – 150	88	(a)
Manhattan Office	5.50% – 9.00%	6.81%	3.00% – 6.00%	4.60%	(a)	(a)	(a)	(a)	(a)	(a)
Northern Virginia Office	6.00% – 9.50%	7.71%	5.00% – 8.50%	6.77%	(a)	(a)	(a)	(a)	(a)	(a)
Pacific Northwest Office	5.25% – 10.00%	7.45%	4.25% – 9.00%	6.05%	75 – 500	50 – 300	246	50 – 300	121	(a)
Philadelphia Office	7.00% – 11.00%	8.63%	5.00% – 10.00%	7.20%	(a)	(a)	(a)	(a)	(a)	(a)
Phoenix Office	7.00% – 11.00%	8.75%	5.00% – 8.00%	6.52%	(a)	(a)	(a)	(a)	(a)	(a)
San Diego Office	6.50% – 12.00%	8.26%	5.25% – 8.50%	6.51%	(a)	(a)	(a)	(a)	(a)	(a)
San Francisco Office	5.00% – 9.50%	6.86%	3.50% – 8.00%	5.47%	(a)	(a)	(a)	(a)	(a)	(a)
Seattle Office	5.25% – 10.00%	7.22%	4.25% – 8.00%	5.61%	(a)	(a)	(a)	(a)	(a)	(a)
Southeast Florida Office	6.00% – 10.50%	8.31%	5.00% – 9.50%	6.93%	(a)	(a)	(a)	(a)	(a)	(a)
Suburban Maryland Office <sup>(b)</sup>										
Washington, DC Office	5.00% – 7.00%	6.19%	4.25% – 6.50%	5.08%	75 – 200	50 – 200	108	50 – 200	125	(a)

(a) Participants are not currently pursuing noninstitutional investments in this market.

(b) Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.





**INSTITUTIONAL-GRADE VS. NONINSTITUTIONAL-GRADE PROPERTY RATES: NATIONAL AND REGIONAL MARKETS**  
Fourth Quarter 2017

MARKET	INSTITUTIONAL IRRS			NONINSTITUTIONAL (BASIS-POINT SPREAD TO INSTITUTIONAL RATES) OARS		
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National Regional Mall	5.00% – 11.50%	7.60%	4.00% – 10.00%	6.25%	(a)	(a)
National Power Center	6.00% – 10.00%	7.62%	5.25% – 9.00%	6.73%	50 – 300	50 – 150
National Strip Shopping Center	5.50% – 10.50%	7.50%	4.00% – 9.50%	6.38%	50 – 800	25 – 500
National Flex/R&D(b)						
Warehouse (National)	5.50% – 9.00%	6.60%	3.30% – 6.90%	5.06%	50 – 400	50 – 250
Warehouse (ENC Region)	5.50% – 7.00%	6.33%	4.25% – 6.00%	5.33%	(a)	(a)
Warehouse (Pacific Region)	5.50% – 8.50%	6.45%	3.75% – 7.25%	4.90%	(a)	(a)
National Apartment	5.50% – 10.00%	7.26%	3.50% – 7.50%	5.32%	25 – 400	25 – 400
Apartment (Mid-Atlantic Region)	5.25% – 10.00%	7.30%	3.00% – 6.75%	5.17%	25 – 400	25 – 400
Apartment (Pacific Region)	5.00% – 10.00%	6.65%	3.50% – 6.00%	4.45%	(a)	(a)
Apartment (Southeast Region)	5.75% – 10.00%	7.50%	3.50% – 6.50%	5.13%	(a)	(a)
National Medical Office Buildings	5.50% – 11.00%	7.73%	4.50% – 10.00%	6.69%	100 – 300	50 – 300

(a) Participants are not currently pursuing noninstitutional investments in this market.

(b) Due to inactivity among our surveyed investors, we are suspending the reporting of data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



## INCOME CAPITALIZED IN DIRECT CAPITALIZATION

Fourth Quarter 2017

MARKET	PERCENTAGE OF SURVEY RESPONDENTS USING:					
	METHOD 1 (a)		METHOD 2 (a)		METHOD 3 (a)	
	CURRENT	YEAR AGO	CURRENT	YEAR AGO	CURRENT	YEAR AGO
<b>National Retail</b>						
Regional Mall	20.0%	20.0%	80.0%	80.0%	0.0%	0.0%
Power Center	14.0%	33.0%	86.0%	67.0%	0.0%	0.0%
Strip Shopping Center	14.0%	11.0%	86.0%	89.0%	0.0%	0.0%
<b>Office</b>						
National CBD	0.0%	14.0%	100.0%	86.0%	0.0%	0.0%
National Suburban	29.0%	25.0%	71.0%	63.0%	0.0%	13.0%
National Secondary	13.0%	10.0%	88.0%	90.0%	0.0%	0.0%
Atlanta	0.0%	0.0%	80.0%	83.0%	20.0%	17.0%
Austin	0.0%		100.0%		0.0%	
Boston	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Charlotte	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Chicago	29.0%	29.0%	71.0%	71.0%	0.0%	0.0%
Dallas	17.0%	14.0%	83.0%	86.0%	0.0%	0.0%
Denver	40.0%	33.0%	60.0%	67.0%	0.0%	0.0%
Houston	20.0%	43.0%	60.0%	43.0%	20.0%	14.0%
Los Angeles	13.0%	20.0%	88.0%	80.0%	0.0%	0.0%
Manhattan	17.0%	0.0%	83.0%	100.0%	0.0%	0.0%
Northern Virginia	50.0%	40.0%	50.0%	60.0%	0.0%	0.0%
Pacific Northwest	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Philadelphia	0.0%	20.0%	100.0%	80.0%	0.0%	0.0%
Phoenix	17.0%	20.0%	83.0%	80.0%	0.0%	0.0%
San Diego	60.0%	60.0%	40.0%	40.0%	0.0%	0.0%
San Francisco	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Seattle	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Southeast Florida	20.0%	33.0%	60.0%	50.0%	20.0%	17.0%
Suburban Maryland		40.0%		60.0%		0.0%
Washington, DC	33.0%	33.0%	67.0%	67.0%	0.0%	0.0%
<b>Industrial</b>						
National Flex/R&D		0.0%		100.0%		0.0%
National Warehouse	20.0%	20.0%	80.0%	80.0%	0.0%	0.0%
ENC Region Warehouse	20.0%	20.0%	80.0%	80.0%	0.0%	0.0%
Pacific Region Warehouse	40.0%	40.0%	60.0%	60.0%	0.0%	0.0%
<b>Apartments<sup>b</sup></b>						
National	50.0%	50.0%	50.0%	50.0%		
Mid-Atlantic Region	80.0%	80.0%	20.0%	20.0%		
Pacific Region	100.0%	100.0%	0.0%	0.0%		
Southeast Region	0.0%	0.0%	100.0%	100.0%		
<b>National Net Lease</b>	40.0%	60.0%	40.0%	20.0%	20.0%	20.0%
<b>National Medical Office Buildings</b>	40.0%	29.0%	60.0%	71.0%	0.0%	0.0%
<b>Note:</b> Lines may not add to up to 100% due to rounding.						
a. <b>Method 1:</b> NOI after deducting capital replacement reserve but before deducting TIs (tenant improvements) and leasing commissions. <b>Method 2:</b> NOI before deducting capital replacement reserve, TIs, and leasing commissions. <b>Method 3:</b> Cash flow after deducting capital replacement reserve, TIs, and leasing commissions.						
b. <b>Method 1:</b> deducts FF&E reserve from NOI prior to direct capitalization. <b>Method 2:</b> does not deducts FF&E reserve from NOI prior to direct capitalization.						

## LODGING INCOME CAPITALIZED IN DIRECT CAPITALIZATION

Third Quarter 2017

SEGMENT	PRIOR 12 MONTHS <sup>a</sup>		FORECAST 12 MONTHS <sup>b</sup>		BOTH <sup>c</sup>	
	CURRENT	YEAR AGO	CURRENT	YEAR AGO	CURRENT	YEAR AGO
Full Service	17.0%	0.0%	50.0%	40.0%	33.0%	60.0%
Limited-Service Midscale & Economy	25.0%	60.0%	75.0%	40.0%	0.0%	0.0%
Luxury/Upper Upscale	40.0%	17.0%	40.0%	33.0%	20.0%	50.0%
Select Service	60.0%	60.0%	20.0%	20.0%	20.0%	20.0%
<b>Note:</b> Lines may not add to up to 100% due to rounding.						
a. Percentage of our lodging participants who capitalize the prior 12 months of income in direct capitalization.						
b. Percentage of our lodging participants who capitalize the next 12 months of income in direct capitalization.						
c. Percentage of our lodging participants who analyze both the prior 12 months of income and the next 12 months of income in direct capitalization.						

## FORECAST PERIODS AND CHANGE RATES: OFFICE MARKETS

Fourth Quarter 2017

MARKET	FORECAST PERIOD			MARKET RENT CHANGE RATES			EXPENSE CHANGE RATES			
	RANGE	AVERAGE	INITIAL YEAR	RANGE	AVERAGE	INITIAL YEAR	RANGE	AVERAGE	INITIAL YEAR	
National CBD Office	5 - 12	9	0.00% - 5.00%	2.61%	0.00% - 4.00%	2.63%	2.00% - 4.00%	2.82%	1.00% - 4.00%	2.70%
National Suburban Office	4 - 10	9	0.00% - 5.00%	1.86%	0.00% - 4.00%	2.22%	0.00% - 4.00%	2.68%	2.00% - 4.00%	2.90%
National Secondary Office	1 - 10	7	0.00% - 5.00%	2.34%	1.00% - 6.00%	3.28%	1.50% - 3.00%	2.53%	1.50% - 3.00%	2.58%
Atlanta Office	3 - 10	9	0.00% - 4.00%	2.50%	0.00% - 3.50%	2.55%	1.50% - 3.50%	2.68%	1.50% - 3.50%	2.83%
Austin Office	3 - 15	7	1.50% - 10.00%	4.35%	2.50% - 6.00%	3.35%	2.00% - 5.00%	2.85%	2.00% - 4.00%	2.65%
Boston Office	3 - 11	9	0.00% - 5.00%	3.17%	0.00% - 3.30%	2.78%	1.00% - 3.00%	2.79%	1.00% - 3.00%	2.79%
Charlotte Office	3 - 10	7	0.00% - 4.50%	2.71%	2.00% - 5.00%	2.92%	1.50% - 4.00%	2.71%	1.75% - 4.00%	2.85%
Chicago Office	3 - 10	9	0.00% - 3.00%	1.57%	2.00% - 4.00%	2.98%	2.00% - 6.00%	3.14%	0.00% - 4.00%	2.83%
Dallas Office	3 - 10	8	2.00% - 5.00%	2.79%	2.00% - 6.00%	3.31%	2.00% - 3.00%	2.88%	2.50% - 6.00%	3.46%
Denver Office	3 - 11	8	0.00% - 3.00%	2.40%	0.00% - 3.00%	2.38%	2.00% - 3.00%	2.90%	2.00% - 3.00%	2.88%
Houston Office	3 - 10	7	(8.00%) - 3.00%	(1.50%)	(2.50%) - 9.00%	1.65%	0.00% - 3.00%	2.50%	0.00% - 9.00%	3.33%
Los Angeles Office	1 - 12	7	1.50% - 6.00%	3.81%	1.50% - 5.00%	3.56%	2.00% - 3.50%	2.84%	2.00% - 3.50%	2.84%
Manhattan Office	3 - 12	8	0.00% - 5.00%	2.67%	0.00% - 4.00%	2.73%	1.00% - 3.00%	2.67%	1.00% - 3.00%	2.67%
Northern Virginia Office	3 - 10	7	0.00% - 3.00%	1.63%	1.00% - 4.00%	2.52%	0.00% - 3.00%	2.17%	2.00% - 3.00%	2.58%
Pacific Northwest Office	5 - 12	8	2.00% - 5.00%	3.07%	2.00% - 5.00%	3.00%	2.50% - 3.00%	2.95%	2.50% - 3.00%	2.95%
Philadelphia Office	1 - 10	6	0.00% - 5.00%	2.60%	0.00% - 4.50%	2.80%	1.00% - 3.00%	2.50%	1.00% - 3.00%	2.50%
Phoenix Office	3 - 12	8	2.00% - 6.00%	3.50%	2.00% - 5.00%	3.37%	1.00% - 4.00%	2.67%	1.00% - 4.00%	2.67%
San Diego Office	1 - 10	8	2.00% - 5.00%	3.60%	1.50% - 5.00%	3.19%	2.00% - 3.00%	2.80%	2.00% - 3.00%	2.75%
San Francisco Office	5 - 10	9	1.00% - 5.00%	3.10%	(5.00%) - 4.00%	2.20%	0.00% - 3.00%	2.60%	2.00% - 3.00%	2.90%
Seattle Office	5 - 10	8	2.00% - 5.00%	3.21%	2.00% - 5.00%	3.25%	2.50% - 3.00%	2.96%	2.50% - 3.00%	2.96%
Southeast Florida Office	3 - 10	7	0.00% - 5.00%	2.30%	0.00% - 5.00%	2.75%	1.00% - 3.00%	2.70%	1.00% - 3.00%	2.69%
Suburban Maryland Office <sup>(1)</sup>										
Washington, DC Office	5 - 10	9	0.00% - 4.00%	1.67%	1.50% - 3.50%	2.63%	0.00% - 3.00%	2.33%	1.50% - 3.00%	2.71%

(1) Due to inactivity among our surveyed investors, we are suspending the reporting data for this market at this time.

Source: Personal survey conducted by PwC during October 2017.



**FORECAST PERIODS AND CHANGE RATES: NATIONAL AND REGIONAL MARKETS**  
Fourth Quarter 2017

MARKET	FORECAST PERIOD		MARKET RENT CHANGE RATES		EXPENSE CHANGE RATES		FORECAST PERIOD AVERAGE		FORECAST PERIOD AVERAGE	
	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National Regional Mall	1 – 10	7	1.00% – 4.00%	2.40%	2.00% – 5.00%	3.00%	2.00% – 4.00%	2.83%	2.00% – 4.00%	3.00%
National Power Center	1 – 12	8	0.00% – 5.00%	1.68%	0.00% – 5.00%	2.50%	1.00% – 3.00%	2.50%	1.00% – 3.00%	2.93%
National Strip Shopping Center	1 – 10	7	0.00% – 3.00%	1.82%	2.00% – 3.00%	2.69%	0.00% – 3.00%	2.69%	1.00% – 4.00%	2.57%
National Flex/R&D(1)										
Warehouse (National)	3 – 15	9	0.00% – 7.00%	2.50%	2.50% – 5.00%	3.14%	0.00% – 3.00%	2.33%	0.00% – 3.00%	2.33%
Warehouse (East North Central Region)	3 – 10	8	0.00% – 5.00%	2.70%	2.50% – 3.50%	3.00%	2.50% – 3.00%	2.90%	0.00% – 3.00%	2.90%
Warehouse (Pacific Region)	5 – 10	9	0.00% – 4.00%	2.25%	2.00% – 4.00%	3.05%	2.00% – 3.00%	2.80%	0.00% – 3.00%	2.80%
Apartment (National)	1 – 10	7	(1.00%) – 5.00%	2.58%	0.00% – 3.50%	2.73%	2.00% – 3.00%	2.72%	2.00% – 4.00%	2.72%
Apartment (Mid-Atlantic Region)	3 – 10	6	0.00% – 3.00%	1.60%	0.00% – 4.00%	2.67%	0.00% – 3.00%	2.00%	0.00% – 3.00%	2.00%
Apartment (Pacific Region)	3 – 10	7	0.00% – 5.00%	2.75%	2.00% – 5.00%	3.28%	0.00% – 3.00%	2.23%	2.00% – 3.00%	2.23%
Apartment (Southeast Region)	1 – 10	5	1.00% – 4.00%	3.05%	1.00% – 4.00%	2.92%	2.00% – 3.00%	2.80%	3.00% – 3.00%	2.80%
National Net Lease	3 – 20	8	0.00% – 4.00%	1.90%	1.00% – 15.00%	4.75%	0.00% – 4.00%	1.60%	1.00% – 8.00%	1.60%
National Medical Office Buildings	1 – 11	6	0.00% – 3.00%	2.20%	0.00% – 4.00%	2.30%	1.00% – 4.00%	2.50%	2.00% – 5.00%	2.50%
National Student Housing Market	2 – 10	6	0.00% – 5.00%	2.66%	1.50% – 4.00%	2.81%	1.50% – 3.00%	2.41%	2.00% – 3.00%	2.41%

(1) Due to inactivity among our surveyed investors, we are suspending the reporting data for this market at this time.  
Source: Personal survey conducted by PwC during October 2017.



# Definitions

## GENERAL

### BASIS POINT

1/100th of a percentage point (0.01%).

### CHANGE RATE

Annual compound rate of change.

### DISCOUNT RATE (IRR)

Internal rate of return in an all-cash transaction, based on annual year-end compounding. All-cash refers to either all cash or market financing; unleveraged return.

### EAST NORTH CENTRAL (ENC) REGION

As per NCREIF, includes Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin.

### EXCESSIVE TENANT IMPROVEMENT ALLOWANCE<sup>3</sup>

The amount by which an awarded tenant improvement allowance exceeds that which is typical for the market.

### INSTITUTIONAL-GRADE REAL ESTATE

Real property investments that are sought out by institutional buyers and have the capacity to meet generally prevalent institutional investment criteria.

### MARKETING TIME

The period of time between the initial offering of a property for sale and the closing date of the sale.

### MEDICAL OFFICE BUILDING (MOB)

A multitenant office building containing physicians' offices and exam rooms, and in some cases pharmacies and ancillary hospital-service space to conduct outpatient services, such as diagnostic testing, rehabilitation, and day-surgery operating procedures. MOBs are different from general office buildings since they typically require more plumbing and electrical and mechanical systems to accommodate equipment unique to medical practices.

### MID-ATLANTIC REGION

As per NCREIF, includes Delaware, Maryland, Virginia, North Carolina, and South Carolina, as well as Washington, DC.

### NET OPERATING INCOME (NOI)

Income remaining after deduction of all property expenses (including real estate taxes). In direct capitalization, investors capitalize one of the following:

1. NOI after capital replacement reserve deduction but before TIs and leasing commissions
2. NOI before capital replacement reserve

- deduction, TIs, and leasing commissions
3. Cash flow after capital replacement reserve deduction, TIs, and leasing commissions

### OVERALL CAPITALIZATION (CAP) RATE

Initial rate of return in an all-cash transaction; the overall cap rates reported in this Survey reflect investors' expectations of property performance and are applied to one of the three net operating income levels noted above. All-cash refers to either all cash or market financing; unleveraged return.

### PACIFIC REGION

As per NCREIF, includes Washington, Oregon, and California.

### PROJECTION PERIOD<sup>4</sup>

A presumed period of ownership; a period of time over which expected net operating income is projected for purposes of analysis and valuation; also referred to as "forecast" period by Survey participants

### PwC DIVIDEND INDICATOR (PDI)

A composite OAR average of the surveyed markets excluding lodging.

### PwC YIELD INDICATOR (PYI)

A composite IRR average of the surveyed markets excluding lodging and development land

### QUARTILE

One of the three points that divide a range of data or population into four equal parts. The first quartile (also called the lower quartile) is the number below which sits 25.0% of the bottom data. The second quartile (the median) divides the range in the middle and has 50.0% of the data below it. The third quartile (also called the upper quartile) has 75.0% of the data below it and the top 25.0% of the data above it.

### RENT SPIKE

An increase in market rent that is markedly higher than the general rate of inflation.

### REPLACEMENT COST<sup>1</sup>

The estimated cost to construct, at current prices as of the effective appraisal date, a substitute for the building being appraised, using modern materials and current standards, design, and layout.

### REPLACEMENT RESERVE

Amount allocated for periodic replacement of building components during a property's economic life

### RESIDUAL

Estimated total price at conclusion of forecast period:

#### Cap Rate

Overall capitalization rate used in calculation of residual price; typically applied to the NOI in the year following the forecast.

#### Selling Expense

Transaction expenses (legal, brokerage, marketing, etc.) paid by the seller.

### SHADOW SPACE<sup>3</sup>

Space within an occupied office suite that is not currently utilized by a tenant and is also not being marketed for subleasing

### SOUTHEAST REGION

As per NCREIF, includes Alabama, Arkansas, Florida, Georgia, Mississippi, and Tennessee.

### STRUCTURAL VACANCY<sup>3</sup>

Normal vacancy rate in a balanced market.

### VACANCY ASSUMPTIONS

#### Months Vacant

The number of months a space remains unleased at the expiration of a vacating tenant lease.

#### Tenant Retention

Percentage of leased rentable area that is expected to be released by the existing tenants at lease expiration.

#### Underlying Vacancy/Credit Loss

Percentage of total revenue uncollected due to unexpected vacancy or credit loss (in addition to any rent loss from vacancies at lease expirations).

## APARTMENT

### NET OPERATING INCOME (APARTMENT NOI)

Income remaining after deduction of all property expenses (which includes leasing commissions); in direct capitalization, investors capitalize one of the following:

1. NOI after capital replacement reserve
2. NOI before capital replacement reserve
3. Cash flow after capital replacement reserve

### GARDEN APARTMENT<sup>1</sup>

Development consisting of two- or three-story, walk-up structures built in a garden-like setting; customarily a suburban or rural-urban fringe development.

### HIGH-RISE APARTMENT<sup>5</sup>

Multifamily housing development consisting of at least four stories.

Various sources for these definitions include <sup>1</sup>The Dictionary of Real Estate Appraisal, Fifth Edition, published by the Appraisal Institute, <sup>2</sup>International Council of Shopping Centers, <sup>3</sup>investor interviews and PwC, <sup>4</sup>Smith Travel Research, and <sup>5</sup>National Multi Housing Council.

## DEVELOPMENT LAND

### DEVELOPMENT LAND

Land that has been purchased, readied for subdivision development (i.e. entitlements and infrastructure), and subsequently sold to builders

### DEVELOPER'S PROFIT<sup>1,3</sup>

A market-derived figure that reflects the amount a developer expects to receive for his or her contribution to a project and risk

## INDUSTRIAL

### FLEX/R&D<sup>3</sup>

An industrial property with 14- to 20-foot clear ceiling heights, up to 100.0% finished office space including lab and clean-room space (up to 60.0% finished office space excluding lab and clean-room space), and dock-high and/or grade-level loading used for minimal distribution, research and development, and specialized office space.

### WAREHOUSE<sup>3</sup>

An industrial property with 16- to 30-foot clear ceiling heights, up to 15.0% finished office space, and dock-high loading facilities used for the storage and distribution of goods.

## LODGING

### AVERAGE DAILY RATE (ADR)<sup>4</sup>

Room revenue divided by rooms sold.

### LIMITED-SERVICE MIDSACLE & ECONOMY<sup>3,4</sup>

Midscale lodging with "rooms only" and no food or beverage except possible continental breakfast; includes all economy lodging; lower-tier pricing; corresponds to STR's limited-service hotels in the midscale chain scale and all hotels in the economy chain scale; includes brands such as Howard Johnson, Sleep Inn, and Motel 6.

### FULL SERVICE<sup>3,4</sup>

Lodging with restaurant and lounge facilities, meeting space, and a minimum service and amenities level; moderate to lower upper-tier pricing; corresponds to STR's full-service hotels in the upscale, upper midscale, and midscale chain scales; includes brands such as Doubletree, Radisson, and Ramada.

### LUXURY/UPPER UPSACLE<sup>3,4</sup>

High-quality lodging offering personalized guest services, typically with extensive amenities, and upper-tier pricing; corresponds to STR's luxury and upper-upscale chain scales; includes brands such as Ritz Carlton, Four Seasons, and Hyatt.

### MANAGEMENT FEE

An expense item representing the sum paid for or the value of management serv-

ice, including incentives, expressed as a percentage of total revenues.

### NET OPERATING INCOME (LODGING NOI)

Income remaining after deduction of all property expenses: in direct capitalization, investors capitalize one of the following:

1. Prior 12 months
2. Forecast next 12 months
3. Both of the above

### OCCUPANCY<sup>4</sup>

Rooms sold divided by rooms available.

### OPERATING EXPENSES

The ongoing expenditures incurred during the ordinary course of business necessary to maintain and continue the production of gross revenues, not including reserves, debt service, and capital costs.

### PROPERTY EXPENSES

Includes all necessary operating expenses and a reserve for replacement of building components and FF&E.

### RESERVE FOR REPLACEMENT

An allowance that provides for the periodic replacement of building components, and furniture, fixtures, and equipment, which deteriorate and must be replaced during the building's economic life.

### REVPAR

Revenue per available room.

### SELECT SERVICE<sup>3,4</sup>

Upscale and upper-midscale lodging with "rooms only" and no or minimal food and beverage; moderate pricing; excludes economy properties; corresponds to STR's select-service hotels in the upscale chain scale and limited-service hotels in the upper-midscale chain scale; includes brands such as Hampton Inn, Residence Inn, and Comfort Inn.

## NET LEASE

### PROVISION 1031

A tax code that allows the seller of an investment property to defer capital gains taxes by exchanging the sale proceeds for an investment in a similar property or properties within 180 days of the original closing.

### SALE LEASEBACK

A transaction in which an owner sells a property that it fully occupies to a third party and then leases the space back from the new owner.

## SECONDARY OFFICE

### INCLUDED MARKETS

Austin, Baltimore, Cincinnati, Cleveland, Detroit, Indianapolis, Jacksonville,

Kansas City, Las Vegas, Minneapolis, Nashville, Orlando, Pittsburgh, Raleigh, Riverside, Sacramento, San Antonio, San Jose, St. Louis, and Tampa

## RETAIL

### FORTRESS MALL

The dominant performing Class-A+ malls in the country whose in-line stores generate at least \$650 per square foot in retail sales; they contain in-line and anchor stores that are both well established and unmatched in the trade area.

### LIFESTYLE CENTER<sup>2</sup>

Most often located near affluent residential neighborhoods, this center type caters to the retail needs and "lifestyle" pursuits of consumers in its trading area. It has an open-air configuration and typically includes at least 50,000 square feet of space occupied by upscale national chain specialty stores. Other elements, such as restaurants and entertainment, design ambience and amenities like fountains and street furniture, make the lifestyle center serve as a multi purpose leisure-time destination. One or more conventional or fashion specialty department stores often act as anchors.

### OUTLET CENTER<sup>2</sup>

Consist mostly of manufacturers' outlet stores selling their own brands at a discount. Usually located in rural or occasionally in tourist locations. A strip configuration is most common, although some are enclosed or arranged in a "village" format.

### POWER CENTER<sup>2,3</sup>

An open center dominated by at least 75.0% large big-box anchors, including discount stores, warehouse clubs, and value-oriented category stores, and a minimal amount of in-line store space

### REGIONAL MALL<sup>2,3</sup>

An enclosed shopping center that contains at least two department stores and has climate-controlled walkways that are lined with smaller retail shops

### REGIONAL MALL CLASSIFICATIONS<sup>3</sup>

Class	In-line Retail Sales <sup>3</sup> (Per Sq. Ft.)
A+	\$650 and up
A	\$500 to \$649
B+	\$400 to \$499
B	\$300 to \$399
C+/C	Less than \$300

### STRIP SHOPPING CENTER<sup>2,3</sup>

An open row of stores either with or without anchor stores that offer convenience (neighborhood centers) and general merchandise (community centers).

Various sources include <sup>1</sup>The Dictionary of Real Estate Appraisal, Fifth Edition, published by the Appraisal Institute; <sup>2</sup>ICSC; <sup>3</sup>investor interviews and PwC, in-line sales exclude anchor stores, movie theaters, and large drug stores; <sup>4</sup>Smith Travel Research; and <sup>5</sup>National Multi Housing Council.



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**Survey Process:** Survey participants represent a cross section of major institutional equity real estate investors who invest primarily in institutional-grade property. As such, the information presented is not generally applicable to noninstitutional-grade investments. In addition, the information represents investors' investment expectations and does not reflect actual property performances.

The information in this survey is gathered through online questionnaires and telephone interviews. As such, the findings and opinions expressed reflect those of our investor participants and do not necessarily reflect those of PwC. Although we do not represent that the survey is statistically accurate, its results provide important insight into the thinking of a significant portion of the equity real estate marketplace.

**Investor Survey Responses:** The individual investor responses contained in the large tables in the back of each issue are a representative sample. Due to space constraints, not all responses are included.

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