CRE Industry Watching Interest Rates

PwC Real Estate Investor Survey™

Third Quarter 2018

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Dear Reader:

There are several factors that investors are watching to help them better determine the future performance of the commercial real estate (CRE) industry, but key among them are interest rates. Our lead story, "CRE Industry Watching Interest Rates," highlights investors' thoughts on this one key factor they believe will impact the industry in the near term.

This issue also contains several topics in its *Valuation Issues* section that are of interest to readers, such as rent spikes, debt service, and buyers vs. sellers – where do you think buyers have the most control during negotiations? This section starts on page 5.

Our semiannual hospitality write-up, extracted from PwC Hospitality & Leisure's August 2018 *Hospitality Directions US*, is also in this issue and begins on page 52. Strong economic indicators, coupled with accelerating group demand, suggest sustained momentum for this sector through 2019.

Lastly, *Emerging Trends in Real Estate*® 2019 is set for release in mid-October. We will be hosting a webinar to discuss its findings on Monday, October 29, 2018 from 12:30 p.m. to 2:00 p.m. (Eastern Standard Time). An invitation will be emailed to all active subscribers in October – please mark your calendars.

As always, I thank our investor participants for sharing their insights and opinions with us, and I thank our loyal subscribers for their continued support. For up-to-the-minute details relating to the Survey, please follow senior editor, Amy Olson, on Twitter @amyolsonatl.

Sincerely,

Susan Smith

Susan M. Smith
Editor-in-Chief

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In This Issue

National Highlights: CRE Industry Watching Interest Rates 2

Overall Cap Rate Analysis 3
- Looking Forward 4
- Breakout of Key Indicators 4

Valuation Issues
- Rent Spikes 5
- Debt Service 5
- Lodging NOI Timing 6
- Lodging Replacement Reserves 7
- Lodging Management Fees 7
- Buyers vs. Sellers 7

PwC Real Estate Barometer 8

U.S. CRE Stock Acquisition Trends 15

National Self-Storage Market 18

National Secondary Office Market 19

National Retail Markets
- Regional Mall 20
- Power Center 21
- Strip Shopping Center 22

Office Markets
- National CBD 23
- National Suburban 24
- Atlanta 25
- Austin 26
- Boston 27
- Charlotte 28
- Chicago 29
- Dallas 30
- Denver 31
- Houston 32
- Los Angeles 33
- Manhattan 34
- Northern Virginia 35
- Pacific Northwest 36
- Philadelphia 37
- Phoenix 38
- San Diego 39
- San Francisco 40
- Seattle 41
- Southeast Florida 42
- Suburban Maryland*
- Washington, DC 43

National Flex/R&D Market*

National Warehouse Market 44

ENC Region Warehouse Market 45

Pacific Region Warehouse Market 46

National Apartment Market 47

Regional Apartment Markets 49
- Southeast Region
- Pacific Region
- Mid-Atlantic Region

National Net Lease Market 50

National Medical Office Buildings Market 51

National Lodging Highlights 52

National Lodging Segments
- Full Service 54
- Limited-Service Midscale & Economy 55
- Luxury/Upper Upscale 56
- Select Service 57

Investor Survey Response Tables 58

Investment and Property Characteristics
- Office Markets 96
- National and Regional Markets 97

Yield Comparisons 98

Dividend Comparisons 98

Institutional-Grade vs. Noninstitutional-Grade Property Rates
- Office Markets 99
- National and Regional Markets 100

Income Capitalized in Direct Capitalization 101

Forecast Periods and Change Rates
- Office Markets 102
- National and Regional Markets 103

Definitions 104

*Due to inactivity among our surveyed investors, we have suspended the reporting of data for this market effective 4Q 2017.

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PwC Real Estate Investor Survey

National Highlights

CRE Industry Watching Interest Rates

When asked what specific factors will most dictate the commercial real estate (CRE) industry's performance over the next 12 months, investor participants' answers are diverse and include job growth, leasing demand, new supply overhang, and political headwinds. But one universal element that runs through each property type and across all geographies is the degree and timing of interest rate increases. "Rates are set to rise, and the pace at which they rise will influence the industry and our strategy in the near term," shares an investor. "Rising interest rates have a ripple effect in the industry, impacting lenders, developers, and investors," comments another.

While investors surely anticipate further interest rate increases, there is no sense of panic or heightened worry at the moment as the Federal Reserve has been slow to roll out interest rate hikes since late 2015. In addition, the rate increases are seen as more proof that the U.S. economy remains healthy and is expected to continue to perform well in the near term, which bodes well for the CRE industry's underlying fundamentals. Total nonfarm employment rose by 157,000 workers in July 2018, and the unemployment rate edged down to 3.9%, as per the U.S. Bureau of Labor Statistics. At the same time, overall vacancy rates are at or near historical lows for each main property sector with the exception of retail.

Questions remain, however. How high will interest rates rise and at what point will the increases start to negatively impact overall capitalization rates and property values? At the peak of the last cycle, which many put at midyear 2007, the spread between average interest rates and the composite average overall cap rate for all Survey markets, excluding niche property types, was 64 basis points, based on our data collection. Specifically, the average interest rate was 6.40% while the composite average overall cap rate was 7.04%. During the Great Recession, between fourth quarter 2007 and second quarter 2009, average interest rates rose approximately 65 basis points while the composite average overall cap rate increased roughly 115 basis points – an average spread of 51 basis points. Forward to today, and the current average interest rate is nearly 300 basis points below the start of the recovery while the composite average overall cap rate is down 235 basis points. "Most properties have regained the value lost during the recession plus some extra," states a participant.

Significant cap rate compression, a low-interest-rate environment, and the positive momentum of the U.S. economy have combined to bolster values, and investors are not eager to take steps backwards. Even though most investors believe the U.S. economy and the CRE industry are both healthy enough to withstand a few interest rate increases, they also know that the increases will restrict lending, push up overall cap rates, and lower property values too quickly if not implemented correctly. "Our concern is whether rent growth will be enough to offset the expected decline in value as a result of higher interest rates," comments a participant. Fortunately, the current spread between the average overall cap rate and the average interest rate is about 115 basis points based on our data, which suggests there is some room for movement in most sectors.

Investors are hopeful that the Federal Reserve will continue to mindfully raise interest rates through 2019, which will keep the cost of borrowing still historically low but also help to control new development. And while overall cap rates will consequently expand across property types and geographies, the increases are expected to lag a bit as the investment arena adjusts its pricing levels to reflect higher interest rates and the CRE industry's movement to the next phase of the real estate cycle. ✦

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Overall Cap Rate Analysis

In the third quarter of 2018, the average overall capitalization (cap) rate decreases in 20 Survey markets, increases in eight, and holds steady in six compared to the second quarter of 2018. This is the highest number of markets posting decreases over the past four quarters.

Declines in cap rates this quarter occur across various property types and geographies, including apartment markets, retail markets, warehouse markets, national office markets, as well as individual office markets like Boston, Dallas, Northern Virginia, and the Pacific Northwest.

Looking Forward

Over the next six months, most surveyed investors foresee overall cap rates holding steady in 26 of the 34 markets analyzed (see Exhibit 2). Most expect increases for the national strip shopping center market and the Denver and Chicago office markets.

Exhibit 1

OVERALL CAPITALIZATION RATES

Third Quarter 2018

National Markets	Average	Quarterly Change*
Warehouse	4.62%	– 18
Apartment	5.23%	– 3
CBD Office	5.44%	– 3
Strip Shopping Center	6.27%	– 9
Regional Mall	6.30%	0
Power Center	6.48%	– 18
Suburban Office	6.52%	– 6
MOB**	6.66%	– 3
Net Lease	6.67%	7
Secondary Office	7.53%	4
Regional Warehouse		
Pacific Region	4.35%	– 45
ENC*** Region	5.05%	– 32
Apartment Markets		
Pacific Region	4.39%	– 9
Mid-Atlantic Region	4.99%	– 17
Southeast Region	5.15%	8
Office Markets		
Manhattan	4.70%	3
Washington, DC	5.13%	3
San Francisco	5.47%	0
Seattle	5.58%	– 28
Pacific Northwest	5.82%	– 14
Austin	5.82%	– 4
Los Angeles	5.88%	0
Boston	5.91%	– 11
Dallas	6.13%	– 15
Phoenix	6.48%	3
Charlotte	6.49%	– 7
San Diego	6.56%	0
Denver	6.56%	0
Northern Virginia	6.67%	– 10
Atlanta	6.86%	– 9
Southeast Florida	6.93%	0
Houston	7.11%	– 10
Philadelphia	7.15%	2
Chicago	7.56%	20

* Basis points; ** Medical office buildings;
*** East North Central
Source: PwC Real Estate Investor Survey

Exhibit 2

OVERALL CAPITALIZATION RATE FORECASTS

Third Quarter 2018

	OVERALL CAP RATE	SIX-MONTH EXPECTATIONS		
MARKET	3Q 2018	INCREASE	DECREASE	HOLD STEADY
National				
Regional Mall	6.30%	0%	0%	100%
Power Center	6.48%	50%	17%	33%
Strip Shopping Center	6.27%	57%	0%	43%
CBD Office	5.44%	50%	0%	50%
Suburban Office	6.52%	0%	0%	100%
Net Lease	6.67%	50%	0%	50%
Medical Office Buildings	6.66%	20%	0%	80%
Secondary Office	7.53%	38%	0%	63%
Industrial				
National Warehouse	4.62%	0%	40%	60%
ENC Region Warehouse	5.05%	0%	50%	50%
Pacific Region Warehouse	4.35%	0%	0%	100%
Apartment				
National	5.23%	25%	0%	75%
Mid-Atlantic Region	4.99%	0%	0%	100%
Pacific Region	4.39%	0%	0%	100%
Southeast Region	5.15%	0%	0%	100%
Office				
Atlanta	6.86%	20%	0%	80%
Austin	5.82%	0%	40%	60%
Boston	5.91%	20%	0%	80%
Charlotte	6.49%	17%	0%	83%
Chicago	7.56%	67%	0%	33%
Dallas	6.13%	20%	20%	60%
Denver	6.56%	75%	0%	25%
Houston	7.11%	20%	0%	80%
Los Angeles	5.88%	13%	0%	88%
Manhattan	4.70%	20%	0%	80%
Northern Virginia	6.67%	0%	17%	83%
Pacific Northwest	5.82%	0%	0%	100%
Philadelphia	7.15%	25%	0%	75%
Phoenix	6.48%	0%	0%	100%
San Diego	6.56%	25%	0%	75%
San Francisco	5.47%	50%	0%	50%
Seattle	5.58%	0%	0%	100%
Southeast Florida	6.93%	25%	0%	75%
Washington, DC	5.13%	0%	0%	100%

Source: PwC Real Estate Investor Survey

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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.

For the Survey's 16 individual office markets that have both a CBD and suburban component, a 91-basis-point spread exists between the composite average overall cap rate of their CBDs and the composite average for their suburbs.

Chicago's office market reports the largest gap between its CBD and suburban average overall cap rates this quarter with a spread of 208 basis points. The next highest gap is in Boston with 173 basis points followed closely by the office markets of Denver and Southeast Florida with spreads of 143 and 124 basis points, respectively. ✦

Exhibit 3

BREAKOUT OF KEY INDICATORS

Third Quarter 2018

CBD OF:	DISCOUNT RATE RANGE	DISCOUNT RATE AVERAGE	OVERALL CAPITALIZATION RATE RANGE	OVERALL CAPITALIZATION RATE AVERAGE	RESIDUAL CAPITALIZATION RATE RANGE	RESIDUAL CAPITALIZATION RATE AVERAGE
Atlanta	6.50% – 9.25%	7.90%	5.00% – 7.50%	6.45%	5.75% – 8.25%	6.93%
Austin	5.50% – 8.00%	6.72%	4.30% – 6.50%	5.44%	5.00% – 6.25%	5.74%
Boston	5.75% – 8.00%	6.65%	4.00% – 6.50%	5.05%	5.00% – 7.00%	5.78%
Charlotte	6.25% – 10.00%	7.54%	5.00% – 7.75%	6.29%	5.50% – 7.50%	6.60%
Chicago	6.00% – 10.00%	8.02%	4.75% – 9.00%	6.52%	5.50% – 10.00%	7.00%
Dallas	6.00% – 8.50%	7.23%	4.50% – 8.00%	5.73%	5.75% – 8.00%	6.63%
Denver	6.50% – 10.00%	7.78%	5.00% – 7.00%	5.84%	5.50% – 8.50%	6.63%
Houston	6.50% – 12.00%	8.13%	5.75% – 8.00%	6.55%	6.00% – 9.50%	7.00%
Los Angeles	5.50% – 11.50%	7.67%	4.00% – 8.00%	5.58%	5.00% – 7.50%	6.27%
Manhattan	5.50% – 9.00%	6.90%	3.00% – 6.00%	4.70%	3.00% – 6.75%	5.23%
Pacific Northwest	5.25% – 8.50%	6.88%	4.00% – 8.00%	5.41%	5.00% – 9.00%	6.13%
Philadelphia	6.00% – 9.00%	7.85%	5.00% – 8.00%	6.70%	5.50% – 9.25%	7.10%
Phoenix	7.00% – 11.00%	8.81%	5.00% – 8.00%	6.38%	5.50% – 8.00%	6.56%
San Diego	6.50% – 10.50%	8.19%	5.50% – 8.50%	6.50%	5.50% – 8.75%	6.84%
San Francisco	5.00% – 8.00%	6.40%	3.50% – 7.00%	5.00%	4.75% – 8.00%	5.68%
Seattle	5.25% – 8.50%	6.71%	4.00% – 8.00%	5.25%	5.00% – 9.00%	6.10%
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%	6.03%	4.25% – 6.50%	5.13%	5.00% – 6.50%	5.63%
Secondary Office	6.50% – 11.00%	8.70%	5.00% – 9.50%	7.23%	6.50% – 9.00%	7.50%
SUBURBS OF:	**DISCOUNT RATE RANGE**	**DISCOUNT RATE AVERAGE**	**OVERALL CAPITALIZATION RATE RANGE**	**OVERALL CAPITALIZATION RATE AVERAGE**	**RESIDUAL CAPITALIZATION RATE RANGE**	**RESIDUAL CAPITALIZATION RATE AVERAGE**
Atlanta	7.00% – 10.75%	8.60%	6.00% – 8.75%	7.28%	6.25% – 9.00%	7.50%
Austin	6.50% – 10.00%	7.83%	5.25% – 7.50%	6.20%	6.00% – 8.00%	6.78%
Boston	6.50% – 10.00%	7.80%	5.25% – 9.50%	6.78%	6.50% – 10.00%	7.38%
Charlotte	7.00% – 10.00%	8.17%	5.50% – 7.75%	6.69%	6.25% – 8.50%	7.13%
Chicago	8.00% – 12.00%	9.67%	7.00% – 10.00%	8.60%	7.50% – 11.00%	9.02%
Dallas	7.00% – 9.00%	8.25%	5.00% – 8.50%	6.53%	6.00% – 9.00%	7.41%
Denver	6.75% – 11.00%	8.35%	6.00% – 9.00%	7.28%	6.00% – 9.50%	7.55%
Houston	7.50% – 13.00%	9.08%	6.75% – 10.00%	7.68%	6.00% – 10.00%	7.75%
Los Angeles	5.00% – 11.50%	7.97%	4.25% – 8.00%	6.17%	5.00% – 8.00%	6.55%
Northern Virginia	6.00% – 9.50%	7.71%	5.00% – 8.50%	6.67%	5.50% – 8.00%	6.81%
Pacific Northwest	5.50% – 10.00%	7.76%	5.00% – 7.75%	6.23%	5.00% – 8.00%	6.68%
Philadelphia	7.00% – 10.00%	8.85%	5.50% – 9.00%	7.60%	6.00% – 10.00%	8.00%
Phoenix	7.00% – 11.00%	8.63%	5.50% – 8.00%	6.58%	6.00% – 8.00%	6.93%
San Diego	6.50% – 12.00%	8.20%	5.25% – 8.50%	6.63%	5.75% – 8.75%	7.05%
San Francisco	5.50% – 9.50%	7.23%	5.00% – 8.00%	5.94%	5.00% – 9.00%	6.68%
Seattle	5.50% – 9.00%	7.42%	5.00% – 6.75%	5.91%	5.00% – 7.50%	6.44%
Southeast Florida	7.00% – 10.50%	8.75%	6.50% – 9.50%	7.55%	6.50% – 10.50%	8.10%
Secondary Office	7.00% – 14.00%	9.53%	5.50% – 9.50%	7.83%	6.50% – 9.50%	8.03%

Source: PwC Real Estate Investor Survey

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Valuation Issues

Rent Spikes

A rent spike is an increase in market rent that is markedly higher than the general inflation rate. For example, if inflation is 3.0%, one might expect a spike to be at least 50.0% to 100.0% higher, or say 4.5% to 6.0%. According to participants, rent spikes typically occur during the first five years of a ten-year forecast. Although they are most often applied in a series of years, an unusually high spike may be applied for a single year only.

Exhibit 4
RENT SPIKES
Third Quarter 2018

	% OF PARTICIPANTS USING RENT SPIKES	
	CURRENT QUARTER	YEAR AGO
National Markets		
Regional Mall	33.0%	0.0%
Power Center	16.0%	29.0%
Strip Shopping Center	14.0%	0.0%
CBD Office	25.0%	29.0%
Suburban Office	14.0%	38.0%
Warehouse	20.0%	20.0%
Net Lease	14.0%	17.0%
MOB*	0.0%	0.0%
Secondary Office	38.0%	36.0%
Regional Markets		
ENC** Warehouse	40.0%	40.0%
Pacific Warehouse	20.0%	20.0%
Office Markets		
Atlanta	0.0%	0.0%
Austin	0.0%	n/a
Boston	40.0%	17.0%
Charlotte	17.0%	20.0%
Chicago	0.0%	0.0%
Dallas	20.0%	17.0%
Denver	0.0%	0.0%
Houston	20.0%	13.0%
Los Angeles	63.0%	63.0%
Manhattan	0.0%	17.0%
Northern Virginia	17.0%	0.0%
Pacific Northwest	9.0%	18.0%
Philadelphia	0.0%	0.0%
Phoenix	20.0%	50.0%
San Diego	0.0%	50.0%
San Francisco	0.0%	0.0%
Seattle	17.0%	17.0%
Southeast Florida	20.0%	0.0%
Washington, DC	40.0%	17.0%

* Medical office buildings
** East North Central
Source: PwC Real Estate Investor Survey

Participants who apply rent spikes maintain that they are both extremely property specific and heavily dependent on submarket conditions. Specifically, they are used "where and when appropriate" in markets where hard evidence exists that rents will increase substantially in the future. Such evidence includes a diversified economic base, strong job growth, and an above-average rate of absorption. Furthermore, since many participants time the use of rent spikes according to anticipated supply-demand conditions, they most commonly apply them during the latter part of a market's expansion phase.

Rent spikes are also used, but to a lesser extent, at the beginning of the recovery phase of the cycle. The expectation is that rents will initially rise slowly until demand gets ahead of acceptable supply. At that point, there is often a rent spike of relatively short duration until construction picks up the slack on the supply side.

Of the 29 Survey markets that have year-ago figures in Exhibit 4, the use of rent spikes decreases in nine of them, increases in nine, and remains unchanged in 11 since the third quarter of 2017. A significant decline in usage has occurred in the office markets of Phoenix and San Diego while a marked increase in rent spike use has occurred in Boston, Southeast Florida, and Washington, DC over the past year.

The Los Angeles office market has the highest percentage of investors using rent spikes (63.0%). The next highest usage is in the ENC warehouse region and the office markets of Boston and Washington, DC.

In the Survey's national warehouse market and its two regional warehouse markets, the use of rent spikes has remained steady over the past year at between 20.0% and 40.0%. In the Survey's three retail markets, the use of rent spikes is up for both the national regional mall and national strip shopping center markets. A year ago, no investors were using rent spikes in these two markets. In the national power center market, the use of rent spikes has fallen from a year ago.

With fewer investors now using rent spikes, reporting specific amounts of spikes remains difficult. In some markets investors use one large spike while others use two smaller spikes during the holding period.

Debt Service

Survey participants indicate that debt remains readily available, especially for quality assets with excellent rent rolls and in good locations, but requires due diligence and "smart underwriting" on the part of borrowers. Overall, loan-to-value percentages (LTV ratios) for the Survey's 39 markets indicate a range from 25.0% to 90.0% and an average of 60.0%.

Surveyed investors report that they have had little difficulty obtaining debt for deals, both for existing assets and new projects. However, debt for new construction may soon become more difficult as interest rates rise. "Debt for new construction will become more difficult to get, which is a win for the industry's fundamentals," says an investor. Current interest rate levels for each market are shown in Exhibit 5. Overall, our surveyed investors indicate that interest rates currently range from 1.75% to 8.00% and average

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4.60% – seven basis points higher than the Survey average a year ago.

When the cost of debt capital is below the rate of return (IRR) on equity and the financed portion of a sale is in the 50.0%-to-60.0% range, some buyers can use positive leverage to bid up prices by a small margin above the all-cash price. Buyers who can access economical debt capital to finance a portion of the price can anticipate a better yield than the indicated property yield, offer slightly more for a property than an all-cash buyer, and thus win the bid.

By doing so, they can increase their equity IRR above the property IRR and thus fare better than they would have in an all-cash deal. Furthermore, they perceive only minimal additional risk as long as the financed portion is small enough to offset the possibility that the leverage might become negative. Current leverage premiums are included in Exhibit 5.

Exhibit 5
DEBT SERVICE
Third Quarter 2018

	INTEREST RATES (%)			LTV DEBT RATIO (%)			PREMIUM ADDED (1)		
	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE
National & Regional Markets									
Regional Mall	3.50	8.00	4.88	40	75	60			
Power Center	3.50	6.00	4.94	30	75	58	0	250	81
Strip Shopping Center	4.00	7.50	5.25	50	75	62	0	300	75
CBD Office	3.50	5.50	4.63	30	75	58	0	400	141
Suburban Office	4.25	6.00	5.04	40	75	60			
Net Lease	4.00	6.50	5.07	40	75	59	0	75	26
Medical Office Buildings	3.25	7.00	4.75	40	90	64	0	1,000	231
Secondary Office	4.00	6.00	4.89	50	75	66	0	750	263
Warehouse Markets									
National	3.00	5.50	4.23	40	70	53	50	400	175
ENC Region									
Pacific Region									
Apartment Markets									
National	3.25	6.00	4.37	50	80	67	0	300	118
Mid-Atlantic Region	3.00	6.00	4.24	50	80	66	25	300	188
Pacific Region	3.00	4.50	3.71	50	85	64	150	500	267
Southeast Region	3.00	5.00	3.94	25	80	58			
Office Markets									
Atlanta	3.00	6.00	4.43	50	75	61	0	1,000	419
Austin	3.50	6.00	4.41	50	75	64			
Boston	3.00	5.50	4.28	50	70	58			
Charlotte	3.10	5.50	4.14	50	75	62	0	600	250
Chicago	3.75	7.00	4.79	40	75	62	0	600	208
Dallas	2.50	5.00	4.13	50	75	59			
Denver	4.00	6.50	4.68	50	75	60	0	400	150
Houston	3.25	8.00	4.84	35	75	54			
Los Angeles	1.75	8.00	4.36	40	80	62	25	800	176
Manhattan	3.00	8.00	4.72	50	75	65	50	300	158
Northern Virginia	3.50	6.00	4.41	50	75	61			
Pacific Northwest	3.50	7.00	4.47	40	75	59	50	300	173
Philadelphia	3.00	5.00	4.47	50	70	59	25	1,100	173
Phoenix	4.00	7.00	5.06	50	75	60			
San Diego	3.15	5.50	4.57	50	75	59			
San Francisco	3.50	5.50	4.28	40	65	54	50	250	142
Seattle	3.50	7.00	4.55	40	75	59	50	300	153
Southeast Florida	3.50	7.50	5.00	50	75	59	0	600	233
Washington, DC	3.25	5.00	4.06	45	75	63			
Lodging Markets									
Full Service	3.00	7.00	5.10	40	70	58	0	500	194
Limited-Service Midscale & Economy	3.50	7.00	5.22	50	80	63	0	700	313
Luxury/Upper Upscale	3.75	6.50	4.97	40	70	58	0	1,200	400
Select Service	3.50	5.50	4.63	50	80	61			

(1) Basis points added to "all cash" IRR (discount rate); empty space means an insufficient number of responses; LTV = loan to value
Source: PwC Real Estate Investor Survey

Lodging NOI Timing

Our lodging participants indicate that they use one of the following three NOI timing scenarios in direct capitalization (cap): prior 12 months; forecast (next) 12 months; or both (see the Income Capitalized in Direct Capitalization table in the back of this issue).

The NOI used in direct capitalization for hotels varies based on each hotel segment. While most full-service and limited-service midscale & economy investors analyze forecasted incomes, select-service investors are more inclined to use prior 12 months income.

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Exhibit 6

LODGING RESERVES AND MANAGEMENT FEES

Third Quarter 2018

	REPLACEMENT RESERVES (1) (% OF TOTAL REVENUE)			MANAGEMENT FEE (% OF TOTAL REVENUE)		
SEGMENT	LOW	HIGH	AVERAGE	LOW	HIGH	AVERAGE
Full Service	2.50%	6.00%	4.10%	1.00%	4.00%	2.60%
Limited-Service Midscale & Economy	2.00%	5.00%	4.10%	2.00%	5.00%	3.50%
Luxury/Upper Upscale	4.00%	6.00%	4.40%	2.00%	5.00%	3.45%
Select Service	2.00%	7.00%	4.30%	2.50%	4.00%	3.30%

Source: PwC Real Estate Investor Survey; (1) for FF&E and structural repairs

Moreover, most of our luxury hotel investors are divided between using either forecasted income or prior 12 months income (see page 101).

Lodging Replacement Reserves

As a percentage of total revenue, the average replacement reserve for the lodging industry ranges from 4.10% to 4.40% (see Exhibit 6). This reserve is for both FF&E and structural repairs. All hotel participants indicate that they deduct this replacement reserve from NOI before capping.

Some surveyed investors use the above percentage for structural reserves and add a separate FF&E reserve based on a per-room rate. In the instances where two separate reserves are used, the participants deduct the FF&E reserve prior to capitalization, but only 70.0% subtract the structural component.

Lodging Management Fees

As a percentage of total revenue, average base management fees for the lodging industry range from 2.60% to 3.50% (see Exhibit 6). These rates are relatively unchanged from a year ago.

Incentive management fees are extremely diverse across each hotel category and very few of our surveyed investors report them.

Buyers vs. Sellers

Overall, sellers continue to dictate investment pricing in many geographies and property types and actually reversed a declining trend from a year ago. When analyzing the Survey's 35 markets combined, 48.0% of investor participants believe that market conditions favor sellers – up from 38.0% last year but still below the figures from 2016 (53.0%) and 2015 (58.0%).

Only 13.0% of our participants feel that market conditions favor buyers – down from 15.0% last year but above 2016's total of 10.0%. Interestingly, the portion of surveyed investors who feel that the industry is neutral, equally favoring buyers and sellers, has also fallen over the past year – down from 47.0% to 39.0%. ✦

Exhibit 7

BUYERS vs. SELLERS

Third Quarter 2018

	BUYERS' MARKET	SELLERS' MARKET	NEUTRAL MARKET*
National Markets			
Regional Mall	67%	0%	33%
Power Center	17%	33%	50%
Strip Shopping Center	29%	29%	43%
CBD Office	0%	29%	71%
Suburban Office	43%	29%	29%
Net Lease	17%	33%	50%
Medical Office Buildings	0%	100%	0%
Secondary Office	13%	50%	38%
Warehouse Markets			
National	0%	80%	20%
Pacific Region	0%	75%	25%
East North Central Region	0%	100%	0%
Apartment Markets			
National	0%	56%	44%
Mid-Atlantic Region	0%	60%	40%
Pacific Region	0%	60%	40%
Southeast Region	0%	33%	67%

	BUYERS' MARKET	SELLERS' MARKET	NEUTRAL MARKET*
Office Markets			
Atlanta	20%	60%	20%
Austin	0%	100%	0%
Boston	0%	60%	40%
Charlotte	0%	80%	20%
Chicago	67%	17%	17%
Dallas	0%	40%	60%
Denver	0%	25%	75%
Houston	80%	0%	20%
Los Angeles	13%	63%	25%
Manhattan	0%	40%	60%
Northern Virginia	50%	33%	17%
Pacific Northwest	0%	36%	64%
Philadelphia	25%	50%	25%
Phoenix	0%	50%	50%
San Diego	0%	25%	75%
San Francisco	0%	25%	75%
Seattle	0%	50%	50%
Southeast Florida	25%	25%	50%
Washington, DC	0%	60%	40%
Average**	13%	48%	39%

Note: Figures may not total 100% due to rounding; figures represent participants' opinions relating to market favorability.
*A neutral market equally favors buyers and sellers; **all markets.
Source: PwC Real Estate Investor Survey

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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

The U.S. office sector should finish the year strong, closing with 27 metros in the expansion phase of the real estate cycle, including Orlando, Portland, and Orange County (see Forecast 1). While growth is expected to remain positive in 2019, it is forecast to slow and move a greater number of metros into the contraction phase by year end – pushing up the total from 23 to 36 cities, including Kansas City, Philadelphia, and Raleigh. For now, rent growth remains steady and unemployment is low. The real test for the U.S office sector could come in 2020 if the country experiences an economic slowdown or recession.

Retail

2018 will remain a difficult year for the U.S. retail sector as 33 metros are forecast to be in the recession phase of the real estate cycle, including Los Angeles, Boston, and Providence. Unfortunately, this sector is projected to suffer through 2019 with 75.0% of the metros analyzed in recession. Forecasting this sector is extremely difficult as it continues to struggle with the structural change created by e-commerce. While the forecast shows some growing relief by year-end 2020 and into 2021, the sector will remain bifurcated over the next few years (see Chart REB-02).

Industrial

The strength of the U.S. industrial sector is expected to linger through 2018 with 47.0% of the metros analyzed forecast to be in expansion. Even though more metros are projected to move into the contraction phase of the cycle by year-end 2019, none will be in either recession or recovery (see Chart REB-3). While strong fundamentals are driving an increased outlook for new supply, fears of oversupply are being tempered by the difficulty in locating appropriate sites for new development and rising construction costs.

Multifamily

The contraction phase of the real estate cycle will dominate the U.S. multifamily sector in 2018. Specifically, 70.0% (57 metros) will be in contraction followed by 15.0% in expansion, 12.0% in recession, and 4.0% in recovery (see Chart REB-4). While demographic and economic conditions support solid leasing demand in 2018, the next two years will test the resilience of the multifamily sector as a large number of markets deal with high levels of new supply, 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.

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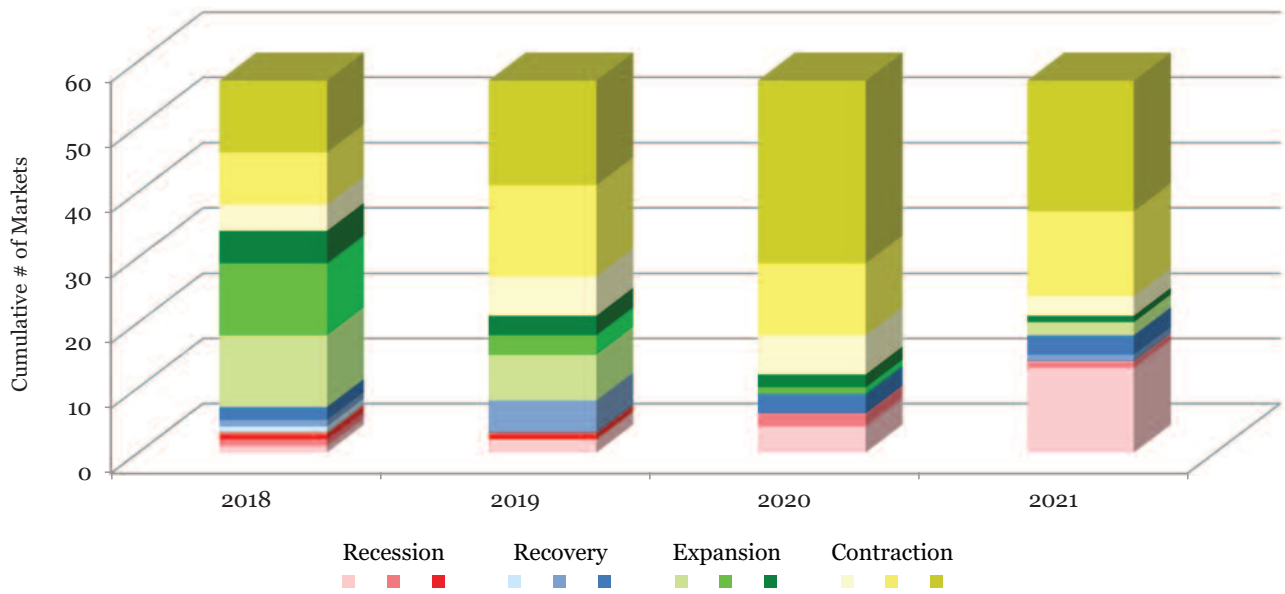
Chart REB-1

PwC REAL ESTATE BAROMETER

U.S. Office Markets – 2018 to 2021

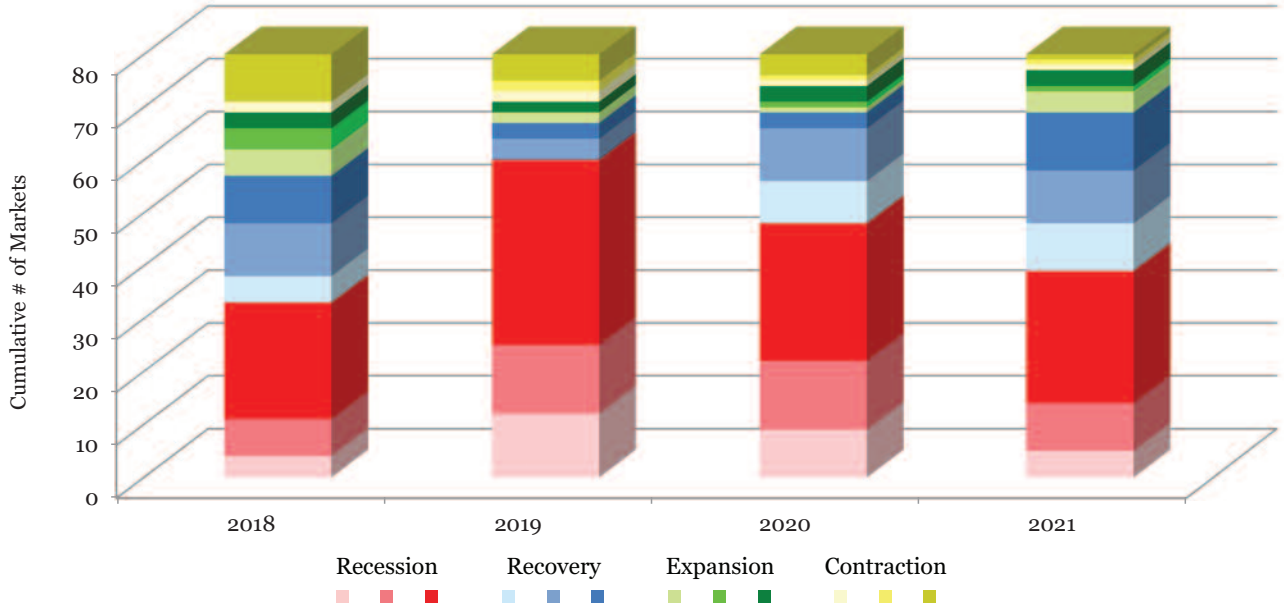


Source: Data provided by CBRE; compiled and analyzed by PwC

Chart REB-2

PwC REAL ESTATE BAROMETER

U.S. Retail Markets – 2018 to 2021



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

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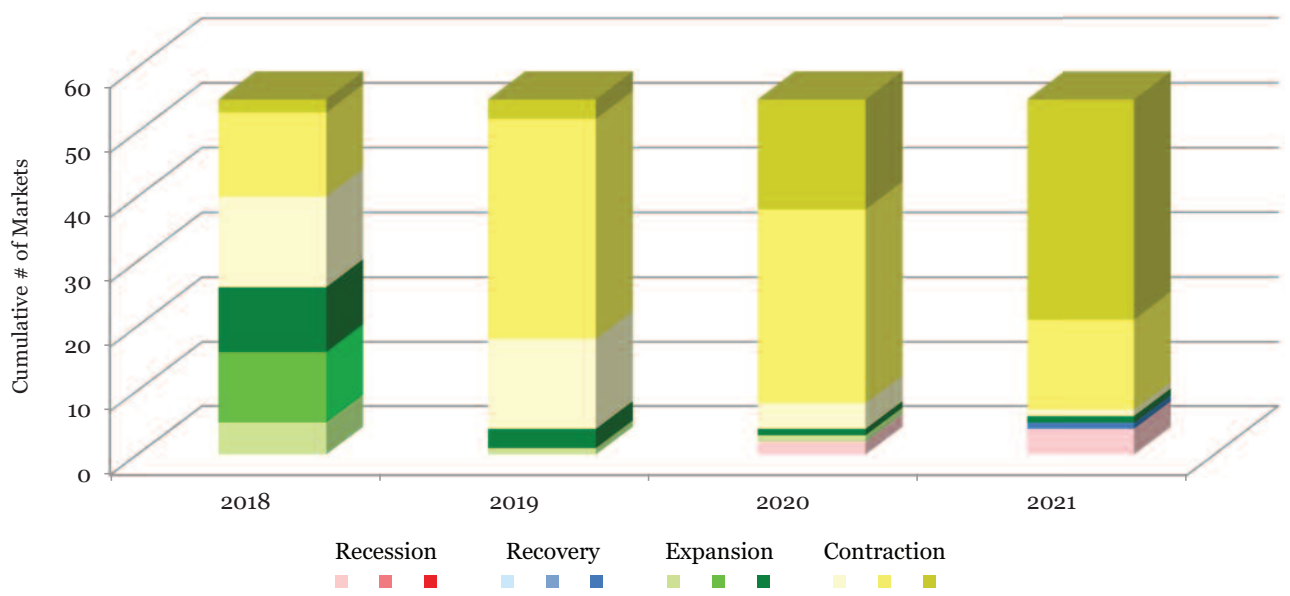
Chart REB-3

PwC REAL ESTATE BAROMETER

U.S. Industrial Markets – 2018 to 2021

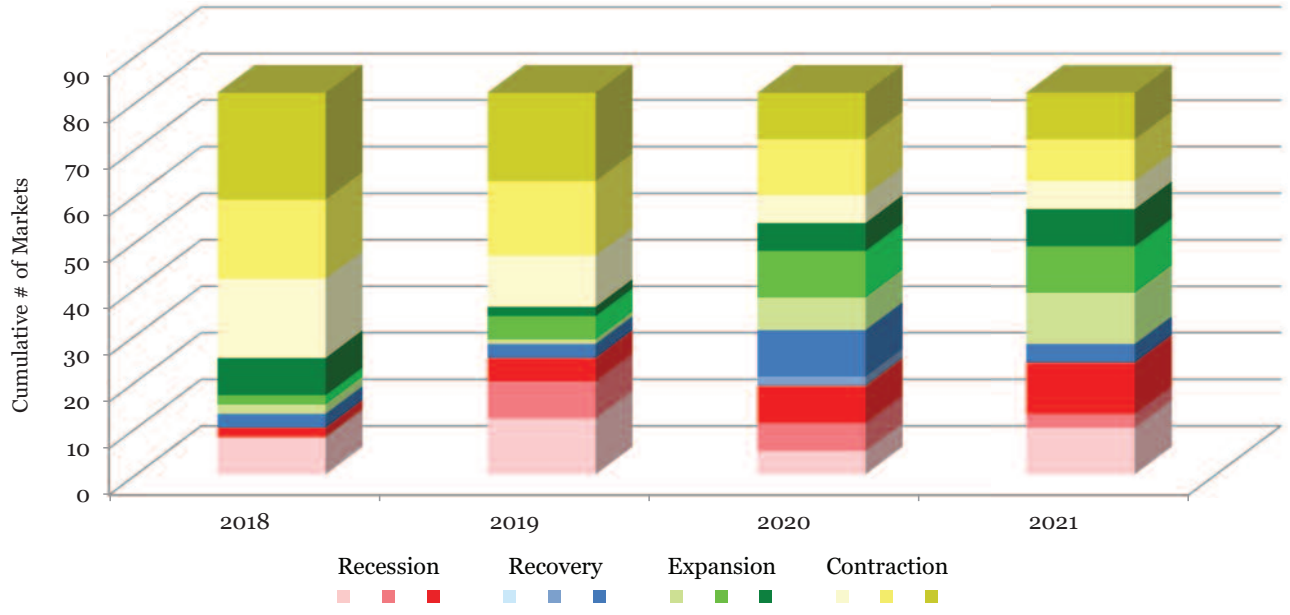


Source: Data provided by CBRE; compiled and analyzed by PwC

Chart REB-4

PwC REAL ESTATE BAROMETER

U.S. Multifamily Markets – 2018 to 2021



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

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PwC Real Estate Barometer

U.S. Office Market Forecasts (2018 to 2021)

	2018	2019	2020	2021
United States				

NORTHEAST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Boston				
Hartford				
Long Island				
New York				
Newark				
Philadelphia				
Pittsburgh				
Stamford				
Trenton				

MIDWEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Chicago				
Cincinnati				
Cleveland				
Columbus				
Detroit				
Indianapolis				
Kansas City				
Minneapolis				
St. Louis				
Toledo				

WEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
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	**2018**	**2019**	**2020**	**2021**
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 2018

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PwC Real Estate Barometer

U.S. Retail Market Forecasts (2018 to 2021)

	2018	2019	2020	2021
United States				

NORTHEAST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Boston				
Buffalo				
Central New Jersey				
Fairfield County				
Hartford				
Long Island				
New Haven				
Northern New Jersey				
Philadelphia				
Pittsburgh				
Rochester				
Syracuse				
Westchester				

MIDWEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Chicago				
Cincinnati				
Cleveland				
Columbus				
Dayton				
Detroit				
Indianapolis				
Kansas City				
Milwaukee				
Minneapolis				
Omaha				
St. Louis				
Wichita				

*=Number of MSAs in position in 2018

WEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
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	**2018**	**2019**	**2020**	**2021**
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				

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PwC Real Estate Barometer

U.S. Industrial Market Forecasts (2018 to 2021)

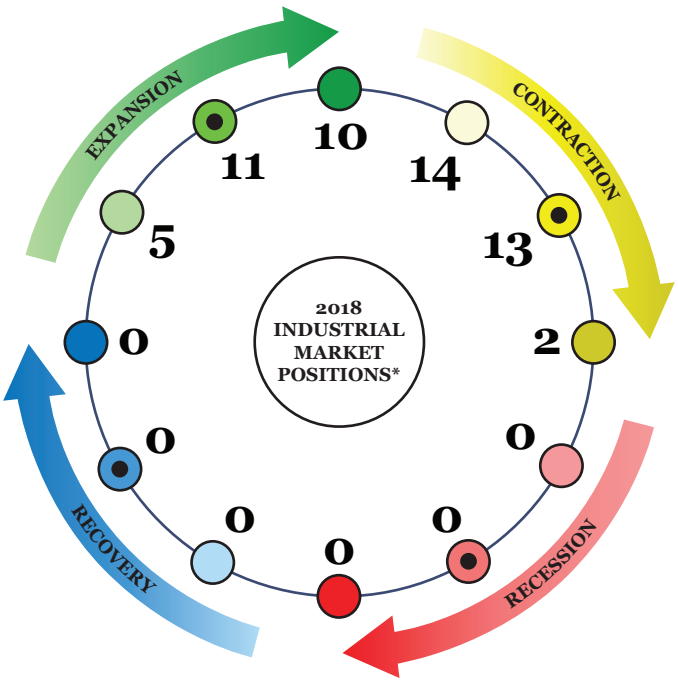
	2018	2019	2020	2021
United States				

NORTHEAST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Allentown				
Boston				
Hartford				
Long Island				
New York				
Newark				
Philadelphia				
Pittsburgh				
Stamford				
Trenton				

MIDWEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
Chicago				
Cincinnati				
Cleveland				
Columbus				
Detroit				
Indianapolis				
Kansas City				
Minneapolis				
St. Louis				

WEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
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	**2018**	**2019**	**2020**	**2021**
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 2018

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PwC Real Estate Barometer

U.S. Multifamily Market Forecasts (2018 to 2021)

	2018	2019	2020	2021
United States				

NORTHEAST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
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	**2018**	**2019**	**2020**	**2021**
Chicago				
Cincinnati				
Cleveland				
Columbus				
Dayton				
Detroit				
Indianapolis				
Kansas City				
Milwaukee				
Minneapolis				
Omaha				
St. Louis				
Wichita				

*=Number of MSAs in position in 2018

WEST REGION				
MSA Name	**2018**	**2019**	**2020**	**2021**
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	**2018**	**2019**	**2020**	**2021**
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				

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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 second quarter of 2018.

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.

- The average stock acquisition percentage showed a quarterly increase in the office and retail sectors and a quarterly decline in the industrial and apartment sectors.
- At 26 metros (59.1%), the office sector boasts the largest number of cities with above-average stock acquisition percentages, including the secondary office markets of Indianapolis and San Jose, and Dallas (see Chart CAT-1).
- At 12.8%, the retail sector reveals the largest increase in its average stock acquisition percentage this quarter.
- In addition, 20 of the retail metros analyzed (44.4%) have above-average stock acquisition percentages led by Northern New Jersey, Los Angeles, and Seattle (see Chart CAT-2).
- In the industrial sector, 18 metros (42.6%) have above-average stock acquisition percentages led by Las Vegas and Memphis (see Chart CAT-3).
- At 40 basis points, the apartment sector posts the largest decline in average stock acquisition percentage this quarter (see Chart CAT-4).
- This quarter only two cities, Dallas and Sacramento, have above-average stock acquisition percentages in each of the four property sectors. Gone from this list are Atlanta, Austin, 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 two 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. ✦

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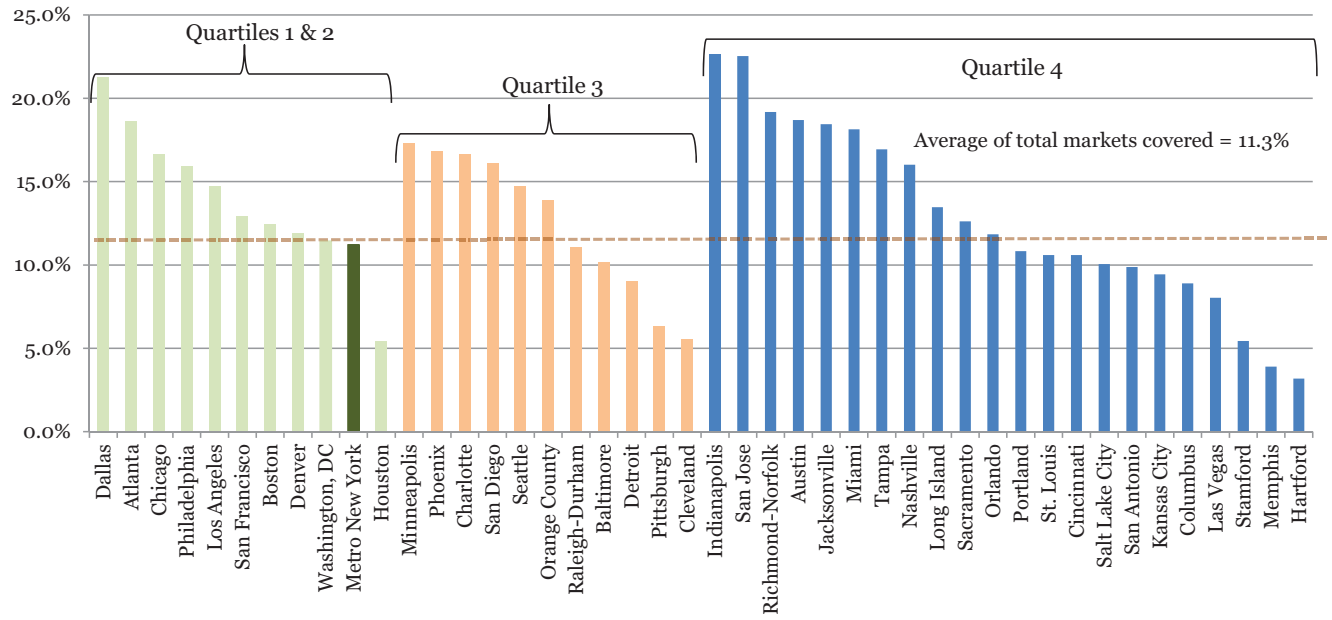
Chart CAT-1

OFFICE CRE TRANSACTIONS TO TOTAL STOCK

4-Quarter Rolling Percentages through 2Q 2018

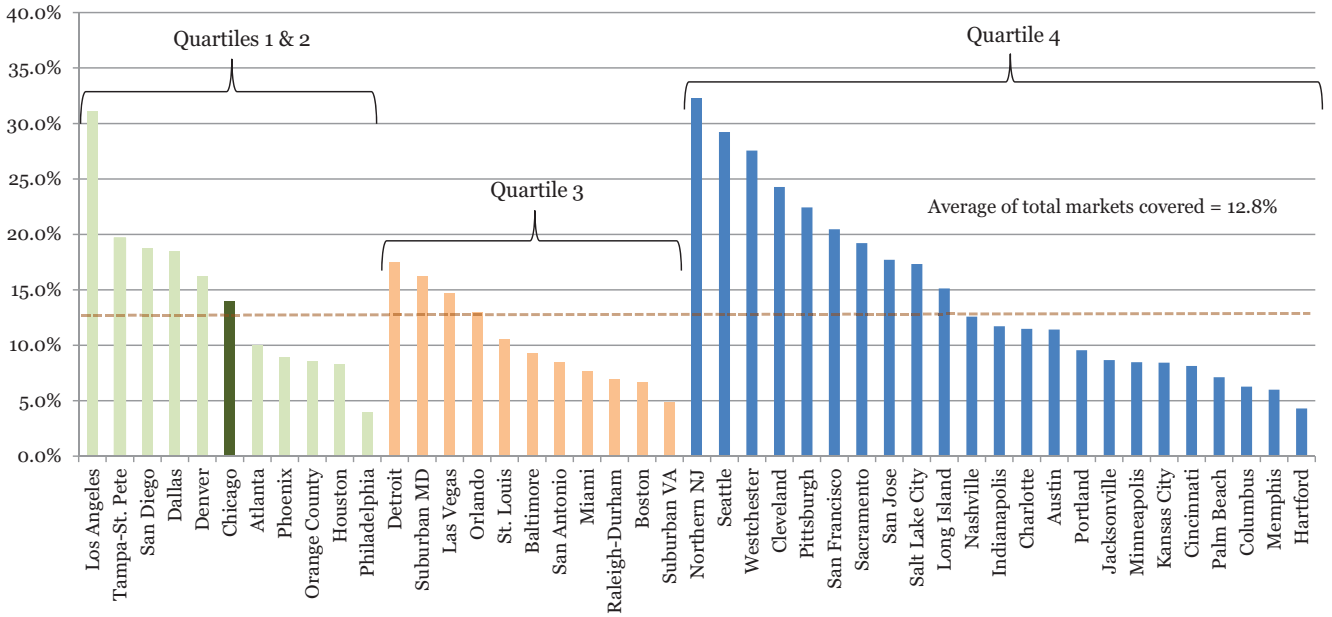


Source: Data provided by Real Capital Analytics and CBRE; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

Chart CAT-2

RETAIL CRE TRANSACTIONS TO TOTAL STOCK

4-Quarter Rolling Percentages through 2Q 2018



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

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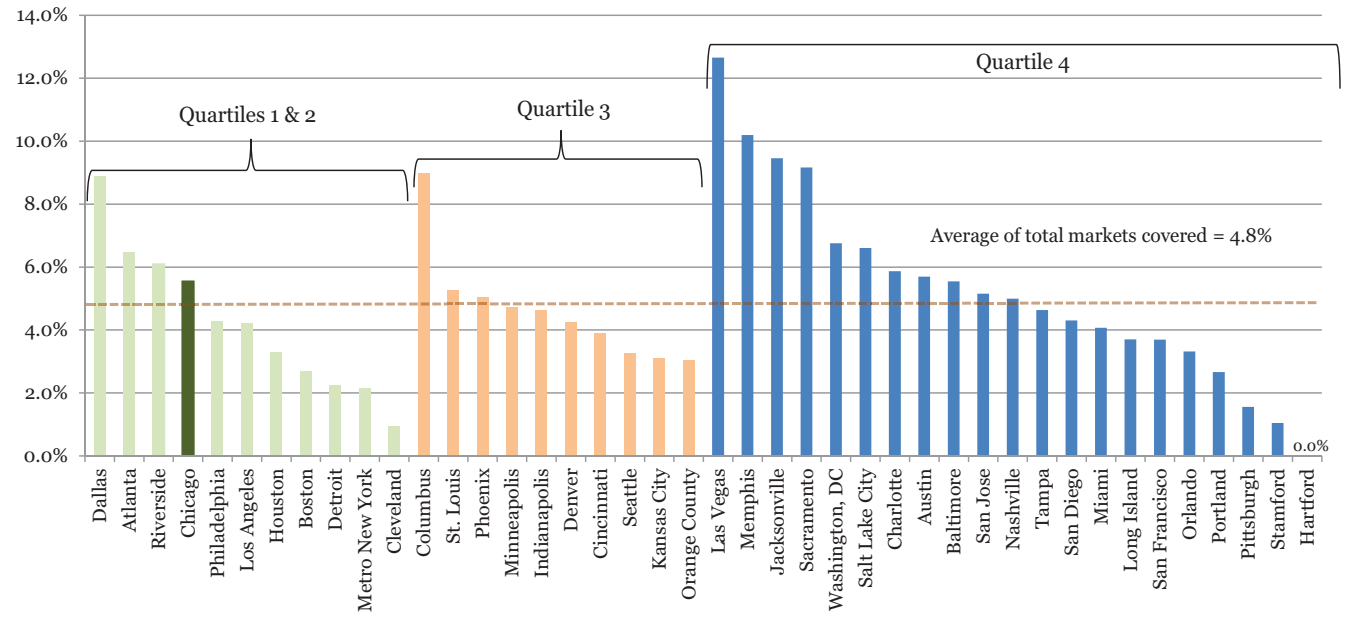
Chart CAT-3

INDUSTRIAL CRE TRANSACTIONS TO TOTAL STOCK

4-Quarter Rolling Percentages through 2Q 2018

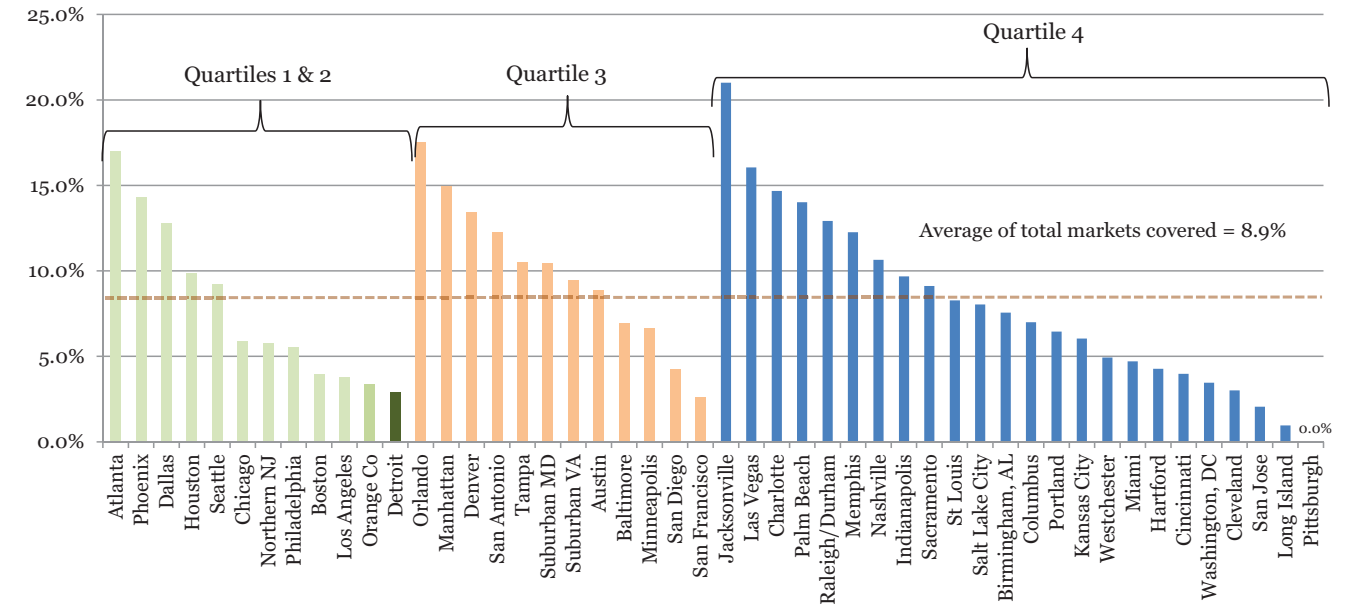


Source: Data provided by Real Capital Analytics and CBRE; compiled and analyzed by PwC Note: Quartiles are based on markets' total CRE stock

Chart CAT-4

APARTMENT CRE TRANSACTIONS TO TOTAL STOCK

4-Quarter Rolling Percentages through 2Q 2018



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

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National Self-Storage Market

As leasing demand remains robust in the national self-storage market, buyers are eager to find properties to acquire in this niche market. "There is still great interest in this segment, and many institutional investors are seeking access," underscores a participant.

Through the first half of 2018, public REITs acquired the largest dollar volume of self-storage properties, as per Real Capital Analytics. These REITs include Extra Space Storage with $135.0 million in acquisitions; CubeSmart with $134.0 million; and National Storage Affiliates with $120.0 million.

Topping the list of the top-five self-storage buyers for the first half of 2018 is ASB Real Estate Investments with total acquisitions of $235.0 million. Westport Properties ends the list with a total sales volume of $102.0 million.

The national self-storage market has the second-lowest average overall cap rate of the four niche property types in our Survey. In addition, it has the most optimistic outlook for future rent growth and the second-highest value change expectation (see Table NSS-2). "There's a lot of capital in the market, so absent an external shock to the system, I don't believe the self-storage investment arena will change in the near term," says an investor. ✦

KEY 3Q18 SURVEY STATS*

Trade Area (Miles):

Average	2.4 ▼
Range	up to 5.0

Expected Value Change(1):

Average	1.6% ▲
Range (3Q18)	–5.0% to 5.0%
Range (1Q18)	–5.0% to 5.0%

Market Conditions Favor:

Buyers	0.0% =
Sellers	86.0% =
Neither	14.0% =

* ▼, ▲, = change from prior quarter
(1) over the next 12 months

Table NSS-2
KEY INDICATOR COMPARISON
Third Quarter 2018

Overall Cap Rates	Average
National Self Storage	5.66%
National Net Lease	6.67%
National Medical Office Buildings	6.66%
National Student Housing (1)	5.88%

Market Rent Change Rates (2)	Average
National Self Storage	4.29%
National Net Lease	2.00%
National Medical Office Buildings	2.20%
National Student Housing (1)	2.58%

Expected Value Change (3)	Average
National Self Storage	1.60%
National Net Lease	– 2.70%
National Medical Office Buildings	– 0.20%
National Student Housing (1)	2.30%

(1) As of 2Q2018
(2) Initial-year rate of change
(3) Expected change over the next 12 months
Source: PwC Real Estate Investor Survey

Table NSS-1
NATIONAL SELF-STORAGE MARKET
Third Quarter 2018

	CURRENT	1Q 2018	YEAR AGO
DISCOUNT RATE (IRR)[a]			
Range	5.00% – 11.00%	5.00% – 9.00%	5.00% – 8.00%
Average	7.32%	6.91%	6.38%
Change (Basis Points)		+ 41	+ 94
OVERALL CAP RATE (OAR)[a]			
Range	4.50% – 7.00%	4.50% – 7.00%	5.00% – 7.00%
Average	5.66%	5.65%	5.78%
Change (Basis Points)		+ 1	– 12
RESIDUAL CAP RATE			
Range	5.00% – 7.50%	5.00% – 7.50%	5.00% – 8.00%
Average	6.04%	6.04%	6.50%
Change (Basis Points)		0	– 46
MARKET RENT CHANGE[b]			
Range	0.00% – 15.00%	0.00% – 15.00%	1.00% – 5.00%
Average	4.29%	4.29%	3.38%
Change (Basis Points)		0	+ 91
EXPENSE CHANGE[b]			
Range	2.00% – 5.00%	2.00% – 5.00%	1.00% – 3.00%
Average	3.00%	3.00%	2.63%
Change (Basis Points)		0	+ 37
MARKETING TIME[c]			
Range	1 – 6	1 – 6	1 – 6
Average	2.5	2.7	2.9
Change (▼, ▲, =)		▼	▼

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

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National Secondary Office Market

During this prolonged real estate cycle, the national secondary office market has maintained solid fundamentals. To that end, the strong performance of this market makes it more challenging for investors. "The leasing market is stabilizing rapidly, and it's become more difficult to find value-added opportunities," states a participant. "More deal flow will result in stabilizing to slightly lower asset pricing and likely result in higher cap rates," predicts another.

Despite these stumbling blocks, half of our surveyed investors believe sellers maintain the advantage in negotiations, up from 27.0% a year ago. Another 38.0% view this market as neutral – equally favoring buyers and sellers. The remainder (13.0%) thinks the advantage belongs to buyers in this market.

This quarter, the average overall cap rate inches up four basis points to reach 7.53%. As shown in the Key 3Q18 Survey Stats, the average overall cap rate for CBD secondary office assets sits below the average for suburban assets, suggesting greater investor demand for CBD office properties. Over the next six months, 63.0% of investors anticipate cap rates holding steady here while the balance expects cap rate increases of as much as 50 basis points – the average expected increase is 27 basis points. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	72.0%	▼
Range	60.0% to 75.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	7.53%	▲
CBD	7.23%	▲
Suburbs	7.83%	▲

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

Table SEC-1
NATIONAL SECONDARY OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.50% – 14.00%	6.50% – 13.00%	6.50% – 13.00%	5.75% – 12.00%	6.50% – 14.00%
Average	9.12%	9.05%	8.99%	8.66%	9.54%
Change (Basis Points)		+ 7	+ 13	+ 46	– 42
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 9.50%	5.00% – 9.50%	4.50% – 10.00%	4.50% – 10.00%	4.00% – 11.00%
Average	7.53%	7.49%	7.46%	7.54%	8.01%
Change (Basis Points)		+ 4	+ 7	– 1	– 48
RESIDUAL CAP RATE					
Range	6.50% – 9.50%	6.50% – 9.50%	6.00% – 11.00%	6.00% – 10.00%	4.50% – 10.00%
Average	7.77%	7.77%	7.79%	7.74%	8.11%
Change (Basis Points)		0	– 2	+ 3	– 34
MARKET RENT CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	0.00% – 5.00%	0.00% – 10.00%	0.00% – 10.00%
Average	2.80%	2.84%	2.84%	3.93%	3.15%
Change (Basis Points)		– 4	– 4	– 113	– 35
EXPENSE CHANGE[b]					
Range	2.00% – 3.00%	1.50% – 3.00%	1.50% – 3.50%	2.00% – 3.00%	2.00% – 3.00%
Average	2.55%	2.53%	2.52%	2.53%	2.52%
Change (Basis Points)		+ 2	+ 3	+ 2	+ 3
MARKETING TIME[c]					
Range	3 – 12	3 – 12	3 – 9	2 – 9	2 – 12
Average	5.9	5.9	5.8	5.8	6.1
Change (▼, ▲, =)		=	▲	▲	▼

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

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National Regional Mall Market

While the vacancy rate for the national regional mall market rose during the second quarter of 2018 compared to both the prior quarter and a year ago, the performance gap between higher-end malls and lower-end malls appears to be widening. "Better geographies, better tenant mixes, and better retail sales drive the Class-A mall segment," states a participant. On the other hand, weaker retail mixes tend to make up the Class-C and lower segment, which continues to struggle. As a whole, the vacancy rate for the national regional mall market stood at 8.6% in the second quarter of 2018 – up 20 basis points from the prior quarter and 50 basis points from a year ago, as per Reis.

When looking at the overall cap rates for the national regional mall market, the averages for both the Class-A+ and Class-A segment each slip this quarter to 4.75% and 5.47%, respectively. At the same time, the average for the Class-B+ segment inches up to 6.78%. Interestingly, as a whole, the average overall cap rate stands only 20 basis points below the average five years ago (see Table 1).

When looking ahead to the next 12 months, our surveyed investors feel that e-commerce trends, interest rate shifts, and unemployment and income changes will have the greatest impact on this sector's performance. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	72.0%	=
Range	50.0% to 85.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Class A+	4.75%	▼
Class A	5.47%	▼
Class B+	6.78%	▲

* ▼, ▲, = change from prior quarter
(1) on a ten-year lease
(2) Insufficient number of responses

Table 1
NATIONAL REGIONAL MALL MARKET(d)
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.00% – 11.50%	5.00% – 11.50%	5.00% – 11.50%	5.75% – 12.00%	5.50% – 12.00%
Average	7.55%	7.55%	7.60%	7.78%	8.79%
Change (Basis Points)		0	– 5	– 23	– 124
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 10.00%	4.00% – 10.00%	4.00% – 10.00%	4.00% – 9.00%	4.50% – 9.00%
Average	6.30%	6.30%	6.23%	6.03%	6.50%
Change (Basis Points)		0	+ 7	+ 27	– 20
RESIDUAL CAP RATE					
Range	4.25% – 10.00%	4.25% – 10.00%	4.00% – 10.00%	4.25% – 9.00%	4.50% – 12.00%
Average	6.80%	6.83%	6.70%	6.63%	7.04%
Change (Basis Points)		– 3	+ 10	+ 17	– 24
MARKET RENT CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 5.00%	1.00% – 6.00%
Average	2.25%	2.35%	2.50%	2.98%	3.08%
Change (Basis Points)		– 10	– 25	– 73	– 83
EXPENSE CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 5.00%	1.00% – 5.00%	0.00% – 3.00%
Average	3.00%	3.00%	3.00%	2.80%	2.17%
Change (Basis Points)		0	0	+ 20	+ 83
MARKETING TIME[c]					
Range	3 – 15	3 – 15	3 – 18	3 – 24	3 – 24
Average	9.0	9.0	9.0	9.0	9.3
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

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National Power Center Market

Quarterly changes in the national power center market's key cash flow assumptions illustrate a sector in flux. First, its average tenant retention rate dips slightly to 68.0%. Second, the average amount of free rent offered on a ten-year lease increases to six months while the portion of Survey participants using free rent rises to 67.0%. Lastly, the average marketing time jumps to 6.8 months – its highest average in five years.

While these changes suggest a weakening outlook on the part of surveyed investors, a decent increase in its average initial-year market rent change rate and a decline in its average overall cap rate both signify a brighter outlook. As noted in the Key 3Q18 Survey Stats, the average overall cap rate slips for each category this quarter. With an average of 6.53%, power centers with 75.0% big-box space report the lowest average this quarter. For the near term, our surveyed investors are divided with regard to where cap rates will trend. While 50.0% feel that overall cap rates will increase in this market, 33.0% believe they will hold steady. The remainder foresees them declining.

Investors plan to keep a close eye on e-commerce trends, tenant credit ratings, and vacancy rates over the next 12 months. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	68.0% ▼
Range	50.0% to 80.0%

Months of Free Rent(1):

Average	6 ▲
Range	0 to 12
% of participants using	67.0% ▲

Average Overall Cap Rates:

75.0% big-box space	6.53% ▼
85.0% big-box space	6.88% ▼
100.0% big-box space	7.18% ▼

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

Table 2
NATIONAL POWER CENTER MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.00% – 11.00%	6.00% – 10.00%	6.00% – 10.00%	5.75% – 10.00%	6.00% – 10.00%
Average	7.60%	7.63%	7.53%	7.79%	8.17%
Change (Basis Points)		– 3	+ 7	– 19	– 57
OVERALL CAP RATE (OAR)[a]					
Range	5.25% – 9.00%	5.25% – 9.00%	5.25% – 8.00%	4.75% – 8.00%	5.50% – 8.00%
Average	6.48%	6.66%	6.40%	6.31%	6.71%
Change (Basis Points)		– 18	+ 8	+ 17	– 23
RESIDUAL CAP RATE					
Range	5.50% – 9.00%	5.50% – 9.00%	5.50% – 9.00%	5.00% – 9.00%	6.00% – 9.00%
Average	6.83%	6.96%	6.88%	6.83%	7.19%
Change (Basis Points)		– 13	– 5	0	– 36
MARKET RENT CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 3.00%	0.00% – 3.00%
Average	1.88%	1.61%	1.97%	1.75%	1.17%
Change (Basis Points)		+ 27	– 9	+ 13	+ 71
EXPENSE CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 5.00%	2.00% – 3.00%	0.00% – 3.00%
Average	2.92%	2.86%	2.89%	2.83%	2.46%
Change (Basis Points)		+ 6	+ 3	+ 9	+ 46
MARKETING TIME[c]					
Range	2 – 18	2 – 18	2 – 18	2 – 18	2 – 18
Average	6.8	5.9	5.2	6.0	6.5
Change (▼, ▲, =)		▲	▲	▲	▲

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

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National Strip Shopping Center Market

Negative net absorption resulting from unending retail store closures and downsizings continues to plague the overall performance of the national strip shopping center market. In the second quarter of 2018, negative net absorption was widespread with 58 of the 80 metros tracked by Reis reporting negative totals. As a result, the overall vacancy rate for the sector moved up to 10.2%. "Tenants are thinning out in the national retail landscape," remarks a participant.

As the retail industry continues to adapt to growing Internet sales, the stability of brick-and-mortar tenants remains a key concern for many investors. "Retail is dying," exclaims a participant. "Ongoing retail bankruptcies and negative headlines do little to help cast a positive light on this sector," says another. Still, many investors continue to search for buying opportunities, looking for strong grocery-anchored centers in dominant trade areas with little in-line vacancy and a lack of available land for new development. "Location is a key driver of a property's success," affirms another.

Cities noted by Survey participants for "solid shopping center investing" include Austin, San Diego, Raleigh-Durham, Miami, and Orange County. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	73.0%	=
Range	65.0% to 100.0%	

Months of Free Rent(1):

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

Market Conditions Favor:

Buyers	29.0%	▲
Sellers	29.0%	▼
Neither	42.0%	▼

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

Table 3
NATIONAL STRIP SHOPPING CENTER MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.50% – 10.50%	5.50% – 10.50%	5.50% – 10.50%	6.00% – 10.75%	5.50% – 11.50%
Average	7.43%	7.43%	7.25%	7.80%	8.06%
Change (Basis Points)		0	+ 18	– 37	– 63
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 9.50%	4.00% – 9.50%	4.00% – 9.50%	4.50% – 9.00%	5.00% – 10.00%
Average	6.27%	6.36%	6.19%	6.81%	6.91%
Change (Basis Points)		– 9	+ 8	– 54	– 64
RESIDUAL CAP RATE					
Range	4.50% – 9.75%	4.50% – 9.75%	4.75% – 9.75%	4.75% – 9.75%	6.00% – 11.00%
Average	6.84%	6.86%	6.57%	6.97%	7.44%
Change (Basis Points)		– 2	+ 27	– 13	– 60
MARKET RENT CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%
Average	1.71%	1.68%	1.69%	1.88%	1.75%
Change (Basis Points)		+ 3	+ 2	– 17	– 4
EXPENSE CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 3.00%
Average	2.61%	2.57%	2.67%	2.72%	2.97%
Change (Basis Points)		+ 4	– 6	– 11	– 36
MARKETING TIME[c]					
Range	2 – 18	2 – 18	2 – 18	2 – 12	3 – 18
Average	6.8	6.8	6.1	6.2	7.4
Change (▼, ▲, =)		=	▲	▲	▼

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

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National CBD Office Market

Strong consumer and business spending helped drive U.S. economic growth in the second quarter of 2018, keeping leasing activity brisk in the national CBD office market. During the first six months of 2018, direct absorption totaled 11.7 million square feet, according to Cushman & Wakefield – up from 8.5 million square feet a year earlier. At the same time, however, sublease offerings have risen along with new speculative space completions. The end result was a slight uptick in overall vacancy in the second quarter of 2018.

Investors will continue to keep a close eye on new supply deliveries over the near term, particularly as they notice a slowdown in leasing demand. "Many larger firms have reached their growth positions already while others are turning a bit more cautious in their space needs," comments an investor. Other factors being closely watched over the next 12 months include interest rate changes, job growth trends, foreign capital flows, and the trajectory of the U.S. economy. "The more clarity we have with regard to the state of the U.S. economy, the more easily we can fine-tune our strategies," says another.

Coastal CBD locations both large and small remain some of the top picks for investors, such as Boston, Seattle, and Tampa. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 85.0%	

Months of Free Rent(1):

Average	7	=
Range	1 to 15	
% of participants using	100.0%	=

Market Conditions Favor:

Buyers	0.0%	=
Sellers	25.0%	=
Neither	75.0%	=

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

Table 4
NATIONAL CBD OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.25% – 9.00%	5.25% – 9.00%	5.50% – 9.50%	5.25% – 11.00%	4.75% – 11.00%
Average	6.89%	6.91%	7.13%	7.21%	8.09%
Change (Basis Points)		– 2	– 24	– 32	– 120
OVERALL CAP RATE (OAR)[a]					
Range	3.00% – 7.50%	3.00% – 7.50%	3.50% – 7.50%	3.50% – 8.00%	4.00% – 10.00%
Average	5.44%	5.47%	5.66%	5.66%	6.59%
Change (Basis Points)		– 3	– 22	– 22	– 115
RESIDUAL CAP RATE					
Range	4.50% – 8.50%	4.50% – 8.50%	4.75% – 7.50%	4.50% – 8.00%	4.75% – 10.50%
Average	6.11%	6.11%	6.11%	6.11%	7.07%
Change (Basis Points)		0	0	0	– 96
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 9.00%	0.00% – 7.00%
Average	2.41%	2.41%	2.54%	2.93%	2.61%
Change (Basis Points)		0	– 13	– 52	– 20
EXPENSE CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	2.00% – 4.00%	1.50% – 5.50%	1.00% – 3.00%
Average	2.72%	2.72%	2.82%	2.86%	2.64%
Change (Basis Points)		0	– 10	– 14	+ 8
MARKETING TIME[c]					
Range	2 – 18	2 – 18	2 – 18	2 – 15	2 – 18
Average	6.5	6.5	6.8	6.4	7.5
Change (▼, ▲, =)		=	▼	▲	▼

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

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National Suburban Office Market

Location remains a key factor influencing investors' investment activity in the national suburban office market. "Overall, this remains a tricky product to underwrite, and assumptions heavily depend on location," comments a participant. While some investors prefer suburban office locations near vital transportation hubs, others feel this characteristic is overstated and instead believe locations near established retail centers and specialized service shops, like banks, dry cleaners, and medical facilities, are better draws of tenants.

Even though sales activity has fallen in the national suburban office market over the past year in terms of number of properties and deal volume, the declines are not as drastic as those for the national CBD office market. In the second quarter of 2018, sales volume was down 13.5% for the suburbs and down 21.0% for the CBD sector, according to Real Capital Analytics. In terms of total properties sold, the suburban sector was down 8.1% while the CBD was down 12.9%.

Over the next 12 months, our surveyed investors will be closely watching how changes in interest rates, new supply, and job growth impact the performance of the suburban office market and inevitably their investment strategies. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	63.0%	=
Range	40.0% to 75.0%	

Months of Free Rent(1):

Average	7	=
Range	2 to 15	
% of participants using	88.0%	=

Market Conditions Favor:

Buyers	43.0%	=
Sellers	29.0%	=
Neither	28.0%	=

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

Table 5
NATIONAL SUBURBAN OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.75% – 12.00%	6.00% – 12.00%	6.00% – 11.50%	5.75% – 10.00%	6.00% – 12.50%
Average	8.16%	8.29%	8.03%	7.64%	8.74%
Change (Basis Points)		– 13	+ 13	+ 52	– 58
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 10.00%	4.35% – 10.00%	5.00% – 10.00%	4.25% – 9.00%	5.00% – 11.00%
Average	6.52%	6.58%	6.69%	6.42%	7.51%
Change (Basis Points)		– 6	– 17	+ 10	– 99
RESIDUAL CAP RATE					
Range	4.75% – 11.50%	6.00% – 11.50%	5.75% – 11.50%	5.50% – 9.75%	6.00% – 11.00%
Average	7.45%	7.57%	7.42%	7.25%	8.04%
Change (Basis Points)		– 12	+ 3	+ 20	– 59
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	(2.00%) – 4.00%
Average	1.86%	1.86%	2.00%	2.88%	1.60%
Change (Basis Points)		0	– 14	– 102	+ 26
EXPENSE CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	1.00% – 4.00%	1.00% – 3.00%
Average	2.68%	2.68%	2.72%	2.81%	2.55%
Change (Basis Points)		0	– 4	– 13	+ 13
MARKETING TIME[c]					
Range	1 – 12	1 – 12	1 – 12	3 – 12	2 – 18
Average	6.4	6.5	6.0	6.6	8.6
Change (▼, ▲, =)		▼	▲	▼	▼

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

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Atlanta Office Market

Robust employment growth and limited construction play vital roles in driving positive absorption and rent growth in the Atlanta office market. "Continued positive job growth and the rate at which new supply is added will be the most important factors for this market over the next 12 months," stresses an investor. As shown in Table 6, investors' outlook for future rent growth remains upbeat – the average is up ten basis points this quarter to 2.55%.

On the demand side, the professional-and-business-services sector increased by 13,600 jobs and the financial-services sector grew by 5,100 jobs from midyear 2016 to midyear 2017 in the Atlanta-Sandy Springs-Roswell metropolitan division. However, preliminary figures for midyear 2018 indicate slower annual additions of 4,200 professional-and-business-services jobs and a loss of 400 financial-activities jobs, as per the U.S. Bureau of Labor Statistics.

In the face of slowing job growth in office-space-using sectors, controlling supply growth is more critical than ever. While limited new construction from 2011 to 2016 kept supply and demand in balance, projects totaling 2.3 million square feet are underway as of midyear 2018 with another 1.5 million square feet estimated for 2019, as per C&W. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	70.0%	▲
Range	50.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	6.86%	▼
CBD	6.45%	▼
Suburbs	7.28%	▼

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

Table 6
ATLANTA OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.50% – 10.75%	6.00% – 10.75%	6.00% – 10.50%	6.00% – 10.00%	7.50% – 10.50%
Average	8.25%	8.23%	8.29%	8.40%	8.88%
Change (Basis Points)		+ 2	– 4	– 15	– 63
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 8.75%	5.00% – 8.75%	5.25% – 9.00%	5.75% – 9.25%	6.50% – 9.25%
Average	6.86%	6.95%	7.19%	7.46%	7.96%
Change (Basis Points)		– 9	– 33	– 60	– 110
RESIDUAL CAP RATE					
Range	5.75% – 9.00%	5.75% – 9.00%	6.00% – 9.00%	6.00% – 9.25%	7.00% – 9.25%
Average	7.21%	7.29%	7.38%	7.36%	7.91%
Change (Basis Points)		– 8	– 17	– 15	– 70
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 6.00%	0.00% – 3.00%
Average	2.55%	2.45%	2.60%	3.58%	1.21%
Change (Basis Points)		+ 10	– 5	– 103	+ 134
EXPENSE CHANGE[b]					
Range	1.50% – 5.00%	1.50% – 3.50%	1.50% – 3.50%	0.00% – 3.50%	0.00% – 3.00%
Average	2.90%	2.73%	2.68%	2.31%	2.29%
Change (Basis Points)		+ 17	+ 22	+ 59	+ 61
MARKETING TIME[c]					
Range	2 – 12	2 – 12	2 – 12	1 – 12	1 – 12
Average	6.1	5.8	6.1	4.3	5.5
Change (▼, ▲, =)		▲	=	▲	▲

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

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Austin Office Market

Despite a quarterly increase in overall vacancy, demand remains robust for space in the Austin office market, particularly in the Class-A sector. The midyear overall vacancy rate of 11.6% was up from 11.0% in the first quarter, according to Cushman & Wakefield. Similarly, the Class-A midyear vacancy rose from 9.0% to 10.1%. However, seemingly insatiable tenant demand led to 380 new leases inked through the second quarter of 2018, more than half of which were in Class-A properties.

Vigorous leasing demand is allowing many landlords to raise rental rates. As shown in Table 7, this market's average initial-year market rent change rate rises this quarter to 3.65%. "The continued investor demand for office product in Austin, coupled with the strong leasing market, has allowed investors to get more aggressive by projecting higher rent growth than even investment sales brokers are underwriting," explains an investor. Despite this optimistic outlook for market rent growth, surveyed investors are not implementing rent spikes in their cash flow forecasts at this time.

While healthy conditions in Austin remain highly attractive to investors, the pace of transactions has slowed. As per Real Capital Analytics, 18 office properties changed hands through midyear 2018, compared with midyear totals of 30 or more properties in the past four years. However, the second quarter 2018 average price per square foot was up 53.2% compared to midyear 2014.

For buyers looking to acquire office property here, local prices range from 100.0% to 130.0% of replacement cost. This market's average price of 107.5% of replacement cost is the second highest among the 19 city-specific office markets surveyed – behind San Francisco with an average price of 107.9% of replacement cost.

Keen investor interest is demonstrated in this market's average cap rate, which slips four basis points this quarter to 5.82%. As shown in the Key 3Q18 Survey Stats, the suburban cap rate falls eight basis points this quarter while the CBD rate holds steady. Over the next six months, 60.0% of participants foresee overall cap rates holding steady while the balance anticipates declines of up to 50 basis points. The average expected decline is 25 basis points. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

Average	5	=
Range	2 to 7	
% of participants using	100.0%	=

Average Overall Cap Rates:

Market (as a whole)	5.82%	▼
CBD	5.44%	=
Suburbs	6.20%	▼

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

Table 7
AUSTIN OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	YEAR AGO
DISCOUNT RATE (IRR)[a]			
Range	5.50% – 10.00%	5.50% – 10.00%	
Average	7.27%	7.51%	
Change (Basis Points)		– 24	
OVERALL CAP RATE (OAR)[a]			
Range	4.30% – 7.50%	4.30% – 7.50%	
Average	5.82%	5.86%	
Change (Basis Points)		– 4	
RESIDUAL CAP RATE			
Range	5.00% – 8.00%	5.15% – 8.00%	
Average	6.26%	6.39%	
Change (Basis Points)		– 13	
MARKET RENT CHANGE[b]			
Range	1.50% – 7.00%	1.50% – 7.00%	
Average	3.65%	3.58%	
Change (Basis Points)		+ 7	
EXPENSE CHANGE[b]			
Range	2.50% – 5.00%	2.50% – 5.00%	
Average	3.10%	3.05%	
Change (Basis Points)		+ 5	
MARKETING TIME[c]			
Range	2 – 9	2 – 9	
Average	4.9	4.9	
Change (▼, ▲, =)		=	

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

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Boston Office Market

The Boston office market continues to post impressive performance statistics, reporting record-level absorption figures for the first half of 2018. "Tenant demand is solid, and large blocks of space are hard to come by downtown," shares a participant. Over the past year, the overall vacancy rate for Boston's CBD declined from 7.4% to 6.0%, as per Cushman & Wakefield. With available space so tight, however, some investors wonder if companies will continue to move downtown, particularly given the rise in rental rates there. "Will tenants move into high-rise CBD space with rental rates continuing to rise?" ponders an investor.

The future performance of this office market is dependent on the continued strength of the U.S. economy. "If the economy remains strong, Boston will continue to perform well," states a participant. One vulnerability noted by the investor, however, is the city's low unemployment rate. "If businesses can't find talent, the office market could be negatively impacted," adds the investor. Other participants are also keeping an eye on labor trends, as well as interest rate increases.

For now, interest rate hikes have done little to impact this market's average overall cap rate, which dips below 6.00% for the first time since its 1999 Survey debut. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0% ▼
Range	50.0% to 75.0%

Months of Free Rent(1):

Average	5 ▼
Range	2 to 9
% of participants using	80.0% ▼

Average Overall Cap Rates:

Market (as a whole)	5.91% ▼
CBD	5.05% ▼
Suburbs	6.78% ▼

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

Table 8
BOSTON OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.75% – 10.00%	5.75% – 10.00%	5.75% – 10.00%	6.00% – 10.00%	6.50% – 13.00%
Average	7.23%	7.36%	7.43%	7.78%	8.57%
Change (Basis Points)		– 13	– 20	– 55	– 134
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 9.50%	4.00% – 9.50%	4.00% – 10.00%	4.00% – 9.00%	4.75% – 11.00%
Average	5.91%	6.02%	6.27%	6.23%	7.04%
Change (Basis Points)		– 11	– 36	– 32	– 113
RESIDUAL CAP RATE					
Range	5.00% – 10.00%	5.00% – 10.00%	5.00% – 10.50%	5.25% – 9.00%	5.75% – 11.00%
Average	6.58%	6.58%	6.82%	6.85%	7.48%
Change (Basis Points)		0	– 24	– 27	– 90
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 6.00%	0.00% – 10.00%
Average	3.10%	3.00%	3.33%	3.58%	3.92%
Change (Basis Points)		+ 10	– 23	– 48	– 82
EXPENSE CHANGE[b]					
Range	1.00% – 3.00%	1.00% – 3.00%	0.00% – 3.00%	2.50% – 4.00%	3.00% – 4.50%
Average	2.70%	2.75%	2.71%	3.04%	3.13%
Change (Basis Points)		– 5	– 1	– 34	– 43
MARKETING TIME[c]					
Range	2 – 8	2 – 8	2 – 9	2 – 12	2 – 12
Average	4.9	4.9	5.5	6.2	5.9
Change (▼, ▲, =)		=	▼	▼	▼

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

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Charlotte Office Market

Investors believe positive net absorption will be a key factor driving the performance of the Charlotte office market in the coming year. "Absorption of the new supply entering the CBD/Uptown submarket, as well as continued absorption in the suburbs, will be a positive for this overall market," remarks a participant. Through the first half of 2018, office space under construction totaled 3.6 million square feet, as per Cushman & Wakefield. Approximately 1.1 million square feet are scheduled for delivery this year while the balance is slated for completion in 2019.

As Charlotte works to absorb the new office supply, investors hope to see some organic tenant growth. "With Bank of America shuffling its tenancy in the CBD, we need some solid absorption from new tenants to propel this market forward," suggests an investor. Another proclaims, "More companies need to relocate here."

The impact of modest midyear absorption paired with the large amount of new supply entering this market is revealed in investors' diminished outlook for future rent growth. As shown in Table 9, the average for this key cash flow assumption falls nine basis points this quarter to 2.54% – just below the aggregate average of 2.63% for the Survey's 19 city-specific office markets. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	70.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	6.49%	▼
CBD	6.29%	▼
Suburbs	6.69%	▼

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

Table 9
CHARLOTTE OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.25% – 10.00%	6.50% – 10.00%	6.50% – 10.00%	7.00% – 11.50%	7.00% – 12.00%
Average	7.85%	8.02%	8.36%	8.70%	9.22%
Change (Basis Points)		– 17	– 51	– 85	– 137
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 7.75%	5.00% – 8.00%	5.00% – 8.75%	5.50% – 9.00%	5.00% – 9.50%
Average	6.49%	6.56%	6.93%	7.21%	7.59%
Change (Basis Points)		– 7	– 44	– 72	– 110
RESIDUAL CAP RATE					
Range	5.50% – 8.50%	5.50% – 8.50%	5.50% – 8.50%	5.50% – 8.75%	6.00% – 9.00%
Average	6.86%	6.85%	7.06%	7.29%	7.52%
Change (Basis Points)		+ 1	– 20	– 43	– 66
MARKET RENT CHANGE[b]					
Range	0.00% – 4.50%	0.00% – 4.50%	2.00% – 4.50%	0.00% – 6.00%	0.00% – 5.00%
Average	2.54%	2.63%	3.10%	3.31%	2.56%
Change (Basis Points)		– 9	– 56	– 77	– 2
EXPENSE CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	1.50% – 4.00%	1.75% – 3.00%	2.00% – 4.00%
Average	2.63%	2.63%	2.45%	2.58%	2.94%
Change (Basis Points)		0	+ 18	+ 5	– 31
MARKETING TIME[c]					
Range	1 – 12	1 – 12	1 – 9	1 – 12	1 – 12
Average	4.3	4.3	3.9	4.2	4.4
Change (▼, ▲, =)		=	▲	▲	▼

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

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Chicago Office Market

The supply side of the equation remains a main concern for many surveyed investors in the Chicago office market. "Untimely construction is a real threat if corporate growth doesn't persist," believes a participant. "The potential for an oversupply situation is huge given the number of CBD projects coming online over the next 12 months," remarks another. To remedy the impact of a very active pipeline, organic and inorganic leasing activity is needed just to keep the CBD stable. "With six million square feet of new developments and redevelopments being delivered over the next two years, we need net absorption figures to jump in order to weather the storm," adds the investor.

As new properties have been delivered to the Chicago office market, rental rates and rent growth assumptions have risen here. This quarter, the average initial-year market rent change rate rises 37 basis points to 2.08% (see Table 10). This quarterly shift is the second highest of the Survey's 19 city-specific office markets – behind the Houston office market with an increase of 40 basis points. At the same time, however, this market's average overall cap rate rises 20 basis points, reflecting investors' concerns and highlighting a market in limbo – one where a bid-ask pricing gap is growing between buyers and sellers. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	68.0%	▼
Range	60.0% to 75.0%	

Months of Free Rent(1):

Average	10	=
Range	6 to 12	
% of participants using	100.0%	=

Average Overall Cap Rates:

Market (as a whole)	7.56%	▲
CBD	6.52%	▲
Suburbs	8.60%	▼

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

Table 10
CHICAGO OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.00% – 12.00%	6.00% – 12.00%	5.50% – 12.00%	6.00% – 12.00%	6.50% – 13.00%
Average	8.84%	8.67%	8.61%	8.61%	9.01%
Change (Basis Points)		+ 17	+ 23	+ 23	– 17
OVERALL CAP RATE (OAR)[a]					
Range	4.75% – 10.00%	4.75% – 10.00%	4.50% – 10.00%	5.00% – 10.00%	5.75% – 11.00%
Average	7.56%	7.36%	7.28%	7.34%	8.02%
Change (Basis Points)		+ 20	+ 28	+ 22	– 46
RESIDUAL CAP RATE					
Range	5.50% – 11.00%	5.50% – 11.00%	5.50% – 10.50%	5.50% – 10.00%	6.00% – 11.00%
Average	8.01%	7.75%	7.75%	7.68%	8.03%
Change (Basis Points)		+ 26	+ 26	+ 33	– 2
MARKET RENT CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 4.50%	0.00% – 3.00%
Average	2.08%	1.71%	1.71%	2.21%	1.61%
Change (Basis Points)		+ 37	+ 37	– 13	+ 47
EXPENSE CHANGE[b]					
Range	2.00% – 6.00%	2.00% – 6.00%	2.00% – 6.00%	2.00% – 4.00%	1.00% – 3.00%
Average	3.17%	3.14%	3.21%	2.93%	2.72%
Change (Basis Points)		+ 3	– 4	+ 24	+ 45
MARKETING TIME[c]					
Range	3 – 18	2 – 10	2 – 9	2 – 8	2 – 9
Average	6.5	5.3	4.7	4.1	4.8
Change (▼, ▲, =)		▲	▲	▲	▲

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

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Dallas Office Market

Surveyed investors look to ongoing employment growth to drive continued vigorous leasing demand in the Dallas office market. "Job growth of more than 2.0% should be a boost to net absorption," predicts a participant. Preliminary figures for midyear 2018 indicate 1,000 new financial-activities jobs and 20,800 new professional-and-business-services jobs for the Dallas-Plano-Irving metropolitan division in the past year, as per the U.S. Bureau of Labor Statistics.

Despite this positive employment growth, second quarter 2018 office absorption was down and the average overall vacancy rate was up compared to a year ago, as per Cushman & Wakefield. These shifts were exacerbated by the one million square feet of speculative space added to the market in the second quarter. Moreover, just 29.0% of the 4.4 million square feet of space under construction as of midyear is preleased.

Even in the face of expanding supply, investors' positive perception of this market is highlighted in its average overall cap rate, which slips again this quarter and sits at 6.13% (see Table 11). This market's quarterly cap rate decline is the second highest among the 19 city-specific office markets in our Survey – behind Seattle which posted a 28-basis-point cap rate decline. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	70.0%	=
Range	65.0% to 75.0%	

Months of Free Rent(1):

Average	6	=
Range	3 to 10	
% of participants using	80.0%	=

Average Overall Cap Rates:

Market (as a whole)	6.13%	▼
CBD	5.73%	=
Suburbs	6.53%	▼

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

Table 11
DALLAS OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.00% – 9.00%	6.00% – 9.00%	6.00% – 11.00%	6.00% – 11.00%	6.00% – 11.00%
Average	7.74%	7.68%	7.86%	8.16%	8.44%
Change (Basis Points)		+ 6	– 12	– 42	– 70
OVERALL CAP RATE (OAR)[a]					
Range	4.50% – 8.50%	4.50% – 8.50%	5.00% – 8.50%	5.00% – 9.00%	5.50% – 10.00%
Average	6.13%	6.28%	6.48%	7.01%	7.57%
Change (Basis Points)		– 15	– 35	– 88	– 144
RESIDUAL CAP RATE					
Range	5.75% – 9.00%	5.75% – 9.00%	5.50% – 9.00%	6.00% – 9.00%	6.50% – 10.00%
Average	7.02%	7.14%	7.12%	7.43%	7.88%
Change (Basis Points)		– 12	– 10	– 41	– 86
MARKET RENT CHANGE[b]					
Range	1.75% – 5.00%	2.00% – 5.00%	2.00% – 6.00%	1.00% – 6.00%	0.00% – 6.00%
Average	2.78%	2.80%	3.46%	3.38%	2.68%
Change (Basis Points)		– 2	– 68	– 60	+ 10
EXPENSE CHANGE[b]					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%
Average	2.90%	2.90%	2.88%	2.88%	2.79%
Change (Basis Points)		0	+ 2	+ 2	+ 11
MARKETING TIME[c]					
Range	3 – 12	1 – 12	1 – 12	1 – 12	1 – 24
Average	5.5	5.3	5.3	4.5	5.9
Change (▼, ▲, =)		▲	▲	▲	▼

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

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Denver Office Market

Denver's growing reputation as a tech hub positively impacts leasing demand and lures investors to its office market. In fact, Denver was ranked as a top-20 tech-talent market in North America in a recent report by CBRE. Both Amazon and Microsoft have expanded their presence here and additional Silicon Valley-based tech firms, such as Marketo, Thanx, and Switchfly, are opening new offices in Denver to combat the higher costs of living and doing business on the West Coast.

Denver's attributes that attract investment capital include a high quality of life, strong in-migration, a growing pool of skilled workers from local universities, and a pro-business environment for start-up companies. As per Real Capital Analytics, 53 office properties sold as of midyear 2018 and an average of 118 properties traded annually in the four years prior. In addition, the average price per square foot has surged 60.0% since midyear 2013.

While the local economy continues to expand at a stable pace, surveyed investors are cautiously watching elevated CBD vacancy, a slowdown in tenant expansion needs, and job growth. Overall, this quarter's Survey results reveal a flat outlook for local office property values in the coming year. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	66.0%	=
Range	50.0% to 75.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	6.56%	=
CBD	5.84%	=
Suburbs	7.28%	=

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

Table 12
DENVER OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.50% – 11.00%	6.50% – 11.00%	6.50% – 11.00%	6.75% – 11.00%	6.50% – 14.00%
Average	8.07%	8.10%	7.95%	8.06%	8.90%
Change (Basis Points)		– 3	+ 12	+ 1	– 83
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	4.50% – 9.00%
Average	6.56%	6.56%	6.56%	6.57%	6.96%
Change (Basis Points)		0	0	– 1	– 40
RESIDUAL CAP RATE					
Range	5.50% – 9.50%	5.50% – 9.50%	5.75% – 9.50%	6.00% – 9.50%	5.00% – 10.00%
Average	7.09%	7.34%	7.30%	7.33%	7.61%
Change (Basis Points)		– 25	– 21	– 24	– 52
MARKET RENT CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%	2.00% – 5.00%	(5.00%) – 10.00%
Average	2.40%	2.40%	2.50%	3.50%	3.40%
Change (Basis Points)		0	– 10	– 110	– 100
EXPENSE CHANGE[b]					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 5.00%
Average	2.90%	2.90%	2.90%	2.80%	3.20%
Change (Basis Points)		0	0	+ 10	– 30
MARKETING TIME[c]					
Range	2 – 6	2 – 6	1 – 6	1 – 6	2 – 12
Average	4.0	4.0	3.7	3.9	5.0
Change (▼, ▲, =)		=	▲	▲	▼

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

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Houston Office Market

Our Survey results reveal that investors' average outlook for future rent growth in the Houston office market has turned positive for the first time in ten consecutive quarters. As shown in Table 13, the average initial-year market rent change rate jumps 40 basis points, but remains quite conservative at 0.10%, suggesting this market still faces considerable headwinds.

Crude oil prices and sublease space are highlighted as the most influential factors driving this market's performance. "The sublease inventory needs to decrease in order for this market to regain its footing," states an investor. Through midyear 2018, another 3.6 million square feet of new sublease space were added, pushing the market's total to 9.4 million square feet, as per Cushman & Wakefield.

Although most Survey participants view market conditions as favoring buyers, the ten-basis-point quarterly decline in the average overall cap rate is another indicator of a recovery in Houston. As shown in the Key 3Q18 Survey Stats, the CBD cap rate slips 20 basis points while the suburban cap rate holds steady. Similarly, investors' opinions are mixed with regard to value changes here over the next 12 months. While some expect decreases of as much as 20.0%, others see increases of as much as 5.0%. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	65.0%	=
Range	50.0% to 75.0%	

Months of Free Rent(1):

Average	10	=
Range	4 to 24	
% of participants using	100.0%	=

Average Overall Cap Rates:

Market (as a whole)	7.11%	▼
CBD	6.55%	▼
Suburbs	7.68%	=

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

Table 13
HOUSTON OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.50% – 13.00%	6.50% – 13.00%	6.50% – 13.50%	6.50% – 11.50%	7.00% – 14.00%
Average	8.60%	8.60%	9.02%	8.46%	9.17%
Change (Basis Points)		0	– 42	+ 14	– 57
OVERALL CAP RATE (OAR)[a]					
Range	5.75% – 10.00%	5.75% – 10.00%	5.00% – 10.00%	5.50% – 10.00%	5.00% – 11.00%
Average	7.11%	7.21%	7.31%	6.87%	7.55%
Change (Basis Points)		– 10	– 20	+ 24	– 44
RESIDUAL CAP RATE					
Range	6.00% – 10.00%	6.25% – 10.00%	5.75% – 10.00%	5.50% – 10.75%	5.00% – 11.00%
Average	7.38%	7.61%	7.46%	7.29%	7.88%
Change (Basis Points)		– 23	– 8	+ 9	– 50
MARKET RENT CHANGE[b]					
Range	(2.00%) – 3.00%	(5.00%) – 3.00%	(8.00%) – 3.00%	(4.00%) – 5.00%	2.00% – 5.00%
Average	0.10%	(0.30%)	(1.53%)	1.14%	3.08%
Change (Basis Points)		+ 40	+ 163	– 104	– 298
EXPENSE CHANGE[b]					
Range	2.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.60%	2.40%	2.51%	2.79%	2.67%
Change (Basis Points)		+ 20	+ 9	– 19	– 7
MARKETING TIME[c]					
Range	4 – 12	4 – 12	3 – 12	3 – 12	3 – 12
Average	8.1	8.7	8.5	7.0	6.7
Change (▼, ▲, =)		▼	▼	▲	▲

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

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Los Angeles Office Market

Media and technology are the engines driving the strength of the Los Angeles office market, one of the largest in terms of geographic size with eight defined submarkets and over 200 million square feet of space. While its dimensions make it difficult to generalize about its well-being, all participants unanimously view it as either "strong" or "healthy." The key to its continued success will likely remain a function of the health of the local media and tech industries. "With LA being a media capital of the world, we see it remaining very vibrant for years to come," remarks a participant.

While many other surveyed investors are also optimistic about this market's future, they are closely watching leasing trends, rising construction and tenant improvement costs, the impact of a trade war with China, and how well emerging submarkets compete with the established nodes in the market. "We are very pleased with this market's performance, but we also realize that there are many variables that can change its direction," says an investor.

For now, investors seem content to embrace its performance and look for properties to acquire throughout its diverse geography, including the submarkets of Los Angeles South, Tri-Cities, and Los Angeles West. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	68.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	5.88%	=
CBD	5.58%	=
Suburbs	6.17%	=

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

Table 14
LOS ANGELES OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.00% – 11.50%	5.00% – 11.00%	5.00% – 11.00%	5.50% – 10.00%	5.75% – 10.00%
Average	7.82%	7.79%	7.41%	7.30%	7.74%
Change (Basis Points)		+ 3	+ 41	+ 52	+ 8
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 8.00%	4.00% – 8.00%	4.00% – 8.00%	4.50% – 7.25%	4.50% – 8.50%
Average	5.88%	5.88%	5.74%	5.76%	6.50%
Change (Basis Points)		0	+ 14	+ 12	– 62
RESIDUAL CAP RATE					
Range	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	5.50% – 9.00%
Average	6.41%	6.41%	6.46%	6.70%	7.07%
Change (Basis Points)		0	– 5	– 29	– 66
MARKET RENT CHANGE[b]					
Range	1.50% – 6.00%	1.50% – 8.00%	1.50% – 6.00%	0.00% – 7.00%	0.00% – 7.50%
Average	3.78%	3.97%	3.75%	4.00%	3.13%
Change (Basis Points)		– 19	+ 3	– 22	+ 65
EXPENSE CHANGE[b]					
Range	2.00% – 4.00%	2.00% – 4.00%	2.00% – 3.50%	2.00% – 3.00%	1.00% – 3.00%
Average	2.91%	2.91%	2.78%	2.80%	2.75%
Change (Basis Points)		0	+ 13	+ 11	+ 16
MARKETING TIME[c]					
Range	1 – 12	1 – 12	1 – 12	1 – 12	1 – 12
Average	4.4	4.4	4.2	4.7	5.2
Change (▼, ▲, =)		=	▲	▼	▼

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

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Manhattan Office Market

A robust local economy continues to benefit the Manhattan office market and contribute to steady leasing trends and low vacancy. Midtown was the most active in terms of leasing for the second quarter of 2018, posting net absorption of 2.2 million square feet, as per Cushman & Wakefield. One large deal signed there during the quarter was by Pfizer, which inked a new 20-year lease for 800,000 square feet at The Spiral, a new 65-story office tower planned for Hudson Yards. Many investors will be closely watching the delivery of this space, as there is some concern that new construction in Midtown will negatively impact effective rents.

While this office market is performing quite soundly, there is a sense among investors and some evidence that it has "leveled off" and that significant growth in rental rates and net operating incomes is not likely. First, its average rent growth assumption declines 44 basis points this quarter to reach 1.85% – the lowest average for this key assumption since 2010. Second, most surveyed investors now feel that this office market is neutral – equally favoring buyers and sellers. And third, this market's average overall cap rate inches up for the second consecutive quarter and at 4.70% is its highest quarterly average over the past year. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	66.0%	▼
Range	50.0% to 75.0%	

Months of Free Rent(1):

Average	8	▼
Range	1 to 12	
% of participants using	100.0%	=

Market Conditions Favor:

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

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

Table 15
MANHATTAN OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.50% – 9.00%	5.50% – 9.00%	5.50% – 9.00%	5.75% – 9.00%	6.00% – 8.50%
Average	6.90%	6.81%	6.81%	6.96%	7.19%
Change (Basis Points)		+ 9	+ 9	– 6	– 29
OVERALL CAP RATE (OAR)[a]					
Range	3.00% – 6.00%	3.00% – 6.00%	3.00% – 8.50%	3.75% – 8.00%	4.00% – 6.00%
Average	4.70%	4.67%	4.94%	5.15%	4.92%
Change (Basis Points)		+ 3	– 24	– 45	– 22
RESIDUAL CAP RATE					
Range	3.00% – 6.75%	3.00% – 6.75%	3.00% – 8.50%	5.00% – 8.00%	5.00% – 7.00%
Average	5.23%	5.25%	5.63%	6.02%	5.73%
Change (Basis Points)		– 2	– 40	– 79	– 50
MARKET RENT CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 8.00%	0.00% – 10.00%
Average	1.85%	2.29%	2.96%	4.25%	4.73%
Change (Basis Points)		– 44	– 111	– 240	– 288
EXPENSE CHANGE[b]					
Range	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%	0.00% – 3.00%
Average	2.60%	2.67%	2.75%	2.75%	2.67%
Change (Basis Points)		– 7	– 15	– 15	– 7
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 9	1 – 9	3 – 6
Average	4.3	4.1	4.8	4.8	4.1
Change (▼, ▲, =)		▲	▼	▼	▲

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

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Northern Virginia Office Market

Average asking rental rates are seeing little movement in the Northern Virginia office market as investors continue to watch additions to supply impact leasing decisions. "Tenants have a variety of leasing options and are choosing new product over commodity product because the rent spread is not that wide," says a participant. According to Cushman & Wakefield, the average asking rental rate for the market as a whole, as well as for Class-A product, rose 1.6% year over year in the second quarter of 2018.

While one investor points out that rent growth is more elevated in the Tysons Corner submarket for new and redeveloped space, it remains to be seen whether this trend trickles out to adjacent areas. For now, our surveyed investors hold the average initial-year market rent change rate assumption steady at 1.79% for this market (see Table 16). Once the supply hurdle is cleared, most investors are confident that rent growth will pick up in conjunction with increased defense and other government spending.

In addition, many local investors are anxiously awaiting Amazon's HQ2 announcement as Crystal City has been rumored to be a frontrunner for its second headquarters pick. "If selected, the positive effect on this market would be immeasurable," says an investor. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 75.0%	

Months of Free Rent(1):

Average	7	=
Range	1 to 13	
% of participants using	100.0%	=

Market Conditions Favor:

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

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

Table 16
NORTHERN VIRGINIA OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.00% – 9.50%	6.00% – 9.50%	6.00% – 9.50%	6.00% – 9.50%	7.00% – 10.00%
Average	7.71%	7.71%	7.71%	7.80%	8.30%
Change (Basis Points)		0	0	– 9	– 59
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 8.50%	5.00% – 8.50%	5.00% – 8.50%	5.00% – 8.50%	5.75% – 9.00%
Average	6.67%	6.77%	6.77%	6.93%	7.15%
Change (Basis Points)		– 10	– 10	– 26	– 48
RESIDUAL CAP RATE					
Range	5.50% – 8.00%	5.50% – 8.50%	5.50% – 8.50%	5.75% – 8.50%	6.00% – 9.00%
Average	6.81%	6.85%	6.85%	7.25%	7.55%
Change (Basis Points)		– 4	– 4	– 44	– 74
MARKET RENT CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	(5.00%) – 3.00%
Average	1.79%	1.79%	1.63%	1.30%	1.00%
Change (Basis Points)		0	+ 16	+ 49	+ 79
EXPENSE CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.38%	2.33%	2.17%	2.40%	2.54%
Change (Basis Points)		+ 5	+ 21	– 2	– 16
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 8	3 – 9	3 – 9
Average	3.9	3.9	4.1	4.7	5.5
Change (▼, ▲, =)		=	▼	▼	▼

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

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Pacific Northwest Office Market

Continuous job growth in office-space-using sectors is keeping the pace of leasing activity quite brisk in the Pacific Northwest office market. In Bellevue and Seattle, for example, employment in the financial-activities sector has risen annually for the Seattle-Bellevue-Everett MSA since 2011, according to the U.S. Bureau of Labor Statistics. This astounding trend is mirrored in the Portland-Vancouver-Hillsboro metro area. In addition, large employment gains have occurred in the professional-and-business-services sector of both of these metro areas for the past seven years.

The strength of this market has led to an increase in construction activity, which is giving some investors reason to pause. In Portland, over 550,000 square feet of new space were delivered in the second quarter and another half a million square feet are slated for completion by year-end 2018. "The new supply could have negative consequences for Portland," comments a participant. "Will any large new employers come to Portland?" questions another.

For now, most surveyed investors are content to look for more buying opportunities throughout this market with the belief that "any hiccups over the near term will be short lived." ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	71.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	5.82%	▼
CBD	5.41%	▼
Suburbs	6.23%	▼

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

Table 17
PACIFIC NORTHWEST OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.25% – 10.00%	5.25% – 10.00%	5.25% – 10.00%	5.75% – 10.50%	6.25% – 11.00%
Average	7.32%	7.32%	7.44%	7.71%	8.08%
Change (Basis Points)		0	– 12	– 39	– 76
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 8.00%	4.20% – 9.00%	4.25% – 8.00%	4.00% – 9.00%	4.50% – 9.00%
Average	5.82%	5.96%	5.99%	6.16%	6.65%
Change (Basis Points)		– 14	– 17	– 34	– 83
RESIDUAL CAP RATE					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%
Average	6.40%	6.42%	6.42%	6.66%	7.00%
Change (Basis Points)		– 2	– 2	– 26	– 60
MARKET RENT CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 5.00%	2.50% – 10.00%	0.00% – 8.00%
Average	3.07%	3.07%	3.24%	4.41%	3.73%
Change (Basis Points)		0	– 17	– 134	– 66
EXPENSE CHANGE[b]					
Range	2.50% – 3.00%	2.50% – 3.00%	2.00% – 3.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.95%	2.95%	2.91%	2.86%	2.83%
Change (Basis Points)		0	+ 4	+ 9	+ 12
MARKETING TIME[c]					
Range	1 – 9	1 – 9	1 – 12	1 – 12	1 – 12
Average	4.1	4.1	4.8	4.7	5.0
Change (▼, ▲, =)		=	▼	▼	▼

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

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Philadelphia Office Market

Our PwC real estate barometer places the Philadelphia office market in the contraction phase of the real estate cycle, illustrated by rising vacancy rates and slowing rent growth. As of midyear 2018, Philly's CBD vacancy rate was up 100 basis points year over year while its suburban rate rose 90 basis points, as per Cushman & Wakefield. "Tenants are continuing to downsize and give back space," comments an investor. Local CBD tenants relocating and downsizing include the Government Services Association, reducing its space by roughly 25,000 square feet, and law firm Montgomery, McCracken, Walker & Rhoads, taking 45,000 less square feet in its move.

Amid softer market conditions, not only does Philly's average initial-year market rent change rate hold steady this quarter, but increased space options continue to compel landlords to provide free rent to tenants. Our surveyed investors unanimously agree that free rent is offered, ranging from three to 12 months on a ten-year lease and averaging seven months.

Despite these shifts in local underlying fundamentals, investors foresee property values rising up to 9.0% here in the coming year. The average expected increase is 2.5% – just above the aggregate average of 2.2% for the 19 city-specific office markets surveyed. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	=
Range	50.0% to 75.0%	

Months of Free Rent(1):

Average	7	=
Range	3 to 12	
% of participants using	100.0%	=

Average Overall Cap Rates:

Market (as a whole)	7.15%	▲
CBD	6.70%	=
Suburbs	7.60%	▲

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

Table 18
PHILADELPHIA OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.00% – 10.00%	7.00% – 10.00%	7.00% – 11.00%	7.00% – 10.00%	7.00% – 12.00%
Average	8.35%	8.58%	8.63%	8.55%	9.10%
Change (Basis Points)		– 23	– 28	– 20	– 75
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.50%	6.00% – 9.00%	6.75% – 10.00%
Average	7.15%	7.13%	7.29%	7.56%	8.45%
Change (Basis Points)		+ 2	– 14	– 41	– 130
RESIDUAL CAP RATE					
Range	5.50% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.25% – 9.00%	7.00% – 10.00%
Average	7.55%	7.60%	7.79%	7.89%	8.29%
Change (Basis Points)		– 5	– 24	– 34	– 74
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%
Average	2.60%	2.60%	2.13%	1.85%	1.10%
Change (Basis Points)		0	+ 47	+ 75	+ 150
EXPENSE CHANGE[b]					
Range	1.00% – 3.00%	1.00% – 3.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%
Average	2.50%	2.50%	2.50%	2.30%	2.45%
Change (Basis Points)		0	0	+ 20	+ 5
MARKETING TIME[c]					
Range	2 – 12	2 – 12	2 – 12	3 – 12	3 – 18
Average	5.5	5.8	5.5	5.4	7.9
Change (▼, ▲, =)		▼	=	▲	▼

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

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Phoenix Office Market

Robust leasing activity in the Phoenix office market led to a decline in vacancy during the first six months of 2018. Year over year, the midyear overall vacancy rate fell 150 basis points to 16.1% – the lowest level seen since the second quarter of 2008, as per Cushman & Wakefield.

During the first half of 2018, a total of 539 leases were signed here, 98.0% of which were new deals. "Solid tenant demand has increased income growth for assets," explains an investor. Companies that signed leases include JP Morgan, taking 299,185 square feet in the Discovery Business Campus, and Freedom Financial, leasing 150,000 square feet at Rio 2100. Plus, Phoenix has seen an increase in leasing among start-up tech firms and was recently named the 15th tech-talent market in North America by CBRE.

These positive demand trends are drawing investors to Phoenix. Since midyear 2018, office property sales averaged 38 per quarter while the average price per square foot rose nearly 8.0%. Still, the average overall cap rate holds relatively steady this quarter. In the coming year, investors are watching U.S. economic trends, government policy initiatives, and corporate health decisions as key factors impacting this market's performance. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	69.0%	=
Range	60.0% to 75.0%	

Months of Free Rent(1):

Average	6	=
Range	3 to 10	
% of participants using	100.0%	=

Average Overall Cap Rates:

Market (as a whole)	6.48%	▲
CBD	6.38%	▲
Suburbs	6.58%	▲

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

Table 19
PHOENIX OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	7.00% – 11.00%	7.00% – 11.00%	7.00% – 11.00%	7.00% – 12.00%	7.00% – 15.00%
Average	8.72%	8.69%	8.78%	8.56%	9.39%
Change (Basis Points)		+ 3	– 6	+ 16	– 67
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 8.00%	5.00% – 8.00%	5.00% – 8.00%	5.50% – 8.50%	5.50% – 10.50%
Average	6.48%	6.45%	6.53%	7.03%	7.34%
Change (Basis Points)		+ 3	– 5	– 55	– 86
RESIDUAL CAP RATE					
Range	5.50% – 8.00%	5.50% – 8.00%	5.50% – 8.00%	5.50% – 9.00%	6.00% – 10.00%
Average	6.74%	6.74%	6.80%	7.10%	7.55%
Change (Basis Points)		0	– 6	– 36	– 81
MARKET RENT CHANGE[b]					
Range	1.00% – 6.00%	1.00% – 6.00%	2.00% – 7.00%	2.00% – 7.00%	0.00% – 5.00%
Average	3.10%	3.10%	4.00%	3.55%	1.30%
Change (Basis Points)		0	– 90	– 45	+ 180
EXPENSE CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 3.00%	1.00% – 3.00%
Average	2.70%	2.70%	2.67%	2.80%	2.70%
Change (Basis Points)		0	+ 3	– 10	0
MARKETING TIME[c]					
Range	3 – 18	1 – 18	1 – 18	1 – 9	1 – 9
Average	6.7	6.8	7.1	4.4	5.0
Change (▼, ▲, =)		▼	▼	▲	▲

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

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San Diego Office Market

Our Survey results reveal a third consecutive quarterly increase in the outlook for future rent growth in the San Diego office market. As shown in Table 20, the average initial-year market rent change rate for this city moves up ten basis points to reach 3.70%.

Investors deem rent growth trends, supported by ongoing tenant demand, as critical factors to this market's success in the coming year. "If we see decelerating tenant demand, it will put downward pressure on rental rates," predicts a participant. "Demand from major suburban employers and the ability to attract major companies from outside the region are critical to this market's performance," remarks another.

Despite a year-over-year decline in total leasing activity through mid-year 2018, overall net absorption increased and overall vacancy declined during that period, as per Cushman & Wakefield. As of the second quarter, however, almost 2.3 million square feet are under construction. Roughly 95.0% of this new supply is Class-A space and mainly located in the Central County and South County submarkets. While build-to-suit projects account for about 57.0% of the new office inventory, the delivery of the remaining speculative space is anticipated to negatively impact vacancy as it lingers in the market. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	68.0%	=
Range	60.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	6.56%	=
CBD	6.50%	=
Suburbs	6.63%	=

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

Table 20
SAN DIEGO OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.50% – 12.00%	6.50% – 12.00%	6.50% – 11.00%	6.25% – 10.50%	6.75% – 12.50%
Average	8.19%	8.25%	8.21%	7.89%	9.14%
Change (Basis Points)		– 6	– 2	+ 30	– 95
OVERALL CAP RATE (OAR)[a]					
Range	5.25% – 8.50%	5.25% – 8.50%	5.25% – 8.50%	5.25% – 8.50%	6.00% – 9.50%
Average	6.56%	6.56%	6.51%	6.94%	7.73%
Change (Basis Points)		0	+ 5	– 38	– 117
RESIDUAL CAP RATE					
Range	5.50% – 8.75%	5.50% – 8.75%	5.75% – 8.75%	5.75% – 8.75%	6.75% – 9.00%
Average	6.95%	6.95%	6.93%	7.29%	7.78%
Change (Basis Points)		0	+ 2	– 34	– 83
MARKET RENT CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	2.00% – 5.00%	0.00% – 6.00%	0.00% – 5.00%
Average	3.70%	3.60%	3.50%	3.60%	2.00%
Change (Basis Points)		+ 10	+ 20	+ 10	+ 170
EXPENSE CHANGE[b]					
Range	2.00% – 4.00%	2.00% – 4.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	2.90%	2.90%	2.80%	2.90%	2.90%
Change (Basis Points)		0	+ 10	0	0
MARKETING TIME[c]					
Range	3 – 12	3 – 12	3 – 12	1 – 6	1 – 9
Average	5.1	5.1	5.1	4.3	4.5
Change (▼, ▲, =)		=	=	▲	▲

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

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San Francisco Office Market

Each key indicator holds steady this quarter for the San Francisco office market suggesting that our investor participants are content with its performance and are expecting little in way of significant changes over the near term. "All the pieces of the puzzle are still connected," states a participant, who adds that interest rates are still low enough to keep the economy moving; businesses continue to expand, keeping employment high; and occupancy levels are strong.

At 5.47%, the average overall cap rate for the San Francisco office market is the third lowest of the Survey's 19 city-specific office markets – behind Manhattan and Washington, DC.

While some speculate that rates could move up slightly as interest rates rise and new space is added to this market, many investors sense the impact will be short lived. At the same time, local owners and investors are keeping an eye on the impact of Prop C. "The community will have to figure out the impact of Prop C on the market and factor in an increasingly active government/regulatory sector on capital and property markets," says a participant.

Investors are also keeping an eye on the robust tech sector's challenge of attracting and retaining employees in such an expensive market as San Francisco. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	69.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

Average	6	=
Range	1 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
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.00% – 9.50%	5.00% – 9.50%	5.00% – 9.50%	5.75% – 10.00%	6.00% – 11.00%
Average	6.81%	6.81%	6.86%	7.02%	7.80%
Change (Basis Points)		0	– 5	– 21	– 99
OVERALL CAP RATE (OAR)[a]					
Range	3.50% – 8.00%	3.50% – 8.00%	3.50% – 8.00%	3.50% – 9.00%	4.00% – 9.00%
Average	5.47%	5.47%	5.45%	5.73%	6.34%
Change (Basis Points)		0	+ 2	– 26	– 87
RESIDUAL CAP RATE					
Range	4.75% – 9.00%	4.75% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 10.00%
Average	6.18%	6.18%	6.21%	6.34%	7.05%
Change (Basis Points)		0	– 3	– 16	– 87
MARKET RENT CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	1.00% – 5.00%	2.00% – 10.00%	2.00% – 10.00%
Average	3.70%	3.70%	3.00%	5.75%	6.00%
Change (Basis Points)		0	+ 70	– 205	– 230
EXPENSE CHANGE[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%	2.69%
Change (Basis Points)		0	0	– 15	– 9
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 6	1 – 6	1 – 8
Average	3.9	3.9	3.9	3.9	4.1
Change (▼, ▲, =)		=	=	=	▼

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

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Seattle Office Market

The downtown core of the Seattle office market maintains one of the lowest overall vacancy rates in the country due to a healthy tech-driven economy and a quality of life that appeals to many in the workforce. "The success of the tech sector will continue to be a very important factor in the health and future of the Seattle office market," says an investor. In the second quarter of 2018, the CBD's overall vacancy rate was 6.0% – tied with Boston's CBD for the 7th lowest rate in the country, as per Cushman & Wakefield. By comparison, the overall vacancy rate for the national CBD office sector was 12.5%.

Even though a tremendous amount of new product is being built in downtown Seattle, tenant demand remains robust and many users are reportedly looking for large blocks of space. As of the second quarter, 3.3 million square feet were under construction (excluding Amazon-owned projects) divided between 43.5% in the Financial District and the remainder in Lower Queen Anne/Lake Union. While nearly 56.0% of the space being built has been preleased, local investors are monitoring the absorption of new product. "The city's job growth may start to decelerate just as new space is delivered," cautions a participant. For now, however, "there are few space options for large tenants." ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	70.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

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

Average Overall Cap Rates:

Market (as a whole)	5.58%	▼
CBD	5.25%	▼
Suburbs	5.91%	▼

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

Table 22
SEATTLE OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.25% – 9.00%	5.25% – 9.00%	5.25% – 10.00%	5.75% – 11.00%	6.25% – 11.00%
Average	7.06%	7.07%	7.24%	7.73%	8.16%
Change (Basis Points)		– 1	– 18	– 67	– 110
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 8.00%	4.20% – 9.00%	4.25% – 8.00%	4.00% – 9.00%	4.50% – 9.00%
Average	5.58%	5.86%	5.79%	6.18%	6.71%
Change (Basis Points)		– 28	– 21	– 60	– 113
RESIDUAL CAP RATE					
Range	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%	5.00% – 9.00%
Average	6.27%	6.33%	6.27%	6.46%	6.85%
Change (Basis Points)		– 6	0	– 19	– 58
MARKET RENT CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 5.00%	2.50% – 5.00%	2.50% – 6.00%	2.50% – 8.00%
Average	3.21%	3.21%	3.38%	4.00%	4.21%
Change (Basis Points)		0	– 17	– 79	– 100
EXPENSE CHANGE[b]					
Range	2.50% – 3.00%	2.50% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 3.00%
Average	2.96%	2.96%	2.88%	2.88%	2.75%
Change (Basis Points)		0	+ 8	+ 8	+ 21
MARKETING TIME[c]					
Range	1 – 9	1 – 9	1 – 12	1 – 12	1 – 12
Average	3.9	3.9	4.5	5.0	5.0
Change (▼, ▲, =)		=	▼	▼	▼

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

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Southeast Florida Office Market

The key indicators for the Southeast Florida office market hold steady this quarter as its three main locations sit in either the contraction or expansion phase of the real estate cycle (see page 11). Our PwC real estate barometer analysis places the office sectors of both West Palm Beach and Fort Lauderdale in the expansion phase of the cycle through 2018 while it puts Miami in the contraction phase. Each office location is expected to be in the contraction phase of the cycle through 2021.

The contraction phase of the cycle is often 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. For now, our surveyed investors hold the average overall cap rate for this market at 6.93% (see Table 23). Over the next six months, most participants (75.0%) see overall cap rates holding steady while the balance sees them rising between 25 and 50 basis points.

Over the next 12 months, some investors will be closely watching how the local economy responds to changes to the U.S. trade policy since "trade is a key factor influencing the success of Southeast Florida's underlying economy and local businesses." ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	64.0%	▼
Range	40.0% to 75.0%	

Months of Free Rent(1):

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
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
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%	8.31%	8.42%	8.99%
Change (Basis Points)		0	0	– 11	– 68
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 9.50%	5.00% – 9.50%	5.00% – 10.00%	4.50% – 10.00%	6.00% – 12.00%
Average	6.93%	6.93%	7.26%	7.23%	8.20%
Change (Basis Points)		0	– 33	– 30	– 127
RESIDUAL CAP RATE					
Range	5.00% – 10.50%	5.00% – 10.50%	5.00% – 10.50%	4.50% – 10.50%	6.00% – 10.50%
Average	7.46%	7.46%	7.49%	7.34%	8.14%
Change (Basis Points)		0	– 3	+ 12	– 68
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 6.00%	(10.00%) – 4.00%
Average	2.70%	2.70%	2.20%	2.42%	0.29%
Change (Basis Points)		0	+ 50	+ 28	+ 241
EXPENSE CHANGE[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%	2.70%	2.75%	2.58%
Change (Basis Points)		0	0	– 5	+ 12
MARKETING TIME[c]					
Range	3 – 8	3 – 8	3 – 12	2 – 12	2 – 18
Average	4.5	4.5	5.4	5.4	6.8
Change (▼, ▲, =)		=	▼	▼	▼

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

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Washington, DC Office Market

With the delivery of both new space and renovated space outpacing leasing activity, the Washington, DC office market continues to battle rising vacancy rates. "Oversupply remains a challenge, as well as tenants using space more efficiently," states an investor.

In the second quarter of 2018, over two million square feet of Class-A office product entered the market – the largest quarterly total in Washington, D.C's history, as per Cushman & Wakefield. Nearly half of this new space has yet to lease, causing the overall vacancy rate in the District to rise to 14.0% – the area's highest vacancy rate since 2014.

Abundant leasing options are helping to swing the pendulum in favor of most tenants, who continue to receive aggressive concession packages. This quarter, our Survey reveals that tenants receive an average of eight months of free rent on a ten-year lease. In addition, surveyed investors are being less aggressive with their market rent growth assumptions. As shown in Table 24, the average initial-year market rent change rate drops 28 basis points this quarter. These trends are not expected to reverse themselves anytime soon given the large amount of new construction and renovated office product due by year-end 2018. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	=
Range	60.0% to 75.0%	

Months of Free Rent(1):

Average	8	▼
Range	3 to 18	
% of participants using	100.0%	=

Market Conditions Favor:

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

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

Table 24
WASHINGTON, DC OFFICE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.00% – 7.00%	5.00% – 7.00%	5.00% – 8.00%	5.50% – 8.00%	6.25% – 8.75%
Average	6.03%	6.19%	6.48%	6.83%	7.25%
Change (Basis Points)		– 16	– 45	– 80	– 122
OVERALL CAP RATE (OAR)[a]					
Range	4.25% – 6.50%	4.25% – 6.50%	4.25% – 6.50%	4.25% – 6.50%	4.25% – 6.50%
Average	5.13%	5.10%	5.27%	5.40%	5.44%
Change (Basis Points)		+ 3	– 14	– 27	– 31
RESIDUAL CAP RATE					
Range	5.00% – 6.50%	5.00% – 6.50%	5.00% – 6.50%	5.00% – 6.50%	5.25% – 8.25%
Average	5.63%	5.65%	5.65%	5.85%	6.38%
Change (Basis Points)		– 2	– 2	– 22	– 75
MARKET RENT CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 6.00%
Average	1.30%	1.58%	1.58%	1.42%	1.75%
Change (Basis Points)		– 28	– 28	– 12	– 45
EXPENSE CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.00% – 3.00%	2.50% – 3.00%
Average	2.20%	2.33%	2.33%	2.75%	2.96%
Change (Basis Points)		– 13	– 13	– 55	– 76
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 6	2 – 6	2 – 9
Average	3.4	3.6	3.6	4.0	4.8
Change (▼, ▲, =)		▼	▼	▼	▼

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

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National Warehouse Market

Fundamentals remain strong for the national warehouse market, and investors are eager to acquire additional assets despite a growing pipeline. "The sector is seeing above-average rent growth, which is luring investors from across the globe," says a participant. This quarter, this market's average initial-year market rent change rate rises 17 basis points to 2.60% (see Table 25). Even though this current average represents the highest posted for this key assumption since the first quarter of 2016, some investors ponder whether rent growth in this sector will outweigh the impact of rising interest rates.

Helping to offset the impact of rising interest rates, however, are continuous declines in this market's average overall cap rate. At 4.62% the current average cap rate is the lowest posted for this market since its debut in 2002. Moreover, the drop represents the sixth consecutive quarterly decline. "Strong investor appetite for this product is keeping rates low and sellers in control of pricing," remarks a participant.

Over the next 12 months, surveyed investors foresee property values in this market either holding steady or rising. The highest expected value increase is a gain of 15.0%. The average value increase is 5.2% – the second highest average of all Survey markets. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	69.0%	=
Range	50.0% to 80.0%	

Months of Free Rent(1):

Average	2	▼
Range	0 to 7	
% of participants using	90.0%	=

Market Conditions Favor:

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

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

Table 25
NATIONAL WAREHOUSE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.25% – 9.00%	5.00% – 9.00%	5.50% – 9.00%	5.25% – 9.00%	5.75% – 9.25%
Average	6.38%	6.36%	6.65%	6.93%	7.36%
Change (Basis Points)		+ 2	– 27	– 55	– 98
OVERALL CAP RATE (OAR)[a]					
Range	1.50% – 6.25%	3.00% – 6.50%	4.00% – 6.90%	4.00% – 7.00%	5.00% – 7.75%
Average	4.62%	4.80%	5.22%	5.56%	6.22%
Change (Basis Points)		– 18	– 60	– 94	– 160
RESIDUAL CAP RATE					
Range	4.50% – 7.25%	4.50% – 7.25%	5.00% – 7.00%	5.25% – 7.25%	5.50% – 8.50%
Average	5.64%	5.69%	5.96%	6.19%	6.76%
Change (Basis Points)		– 5	– 32	– 55	– 112
MARKET RENT CHANGE[b]					
Range	0.00% – 7.00%	0.00% – 7.00%	0.00% – 6.00%	0.00% – 6.00%	0.00% – 6.00%
Average	2.60%	2.43%	2.55%	2.93%	2.39%
Change (Basis Points)		+ 17	+ 5	– 33	+ 21
EXPENSE CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 3.00%	2.50% – 3.00%
Average	2.30%	2.30%	2.48%	2.98%	2.94%
Change (Basis Points)		0	– 18	– 68	+ 64
MARKETING TIME[c]					
Range	1 – 9	1 – 9	1 – 9	1 – 12	2 – 12
Average	4.2	4.2	3.8	4.6	6.2
Change (▼, ▲, =)		=	▲	▼	▼

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

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ENC Region Warehouse Market

The average overall cap rate declines 32 basis points this quarter in the East North Central (ENC) region warehouse market – the key assumption's second consecutive quarterly decline. At 5.05%, the current average stands as the lowest posted for this market since its debut in 2012.

While cap rate compression suggests that investors are anticipating value appreciation and income growth, some participants question their ability to push NOI higher over the next 12 months as tenant demand softens, interest rates rise, and many metros exhibit nominal rent growth.

At this point in the cycle, investors appear more focused on firming up occupancy levels with credit tenants than on rent growth. This quarter, the average initial-year market rent change rate assumption for this warehouse region slips slightly to 2.60% (see Table 26). This current average is the lowest reported for this market since 2014.

Over the near term, some surveyed investors are keeping an eye on rent growth trends and deliveries as there are some concerns that the current pricing levels in this market could present challenges to new buyers if the market becomes saturated with new supply, causing concessions to rise and rental rates to drop. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	67.0%	▼
Range	60.0% to 75.0%	

Months of Free Rent(1):

Average	3	=
Range	1 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 26
EAST NORTH CENTRAL (ENC) REGION WAREHOUSE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.50% – 7.00%	5.50% – 7.25%	5.75% – 7.00%	6.00% – 8.00%	6.00% – 8.50%
Average	6.25%	6.33%	6.38%	6.93%	7.30%
Change (Basis Points)		– 18	– 13	– 68	– 105
OVERALL CAP RATE (OAR)[a]					
Range	3.70% – 5.75%	4.25% – 6.00%	4.25% – 6.00%	4.75% – 7.00%	5.50% – 7.50%
Average	5.05%	5.37%	5.35%	5.88%	6.48%
Change (Basis Points)		– 32	– 30	– 83	– 143
RESIDUAL CAP RATE					
Range	5.00% – 7.00%	5.00% – 7.00%	5.00% – 7.00%	5.25% – 7.75%	6.00% – 8.25%
Average	6.03%	6.03%	6.05%	6.48%	7.08%
Change (Basis Points)		0	– 2	– 45	– 105
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%
Average	2.60%	2.65%	2.70%	3.08%	2.50%
Change (Basis Points)		– 5	– 10	– 48	+ 10
EXPENSE CHANGE[b]					
Range	2.50% – 3.00%	2.50% – 3.00%	2.50% – 3.00%	2.00% – 4.00%	2.50% – 5.00%
Average	2.90%	2.90%	2.90%	3.00%	3.13%
Change (Basis Points)		0	0	– 10	– 23
MARKETING TIME[c]					
Range	2 – 6	2 – 6	2 – 9	2 – 9	2 – 12
Average	4.0	4.1	4.7	4.8	5.8
Change (▼, ▲, =)		▼	▼	▼	▼

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

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Pacific Region Warehouse Market

Healthy economic growth and robust Internet sales continue to fuel tenant demand in the Pacific region warehouse market. When looking at the four main regions of the United States – Northeast, Midwest, South, and West, the West region posts the lowest vacancy rate by a considerable margin, according to stats by Cushman & Wakefield. Specifically, the West's vacancy rate was 3.6% for the second quarter of 2018. The next lowest figure was 5.2% for the Midwest region.

While most investors foresee continued strength in the west region, they also realize that "the Pacific warehouse market is heavily dependent on trade with China, and any fallout from a potential trade war could materially impact tenant demand – the key to this market's strength over the last few years."

Buyers looking for available properties are finding limited quality offerings and high prices. With 75.0% of participants feeling that market conditions favor sellers, it is not surprising that the average overall cap rate declines 45 basis points this quarter (see Table 27). "It's a fiercely competitive atmosphere," attests a participant. Based on data from Real Capital Analytics, the most active Pacific cities for industrial sales during the first half of 2018 were Los Angeles, Inland Empire, and San Jose. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	66.0%	▲
Range	50.0% to 75.0%	

Months of Free Rent(1):

Average	2	=
Range	1 to 6	
% of participants using	100.0%	▲

Market Conditions Favor:

Buyers	0.0%	=
Sellers	75.0%	=
Neither	25.0%	=

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

Table 27
PACIFIC REGION WAREHOUSE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.50% – 7.00%	5.00% – 8.00%	5.50% – 8.50%	5.75% – 9.00%	6.50% – 8.50%
Average	6.03%	6.38%	6.48%	6.98%	7.38%
Change (Basis Points)		– 35	– 45	– 95	– 135
OVERALL CAP RATE (OAR)[a]					
Range	3.00% – 5.50%	3.75% – 6.50%	3.75% – 7.00%	4.00% – 7.00%	5.00% – 7.25%
Average	4.35%	4.80%	4.83%	5.42%	6.04%
Change (Basis Points)		– 45	– 48	– 107	– 169
RESIDUAL CAP RATE					
Range	4.50% – 6.00%	4.50% – 7.00%	4.50% – 8.00%	5.00% – 7.50%	5.50% – 7.50%
Average	5.15%	5.58%	5.70%	6.08%	6.46%
Change (Basis Points)		– 43	– 55	– 93	– 131
MARKET RENT CHANGE[b]					
Range	0.00% – 5.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 6.00%	0.00% – 5.00%
Average	2.60%	2.50%	2.25%	2.83%	2.58%
Change (Basis Points)		+ 10	+ 35	– 23	+ 2
EXPENSE CHANGE[b]					
Range	3.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%
Average	3.00%	2.80%	2.80%	2.83%	2.88%
Change (Basis Points)		+ 20	+ 20	+ 17	+ 12
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 6	1 – 6	1 – 12
Average	3.0	3.3	3.3	3.3	4.0
Change (▼, ▲, =)		▼	▼	▼	▼

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

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National Apartment Market

Investment criteria for the national apartment market reveals little movement this quarter as this market continues to benefit from strong economic and demographic trends. The underlying fundamentals are sound, with a second quarter overall vacancy rate of 4.8% despite the addition of 57,110 units to the total inventory, as per Reis. "Given several years of new supply, some markets are reaching saturation points so a correction may be in the future," predicts an investor.

Along with upcoming supply, investors highlight rising interest rates, political tensions, job growth, rising tax assessments, and the flow of capital to this sector as influences on this market's performance in the coming year. "The increase in taxes by aggressive assessors is so onerous that it is diluting value and creating a strain on many property owners," explains a participant.

"It will be interesting to see if the consistent capital flows to the apartment market, which have resulted in compressed cap rates, continue in the face of moderating fundamentals in certain locations," observes a participant. This quarter, the average overall cap rate holds relatively stable at 5.23%. Over the next six months, 75.0% of investors foresee cap rates holding steady. ✦

KEY 3Q18 SURVEY STATS*

Total Vacancy Assumption:

Average	6.0%	=
Range	3.0% to 8.0%	

Months of Free Rent(1):

Average	1	=
Range	0 to 2	
% of participants using	83.0%	=

Market Conditions Favor:

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

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

Table 28
NATIONAL APARTMENT MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.25% – 10.00%	5.25% – 10.00%	5.00% – 10.00%	5.00% – 11.00%	5.00% – 14.00%
Average	7.20%	7.20%	7.28%	7.30%	7.98%
Change (Basis Points)		0	– 8	– 10	– 78
OVERALL CAP RATE (OAR)[a]					
Range	3.50% – 8.50%	3.50% – 8.50%	3.50% – 7.50%	3.50% – 8.00%	3.50% – 10.00%
Average	5.23%	5.26%	5.35%	5.39%	5.61%
Change (Basis Points)		– 3	– 12	– 16	– 38
RESIDUAL CAP RATE					
Range	4.00% – 8.50%	4.00% – 8.50%	4.25% – 7.75%	4.25% – 8.50%	4.00% – 9.75%
Average	5.57%	5.61%	5.79%	5.88%	6.15%
Change (Basis Points)		– 4	– 22	– 31	– 58
MARKET RENT CHANGE[b]					
Range	(2.00%) – 5.00%	(2.00%) – 5.00%	(1.00%) – 5.00%	0.00% – 8.00%	(2.00%) – 7.00%
Average	2.41%	2.44%	2.69%	3.23%	2.69%
Change (Basis Points)		– 3	– 28	– 82	– 28
EXPENSE CHANGE[b]					
Range	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	1.00% – 4.00%	1.00% – 3.50%
Average	2.73%	2.73%	2.72%	2.81%	2.69%
Change (Basis Points)		0	+ 1	– 8	+ 4
MARKETING TIME[c]					
Range	1 – 9	1 – 9	1 – 9	1 – 9	0 – 18
Average	3.7	3.7	3.8	3.8	5.0
Change (▼, ▲, =)		=	▼	▼	▼

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

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Regional Apartment Markets

The elongated real estate cycle has led some investors to revise their strategies in the Mid-Atlantic, Pacific, and Southeast region apartment markets. Significant new supply has accompanied the prolonged cycle, particularly in the Class-A sector, compelling investors to entertain a broader scope of apartment properties for acquisition. "We are focusing on more value-added, workforce-level housing investments in the Mid-Atlantic region at this point in the cycle," explains a participant. "We now have more interest in value-added acquisitions," states another.

Ongoing investor demand for apartment assets continues to keep overall cap rates low, particularly amid a shrinking pool of for-sale properties. "We have the same focus but are accepting slightly lower returns due to the scarcity of available product," confirms a Pacific region investor. Another echoes, "Our buying strategy has not changed, but we are finding fewer deals that fit our investment parameters, from both a product type and available returns standpoint."

This quarter, two of the three apartment regions reveal further cap rate compression. As shown in Table 30, the average overall cap rate for the Mid-Atlantic region falls 17 basis points, dipping below 5.00% for the first time since this market debuted in 2009. In the Pacific region, this key indicator slips nine basis points to 4.39% – the lowest rate among the three regions. In contrast, it rises eight basis points in the Southeast region. Over the next six months, investors unanimously see cap rates holding steady in all three regions.

Despite the growing challenges relative to rising inventory and strong competition for available assets, investors believe economic and demographic trends make this sector a solid long-term investment. "We are selective about new opportunities and take a very long view when underwriting," notes a participant. ✦

Table 29
SOUTHEAST REGION APARTMENT MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.75% – 10.00%	5.25% – 10.00%	5.75% – 10.00%	6.00% – 10.00%	6.50% – 10.00%
Average	7.55%	7.53%	7.50%	7.60%	7.95%
Change (Basis Points)		+ 2	+ 5	– 5	– 40
OVERALL CAP RATE (OAR)[a]					
Range	2.95% – 6.50%	2.95% – 6.50%	3.50% – 6.50%	3.75% – 7.00%	4.50% – 7.25%
Average	5.15%	5.07%	5.13%	5.48%	5.73%
Change (Basis Points)		+ 8	+ 2	– 33	– 58
RESIDUAL CAP RATE					
Range	4.00% – 7.00%	4.00% – 7.00%	4.50% – 7.00%	4.75% – 7.00%	5.25% – 7.50%
Average	5.80%	5.73%	5.75%	6.00%	6.33%
Change (Basis Points)		+ 7	+ 5	– 20	– 53
MARKET RENT CHANGE[b]					
Range	1.00% – 5.50%	1.00% – 5.50%	1.00% – 4.00%	2.00% – 4.00%	2.00% – 4.00%
Average	3.05%	2.95%	3.05%	3.15%	3.25%
Change (Basis Points)		+ 10	0	– 10	– 20
EXPENSE CHANGE[b]					
Range	2.00% – 5.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 3.00%	2.00% – 4.00%
Average	3.00%	2.80%	2.80%	2.80%	3.00%
Change (Basis Points)		+ 20	+ 20	+ 20	0
MARKETING TIME[c]					
Range	1 – 6	1 – 6	1 – 6	2 – 6	1 – 12
Average	4.0	3.6	3.3	3.1	4.5
Change (▼, ▲, =)		▲	▲	▲	▼

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

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Table 30

REGIONAL APARTMENT MARKETS

Third Quarter 2018

	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
DISCOUNT RATE (IRR)[a]										
Range	5.25% – 10.00%	5.25% – 10.00%	5.25% – 10.00%	5.75% – 10.00%	5.00% – 13.00%	5.00% – 10.00%	5.00% – 10.00%	5.25% – 10.00%	5.50% – 9.00%	5.00% – 12.00%
Average	7.15%	7.13%	7.33%	8.13%	8.60%	6.60%	6.60%	6.73%	7.18%	7.38%
Change (Basis Points)		+ 2	– 18	– 98	– 145		0	– 13	– 58	– 78
OVERALL CAP RATE (OAR)[a]										
Range	2.50% – 6.75%	3.90% – 6.75%	3.00% – 6.75%	4.00% – 7.50%	4.00% – 7.50%	3.50% – 6.00%	3.50% – 6.00%	3.50% – 6.00%	3.50% – 6.50%	3.50% – 6.00%
Average	4.99%	5.16%	5.04%	5.65%	5.67%	4.39%	4.48%	4.49%	4.83%	4.80%
Change (Basis Points)		– 17	– 5	– 66	– 68		– 9	– 10	– 44	– 41
RESIDUAL CAP RATE										
Range	4.00% – 6.50%	4.75% – 6.50%	4.00% – 6.75%	4.25% – 7.50%	4.50% – 9.75%	4.00% – 6.00%	4.00% – 6.00%	4.25% – 6.00%	3.75% – 7.00%	4.00% – 6.50%
Average	5.50%	5.55%	5.53%	5.88%	6.31%	4.95%	4.98%	5.00%	5.45%	5.48%
Change (Basis Points)		– 5	– 3	– 38	– 81		– 3	– 5	– 50	– 53
MARKET RENT CHANGE[b]										
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%	0.00% – 4.00%	(5.00%) – 6.00%	0.00% – 7.50%	0.00% – 7.50%	0.00% – 5.00%	2.50% – 7.00%	2.00% – 10.00%
Average	1.60%	1.60%	1.75%	2.80%	2.67%	2.70%	2.75%	2.85%	4.55%	4.25%
Change (Basis Points)		0	– 15	– 120	– 107		– 5	– 15	– 185	– 155
EXPENSE CHANGE[b]										
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 4.00%	1.00% – 3.00%	1.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	2.50% – 3.00%	2.00% – 3.00%
Average	2.00%	2.00%	2.50%	2.80%	2.83%	2.23%	2.23%	2.23%	2.95%	2.85%
Change (Basis Points)		0	– 50	– 80	– 83		0	0	– 72	– 62
MARKETING TIME[c]										
Range	1 – 9	1 – 9	1 – 9	3 – 9	1 – 18	1 – 9	1 – 9	1 – 9	3 – 9	1 – 12
Average	3.8	3.9	3.9	4.9	5.4	3.7	3.8	4.1	5.1	4.7
Change (▼, ▲, =)		▼	▼	▼	▼		▼	▼	▼	▼

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

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National Net Lease Market

The pace of sales remains steady in the national net lease market as investors anticipate further increases in interest rates. "Investors are recalibrating slowly after ten years of a federally subsidized debt environment, so debt rates and modest spreads will impact buying decisions going forward," details a participant.

In the 12 months leading up to the second quarter of 2018, the number of industrial and retail net lease sale transactions rose, as per Real Capital Analytics. In contrast, the number of net lease office property trades declined.

Most surveyed investors still perceive this market as neutral – equally favoring buyers and sellers (see Key 3Q18 Survey Stats). For buyers looking to acquire net lease properties, prices range from 75.0% to 140.0% of replacement cost and average 103.3% of cost, according to our participants.

Regardless of this market's competitive investment environment, its average overall cap rate inches up seven basis points this quarter (see Table 31). Over the next six months, 50.0% of investors see cap rates holding steady in this market while the balance expects cap rates to increase (up to 75 basis points with an average increase of 40 basis points). ✦

KEY 3Q18 SURVEY STATS*

Market Conditions Favor:

Neutral	50.0%	▼
Buyers	17.0%	▼
Sellers	33.0%	▲

Months of Free Rent:

Average	(1)
Range	(1)
% of participants using	0.0%

Portfolio Allocation:

Sale leasebacks	20.0%	▲
Net lease sales	41.0%	▲
1031 exchanges	31.0%	▼
Build to suit	9.0%	▼

* ▼, ▲, = change from prior quarter
(1) No participants are using free rent.

Table 31
NATIONAL NET LEASE MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.00% – 12.00%	6.50% – 12.00%	6.00% – 10.00%	6.00% – 10.00%	7.00% – 9.00%
Average	8.15%	8.44%	7.81%	8.00%	7.94%
Change (Basis Points)		– 39	+ 24	+ 5	+ 11
OVERALL CAP RATE (OAR)[a]					
Range	5.00% – 8.50%	5.00% – 8.50%	5.25% – 8.50%	5.50% – 9.00%	6.00% – 8.50%
Average	6.67%	6.60%	6.71%	6.83%	7.18%
Change (Basis Points)		+ 7	– 4	– 16	– 51
RESIDUAL CAP RATE					
Range	6.00% – 9.00%	6.00% – 9.00%	6.00% – 9.00%	7.00% – 9.00%	7.00% – 9.00%
Average	7.60%	7.50%	7.40%	7.81%	8.13%
Change (Basis Points)		+ 10	+ 20	– 21	– 53
MARKET RENT CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%
Average	2.00%	2.00%	1.88%	1.80%	1.35%
Change (Basis Points)		0	+ 12	+ 20	+ 65
EXPENSE CHANGE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 3.00%	0.00% – 3.00%
Average	1.83%	1.90%	1.67%	1.70%	1.90%
Change (Basis Points)		– 7	+ 16	+ 13	– 7
MARKETING TIME[c]					
Range	2 – 12	2 – 12	2 – 12	1 – 12	2 – 12
Average	5.5	5.8	5.3	4.3	4.9
Change (▼, ▲, =)		▼	▲	▲	▲

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

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National Medical Office Buildings Market

While investors continue to seek assets in the national medical office buildings (MOB) market, they are watchful of certain factors including rising cap rates, interest rate movements, changes in healthcare legislation, and an increasing pricing gap between new and old MOB product. "Cap rate increases are what everyone is talking about," states a participant. As shown in Table 32, this market's average overall cap rate slips just three basis points this quarter. During the next six months, most surveyed investors see cap rates holding steady.

As they watch overall cap rates, investors are also monitoring the direction of interest rates. "Most new development deals include provisions that split or absorb any future interest rate hikes equally or fully by the prospective tenants, protecting developers from rising interest rates," says a participant.

In addition, MOB development has become more sophisticated in terms of required layout in order to better equip properties for high-acuity care, which was previously handled at hospitals. The resulting increase in construction cost is causing a "significant premium in rental rates" compared to existing product, as well as a flight to quality by both users and investors. ✦

KEY 3Q18 SURVEY STATS*

Tenant Retention Rate:

Average	80.0%	=
Range	70.0% to 90.0%	

Months of Free Rent(1):

Average	3	=
Range	1 to 9	
% of participants using	80.0%	=

Average Overall Cap Rates:

Market (as a whole)	6.66%	▼
On campus	6.33%	▼
Off campus	7.00%	=

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

Table 32
NATIONAL MEDICAL OFFICE BUILDINGS MARKET
Third Quarter 2018

	CURRENT	LAST QUARTER	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	5.50% – 11.00%	5.50% – 11.00%	5.75% – 11.00%	5.50% – 11.00%	6.00% – 13.00%
Average	7.73%	7.73%	7.80%	7.94%	8.74%
Change (Basis Points)		0	– 7	– 21	– 101
OVERALL CAP RATE (OAR)[a]					
Range	4.50% – 10.00%	4.50% – 10.00%	4.75% – 10.00%	4.75% – 10.00%	5.50% – 11.00%
Average	6.66%	6.69%	6.71%	6.95%	7.77%
Change (Basis Points)		– 3	– 5	– 29	– 111
RESIDUAL CAP RATE					
Range	5.00% – 10.25%	5.00% – 10.25%	5.25% – 10.25%	5.50% – 10.50%	6.00% – 11.00%
Average	6.83%	6.84%	6.98%	7.35%	8.00%
Change (Basis Points)		– 1	– 15	– 52	– 117
MARKET RENT CHANGE[b]					
Range	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	0.00% – 3.00%	(5.00%) – 3.00%
Average	2.20%	2.20%	2.20%	1.92%	1.09%
Change (Basis Points)		0	0	+ 28	+ 111
EXPENSE CHANGE[b]					
Range	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	0.00% – 4.00%
Average	2.50%	2.50%	2.50%	2.46%	2.41%
Change (Basis Points)		0	0	+ 4	+ 9
MARKETING TIME[c]					
Range	1 – 12	1 – 12	1 – 12	1 – 9	1 – 12
Average	4.7	4.8	4.8	4.0	4.6
Change (▼, ▲, =)		▼	▼	▲	▲

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

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National Lodging Highlights

The following data and narrative is extracted from "Hospitality Directions US" updated August 2018, published by PwC Hospitality & Leisure.

Strong economic indicators in the second quarter, coupled with accelerating group demand, suggest sustained momentum for the lodging sector through 2019. Solid economic fundamentals continued in the second quarter, generating strong demand for hotels that outpaced increases in supply and resulted in the highest second-quarter increase in average daily rate (ADR) since 2016. A year-over-year comparison for the second quarter shows U.S. RevPAR increasing 4.0%, led by ADR growth of 2.9%.

Looking ahead to 2019, hoteliers are expected to remain confident as increases in room rates remain a bigger driver of RevPAR growth. Consumer spending is forecast to increase due to lower personal tax rates and low unemployment. The industry is expected to continue to benefit from an improving economy stemming from the Tax Cuts and Jobs Act, as well as potentially higher group spending and greater commercial transient demand.

Demand

Continued growth in U.S. lodging demand led to a midyear year-to-date occupancy of 65.9%. Holiday shifts with Easter week ending on Sunday, April 1, contributed to a positive second-quarter RevPAR performance. Group demand increased 2.1% for the first half of this year compared to the same period in 2017. Commercial transient demand continued to increase, albeit at a slower pace than the prior year. As demand increases for both segments and continues to apply pressure on occupancy levels in many markets, our 2018 forecast anticipates an increase in pricing power for hotels, resulting in an ADR-driven RevPAR growth of 3.3%, driving improved cash flow for hotel operators.

For 2018, PwC's lodging outlook anticipates demand growing 2.7% for the industry and either holding steady or increasing in each chain-scale segment (between 0.0% in the economy chain-scale segment to 4.8% in the upscale chain-scale segment). Four of the seven chain-scale segments included in PwC's analysis are forecast to achieve demand growth above the industry average in 2018, including the luxury, upper-upscale, upscale, and upper-midscale segments.

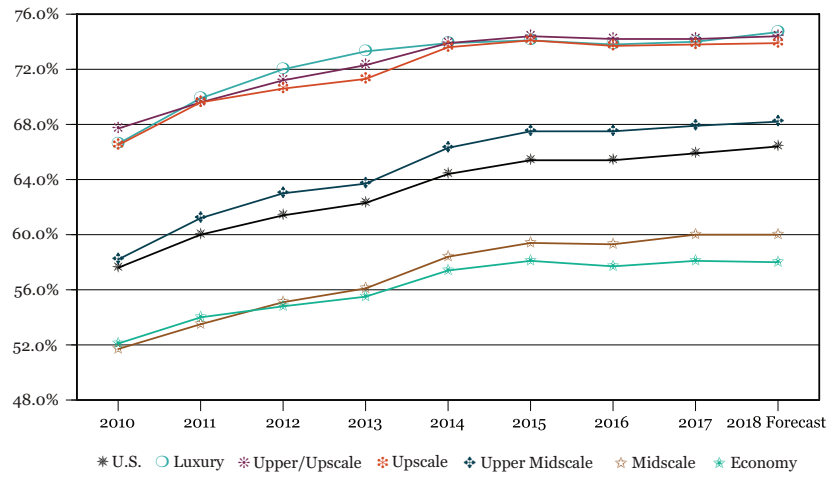
For 2019, demand growth for the U.S. lodging industry is forecast to remain positive as a whole, but decelerate to 1.8%. Moreover, only three of the seven chain-scale segments included in PwC's analysis are forecast to achieve demand growth above the industry average in 2019, including upper upscale (+2.0%), upscale (+5.9%), and upper midscale (4.2%).

Supply

Supply growth for the U.S. lodging industry has been relatively tame during this recovery and is anticipated to increase at 2.0% for 2018 – its long-term average. Of the seven chain-scale segments included in PwC's analysis, three are forecast to achieve supply growth above the industry average in 2018 while the rest are forecast to stay below it. The upscale segment is forecast to post the highest supply gain (+4.6%) while the economy segment is forecast to have the lowest (+0.1%).

For 2019, the U.S. lodging industry's supply growth is forecast to decelerate to 1.9%. As in 2018, three chain-scale segments are forecast to achieve supply growth above the industry average while the remainder are forecast to stay below it.

Exhibit L-1
OCCUPANCY



Source: STR (2010 thru 2017); PwC (2018 Forecast)

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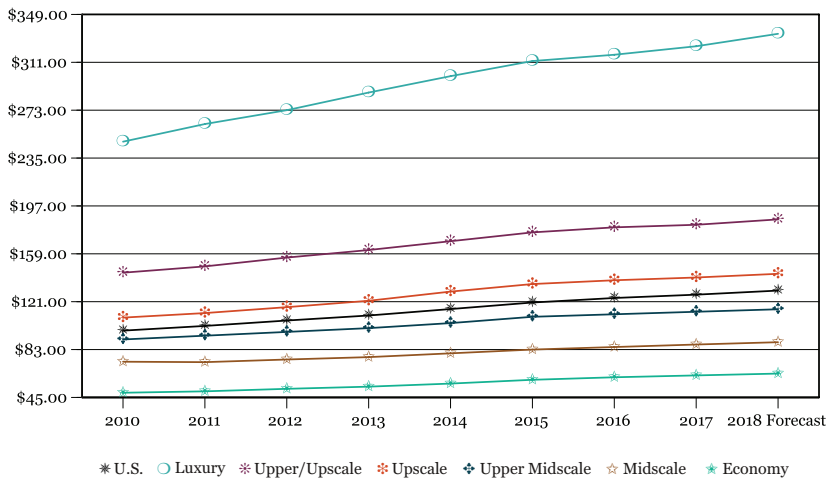
Exhibit L-2

AVERAGE DAILY RATE (ADR)



Source: STR (2010 thru 2017); PwC (2018 Forecast)

Occupancy

As shown in Exhibit L-1, all but one of the six chain-scale segments included in our analysis are forecast to see increases in annual occupancy in 2018, led by the upper-midscale segment with an increase of 0.7%.

For 2018, demand growth for most lodging segments is expected to stay ahead of supply growth, resulting in a slight rise in annual occupancy for the industry. Specifically, PwC forecasts the industry's occupancy level to increase to 66.4% in 2018 – a 0.7% change from the prior year.

Average Daily Rate (ADR)

As shown in Exhibit L-2, ADR growth is forecast for each chain-scale segment in 2018. In addition, the individual increases are forecast at higher rates than those realized in 2017 for each segment with the exception of the economy segment.

For 2018, PwC forecasts ADR for the U.S. lodging industry to rise 2.6% – slightly above the rate of 2.1% recorded in 2017. The luxury segment is expected to lead the industry's growth with an increase of 3.0%.

Manhattan

Continuing the momentum from the end of last year, RevPAR growth accelerated in the first quarter of 2018 for the Manhattan lodging market. A combination of continued strength in demand and a slowing of supply growth led to a 7.4% increase in RevPAR.

In the first quarter of 2018, all five Manhattan submarkets reported strong increases in RevPAR, with a mix of occupancy and ADR-driven RevPAR increases. Upper Manhattan and Midtown West reported ADR-driven RevPAR increases of 11.9% and 6.5%, respectively, while Midtown South and Lower Manhattan reported occupancy-driven RevPAR increases of 5.9% and 6.2%, respectively. Lower Manhattan was the only neighborhood with a flat ADR level, potentially driven by the significant 8.2% increase in supply – the highest amongst all the neighborhoods.

Investment Activity

U.S. hotel sales totaled $19.8 billion for the first half of 2018 – 37.5% above 2017's first half total, as per Real Capital Analytics. Deal activity in the U.S. hotel sector had been in retreat since 2015, but investors have recently re-embraced the sector, acquiring both portfolios and single assets.

When looking more closely at hotel sales for the first half of 2018 compared to the first half of 2017, the full-service segment reported a volume increase of 51.2% while the limited-service segment reported a 16.6% increase. Strong portfolio activity helped spur this growth, but single-asset sales also occurred.

The top-five metros in terms of sales volume for the first half 2018 are shown in Table NLH-1. Only one metro had the distinction of being in the top five for 2017 while four are new to the list. ✦

Table NLH-1

2018 HOTEL SALES VOLUME

Top U.S. Metros

Metro	Total[(1)] Volume ($M)	Rank 2017
1. Manhattan	$1,695	2
2. Hawaii	$1,409	8
3. Phoenix	$1,090	9
4. San Francisco	$998	10
5. DC VA suburbs	$733	7

Source: Real Capital Analytics, Inc.; (1)first half

Trends and forecasts have been extracted from *Hospitality Directions US*, published by PwC Hospitality & Leisure. Released August 2018, this report provides historical data and forecasts for the U.S. lodging industry and seven chain-scale segments with respect to ADR, supply, demand, occupancy, RevPAR, and revenue. For more information, email contact.hospitality@pwc.com.

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National Full-Service Lodging Segment

Investors in the national full-service lodging segment are closely watching the growth of supply and its potential impact on occupancy and ADR growth in the year ahead. "Demand remains healthy, but it could slip with more accommodation options entering the picture," says a participant. Over the next six months, our surveyed investors are divided between occupancy either holding steady or declining in this sector.

In the upscale chain-scale segment, PwC forecasts overall demand to grow 4.8% in 2018 – well above the U.S. lodging industry's forecast average of 2.7%. At the same time, upscale supply is forecast to increase 4.6%, resulting in a slight occupancy gain of 0.2% for the year. In the upper-midscale segment, demand growth is forecast to increase 4.5% in 2018 – just slightly ahead of supply and resulting in a mere 0.5% increase in annual occupancy.

Factors investors highlight as key influences on this market's performance include gas prices, Airbnb trends, labor availability, and the overall health of the U.S. economy. ✦

Table FSL-1

LODGING FORECASTS

Segment	2018	Annual Change
Upscale		
Occupancy	73.9%	+ 0.2%
ADR	$143.32	+ 2.2%
RevPAR	$105.90	+ 2.4%
Upper Midscale		
Occupancy	68.2%	+ 0.5%
ADR	$114.98	+ 1.8%
RevPAR	$78.46	+ 2.3%

Source: *Hospitality Directions US, August 2018;* published by PwC

Table 33

NATIONAL FULL-SERVICE LODGING SEGMENT

Third Quarter 2018

	CURRENT	FIRST QUARTER 2018	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	8.00% – 13.00%	8.00% – 13.50%	8.00% – 13.00%	8.50% – 13.00%	9.50% – 12.00%
Average	10.20%	10.33%	10.19%	10.48%	10.92%
Change (Basis Points)		– 13	+ 1	– 28	– 72
OVERALL CAP RATE (OAR)[a]					
Range	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%	6.00% – 10.00%
Average	7.73%	7.73%	7.85%	7.60%	8.02%
Change (Basis Points)		0	– 12	+ 13	– 29
RESIDUAL CAP RATE					
Range	7.00% – 10.00%	7.00% – 10.00%	7.00% – 10.00%	6.50% – 10.00%	6.50% – 12.00%
Average	8.35%	8.35%	8.44%	8.18%	8.75%
Change (Basis Points)		0	– 9	+ 17	– 40
AVERAGE DAILY RATE[b]					
Range	(1.00%) – 7.00%	(2.00%) – 7.00%	(2.00%) – 7.00%	0.00% – 7.00%	0.00% – 6.00%
Average	3.10%	2.90%	2.75%	4.00%	3.67%
Change (Basis Points)		+ 20	+ 35	– 90	– 57
OPERATING EXPENSE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%	1.00% – 4.00%
Average	2.80%	2.80%	2.92%	2.80%	2.96%
Change (Basis Points)		0	– 12	0	– 16
MARKETING TIME[c]					
Range	3 – 9	3 – 9	3 – 9	3 – 9	3 – 24
Average	6.2	6.0	6.3	6.9	9.0
Change (▼, ▲, =)		▲	▼	▼	▼

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

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National Limited-Service Midscale & Economy Lodging Segment

Two key indictors hold steady this quarter for the national limited-service midscale & economy lodging segment, suggesting that our surveyed investors see this segment's near-term performance staying relatively healthy. First, its average overall cap rate remains at 9.15% (see Table 34). Second, its average ADR change rate stays at 2.20%. Furthermore, most investors view this market as neutral – equally favoring buyers and sellers.

Concerns, however, do exist for this lodging segment among our participants. "We are concerned about what a market correction will do to values," says a participant. "New supply is a concern in certain markets," says another. In the midscale segment, PwC forecasts supply growth at 1.0% in 2018, slightly above its annual average over the past four years. For the economy segment, it forecasts supply growth at 0.1% for 2018 – the lowest annual rate since 2015.

Over the next 12 months, our investors are evenly split with their forecasts of property value trends – half see declines of up to 5.0% and half see increases of up to 5.0%. ✦

Table LSE-1
LODGING FORECASTS

Segment	2018	Annual Change
Midscale		
Occupancy	60.6%	+ 1.1%
ADR	$88.84	+ 2.2%
RevPAR	$53.84	+ 3.3%
Economy		
Occupancy	58.0%	– 0.1%
ADR	$63.93	+ 2.3%
RevPAR	$37.08	+ 2.3%

Source: *Hospitality Directions US, August 2018;* published by PwC

Table 34
NATIONAL LIMITED-SERVICE MIDSCALE & ECONOMY LODGING SEGMENT
Third Quarter 2018

	CURRENT	FIRST QUARTER 2018	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	8.50% – 13.00%	8.50% – 13.00%	8.50% – 13.00%	8.50% – 12.00%	9.00% – 12.00%
Average	10.50%	11.00%	11.00%	10.53%	10.56%
Change (Basis Points)		– 50	– 50	– 3	– 6
OVERALL CAP RATE (OAR)[a]					
Range	7.50% – 11.00%	7.50% – 11.00%	7.75% – 11.00%	7.50% – 10.00%	8.00% – 12.00%
Average	9.15%	9.15%	9.08%	8.78%	9.60%
Change (Basis Points)		0	+ 7	+ 37	– 45
RESIDUAL CAP RATE					
Range	7.75% – 11.00%	7.75% – 11.00%	7.75% – 11.00%	7.75% – 10.50%	8.00% – 11.00%
Average	9.38%	9.78%	9.83%	9.50%	9.50%
Change (Basis Points)		– 40	– 45	– 12	– 12
AVERAGE DAILY RATE[b]					
Range	(1.00%) – 5.00%	(1.00%) – 5.00%	(2.50%) – 4.00%	2.00% – 5.00%	2.00% – 6.00%
Average	2.20%	2.20%	2.30%	3.50%	3.40%
Change (Basis Points)		0	– 10	– 130	– 120
OPERATING EXPENSE[b]					
Range	2.50% – 3.00%	2.50% – 3.00%	2.50% – 3.00%	2.50% – 3.00%	1.00% – 3.00%
Average	2.95%	2.95%	2.95%	2.95%	2.75%
Change (Basis Points)		0	0	0	+ 20
MARKETING TIME[c]					
Range	2 – 12	2 – 12	2 – 12	2 – 12	2 – 12
Average	6.1	6.7	6.9	7.0	7.7
Change (▼, ▲, =)		▼	▼	▼	▼

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

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National Luxury/Upper-Upscale Lodging Segment

While many surveyed investors in the national luxury/upper-upscale lodging segment are keeping a close eye on the trade war's effect on foreign travel to the United States, others are focused on how interest rate trends, oil prices, Airbnb, and new supply may impact the performance of this lodging segment. "There's a lot to consider when investing in lodging now," says a participant.

Another concern noted by participants is the rising cost of operations amid declining non-room revenue. "Room rates are rising, but they are not rising enough in all cases to close the revenue gap created by slowing demand and declining non-room revenue," comments an investor. Nevertheless, PwC forecasts solid RevPAR gains for the luxury chain-scale segment for 2018 and 2019 at 4.0% and 3.9%, respectively (see Table LUL-1). By comparison, the U.S. RevPAR averages are 3.3% and 2.6%, respectively.

Looking ahead over the next 12 months, most surveyed investors see property values rising – as much as 10.0% in this hotel segment; the average appreciation forecast is 2.9%. ✦

Table LUL-1

LODGING FORECASTS

Segment	2018	Annual Change
Luxury		
Occupancy	74.7%	+ 1.0%
ADR	$333.63	+ 3.0%
RevPAR	$249.24	+ 4.0%
Upper Upscale		
Occupancy	74.4%	+ 0.3%
ADR	$186.32	+ 2.3%
RevPAR	$138.68	+ 2.6%

Source: *Hospitality Directions US, August 2018;* published by PwC

Table 35

NATIONAL LUXURY/UPPER-UPSCALE LODGING SEGMENT

Third Quarter 2018

	CURRENT	FIRST QUARTER 2018	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	6.25% – 12.00%	6.50% – 12.00%	6.50% – 12.00%	7.25% – 12.00%	8.00% – 12.00%
Average	9.45%	9.50%	9.53%	9.69%	10.28%
Change (Basis Points)		– 5	– 8	– 24	– 83
OVERALL CAP RATE (OAR)[a]					
Range	4.00% – 9.00%	4.00% – 9.00%	4.00% – 9.00%	4.75% – 9.00%	4.00% – 10.00%
Average	7.05%	7.05%	7.03%	6.98%	7.83%
Change (Basis Points)		0	+ 2	+ 7	– 78
RESIDUAL CAP RATE					
Range	5.50% – 9.50%	5.50% – 9.50%	5.50% – 9.50%	6.00% – 10.00%	6.00% – 12.00%
Average	7.33%	7.23%	7.18%	7.35%	8.50%
Change (Basis Points)		+ 10	+ 15	– 2	– 117
AVERAGE DAILY RATE[b]					
Range	0.00% – 5.00%	0.00% – 5.00%	0.00% – 5.00%	0.00% – 9.00%	0.00% – 10.00%
Average	2.80%	2.80%	3.00%	3.58%	3.90%
Change (Basis Points)		0	– 20	– 78	– 110
OPERATING EXPENSE[b]					
Range	0.00% – 4.00%	0.00% – 4.00%	0.00% – 4.00%	0.00% – 5.00%	0.00% – 5.00%
Average	2.60%	2.60%	2.60%	2.83%	2.83%
Change (Basis Points)		0	0	– 23	– 23
MARKETING TIME[c]					
Range	3 – 12	3 – 12	3 – 12	3 – 12	2 – 20
Average	6.8	6.8	6.8	6.0	7.4
Change (▼, ▲, =)		=	=	▲	▼

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

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National Select-Service Lodging Segment

Over the next six months, most Survey participants expect ADR increases in the national select-service lodging segment. As shown in Table 36, they are using ADR change rates ranging from -1.00% to 8.00% and averaging 2.90%. This average is the second highest of the four lodging segments in our Survey – just behind the full-service segment at 3.10%.

In this lodging segment, investors are watching several macro factors, including supply growth, the health of the U.S. economy, gas price trends, and "the ability of ADR growth to cover wage and property tax increases if the industry should slip as a result of a downturn." Of these many concerns, new supply tops the list for most investors. As a portion of the U.S. hotel development pipeline, select-service projects account for 63.0% of the total, according to Smith Travel Research.

Over the next 12 months, our investors are evenly split with their expectations of property value trends for this market – 50.0% see declines of up to 5.0% while 50.0% see increases of up to 5.0%. ✦

Table SSL-1
EXPECTED VALUE CHANGE*
Survey Lodging Markets

Segment	Range	Average
Full Service	(3.0%) to 6.0%	+ 1.3%
Limited-Service Midscale & Economy	(5.0%) to 5.0%	+ 1.4%
Luxury/Upper Upscale	(3.0%) to 10.0%	+ 2.9%
Select Service	(5.0%) to 5.0%	– 0.8%

* Over the next 12 months
Source: PwC Real Estate Investor Survey; 3Q2018

Table 36
NATIONAL SELECT-SERVICE LODGING SEGMENT
Third Quarter 2018

	CURRENT	FIRST QUARTER 2018	1 YEAR AGO	3 YEARS AGO	5 YEARS AGO
DISCOUNT RATE (IRR)[a]					
Range	8.00% – 11.00%	7.50% – 12.00%	8.00% – 12.00%	9.00% – 12.00%	9.00% – 13.00%
Average	9.55%	9.90%	10.20%	10.90%	10.90%
Change (Basis Points)		– 35	– 65	– 135	– 135
OVERALL CAP RATE (OAR)[a]					
Range	7.00% – 10.00%	6.50% – 10.00%	6.50% – 10.00%	6.50% – 11.00%	5.00% – 12.00%
Average	8.50%	8.56%	8.70%	8.45%	8.35%
Change (Basis Points)		– 6	– 20	+ 5	+ 15
RESIDUAL CAP RATE					
Range	7.00% – 10.00%	7.00% – 10.75%	7.00% – 10.75%	7.00% – 11.00%	5.00% – 12.00%
Average	8.75%	8.93%	9.08%	8.95%	8.55%
Change (Basis Points)		– 18	– 33	– 20	+ 20
AVERAGE DAILY RATE[b]					
Range	(1.00%) – 8.00%	(1.00%) – 8.00%	(2.00%) – 5.00%	2.00% – 7.00%	1.00% – 8.00%
Average	2.90%	2.90%	2.80%	3.70%	4.70%
Change (Basis Points)		0	+ 10	– 80	– 180
OPERATING EXPENSE[b]					
Range	2.00% – 10.00%	2.00% – 10.00%	2.00% – 4.00%	2.00% – 4.00%	2.00% – 4.00%
Average	3.45%	3.45%	2.70%	2.95%	2.95%
Change (Basis Points)		0	+ 75	+ 50	+ 50
MARKETING TIME[c]					
Range	2 – 15	2 – 15	2 – 12	2 – 12	2 – 12
Average	6.9	6.6	6.0	6.0	6.9
Change (▼, ▲, =)		▲	▲	▲	=

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

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NATIONAL SECONDARY OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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	MONTHS VACANT	TENANT RETENTION	UNDERLYING VACANCY & CREDIT LOSS	PER SQUARE FOOT	MONTHS
FULL-SERVICE ADVISORY FIRM ✦ Forecast Period: 10 years 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 increase 25 to 50 basis points over the next six months; does not use rent spikes.	West/ Sacramento	2.5%	2.5%	6.50% to 7.00% (CBD); 8.00% to 8.50% (suburbs)	2.5% to 5.0%	9.00% to 11.00% (CBD); 11.00% to 14.00% (suburbs)	6.00% to 7.00% (CBD); 7.50% to 8.00% (suburbs)	6	75.0%	5.0%	$0.15 to $0.20	9 to 12
REAL ESTATE FIRM ✦ Forecast Period: 1 to 3 years 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; does not use rent spikes.	Mountain/ Las Vegas	2.5% to 3.25%	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	7.25% to 8.00% in both CBD & suburbs	6 to 9	75.0%	7.0% to 10.0%	$0.10 to $0.15	3 to 5
REAL ESTATE ADVISOR ✦ Forecast Period: 3 to 10 years 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 7.25% (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
REAL ESTATE ADVISOR ✦ Forecast Period: 3 to 7 years 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 cap rates to hold steady over the next six months; may use a rent spike of 5.0% in year 4.	South/ Orlando	3.0%	2.0% to 3.0%	7.00% to 7.25% (CBD); 7.25% to 8.00% (suburbs)	2.0% to 3.0%	8.00% to 9.25% (CBD); 9.00% to 11.00% (suburbs)	6.50% to 7.25% (CBD); 7.25% to 8.75% (suburbs)	3 to 9	70.0% to 75.0%	2.0% to 10.0%	$0.10 to $0.25	6 to 9
REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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 8.00% (suburbs)	5.00% to 7.00% (CBD); 5.50% to 7.50% (suburbs)	6 to 9	60.0% to 70.0%	3.0% to 7.0%	Does not use	3 to 6
REAL ESTATE INVESTOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; believes market conditions are neutral; 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 2.25%	8.00% to 9.00% (CBD); 8.50% to 9.50% (suburbs)	1.5% to 3.0%	8.00% to 10.00% (CBD); 8.00% to 12.00% (suburbs)	7.50% to 9.50% (CBD); 8.00% to 9.50% (suburbs)	8 to 10	70.0% to 75.0%	8.0% to 10.0%	Does not use	3 to 5
REAL ESTATE SERVICE FIRM ✦ Forecast Period: 5 to 10 years 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	2.5% to 3.0%	2.0% to 2.5%	6.50% to 7.25% (CBD); 7.50% to 8.00% (suburbs)	2.0% to 3.0%	8.25% to 8.50% (CBD); 8.75% to 9.00% (suburbs)	6.75% to 7.50% (CBD); 7.25% to 8.25% (suburbs)	7 to 12	70.0% to 75.0%	2.0% to 3.0%	$0.15 to $0.25	6 to 9

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL REGIONAL MALL MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PUBLIC REAL ESTATE COMPANY ✦ Forecast Period: 3 to 8 years 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 hold steady over the next six months; does not use rent spikes.	1.0% to 3.0% Year 1; 2.0% to 3.0% Year 2	2.0% to 5.0%	2.0% to 4.0%	4.25% to 10.00% (1)	2.0% to 3.0%	5.00% to 11.50% (1)	4.00% to 9.00% (1)	9 to 18	60.0% to 80.0%	3.0% to 8.0%	$0.25 to $0.50	6 to 15
INVESTMENT BANKER ✦ Forecast Period: 1 to 10 years 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 hold steady over the next six months.	2.0% to 2.5%	3.0%		5.00% to 7.25% (1)	0.8% to 1.0%	5.50% to 7.00% (2)	4.50% to 6.25% (2)	4 to 6	70.0%	1.0% to 2.0%	$0.15 to $0.30	6 to 9
REIT ✦ Forecast Period: 5 to 10 years 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.	1.0% to 2.0%	2.0% to 3.0%	3.0% to 4.0%	5.25% to 10.00% (1)	0.5% to 1.0%	6.00% to 10.00% (1)	5.00% to 10.00% (1)	4 to 8	80.0% to 85.0%	3.0% to 8.0%	$0.30	9 to 15
PUBLIC C CORP ✦ Forecast Period: 7 to 10 years 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.	2.5%	3.0%	3.0%	4.25% to 9.00% (1)	1.0% to 3.0%	6.00% to 11.00% (1)	4.00% to 9.00% (1)	6 to 9	70.0% to 80.0%	5.0% to 7.0%	$0.25 to $0.50	6 to 9
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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.	2.0% to 4.0% Years 1 to 3	3.0%	1.5% to 3.0%	5.25% to 7.75% (2)	0.5% to 3.0%	5.75% to 7.75% (2)	4.25% to 7.00% (2)	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 July 2018; (1) relates to Class A+, A, B+, and B malls; (2) relates to Class A+, A, and B+ malls

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NATIONAL POWER CENTER MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
REALTY ADVISOR ✦ Forecast Period: 3 to 7 years 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.	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 to 9
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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 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 70.0%	5.0% to 8.0%	Does not use	2 to 6
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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.	3.0% to 4.0% Year 1; 3.0% Year 2	3.0%	3.0%	5.50% to 5.75%	1.0% to 1.5%	6.00% to 6.25%	5.25% to 5.50%	4 to 8	65.0% to 70.0%	5.0% to 7.0%	$0.20 to $0.30	2 to 4
INVESTMENT BANKER ✦ Forecast Period: 5 to 10 years 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.	0.0% to 3.0% Years 1 & 2	3.0%	3.0%	7.00% to 9.00%	2.0%	8.00% to 11.00%	6.00% to 7.50%	5 to 9	65.0% to 75.0%	5.0% to 10.0%	$0.20	3 to 5
PENSION FUND ✦ Forecast Period: 1 to 10 years 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%	3.0%	Did not disclose	6.75% to 7.50%	2.0%	6.50% to 7.75%	6.50% to 7.25%	1 to 3	70.0%	3.0% to 5.0%	$0.10 to $0.30	9 to 18

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL STRIP SHOPPING CENTER MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INSTITUTIONAL ADVISOR ✦ Forecast Period: 5 to 10 years 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 4.0%	5.25% to 7.00%	1.0% to 3.0%	6.00% to 7.50%	4.75% to 6.50%	6 to 24	100.0%	5.0% to 8.0%	$0.25 to $0.50	6 to 18
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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%	5.75% to 6.25%	2.0% to 2.5%	6.25% to 7.00%	5.25% to 6.00%	5 to 7	65.0% to 70.0%	4.0% to 6.0%	$0.15 to $0.25	3 to 4
REIT ✦ Forecast Period: 1 to 3 years 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%	7.00% to 9.75%	1.0% to 2.0%	8.00% to 10.50%	6.50% to 9.50%	9 to 15	70.0% to 75.0%	2.5% to 5.0%	$0.15 to $0.35	9 to 12
REIT ✦ Forecast Period: 5 to 11 years 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.	0.0% to 3.0%	3.0%	3.0% to 4.0%	6.50% to 7.75%	4.0% to 6.0%	6.00% to 7.75%	5.50% to 9.75%	9 to 18	70.0% to 75.0%	3.0% to 7.0%	$0.25 to $0.75	3 to 6
DOMESTIC PENSION FUND ✦ Forecast Period: 10 years 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.	3.0%	3.0%	3.0%	4.50% to 6.50%	0.5% to 2.0%	5.50% to 7.00%	4.00% to 6.00%	6 to 12	65.0% to 75.0%	1.0% to 5.0%	$0.10 to $0.25	6 to 12
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 3 to 6 years 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 July 2018.

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NATIONAL CBD OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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
PENSION FUND ✦ Forecast Period: 8 to 12 years 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.	1.0% to 3.0%	1.0% to 3.0%	1.0% to 3.0%	5.50% to 8.50%	2.0% to 3.0%	6.50% to 9.00%	5.00% to 7.50%	6 to 18	50.0% to 75.0%	2.0% to 6.0%	$0.10 to $0.20	3 to 18
PUBLIC REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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 7.50%	1.0% to 1.5%	6.50% to 7.50%	5.00% to 7.25%	6 to 12	60.0% to 70.0%	5.0% to 8.0%	Does not use	2 to 6
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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.	0.0% to 3.0%	3.0%	3.0%	5.00% to 5.50%	1.0% to 4.0%	6.00% to 6.25%	4.50% to 5.50%	6 to 9	65.0% to 75.0%	3.0% to 5.0%	$0.15 to $0.30	3 to 6
REIT ✦ Forecast Period: 5 to 10 years Uses direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions favor sellers.	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
PRIVATE REAL ESTATE ✦ Forecast Period: 5 to 10 years 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 July 2018.

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NATIONAL SUBURBAN OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISORS ✦ Forecast Period: 10 years 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 7.00%	2.0% to 2.5%	7.00% to 7.50%	5.50% to 6.00%	6 to 9	65.0% to 70.0%	3.0% to 5.0%	$0.20 to $0.25	3 to 8
LIFE INSURANCE COMPANY ✦ Forecast Period: 5 to 10 years 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%	$0.35 to $0.50	4 to 9
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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; 2.0% to 6.0% Year 2	0.0% to 3.0%	2.0% to 3.0%	4.75% to 7.75%	2.7% to 4.2%	5.75% to 9.00%	4.00% to 6.50%	5 to 10	70.0%	1.0% to 9.0%	$0.05 to $0.25	1 to 2
PUBLIC REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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
DOMESTIC PENSION FUND ✦ Forecast Period: 10 years 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%	2.8% to 3.0%	6.25% to 7.50%	0.5% to 2.0%	7.00% to 8.50%	5.50% to 7.00%	9 to 12	65.0% to 75.0%	0.0% to 7.0%	$0.10 to $0.25	6 to 12
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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 July 2018.

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ATLANTA OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE INVESTMENT COMPANY ✦ Forecast Period: 10 years 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 increase 5 to 25 basis points over the next six months.	0.0% to 3.0% Years 1 to 3	2.5% to 3.0%	3.0%	5.75% to 8.25% (CBD); 6.25% to 8.50% (suburbs)	0.7% to 1.5%	6.75% to 8.50% (CBD); 7.00% to 9.00% (suburbs)	5.00% to 7.50% (CBD); 6.25% to 8.50% (suburbs)	4 to 12	60.0% to 70.0%	6.0% to 10.0%	$0.20 to $0.35	2 to 4
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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	65.0% to 70.0%	8.0% to 10.0%	$0.20 to $0.25	8 to 10
INVESTMENT BANKER ✦ Forecast Period: 5 to 10 years 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.	1.0% to 3.0%	1.5% to 2.0%	1.5% to 2.0%	6.25% to 7.25% (CBD); 6.50% to 7.50% (suburbs)	1.0% to 2.0%	6.50% to 9.00% (CBD); 7.50% to 9.50% (suburbs)	5.75% to 7.00% (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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 3 to 7 years 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%	3.0%	2.0% to 2.5%	6.75% to 7.25% (CBD); 7.25% 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); 7.25% to 8.75% (suburbs)	6 to 11	70.0% to 75.0%	8.0% to 12.0%	$0.15 to $0.35	9 to 12
PRIVATE INVESTOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses face and reflects concessions when they are scheduled to occur; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0%	3.0% to 5.0%	2.0% to 3.0%	6.00% to 7.00% (CBD); 6.50% to 7.50% (suburbs)	1.0% to 1.5%	6.50% to 7.50% (CBD); 7.00% to 9.00% (suburbs)	6.00% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	6 to 12	60.0% to 75.0%	5.0% to 7.0%	$0.25 to $0.50	3 to 6

Source: Personal survey conducted by PwC during July 2018.

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AUSTIN OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INSTITUTIONAL ADVISORS ✦ Forecast Period: 5 to 10 years 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% Years 1 & 2	2.5% to 3.0%	2.0% to 2.2%	6.00% (CBD); 6.25% to 7.50% (suburbs)	2.0% to 2.5%	5.50% to 6.50% (CBD); 6.50% to 7.50% (suburbs)	5.25% to 5.75% (CBD); 6.00% to 7.00% (suburbs)	9 to 12	75.0%	4.0% to 6.0%	$0.25 to $0.45	2 to 3
REIT ✦ Forecast Period: 5 to 7 years 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 decrease 25 to 50 basis points over the next six months; believes local market conditions favor sellers.	3.0% to 4.0% Years 1 & 2	2.5% to 3.0%	2.0% to 2.5%	5.00% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	1.5% to 2.5%	7.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	5.50% to 6.50% (CBD); 6.00% 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
PRIVATE INVESTMENT MANAGER ✦ Forecast Period: 5 to 10 years 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 decrease up to 25 basis points over the next six months; believes local market conditions favor sellers.	3.0% to 4.0% Years 1 & 2	3.0%	3.0%	5.15% to 6.00% (CBD); 6.00% to 6.75% (suburbs)	0.5% to 1.25%	6.00% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	4.30% to 5.00% (CBD); 5.25% to 5.50% (suburbs)	6 to 9	65.0% to 75.0%	1.0% to 3.0%	$0.20 to $0.50	6 to 9
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 3 to 7 years 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.	4.0% to 7.0% Year 1; 2.0% to 5.0% Year 2	3.0% to 5.0%		7.25% to 8.00% (suburbs)	2.0% to 4.0%	8.00% to 10.00% (suburbs)	5.75% to 6.25%	4 to 6	50.0% to 80.0%	5.0% to 7.0%	$0.25 to $1.00	4 to 8
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 1 to 3 years 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	3.0%	2.0% to 3.0%	5.50% to 6.25% (CBD); 6.00% to 7.00% (suburbs)	1.0% to 2.0%	6.75% to 7.50% (CBD); 7.25% to 8.50% (suburbs)	5.50% to 5.75% (CBD); 6.00% to 6.50% (suburbs)	6 to 9	70.0%	5.0%	$0.25 to $1.00	3 to 6

Source: Personal survey conducted by PwC during July 2018.

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BOSTON OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISER ✦ Forecast Period: 10 years 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.	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
PENSION FUND ADVISOR ✦ Forecast Period: 3 to 5 years 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.	0.0% to 3.0%	1.0% to 3.0%	1.0% to 3.0%	5.00% to 7.00% (CBD); 7.00% to 10.00% (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
REAL ESTATE ADVISOR ✦ Forecast Period: 10 years 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% to 5.0% in year 4; expects overall cap rates to hold steady over the next six months.	3.0% to 5.0%	3.0%	3.0%	5.00% to 5.25% (CBD); 6.75% (suburbs)	1.0% to 1.5%	5.75% to 6.75% (CBD); 7.25% to 7.50% (suburbs)	4.00% to 4.75% (CBD); 5.50% to 6.50% (suburbs)	6 to 9	70.0%	1.0% to 2.0%	$0.10 to $0.20	3 to 4
PRIVATE EQUITY INVESTOR ✦ Forecast Period: 5 to 10 years 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 25 to 50 basis points over the next six months.	3.0%	2.5%	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)	4.75% to 5.50% (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
INSURANCE COMPANY ✦ Forecast Period: 10 years 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.	4.0%	3.0%	3.0%	5.25% to 6.25% (CBD); 6.50% to 7.50% (suburbs)	1.0% to 3.0%	5.75% to 6.50% (CBD); 6.50% to 7.25% (suburbs)	4.50% to 5.25% (CBD); 5.75% to 6.75% (suburbs)	5 to 7	65.0% to 70.0%	5.0% to 8.0%	$0.15 to $0.25	5 to 7

Source: Personal survey conducted by PwC during July 2018.

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CHARLOTTE OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
LIFE INSURANCE COMPANY ✦ Forecast Period: 8 to 10 years 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.	2.0% to 3.0%	3.0% to 4.0%	1.0% to 3.0%	6.00% to 7.25% (CBD); 6.25% to 7.75% (suburbs)	0.5% to 1.0%	6.25% to 7.25% (CBD); 7.00% to 8.00% (suburbs)	5.00% to 6.50% (CBD); 5.50% to 7.00% (suburbs)	5 to 10	65.0% to 75.0%	5.0% to 10.0%	$0.10 to $0.25	1 to 9
INSTITUTIONAL INVESTOR ✦ Forecast Period: 5 to 10 years 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.	1.0% to 3.0%	1.0% to 2.0%	2.0% to 2.5%	6.50% to 7.50% (CBD); 6.75% to 7.75% (suburbs)	1.0% to 3.0%	7.00% to 9.00% (CBD); 7.50% to 9.50% (suburbs)	6.25% to 7.75% (CBD); 6.50% to 7.75% (suburbs)	3 to 9	65.0% to 80.0%	5.0% to 7.5%	$0.10 to $0.35	2 to 4
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 7 years 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; does not use rent spikes.	3.0%	3.0%	2.0%	6.00% to 7.00% (CBD); 6.50% to 7.50% (suburbs)	2.0%	7.00% to 8.00% (CBD); 7.50% to 8.50% (suburbs)	5.50% to 6.00% (CBD); 6.00% to 7.00% (suburbs)	9 to 12	65.0% to 75.0%	5.5% to 6.0%	$0.20 to $0.40	3
PRIVATE INVESTOR ✦ Forecast Period: 5 to 10 years 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.	0.0% to 3.5%	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
INVESTMENT MANAGER ✦ Forecast Period: 3 to 10 years 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.	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 July 2018.

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CHICAGO OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
LIFE INSURANCE COMPANY ✦ Forecast Period: 5 to 10 years 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)	0.5% 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
REAL ESTATE ADVISOR ✦ Forecast Period: 7 to 10 years 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% to 3.0%	6.00% to 9.00% (CBD); 7.50% to 10.00% (suburbs)	1.0% to 3.0%	7.00% to 9.50% (CBD); 8.50% to 11.00% (suburbs)	5.75% to 8.00% (CBD); 7.00% to 10.00% (suburbs)	6 to 9	60.0% to 75.0%	7.0% to 10.0%	$0.35 to $0.60	4 to 6
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 10 years Uses mainly direct capitalization; in drect 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.	1.0% to 3.0% Years 1 & 2	2.5% to 3.5%	2.5% to 3.5%	7.00% to 10.00% (CBD); 8.00% to 11.00% (suburbs)	4.0% to 6.0%	8.00% to 10.00% (CBD); 9.00% to 11.00% (suburbs)	6.00% to 9.00% (CBD); 7.00% to 10.00% (suburbs)	6 to 12	60.0% to 70.0%	10.0% to 25.0%	$0.25 to $0.35	4 to 10
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 10 years 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; sees overall cap rates holding steady over the next six months.	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
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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 50 to 100 basis points over the next six months.	3.5% Years 1 & 2	3.0%	3.0%	6.00% to 7.00% (CBD); 8.00% to 10.00% (suburbs)	1.0% to 1.5%	6.50% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	5.50% to 6.50% (CBD); 7.50% to 10.00% (suburbs)	9 to 12	70.0% to 75.0%	5.0% to 8.0%	$0.25 to $0.50	3 to 18

Source: Personal survey conducted by PwC during July 2018.

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DALLAS OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE INVESTOR ✦ Forecast Period: 3 to 7 years 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.	2.0% to 5.0% Years 1 & 2	2.0% to 3.0%	2.0% to 3.0%	6.00% to 8.00% (CBD); 6.00% to 9.00% (suburbs)	1.0% to 3.0%	6.00% to 8.00% (CBD); 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
REAL ESTATE ADVISER ✦ Forecast Period: 10 years 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.	1.75% 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%	6.25% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	5.00% to 6.25% (CBD); 6.25% to 7.00% (suburbs)	9 to 12	70.0% to 75.0%	5.0% to 7.5%	$0.25 to $0.40	3 to 6
REAL ESTATE ADVISER ✦ Forecast Period: 10 years 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 equally favor sellers and buyers.	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); 5.75% 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
PENSION FUND ADVISER ✦ Forecast Period: 10 years 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.	3.0% Years 1 to 3	3.0%	Did not disclose	5.75% to 6.50% (CBD)	0.5% to 1.0%	6.25% to 7.25% (CBD)	5.00% 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
REAL ESTATE ADVISER ✦ Forecast Period: 5 to 10 years 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.	2.5% to 3.0% Year 1; 3.0% Year 2	3.0%	3.0%	6.00% to 6.50% (CBD); 6.25% to 7.00% (suburbs)	0.5% to 1.0%	7.00% to 8.00% in both CBD & suburbs	4.50% to 5.50% (CBD); 5.00% to 6.00% (suburbs)	6 to 9	65.0% to 70.0%	5.0% to 6.0%	$0.15 to $0.40	3 to 6

Source: Personal survey conducted by PwC during July 2018.

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DENVER OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 3 to 10 years 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%	5.50% to 6.50% (CBD); 6.50% to 8.00% (suburbs)	0.5% to 3.0%	7.00% to 9.00% (CBD); 9.00% to 10.00% (suburbs)	5.50% to 7.00% (CBD); 7.00% to 9.00% (suburbs)	5 to 10	50.0% to 70.0%	3.0% to 8.0%	$0.10 to $0.25	2 to 5
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 7 years Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes.	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 7.75% (CBD); 8.00% to 9.00% (suburbs)	5.00% to 6.00% (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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 10 years 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 6.75% (suburbs)	2.0% to 3.0%	7.00% to 7.25% (suburbs)	6.00% to 6.25% (suburbs)	6 to 8	60.0% to 70.0%	1.0% to 2.0%	$0.20 to $0.25	3 to 6
PENSION FUND INVESTOR ✦ Forecast Period: 10 years 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); 6.00% to 7.25% (suburbs)	1.5% to 2.0%	6.50% to 7.25% (CBD); 6.75% to 7.50% (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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 5 to 11 years Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to increase up 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 July 2018.

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HOUSTON OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
REAL ESTATE ADVISERS ✦ Forecast Period: 5 years 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 hold steady over the next six months.	(2.0%) to 0.0%	2.5%	1.8% to 2.0%	6.50% to 6.75% (CBD); 6.75% to 7.00% (suburbs)	1.5% to 2.5%	6.50% to 6.75% (CBD); 7.50% to 7.75% (suburbs)	6.25% to 6.50% (CBD); 6.75% to 7.00% (suburbs)	6 to 9	60.0% to 65.0%	6.0% to 10.0%	$0.50	6 to 9
REAL ESTATE ADVISER ✦ Forecast Period: 10 years 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.	1.0% to 3.0%	3.0%	3.0%	6.50% to 7.75% (CBD); 7.00% to 8.75% (suburbs)	2.0% to 3.0%	7.25% to 8.75% (CBD); 7.75% to 8.75% (suburbs)	5.75% to 7.25% (CBD); 6.75% 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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 7 years 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.	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 10.00% (CBD); 9.00% to 11.50% (suburbs)	6.50% to 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
REIT ✦ Forecast Period: 3 to 10 years 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.	(2.0%)	2.0%	1.5% to 2.0%	6.00% to 7.00% (CBD); 6.00% to 9.00% (suburbs)	1.0%	8.00% to 12.00% (CBD); 9.00% to 13.00% (suburbs)	6.00% to 7.00% (CBD); 7.50% to 9.00% (suburbs)	12 to 36	50.0% to 70.0%	6.0% to 15.0%	$0.25 to $0.50	6 to 12
REAL ESTATE SERVICES ✦ Forecast Period: 5 to 10 years 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 rent spikes.	0.0%	3.0%	2.0%	6.25% to 6.75% (CBD); 7.00% to 8.50% (suburbs)	1.0% to 2.5%	6.50% to 7.50% (CBD); 7.50% to 9.00% (suburbs)	6.00% to 6.25% (CBD); 6.75% to 8.00% (suburbs)	6 to 9	60.0% to 75.0%	5.0% to 8.0%	$0.15 to $0.25	4 to 9

Source: Personal survey conducted by PwC during July 2018.

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LOS ANGELES OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISER ✦ Forecast Period: 7 to 10 years 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 5.00% (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
REAL ESTATE COMPANY ✦ Forecast Period: 7 to 10 years 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
INVESTMENT BANKER ✦ Forecast Period: 5 to 10 years 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%	3.0%	6.50% to 7.50% in both CBD & suburbs	2.0%	6.50% to 9.00% 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
LIFE INSURANCE COMPANY ✦ Forecast Period: 3 to 12 years 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 7.50% (CBD); 6.00% to 8.00% (suburbs)	1.5% to 2.0%	6.00% to 8.25% (CBD); 7.00% to 9.00% (suburbs)	4.75% to 6.50% (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
REAL ESTATE ADVISER ✦ Forecast Period: 10 years 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.	2.0% to 3.0%	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 July 2018.

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MANHATTAN OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT BANKER ✦ Forecast Period: 3 to 5 years 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; sees overall cap rates holding steady over the next six months.	0.0% 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	55.0% to 75.0%	5.0% to 10.0%	Does not use	1 to 5
REAL ESTATE ADVISER ✦ Forecast Period: 5 to 10 years Uses mainly 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.	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
PENSION FUND ADVISER ✦ Forecast Period: 10 to 12 years Mainly uses DCF analysis when valuing assets; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes; expects overall cap rates to increase up to 25 basis points over the next six months.	0.0% to 2.5%	3.0%	3.0%	4.50% to 5.25%	3.8% to 4.0%	5.50% to 6.25%	4.00% to 5.50%	9 to 12	60.0% to 70.0%	1.0% to 2.0%	$0.10 to $0.75	3 to 6
INVESTMENT ADVISER ✦ Forecast Period: 3 to 10 years 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
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 to 11 years 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%	5.00% to 6.00%	1.0% to 3.0%	6.00% to 6.25%	4.50% to 5.50%	5 to 7	65.0% to 70.0%	5.0% to 7.0%	$0.15 to $0.25	5 to 6

Source: Personal survey conducted by PwC during July 2018.

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NORTHERN VIRGINIA OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
REIT ✦ Forecast Period: 3 to 7 years 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 25 to 50 basis points over the next six months; does not use rent spikes.	2.0% to 3.0% Year 1; 2.5% to 3.0% Year 2	2.0% to 3.0%	2.5% to 3.0%	7.00% to 8.00%	1.5% to 2.0%	7.50% to 8.50%	6.75% to 7.50%	6 to 12	60.0% to 70.0%	5.0% to 7.0%	$0.25 to $0.50	4 to 6
LIFE INSURANCE COMPANY ✦ Forecast Period: 5 to 10 years 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 years 2 and 3.	0.0% to 2.0% Year 1; 2.0% to 5.0% Year 2	0.0% to 2.0%	2.0% to 2.5%	5.50% to 6.50%	1.5% to 2.0%	6.00% to 8.50%	5.00% to 7.00%	9 to 18	50.0% to 75.0%	5.0% to 9.0%	$0.10 to $0.70	1 to 3
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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.	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
PRIVATE EQUITY INVESTOR ✦ Forecast Period: 5 to 10 years 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 favor buyers.	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
PRIVATE INVESTOR ✦ Forecast Period: 10 years 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.	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 July 2018.

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PACIFIC NORTHWEST OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISOR ✦ Forecast Period: 7 to 10 years 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.	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 6.00% (CBD); 5.50% to 6.50% (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
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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.	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)	9 to 12	70.0% to 75.0%	3.0% to 6.0%	$0.25 to $0.30	3 to 6
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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 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)	9 to 12	70.0% to 75.0%	3.0% to 5.0%	$0.25 to $0.30	3 to 6
PRIVATE INVESTOR ✦ Forecast Period: 5 to 10 years 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.	2.5% to 3.0%	2.5% to 3.0%	1.5% to 3.0%	5.00% to 9.00% (CBD)	2.0% to 4.0%	7.00% to 8.00% (CBD); 7.00% to 9.00% (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 9
REAL ESTATE SERVICE FIRM ✦ Forecast Period: 5 to 12 years 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.	3.0% to 5.0%	2.5% to 3.0%	2.5% to 3.0%	5.50% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	1.0% to 2.0%	6.00% to 8.00% (CBD); 8.00% to 10.00% (suburbs)	5.00% to 6.50% (CBD); 6.75% to 7.75% (suburbs)	6 to 9	70.0% to 75.0%	5.0%	$0.10 to $0.20	3 to 6
LIFE INSURANCE COMPANY ✦ Forecast Period: 7 to 10 years 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.	3.0%	3.0%	3.0%	6.50% to 7.50% (CBD)	2.5% to 3.0%	7.00% to 8.25% (CBD); 7.25% to 8.00% (suburbs)	6.00% to 7.00% (CBD); 5.50% to 6.50% (suburbs)	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 July 2018.

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PHILADELPHIA OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE EQUITY INVESTOR ✦ Forecast Period: 3 to 5 years 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.	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 10.00% (suburbs)	1.5% to 3.0%	9.00% (CBD); 9.50% to 10.00% (suburbs)	6.00% to 8.00% (CBD); 7.00% to 9.00% (suburbs)	9 to 12	50.0% to 75.0%	5.0% to 10.0%	$0.15 to $0.65	3 to 5
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 1 to 10 years 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.	4.0% to 5.0% Year 1; 4.0% to 6.0% Year 2	2.5% to 3.0%	2.0% to 2.5%	5.50% to 7.00% (CBD); 6.00% to 7.50% (suburbs)	1.5% to 2.5%	6.00% to 8.00% (CBD); 7.00% to 9.00% (suburbs)	5.00% to 6.50% (CBD); 5.50% to 7.00% (suburbs)	6 to 9	70.0% to 75.0%	5.0% to 8.0%	Does not use	2 to 6
OPPORTUNITY FUND INVESTOR ✦ Forecast Period: 10 years 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.	3.0% Years 1 to 3	3.0%	3.0%	6.50% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	2.0% to 3.0%	7.00% to 8.00% (CBD); 8.00% to 9.00% (suburbs)	6.00% to 7.50% (CBD); 7.25% to 7.75% (suburbs)	6 to 9	65.0% to 75.0%	5.0%	$0.20 to $0.25	4 to 8
REIT ✦ Forecast Period: 5 to 7 years 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 3.0%	1.5% to 2.0%	2.5% to 3.0%	6.50% to 7.50% (CBD); 7.50% to 8.50% (suburbs)	2.0% to 2.5%	7.00% to 8.00% (CBD); 8.50% to 9.50% (suburbs)	6.00% to 7.00% (CBD); 7.00% to 8.50% (suburbs)	6 to 18	60.0% to 70.0%	5.0% to 7.0%	$0.25 to $0.50	3 to 6
PRIVATE INVESTOR ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; uses effective rents; expects overall cap rates to hold steady over the next six months; does not use rent spikes.	1.0% to 2.0%	3.0%	2.5% to 3.0%	7.00% to 8.00% (CBD); 8.50% to 9.00% (suburbs)	2.0%	8.00% to 8.50% (CBD); 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 July 2018.

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PHOENIX OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE INVESTOR ✦ Forecast Period: 3 to 7 years 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.	1.0% to 3.0% 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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 10 to 12 years 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% to 6.0% in year 3.	3.0% to 6.0% Years 1 & 2	3.0%	3.0%	6.00% to 6.50% in both CBD & suburbs	1.0% to 2.0%	7.50% to 8.00% in both CBD & suburbs	5.50% to 6.00% 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
PUBLIC REIT ✦ Forecast Period: 5 to 10 years 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 6.50% (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	65.0% to 75.0%	4.0% to 7.0%	$0.10 to $0.25	3 to 9
REAL ESTATE ADVISOR ✦ Forecast Period: 10 years 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; no longer uses rent spikes.	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
PRIVATE EQUITY FIRM ✦ Forecast Period: 5 to 10 years Mainly uses DCF analysis; in direct capitalization, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; believes that market conditions currently favor sellers.	2.0% to 4.0%	3.0% to 4.0%	3.0% to 4.0%	5.75% to 7.25% (CBD); 6.00% to 7.50% (suburbs)	2.0% to 3.0%	10.00% to 11.00% in both CBD & suburbs	5.00% to 7.25% (CBD); 5.50% to 7.25% (suburbs)	4 to 7	65.0% to 75.0%	2.0%	$0.30 to $0.40	3 to 6

Source: Personal survey conducted by PwC during July 2018.

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SAN DIEGO OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 5 years 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; no longer uses rent spikes.	2.0% to 5.0% Year 1; 1.5% to 3.0% Year 2	2.0% to 4.0%	1.5% to 2.5%	5.50% to 7.00% (CBD); 7.00% to 8.50% (suburbs)	1.0% to 3.0%	8.00% to 10.50% (CBD); 9.00% to 12.00% (suburbs)	5.50% to 6.50% (CBD); 6.75% to 7.75% (suburbs)	6 to 12	65.0% to 80.0%	5.0% to 12.0%	$0.10 to $0.20	3 to 12
PRIVATE INVESTOR ✦ Forecast Period: 1 to 10 years 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; sees overall cap rates holding steady over the next six months.	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
PUBLIC REAL ESTATE COMPANY ✦ Forecast Period: 7 to 10 years Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; no longer uses rent spikes; believes market conditions equally favor buyers and sellers.	4.0% to 5.0% Year 1; 2.0% to 4.0% Year 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
PENSION/CORE INVESTOR ✦ Forecast Period: 10 years 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.	3.0% Years 1 & 2	3.0%	2.5% to 3.0%	5.75% to 6.50% (CBD); 6.25% to 7.25% (suburbs)	2.0%	6.50% to 7.50% (CBD); 6.75% to 7.75% (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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 10 years 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.	3.0% to 4.0%	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 July 2018.

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SAN FRANCISCO OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISOR ✦ Forecast Period: 10 years 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.	3.0% to 5.0% Years 1 & 2	3.0%	2.0% to 3.0%	4.75% to 6.00% (CBD); 6.25% to 7.50% (suburbs)	0.5% 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 $0.35	3 to 5
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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.	2.0% to 5.0% Year 1; 3.0% to 5.0% Year 2	3.0%	3.0%	5.00% to 8.00% (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
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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.	3.0% to 4.0%	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	70.0% to 75.0%	3.0% to 4.5%	Does not use	4 to 6
INVESTMENT ADVISOR ✦ Forecast Period: 10 years 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.	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); 5.50% to 6.50% (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
REAL ESTATE COMPANY ✦ Forecast Period: 10 years Mainly uses DCF analysis; in direct cap, capitalizes NOI before TIs, leasing commissions, and capital replacement reserve; does not use rent spikes.	3.0% to 5.0%	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 July 2018.

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SEATTLE OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
INVESTMENT ADVISOR ✦ Forecast Period: 7 to 10 years 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 6.00% (suburbs)	0.5% to 1.0%	5.25% to 6.00% (CBD); 5.50% to 6.50% (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
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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%	7.00% to 8.00% (CBD); 7.00% to 9.00% (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 9
INVESTMENT BANKER ✦ Forecast Period: 5 to 10 years 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 to 3	3.0%	3.0%	6.50% to 7.50% in both CBD & suburbs	2.0%	7.00% to 8.50% in both CBD & suburbs	5.00% to 6.50% in both CBD & suburbs	4 to 6	65.0% to 75.0%	5.0% to 7.0%	$0.15 to $0.25	3 to 4
LIFE INSURANCE COMPANY ✦ Forecast Period: 7 to 10 years 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%	5.75% to 6.50% (CBD); 6.50% to 7.00% (suburbs)	2.5% to 3.0%	6.00% to 7.00% (CBD); 7.00% to 8.00% (suburbs)	4.50% to 5.25% (CBD); 5.50% to 6.50% (suburbs)	5 to 8	65.0% to 70.0%	5.0% to 8.0%	$0.20 to $0.50	1 to 3
ASSET MANAGER ✦ Forecast Period: 10 years 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 6.00% (CBD)	2.3% to 2.8%	6.00% to 6.75% (CBD); 7.75% (suburbs)	4.00% to 5.50% (CBD)	6 to 8	70.0% to 75.0%	1.5% to 2.0%	$0.10 to $0.20	3 to 5

Source: Personal survey conducted by PwC during July 2018.

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SOUTHEAST FLORIDA OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 3 to 5 years Uses both DCF and direct capitalization; 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; 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 8.00% (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
REIT ✦ Forecast Period: 5 to 10 years Uses DCF analysis only; 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 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); 6.50% to 7.00% (suburbs)	6 to 12	50.0% to 75.0%	3.0% to 8.0%	$0.25 to $0.50	4 to 8
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years 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); 6.50% 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
PRIVATE EQUITY INVESTOR ✦ Forecast Period: 3 to 5 years 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 10.00% (CBD); 8.50% to 10.50% (suburbs)	1.0% to 2.5%	8.50% to 10.00% (CBD); 10.00% to 10.50% (suburbs)	6.00% to 8.00% (CBD); 6.50% 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
REIT ✦ Forecast Period: 10 years 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.	2.5%	3.0%	2.0% to 3.0%	8.00% (suburbs)	2.0%	8.00% to 9.50% (suburbs)	7.25% to 8.25% (suburbs)	6 to 9	65.0%	8.0%	$0.20	4 to 5

Source: Personal survey conducted by PwC during July 2018.

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WASHINGTON, DC OFFICE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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 2.	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
LIFE INSURANCE COMPANY ✦ Forecast Period: 5 to 10 years 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.	0.0% Year 1; 0.0% to 4.0% Year 2	0.0%	2.0% to 2.5%	5.00% to 6.50%	1.5% to 3.0%	5.00% to 6.50%	4.25% to 5.75%	9 to 18	50.0% to 75.0%	0.0% to 5.0%	$0.10 to $0.50	1 to 3
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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.	3.0% Years 1 to 3	3.0%	2.5% to 3.0%	5.00% to 5.50%	2.0% to 2.5%	5.50% to 6.25%	4.75% to 5.25%	4 to 6	65.0% to 75.0%	1.0% to 2.0%	$0.15 to $0.25	2 to 5
PENSION FUND ADVISOR ✦ Forecast Period: 5 to 10 years 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.	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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 10 years 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.	1.5% Years 1 & 2	3.0%	3.0%	6.00%	3.0%	6.00% to 7.00%	4.75% to 5.50%	8	65.0%	0.0% to 3.0%	$0.25	4

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL WAREHOUSE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
REAL ESTATE SERVICES FIRM ✦ Forecast Period: 5 to 15 years 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%	2.5%	2.5% to 3.5%	5.00% to 6.50%	1.0% to 2.0%	5.50% to 6.50%	3.75% to 5.00%	6 to 9	65.0% to 80.0%	0.0% to 5.0%	$0.05 to $0.15	4 to 6
DOMESTIC PENSION FUND ✦ Forecast Period: 10 years 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.	3.0% Years 1 to 3	3.0%	3.0%	5.25% to 6.75%	1.0% to 2.0%	5.75% to 7.25%	4.50% to 6.25%	6 to 12	65.0% to 75.0%	0.5% to 2.0%	$0.10 to $0.25	6 to 9
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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.	3.0% to 5.0%	3.0%	3.0%	5.25% to 5.50%	1.0% to 3.0%	5.75% to 6.50%	3.75% to 4.50%	6 to 9	50.0% to 70.0%	1.0% to 3.0%	$0.10 to $0.35	3 to 6
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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 5.75%	1.0% to 3.0%	5.75% to 6.25%	4.00% to 5.50%	6 to 9	60.0% to 75.0%	2.0% to 6.0%	$0.05 to $0.15	3 to 6
PENSION FUND ADVISOR ✦ Forecast Period: 5 to 10 years 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 decrease over the next six months.	0.0% Year 1; 3.0% Year 2	0.0%	2.0% to 3.0%	4.50% to 6.25%	1.0% to 2.0%	6.25% to 7.25%	1.70% to 6.20%	6 to 9	70.0%	1.0% to 6.0%	$0.05 to $0.20	1 to 2
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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%	5.50% to 6.00%	2.0% to 3.0%	6.00% to 6.50%	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 July 2018.

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EAST NORTH CENTRAL (ENC) REGION WAREHOUSE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PENSION FUND ADVISOR ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes NOI before TIs, leasing commissions, and replacement reserve; expects overall cap rates to decrease ten to 20 basis points over the next six months; may use rent spikes.	0.0% to 3.0%	3.0%	3.0%	5.00% to 5.75%	1.0% to 2.0%	5.50% to 6.00%	4.25% to 5.00%	6 to 8	60.0% to 75.0%	4.0% to 7.0%	$0.05 to $0.15	2 to 3
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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%	6.25% to 6.50%	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
REAL ESTATE SERVICES FIRM ✦ Forecast Period: 5 to 10 years 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 decrease as much as 15 basis points 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	3 to 6
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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.	2.5% to 3.0%	3.0%	3.0%	6.00% to 7.00%	1.5% to 2.0%	6.25% to 7.00%	3.70% to 5.75%	9 to 12	65.0% to 75.0%	3.0%	$0.10 to $0.20	3 to 6
PRIVATE EQUITY INVESTOR ✦ Forecast Period: 3 to 7 years 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.	2.5%	3.0%	2.8%	6.00%	1.0% to 3.0%	5.00% to 7.00%	5.00%	8	68.0%	3.5%	$0.10 to $0.15	4

Source: Personal survey conducted by PwC during July 2018.

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PACIFIC REGION WAREHOUSE MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
PRIVATE ASSET MANAGER ✦ Forecast Period: 10 years 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.	0.0% Year 1; 3.0% to 5.0% Year 2	3.0%	3.0%	4.75% to 5.25%	1.0% to 3.0%	5.50% to 6.25%	3.75% to 4.50%	6 to 12	60.0% to 75.0%	2.0% to 5.0%	$0.05 to $0.15	2 to 4
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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.	3.0% Years 1 to 3	3.0%	3.0%	5.50% to 6.00%	3.0% to 4.0%	6.00% to 7.00%	4.25% to 5.50%	2 to 4	60.0% to 70.0%	5.0% to 7.0%	Does not use	1 to 2
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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.	3.0% to 4.0% Year 1; 3.0% Year 2	3.0%	3.0%	4.50% to 5.00%	2.0% to 3.0%	5.50% to 6.00%	4.00% to 4.50%	4 to 6	65.0% to 75.0%	2.0% to 4.0%	$0.10 to $0.20	2 to 4
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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; does not use rent spikes.	3.0% to 5.0%	3.0%	3.0%	4.75% to 5.75%	0.5% to 2.0%	5.50% to 6.50%	3.00% to 5.00%	3 to 9	50.0% to 70.0%	3.0%	$0.10 to $0.35	3 to 6
REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years 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%	3.0%	3.0%	5.00%	2.0% to 3.0%	6.00%	4.00% to 5.00%	6	50.0% to 75.0%	2.0% to 5.0%	$0.15	3

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL APARTMENT MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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	PER UNIT	MONTHS
INSURANCE COMPANY ✦ Forecast Period: 10 years 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%	4.50% to 6.75%	0.5% to 4.0%	5.75% to 7.50%	3.75% to 6.25%	$200 to $550	3 to 6
PENSION FUND ADVISOR ✦ Forecast Period: 10 years 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
DOMESTIC PENSION FUND ✦ Forecast Period: 1 to 10 years 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.	3.0%	3.0%	3.0% to 7.0%	4.25% to 5.50%	0.5% to 2.0%	5.75% to 7.00%	3.50% to 5.25%	$250 to $400	3 to 9
INSTITUTIONAL INVESTOR ✦ Forecast Period: 10 years 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%	5.75% to 6.25%	4.00% to 5.00%	$200 to $250	2 to 3
PENSION FUND ADVISOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; FF&E reserve is deducted fom 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%	5.0% to 7.0%	5.50% to 6.50%	1.0% to 2.0%	8.25% to 9.00%	5.50% to 6.75%	$250 to $350	1 to 2
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 1 to 5 years 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.	(2.0%) to 3.0%	2.0% to 3.0%	3.0% to 8.0%	5.25% to 8.50%	3.0% to 4.0%	7.00% to 10.00%	5.25% to 8.50%	$200 to $350	1 to 9

Source: Personal survey conducted by PwC during July 2018.

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MID-ATLANTIC REGION APARTMENT MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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	PER UNIT	MONTHS
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 5 years 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 current market conditions equally favor buyers and 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
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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%	4.0% to 6.0%	4.00% to 5.25%	1.0% to 4.0%	5.25% to 6.25%	2.50% to 4.40%	$200 to $300	1 to 2
PENSION FUND INVESTOR ✦ Forecast Period: 4 to 7 years 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 favor sellers.	2.0% to 3.0% Year 1; 3.0% Year 2	3.0%	5.0% to 7.0%	5.00% to 6.25%	2.0% to 3.0%	8.00% to 10.00%	4.25% to 6.75%	$250 to $350	2 to 8
PRIVATE INVESTOR ✦ Forecast Period: 5 to 10 years 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 6.0%	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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 8 years 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 seperate 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%	6.50% to 8.50%	4.75% to 5.75%	$200 to $300	3 to 9

Source: Personal survey conducted by PwC during July 2018.

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PACIFIC REGION APARTMENT MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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	PER UNIT	MONTHS
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 10 years 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.	2.5% to 7.5%	2.5% to 3.0%	2.0% to 5.0%	4.00% to 6.00%	0.5% to 1.5%	7.00% to 10.00%	4.00% to 6.00%	$250 to $350	3 to 6
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years 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% Year 2	0.0%	4.5% to 6.0%	4.25% to 4.50%	0.8% to 3.0%	5.50% to 5.75%	3.60% to 4.00%	$200 to $300	1 to 2
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 8 years Mainly uses direct capitalization analysis; FF&E reserve is deducted from NOI before capitalization; believes market conditions favor sellers; does not use a separate structural reserve.	2.0% to 3.0%	3.0%	5.0% to 6.0%	5.00% to 6.00%	1.0% to 3.0%	5.50% to 9.50%	4.50% to 5.00%	$200 to $300	3 to 6
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; does not use an FF&E reserve; uses a separate structural replacement reserve of $150 to $300 per unit.	2.0% to 4.0% Years 1 & 2	3.0%	4.0% to 6.0%	4.25% to 5.25%	1.0% to 2.8%	5.00% to 6.50%	3.50% to 4.75%	Does not use	3 to 9
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 5 to 10 years 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 5.75%	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 July 2018.

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SOUTHEAST REGION APARTMENT MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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	PER UNIT	MONTHS
PENSION FUND INVESTOR ✦ Forecast Period: 4 to 7 years Uses all three approaches to value; FF&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.	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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 6 years Uses both DCF and direct capitalization; does not use an FF&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.	2.0% to 3.0%	2.0% to 3.0%	4.0% to 7.0%	6.50% to 7.00%	1.3% to 1.5%	9.00%	5.50% to 6.50%	Does not use	3 to 5
REAL ESTATE ADVISOR ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; uses a separate structural replacement reserve of $150 to $300 per unit; expects overall cap rates to hold steady over the next six months.	3.0% to 5.5%	3.0% to 5.0%	5.0% to 10.0%	4.00% to 5.25%	1.5% to 4.0%	5.75% to 6.50%	2.95% to 4.75%	$150 to $250	6
PENSION FUND ADVISOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; FF&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 hold steady over the next six months.	1.0% to 3.0% Years 1 & 2	2.0% to 3.0%	4.5% to 6.0%	5.50% to 6.00%	0.5% to 1.5%	6.25% to 7.00%	4.75% to 5.75%	$200 to $350	1 to 3
REAL ESTATE ADVISOR ✦ Forecast Period: 5 to 6 years Prefers DCF analysis; also uses direct capitalization; FF&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.	3.0%	3.0%	6.00%	5.50%	1.0% to 1.5%	6.00% to 8.00%	5.00%	$300	4

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL NET LEASE MARKET–SELECT SURVEY RESPONSES
Third Quarter 2018

	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	EXPENSES		CAP RATE	SELLING EXPENSES	FREE & CLEAR	FREE & CLEAR		PER SQUARE FOOT	MONTH
INVESTOR/BROKERS ✦ Forecast Period: 3 to 10 years 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; sees overall cap rates increasing ten to 25 basis points over the next six months.	Commodity retail, office, medical	1.0% to 3.0% Years 1 to 3	1.0% to 3.0%	B to AAA	6.00% to 9.00%	3.0% to 5.0%	8.00% to 12.00%	5.50% to 8.50%	Does not use	Does not use	3 to 6
REAL ESTATE ADVISOR ✦ Forecast Period: 8 years Primary valuation method is direct capitalization; in direct cap, capitalizes cash flow after deducting TIs, leasing commissions, and capital replacement reserve; also uses DCF analysis; mainly focuses on net lease transactions; feels that market conditions favor buyers; sees overall cap rates increasing 35 to 50 basis points over the next six months.	All types	2.0% to 3.0% Year 1; 2.0% to 2.5% Year 2	3.0%	BBB+ to AA	7.00% to 8.00%	0.8% to 1.5%	8.00% to 10.00%	5.50% to 6.75%	5.0% to 10.0%	Did not reveal	3 to 6
PRIVATE INVESTMENT FIRM ✦ Forecast Period: 5 to 10 years Primary valuation method is DCF analysis; only completes net lease sales; 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.	Automotive; general (retail)	2.0% to 4.0% Years 1 to 3	2.0% to 4.0%	Not disclosed	7.00% to 8.00%	4.0% to 6.0%	8.00%	7.00% to 8.00%	0.0%	Does not use	4 to 12
INVESTMENT ADVISOR ✦ Forecast Period: 3 to 8 years 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	1.0% to 2.0%	BB to AA	7.25% to 7.75%	3.0% to 3.5%	6.00% to 6.50%	5.75% to 6.25%	0.0% to 5.0%	Does not use	3 to 6
MANAGEMENT COMPANY ✦ Forecast Period: 10 to 20 years 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	0.0%	B to AAA	Does not use	Does not use	Does not use	6.00% to 7.75%	Does not use	Does not use	2 to 12

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL MEDICAL OFFICE BUILDINGS MARKET–SELECT SURVEY RESPONSES

Third Quarter 2018

	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
REIT ✦ Forecast Period: 1 to 10 years 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 hold steady over the next six months; does not use rent spikes; believes market conditions favor sellers.	2.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0% to 3.0%	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
REIT ✦ Forecast Period: 3 to 5 years 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; does not use rent spikes.	2.5% Years 1 to 3	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
REAL ESTATE SERVICE FIRM ✦ Forecast Period: 8 to 11 years 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.	2.0% to 3.0% Years 1 to 3	2.0% to 3.0%	2.0% to 3.0%	5.00% to 7.00% (on campus); 5.25% to 7.00% (off campus)	1.0% to 2.0%	6.00% to 7.75% (on campus); 6.00% to 8.00% (off campus)	4.75% to 6.50% (on campus); 5.00% to 6.75% (off campus)	6 to 12	70.0% to 85.0%	2.0% to 5.0%	$0.15 to $0.25	2 to 4
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 3 to 7 years 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.	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
PRIVATE REAL ESTATE FIRM ✦ Forecast Period: 5 to 10 years Uses both DCF analysis and direct capitalization; in direct cap, capitalizes NOI after capital replacement reserve but before TIs and leasing commissions.	1.0% to 3.0%	1.0% to 4.0%	2.0% to 5.0%	5.00% 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 18	70.0% to 90.0%	0.0% to 10.0%	$0.15 to $0.30	1 to 12

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL FULL-SERVICE LODGING SEGMENT–SELECT SURVEY RESPONSES

Third Quarter 2018

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	IS FF&E DEDUCTED FROM NOI PRIOR TO CAPITALIZATION?	BASE MANAGEMENT FEE	RESERVE FOR REPLACEMENT OF FIXED ASSETS	MARKETING TIME
	AVERAGE DAILY RATE	OPERATING EXPENSES	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	YES/NO	PERCENT OF TOTAL REVENUE	PERCENT OF TOTAL REVENUE	MONTHS
OWNER/OPERATOR ✦ Forecast Period: 4 to 6 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; believes market conditions equally favor buyers and sellers; expects overall cap rates to hold steady over the next six months.	2.5% to 3.5% Years 1 to 3	3.0% to 4.0%	7.00% to 9.00%	2.5% to 3.5%	10.00% to 12.00%	6.50% to 8.00%	Yes	1.0% to 1.5%	2.5% to 4.5%	6 to 9
OWNER/PRIVATE ✦ Forecast Period: 4 to 8 years Uses both DCF and direct capitalization; in direct cap, capitalizes both prior 12 months of income and forecast 12 months of income; believes market conditions equally favor sellers and buyers; expects overall cap rates to hold steady over the next six months.	(1.0%) to 4.0% Year 1; (2.0%) to 5.0% Year 2	3.0%	7.00% to 9.00%	0.3% to 3.0%	8.00% to 10.00%	6.00% to 8.50%	Yes	2.0% to 3.0%	3.0% to 5.0%	4 to 8
PRIVATE COMPANY ✦ Forecast Period: 7 to 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; believes that market conditions equally favor buyers and sellers; expects overall cap rates to increase over the next six months.	5.0% to 7.0%	3.0%	7.25% to 9.50%	1.5% to 3.0%	10.00% to 13.00%	6.50% to 9.00%	Yes	3.0% to 3.5%	4.0% to 5.0%	3 to 7
REAL ESTATE ADVISER ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months income; expects overall cap rates to increase 25 to 50 basis points over the next six months; believes current market conditions equally favor buyers and sellers.	3.0% to 4.0%	3.0%	7.25% to 9.50%	2.0% to 3.0%	8.50% to 10.50%	6.25% to 8.50%	Yes	2.5% to 3.5%	4.0% to 5.0%	8
PRIVATE INVESTOR ✦ Forecast Period: 3 to 5 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months; believes that overall cap rates will hold steady over the next six months and that market conditions are neutral.	0.0% to 3.0%	0.0% to 3.0%	8.00% to 10.00%	1.0% to 2.0%	9.00% to 11.00%	8.00% to 10.00%	Yes	2.0% to 4.0%	3.0% to 5.0%	3 to 6

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL LIMITED-SERVICE MIDSCALE & ECONOMY LODGING SEGMENT–SELECT SURVEY RESPONSES

Third Quarter 2018

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	IS FF&E DEDUCTED FROM NOI PRIOR TO CAPITALIZATION?	BASE MANAGEMENT FEE	RESERVE FOR REPLACEMENT OF FIXED ASSETS	MARKETING TIME
	AVERAGE DAILY RATE	OPERATING EXPENSES	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	YES/NO	PERCENT OF TOTAL REVENUE	PERCENT OF TOTAL REVENUE	MONTHS
REAL ESTATE ADVISER ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; expects overall cap rates to increase up to 25 basis points over the next six months.	1.0% to 3.0%	3.0%	7.75% to 9.50%	3.0% to 4.0%	8.50% to 11.00%	7.75% to 9.50%	Yes	4.0% to 5.0%	4.0% to 5.0%	8 to 12
OWNER/OPERATOR ✦ Forecast Period: 3 to 7 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months of income; believes overall cap rates will hold steady over the next six months; believes market conditions favor sellers.	(1.0%) to 3.0%	3.0%	8.50% to 10.00%	0.5% to 2.5%	9.00% to 11.00%	8.50% to 10.50%	Yes	2.5% to 4.0%	2.0% to 4.0%	2 to 4
PRIVATE HOTEL COMPANY ✦ Forecast Period: 7 to 10 years Prefers Northeast, Southeast, and Southwest; uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; expects occupancy to hold steady and ADRs to increase over the next six months; believes market conditions currently are neutral.	2.0% to 4.0%	3.0%	9.00% to 11.00%	2.5% to 3.5%	11.50% to 13.00%	8.00% to 11.00%	Yes	3.0% to 4.0%	4.0% to 5.0%	3 to 6
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; believes that market conditions favor sellers; expects occupancy and ADR to hold steady over the next six months.	0.0% to 5.0% Years 1 to 3	2.5% to 3.0%	9.00% to 10.00%	1.0% to 2.0%	9.00% to 11.00%	8.50% to 10.00%	Yes	2.0% to 3.5%	4.0% to 5.0%	6 to 8
PRIVATE OWNER ✦ Forecast Period: 5 years Focuses on direct capitalization; in direct cap, capitalizes prior 12 months of income; current breakeven occupancy rate is estimated at 55.0%; sees occupancy holding steady over the next six months.	2.0% to 3.0%	3.0%	9.50%	2.0%	10.50%	9.00%	Yes	3.5%	4.0%	6

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL LUXURY/UPPER-UPSCALE LODGING SEGMENT–SELECT SURVEY RESPONSES

Third Quarter 2018

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	IS FF&E DEDUCTED FROM NOI PRIOR TO CAPITALIZATION?	BASE MANAGEMENT FEE	RESERVE FOR REPLACEMENT OF FIXED ASSETS	MARKETING TIME
	AVERAGE DAILY RATE	OPERATING EXPENSES	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	YES/NO	PERCENT OF TOTAL REVENUE	PERCENT OF TOTAL REVENUE	MONTHS
INSURANCE COMPANY ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; expects overall cap rates to hold steady over the next six months.	2.0% to 5.0%	2.0% to 4.0%	5.50% to 8.00%	0.5% to 2.5%	6.25% to 8.75%	4.00% to 6.50%	Yes	3.0% to 5.0%	4.0% to 5.0%	6 to 12
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes next 12 months of income; believes that market conditions currently favor sellers; expects overall cap rates to increase 25 to 50 basis points over the next six months.	3.0% Years 1 to 3	3.0%	6.75% to 8.50%	2.0% to 3.0%	7.50% to 10.00%	5.75% to 8.25%	Yes	2.5% to 5.0%	4.0% to 5.0%	6 to 8
PRIVATE INVESTOR ✦ Forecast Period: 3 to 7 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months income; believes that overall cap rates will hold steady over the next six months and that market conditions equally favor buyers and sellers.	2.0% to 3.0%	2.0% to 3.0%	7.00% to 8.50%	1.5% to 2.0%	10.00% to 12.00%	7.00% to 9.00%	Yes	2.5% to 3.5%	4.0%	3 to 6
PRIVATE INVESTOR ✦ Forecast Period: 3 to 5 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months of income; believes overall cap rates will hold steady over the next six months; believes market conditions equally favor buyers and sellers.	0.0% to 3.0%	0.0% to 3.0%	6.50% to 9.50%	1.0% to 2.0%	8.00% to 10.00%	7.00% to 9.00%	Yes	2.0% to 3.0%	4.0% to 6.0%	3 to 6
OWNER/OPERATOR ✦ Forecast Period: 5 to 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes both next 12 months of income and prior 12 months of income; believes market conditions equally favor sellers and buyers.	3.0% to 4.0%	3.0%	6.00% to 7.00%	2.0% to 4.0%	10.00% to 12.00%	6.00% to 8.00%	Yes	3.0% to 5.0%	4.0%	6 to 12

Source: Personal survey conducted by PwC during July 2018.

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NATIONAL SELECT-SERVICE LODGING SEGMENT–SELECT SURVEY RESPONSES

Third Quarter 2018

	INITIAL-YEAR CHANGE RATES		RESIDUAL		DISCOUNT RATE (IRR)	OVERALL CAP RATE (OAR)	IS FF&E DEDUCTED FROM NOI PRIOR TO CAPITALIZATION?	BASE MANAGEMENT FEE	RESERVE FOR REPLACEMENT OF FIXED ASSETS	MARKETING TIME
	AVERAGE DAILY RATE	OPERATING EXPENSES	CAP RATE	SELLING EXPENSE	FREE & CLEAR	FREE & CLEAR	YES/NO	PERCENT OF TOTAL REVENUE	PERCENT OF TOTAL REVENUE	MONTHS
OWNER/MANAGER ✦ Forecast Period: 4 to 7 years Uses both DCF and direct capitalization; in direct cap, capitalizes both prior 12 months of income and the next 12 months of income; expects overall cap rates to decrease over the next six months; believes that market conditions currently favor sellers.	(1.0%) to 3.0%	3.0%	7.50% to 10.00%	0.3% to 2.5%	8.00% to 10.00%	7.00% to 9.50%	Yes	2.5% to 3.5%	2.0% to 4.0%	4 to 7
PRIVATE INVESTOR ✦ Forecast Period: 5 to 10 years Mainly uses DCF; expects overall cap rates to decrease over the next six months; believes market conditions favor sellers.	0.0% to 8.0%	2.0% to 10.0%	8.00% to 9.00%	1.0% to 1.5%	10.25%		Yes	3.0% to 4.0%	4.0% to 7.0%	3 to 15
REIT ✦ Forecast Period: 5 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months of income; expects overall cap rates to increase 25 to 50 basis points over the next six months; believes that market conditions equally favor buyers and sellers.	3.0% to 5.0%	2.0% to 3.0%	7.00% to 9.00%	1.5% to 3.0%	8.00% to 10.00%	7.00% to 9.00%	Yes	3.0% to 4.0%	4.0% to 5.0%	2 to 6
OWNER/MANAGER ✦ Forecast Period: 1 to 4 years Uses both DCF and direct capitalization; in direct cap, capitalizes prior 12 months of income; deducts both FF&E and structural reserve from NOI before capitalization; expects overall cap rates to hold steady over the next six months.	3.0%	2.0% to 4.0%	9.00%	2.0%	9.50% to 11.00%	8.50%	Yes	3.0% to 4.0%	4.0%	10 to 12
LIFE INSURANCE COMPANY ✦ Forecast Period: 10 years Uses both DCF and direct capitalization; in direct cap, capitalizes the next 12 months of income; expects overall cap rates to hold steady over the next six months; believes that market conditions favor sellers.	0.0% to 5.0%	2.5% to 3.0%	9.00% to 10.00%	2.0% to 3.0%	8.50% to 10.00%	8.50% to 10.00%	Yes	2.5% to 3.5%	4.0% to 5.0%	4 to 6

Source: Personal survey conducted by PwC during July 2018.

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INVESTMENT AND PROPERTY CHARACTERISTICS: OFFICE MARKETS

Third Quarter 2018

	FORECAST VALUE CHANGE NEXT 12 MONTHS		PRICE AS % OF REPLACEMENT COST		STRUCTURAL VACANCY		YEARS TO REACH STRUCTURAL VACANCY		TENANT IMPROVEMENT ALLOWANCE (PSF) NEW DEALS (1)		RENEWAL LEASES	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National CBD	(5.0%) – 15.0%	2.0%	65.0% – 125.0%	99.3%	2.0% – 15.0%	7.0%	0 – 3	1.6	$10.00 – $100.00	$49.64	$5.00 – $40.00	$20.00
National Suburban	(10.0%) – 10.0%	1.4%	70.0% – 110.0%	90.5%	0.0% – 15.0%	8.3%	0 – 5	1.6	$5.00 – $100.00	$39.58	$5.00 – $40.00	$17.92
National Secondary	(10.0%) – 10.0%	(0.2%)	50.0% – 120.0%	79.4%	0.0% – 15.0%	8.5%	1 – 5	2.4	$10.00 – $100.00	$32.88	$5.00 – $25.00	$11.47
Atlanta	0.0% – 10.0%	3.6%	55.0% – 110.0%	82.0%	5.0% – 10.0%	7.7%	0 – 3	1.2	$10.00 – $75.00	$39.25	$5.00 – $60.00	$19.90
Austin	0.0% – 20.0%	5.5%	100.0% – 130.0%	107.5%	0.0% – 10.0%	5.8%	0 – 2	1.0	$15.00 – $100.00	$43.25	$0.00 – $40.00	$15.20
Boston	(5.0%) – 5.0%	1.7%	50.0% – 115.0%	97.5%	4.0% – 12.0%	6.6%	0 – 5	1.1	$10.00 – $125.00	$59.00	$5.00 – $50.00	$21.00
Charlotte	(5.0%) – 6.0%	2.4%	80.0% – 120.0%	96.3%	0.0% – 12.0%	6.1%	0 – 4	1.8	$10.00 – $65.00	$36.46	$0.00 – $30.00	$13.33
Chicago	(10.0%) – 10.0%	1.1%	25.0% – 120.0%	80.4%	5.0% – 20.0%	11.0%	0 – 4	2.3	$10.00 – $125.00	$58.29	$5.00 – $75.00	$25.83
Dallas	(2.0%) – 20.0%	3.1%	50.0% – 110.0%	92.5%	5.0% – 15.0%	8.9%	0 – 3	1.7	$5.00 – $100.00	$44.25	$5.00 – $50.00	$21.20
Denver	(10.0%) – 4.0%	0.3%	50.0% – 150.0%	102.5%	5.0% – 12.0%	7.2%	0 – 3	1.3	$15.00 – $70.00	$37.50	$3.00 – $30.00	$13.00
Houston	(20.0%) – 5.0%	(2.3%)	50.0% – 110.0%	84.5%	5.0% – 15.0%	9.4%	1 – 5	2.9	$8.00 – $80.00	$36.65	$3.00 – $40.00	$15.30
Los Angeles	(10.0%) – 10.0%	2.0%	50.0% – 140.0%	95.0%	2.0% – 15.0%	8.2%	0 – 7	2.1	$8.00 – $125.00	$48.64	$0.00 – $50.00	$17.19
Manhattan	(1.0%) – 7.0%	2.8%	50.0% – 100.0%	86.9%	0.0% – 10.0%	5.4%	0 – 4	1.8	$10.00 – $140.00	$65.50	$10.00 – $60.00	$32.50
Northern Virginia	(10.0%) – 10.0%	1.5%	60.0% – 100.0%	90.8%	4.0% – 12.0%	7.1%	0 – 10	3.4	$20.00 – $125.00	$51.25	$5.00 – $80.00	$22.67
Pacific Northwest	(5.0%) – 10.0%	2.2%	50.0% – 130.0%	104.5%	3.0% – 10.0%	6.8%	0 – 2	0.9	$10.00 – $100.00	$57.27	$0.00 – $30.00	$20.91
Philadelphia	0.0% – 9.0%	2.5%	50.0% – 100.0%	78.8%	4.0% – 12.0%	6.9%	1 – 7	3.0	$5.00 – $80.00	$38.44	$5.00 – $20.00	$11.25
Phoenix	0.0% – 7.0%	3.5%	70.0% – 110.0%	93.3%	5.0% – 15.0%	8.5%	0 – 4	1.6	$2.00 – $75.00	$62.50	$0.00 – $50.00	$19.00
San Diego	(5.0%) – 10.0%	2.4%	60.0% – 110.0%	93.1%	3.0% – 12.0%	6.6%	0 – 4	1.8	$10.00 – $100.00	$40.94	$0.00 – $25.00	$12.50
San Francisco	(5.0%) – 5.0%	1.0%	90.0% – 130.0%	107.9%	3.0% – 10.0%	6.1%	0 – 3	0.6	$10.00 – $150.00	$55.63	$0.00 – $35.00	$17.50
Seattle	0.0% – 10.0%	3.7%	50.0% – 130.0%	101.5%	3.0% – 10.0%	6.3%	0 – 2	1.0	$10.00 – $100.00	$55.63	$0.00 – $30.00	$19.17
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	$32.81	$5.00 – $40.00	$15.63
Washington, DC	0.0% – 5.0%	1.7%	95.0% – 130.0%	106.3%	2.0% – 7.0%	5.0%	0 – 5	0.8	$25.00 – $150.00	$71.50	$12.00 – $115.00	$34.20

(1) Includes both second-generation and new space; a breakout of TI allowances is included in each fourth quarter issue of the Survey.
Source: Personal survey conducted by PwC during July 2018.

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INVESTMENT AND PROPERTY CHARACTERISTICS: NATIONAL AND REGIONAL MARKETS

Third Quarter 2018

	FORECAST VALUE CHANGE NEXT 12 MONTHS		PRICE AS % OF REPLACEMENT COST		CLASS-A+ and A MALLS IRRs		OARs		CLASS-B+ and B MALLS IRRs		OARs		STABILIZED OCCUPANCY	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National Regional Mall	(12.0%) – 5.0%	0.5%	50.0% – 125.0%	97.5%	5.00% – 8.00%	6.48%	4.00% – 6.50%	5.11%	7.00% – 11.50%	9.09%	5.75% – 10.00%	7.83%	80.0% – 99.0%	92.0%
National Power Center	(15.0%) – 5.0%	(1.2%)	80.0% – 110.0%	98.3%									80.0% – 96.0%	90.3%
National Strip Shopping Center	(10.0%) – 5.0%	(0.3%)	50.0% – 125.0%	97.5%									85.0% – 97.0%	92.0%

	FORECAST VALUE CHANGE NEXT 12 MONTHS		PRICE AS % OF REPLACEMENT COST		FINISHED SPACE %		TENANT IMPROVEMENT ALLOWANCES (PSF) NEW DEALS (1)		RENEWAL LEASES	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
Warehouse (National)	0.0% – 15.0%	5.2%	100.0% – 140.0%	109.1%	0.0% – 20.0%	8.3%	$0.00 – $15.00	$2.53	$0.00 – $1.50	$0.60
Warehouse (ENC Region)	0.0% – 12.0%	3.1%	100.0% – 125.0%	104.2%	0.0% – 15.0%	6.6%	$0.00 – $5.00	$1.46	$0.00 – $1.00	$0.59
Warehouse (Pacific Region)	0.0% – 10.0%	3.4%	95.0% – 125.0%	103.5%	0.0% – 15.0%	6.5%	$0.00 – $6.00	$1.41	$0.00 – $1.50	$0.56
Apartment (National)	(5.0%) – 10.0%	1.6%	80.0% – 125.0%	101.8%						
Apartment (Mid-Atlantic Region)	(3.0%) – 6.0%	1.4%	80.0% – 125.0%	99.3%						
Apartment (Pacific Region)	(10.0%) – 15.0%	2.6%	80.0% – 135.0%	105.8%						
Apartment (Southeast Region)	0.0% – 10.0%	2.5%	85.0% – 115.0%	101.7%						
National Net Lease	(20.0%) – 15.0%	(2.7%)	75.0% – 140.0%	103.3%						
National Medical Office Buildings	(15.0%) – 10.0%	(0.2%)	100.0% – 150.0%	115.4%						

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

Source: Personal survey conducted by PwC during July 2018.

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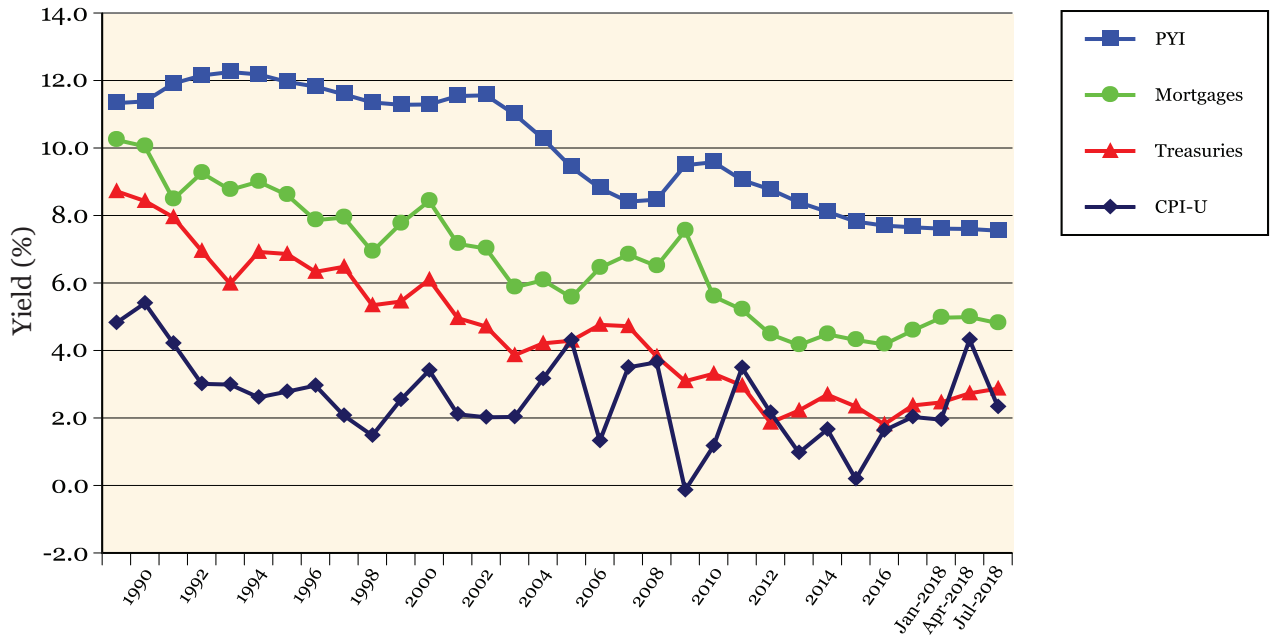
YIELD COMPARISONS
July 1, 2018

	2013 AVERAGE	2014 AVERAGE	2015 AVERAGE	2016 AVERAGE	2017 AVERAGE	2017 OCTOBER	2018 JANUARY	2018 APRIL	2018 JULY
PwC Yield Indicator (PYI)[a]	8.39%	8.11%	7.82%	7.70%	7.65%	7.63%	7.61%	7.60%	7.55%
Long-Term Mortgages[b]	4.16%	4.48%	4.31%	4.18%	4.59%	4.56%	4.97%	4.99%	4.88%
10-Year Treasuries[c]	2.22%	2.69%	2.34%	1.81%	2.37%	2.34%	2.46%	2.73%	2.87%
Consumer Price Index Change[d]	0.97%	1.66%	0.19%	1.63%	2.03%	3.07%	1.95%	4.32%	2.33%
SPREAD TO PYI (Basis Points)									
Long-Term Mortgages	423	363	351	352	306	307	264	261	267
10-Year Treasuries	617	542	548	589	528	529	515	487	468
Consumer Price Index Change	742	645	763	607	562	456	566	328	522

a. A composite IRR average of all markets surveyed (excluding hotels, development land, and student housing).
b. Source: Survey; CB Richard Ellis/L.J. Melody Capital Markets; Select Commercial Funding; Commercial Loan Direct; conventional funding, 60% to 80% LTV 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
July 1, 2018



DIVIDEND COMPARISONS
July 1, 2018

	2013 AVERAGE	2014 AVERAGE	2015 AVERAGE	2016 AVERAGE	2017 AVERAGE	2017 OCTOBER	2018 JANUARY	2018 APRIL	2018 JULY
PwC Dividend Indicator (PDI)[a]	6.92%	6.66%	6.38%	6.26%	6.21%	6.13%	6.10%	6.08%	6.01%
Equity REITs[b]	3.68%	3.80%	3.64%	3.88%	4.02%	4.07%	4.36%	4.51%	4.15%
S&P 500[c]	2.09%	1.92%	2.03%	2.11%	1.97%	1.91%	1.83%	1.89%	1.88%
SPREAD TO PDI (Basis Points)									
Equity REITs	324	286	274	238	219	206	174	157	186
S&P 500	483	474	435	415	424	422	427	419	413

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.

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INSTITUTIONAL-GRADE VS. NONINSTITUTIONAL-GRADE PROPERTY RATES: OFFICE MARKETS

Third Quarter 2018

	INSTITUTIONAL				NONINSTITUTIONAL (BASIS-POINT SPREAD TO INSTITUTIONAL RATES)			
	IRRs		OARs		IRRs		OARs	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National CBD Office	5.25% – 9.00%	6.89%	3.00% – 7.50%	5.44%	(a)	(a)	(a)	(a)
National Suburban Office	5.75% – 12.00%	8.16%	4.00% – 10.00%	6.52%	(a)	(a)	(a)	(a)
National Secondary Office	6.50% – 14.00%	9.12%	5.00% – 9.50%	7.53%	50 – 400	188	50 – 250	127
Atlanta Office	6.50% – 10.75%	8.25%	5.00% – 8.75%	6.86%	(a)	(a)	(a)	(a)
Austin Office	5.50% – 10.00%	7.27%	4.30% – 7.50%	5.82%	(a)	(a)	(a)	(a)
Boston Office	5.75% – 10.00%	7.23%	4.00% – 9.50%	5.91%	100 – 500	258	100 – 250	192
Charlotte Office	6.25% – 10.00%	7.85%	5.00% – 7.75%	6.49%	50 – 400	238	100 – 250	167
Chicago Office	6.00% – 12.00%	8.84%	4.75% – 10.00%	7.56%	50 – 800	285	50 – 600	183
Dallas Office	6.00% – 9.00%	7.74%	4.50% – 8.50%	6.13%	(a)	(a)	(a)	(a)
Denver Office	6.50% – 11.00%	8.07%	5.00% – 9.00%	6.56%	(a)	(a)	(a)	(a)
Houston Office	6.50% – 13.00%	8.60%	5.75% – 10.00%	7.11%	50 – 500	192	40 – 300	141
Los Angeles Office	5.00% – 11.50%	7.82%	4.00% – 8.00%	5.88%	25 – 300	128	25 – 150	88
Manhattan Office	5.50% – 9.00%	6.90%	3.00% – 6.00%	4.70%	(a)	(a)	(a)	(a)
Northern Virginia Office	6.00% – 9.50%	7.71%	5.00% – 8.50%	6.67%	(a)	(a)	(a)	(a)
Pacific Northwest Office	5.25% – 10.00%	7.32%	4.00% – 8.00%	5.82%	75 – 500	238	50 – 250	113
Philadelphia Office	6.00% – 10.00%	8.35%	5.00% – 9.00%	7.15%	(a)	(a)	(a)	(a)
Phoenix Office	7.00% – 11.00%	8.72%	5.00% – 8.00%	6.48%	(a)	(a)	(a)	(a)
San Diego Office	6.50% – 12.00%	8.19%	5.25% – 8.50%	6.56%	(a)	(a)	(a)	(a)
San Francisco Office	5.00% – 9.50%	6.81%	3.50% – 8.00%	5.47%	(a)	(a)	(a)	(a)
Seattle Office	5.25% – 9.00%	7.06%	4.00% – 8.00%	5.58%	(a)	(a)	(a)	(a)
Southeast Florida Office	6.00% – 10.50%	8.31%	5.00% – 9.50%	6.93%	(a)	(a)	(a)	(a)
Washington, DC Office	5.00% – 7.00%	6.03%	4.25% – 6.50%	5.13%	(a)	(a)	(a)	(a)

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

Source: Personal survey conducted by PwC during July 2018.

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INSTITUTIONAL-GRADE VS. NONINSTITUTIONAL-GRADE PROPERTY RATES: NATIONAL AND REGIONAL MARKETS

Third Quarter 2018

	INSTITUTIONAL				NONINSTITUTIONAL (BASIS-POINT SPREAD TO INSTITUTIONAL RATES)			
	IRRs		OARs		IRRs		OARs	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National Regional Mall	5.00% – 11.50%	7.55%	4.00% – 10.00%	6.30%	(a)	(a)	(a)	(a)
National Power Center	6.00% – 11.00%	7.60%	5.25% – 9.00%	6.48%	50 – 300	154	50 – 150	100
National Strip Shopping Center	5.50% – 10.50%	7.43%	4.00% – 9.50%	6.27%	50 – 800	229	25 – 500	154
Warehouse (National)	5.25% – 9.00%	6.38%	1.50% – 6.25%	4.62%	50 – 400	217	50 – 250	133
Warehouse (ENC Region)	5.50% – 7.00%	6.25%	3.70% – 5.75%	5.05%	(a)	(a)	(a)	(a)
Warehouse (Pacific Region)	5.50% – 7.00%	6.03%	3.00% – 5.50%	4.35%	(a)	(a)	(a)	(a)
National Apartment	5.25% – 10.00%	7.20%	3.50% – 8.50%	5.23%	25 – 400	175	25 – 400	131
Apartment (Mid-Atlantic Region)	5.25% – 10.00%	7.15%	2.50% – 6.75%	4.99%	25 – 400	204	25 – 400	171
Apartment (Pacific Region)	5.00% – 10.00%	6.60%	3.50% – 6.00%	4.39%	(a)	(a)	(a)	(a)
Apartment (Southeast Region)	5.75% – 10.00%	7.55%	2.95% – 6.50%	5.15%	(a)	(a)	(a)	(a)
National Medical Office Buildings	5.50% – 11.00%	7.73%	4.50% – 10.00%	6.66%	(a)	(a)	(a)	(a)

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

Source: Personal survey conducted by PwC during July 2018.

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INCOME CAPITALIZED IN DIRECT CAPITALIZATION
Third Quarter 2018

	PERCENTAGE OF SURVEY RESPONDENTS USING:					
	METHOD 1 (a)		METHOD 2 (a)		METHOD 3 (a)	
MARKET	CURRENT	YEAR AGO	CURRENT	YEAR AGO	CURRENT	YEAR AGO
National Retail						
Regional Mall	20.0%	20.0%	80.0%	80.0%	0.0%	0.0%
Power Center	17.0%	17.0%	83.0%	83.0%	0.0%	0.0%
Strip Shopping Center	14.0%	11.0%	86.0%	89.0%	0.0%	0.0%
Office						
National CBD	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
National Suburban	29.0%	38.0%	71.0%	63.0%	0.0%	0.0%
National Secondary	13.0%	9.0%	88.0%	91.0%	0.0%	0.0%
Atlanta	20.0%	0.0%	80.0%	80.0%	0.0%	20.0%
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	33.0%	29.0%	67.0%	71.0%	0.0%	0.0%
Dallas	20.0%	17.0%	80.0%	83.0%	0.0%	0.0%
Denver	40.0%	40.0%	60.0%	60.0%	0.0%	0.0%
Houston	20.0%	43.0%	60.0%	43.0%	20.0%	14.0%
Los Angeles	13.0%	14.0%	88.0%	86.0%	0.0%	0.0%
Manhattan	20.0%	17.0%	80.0%	83.0%	0.0%	0.0%
Northern Virginia	33.0%	60.0%	67.0%	40.0%	0.0%	0.0%
Pacific Northwest	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%
Philadelphia	0.0%	17.0%	100.0%	83.0%	0.0%	0.0%
Phoenix	20.0%	17.0%	80.0%	83.0%	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%	20.0%	60.0%	60.0%	20.0%	20.0%
Suburban Maryland		40.0%		60.0%		0.0%
Washington, DC	40.0%	33.0%	60.0%	67.0%	0.0%	0.0%
Industrial						
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	20.0%	40.0%	80.0%	60.0%	0.0%	0.0%
Apartments[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%		
National Net Lease	20.0%	50.0%	40.0%	33.0%	40.0%	17.0%
National Medical Office Buildings	40.0%	40.0%	60.0%	60.0%	0.0%	0.0%

Note: Lines may not add to up to 100% due to rounding.

a. **Method 1:** NOI after deducting capital replacement reserve but before deducting TIs (tenant improvements) and leasing commissions.
Method 2: NOI before deducting capital replacement reserve,TIs, and leasing commissions.
Method 3: Cash flow after deducting capital replacement reserve, TIs, and leasing commissions.

b. **Method 1:** deducts FF&E reserve from NOI prior to direct capitalization.
Method 2: does not deducts FF&E reserve from NOI prior to direct capitalization.

LODGING INCOME CAPITALIZED IN DIRECT CAPITALIZATION
Third Quarter 2018

	PRIOR 12 MONTHS[a]		FORECAST 12 MONTHS[b]		BOTH[c]	
SEGMENT	CURRENT	YEAR AGO	CURRENT	YEAR AGO	CURRENT	YEAR AGO
Full Service	20.0%	17.0%	60.0%	50.0%	20.0%	33.0%
Limited-Service Midscale & Economy	40.0%	25.0%	60.0%	75.0%	0.0%	0.0%
Luxury/Upper Upscale	40.0%	40.0%	40.0%	40.0%	20.0%	20.0%
Select Service	50.0%	60.0%	25.0%	20.0%	25.0%	20.0%

Note: 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.

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FORECAST PERIODS AND CHANGE RATES: OFFICE MARKETS

Third Quarter 2018

	FORECAST PERIOD		MARKET RENT CHANGE RATES INITIAL YEAR		FORECAST PERIOD AVERAGE		EXPENSE CHANGE RATES INITIAL YEAR		FORECAST PERIOD AVERAGE	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National CBD Office	5 – 12	9	0.00% – 5.00%	2.41%	0.00% – 4.00%	2.60%	1.00% – 4.00%	2.72%	1.00% – 4.00%	2.73%
National Suburban Office	5 – 10	9	0.00% – 5.00%	1.86%	0.00% – 4.20%	2.30%	0.00% – 4.00%	2.68%	2.00% – 4.00%	2.90%
National Secondary Office	1 – 10	7	2.00% – 5.00%	2.80%	1.00% – 6.00%	3.23%	2.00% – 3.00%	2.55%	2.00% – 3.00%	2.59%
Atlanta Office	3 – 10	8	0.00% – 5.00%	2.55%	0.00% – 4.00%	2.60%	1.50% – 5.00%	2.90%	1.50% – 4.00%	2.75%
Austin Office	1 – 10	6	1.50% – 7.00%	3.65%	2.00% – 6.00%	3.33%	2.50% – 5.00%	3.10%	2.00% – 4.00%	2.90%
Boston Office	3 – 10	8	0.00% – 5.00%	3.10%	0.00% – 3.50%	2.70%	1.00% – 3.00%	2.70%	1.00% – 3.00%	2.75%
Charlotte Office	3 – 10	7	0.00% – 4.50%	2.54%	2.00% – 5.00%	2.92%	1.00% – 4.00%	2.63%	1.50% – 4.00%	2.77%
Chicago Office	3 – 10	8	0.00% – 4.00%	2.08%	2.00% – 4.00%	3.00%	2.00% – 6.00%	3.17%	0.00% – 4.00%	2.80%
Dallas Office	3 – 10	9	1.75% – 5.00%	2.78%	2.00% – 6.00%	3.33%	2.00% – 3.00%	2.90%	3.00% – 6.00%	3.60%
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	(2.00%) – 3.00%	0.10%	(2.00%) – 9.00%	2.40%	2.00% – 3.00%	2.60%	2.00% – 9.00%	3.63%
Los Angeles Office	3 – 12	8	1.50% – 6.00%	3.78%	1.50% – 5.00%	3.59%	2.00% – 4.00%	2.91%	2.00% – 4.00%	2.91%
Manhattan Office	3 – 12	8	0.00% – 4.00%	1.85%	0.00% – 5.00%	2.52%	1.00% – 3.00%	2.60%	1.00% – 3.00%	2.60%
Northern Virginia Office	3 – 10	7	0.00% – 3.00%	1.79%	1.00% – 4.00%	2.52%	0.00% – 3.00%	2.38%	2.00% – 3.00%	2.63%
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	7	0.00% – 5.00%	2.60%	0.00% – 5.00%	2.85%	1.00% – 3.00%	2.50%	1.00% – 3.00%	2.60%
Phoenix Office	3 – 12	8	1.00% – 6.00%	3.10%	1.00% – 5.00%	3.00%	1.00% – 4.00%	2.70%	1.00% – 4.00%	2.70%
San Diego Office	1 – 10	8	2.00% – 5.00%	3.70%	1.50% – 5.00%	3.13%	2.00% – 4.00%	2.90%	2.00% – 3.50%	2.81%
San Francisco Office	5 – 10	10	2.00% – 5.00%	3.70%	(2.00%) – 4.00%	2.64%	0.00% – 3.00%	2.60%	2.00% – 3.00%	2.90%
Seattle Office	5 – 10	8	2.00% – 5.00%	3.21%	2.25% – 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%	2.70%	0.00% – 5.00%	2.75%	1.00% – 3.00%	2.70%	1.00% – 3.00%	2.69%
Washington, DC Office	5 – 10	9	0.00% – 4.00%	1.30%	1.50% – 3.50%	2.60%	0.00% – 3.00%	2.20%	1.50% – 3.00%	2.65%

Source: Personal survey conducted by PwC during July 2018.

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FORECAST PERIODS AND CHANGE RATES: NATIONAL AND REGIONAL MARKETS

Third Quarter 2018

	FORECAST PERIOD		MARKET RENT CHANGE RATES INITIAL YEAR		FORECAST PERIOD AVERAGE		EXPENSE CHANGE RATES INITIAL YEAR		FORECAST PERIOD AVERAGE	
MARKET	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE
National Regional Mall	1 – 10	7	1.00% – 4.00%	2.25%	2.00% – 4.00%	2.92%	2.00% – 5.00%	3.00%	2.00% – 4.00%	3.00%
National Power Center	1 – 12	8	0.00% – 4.00%	1.88%	0.00% – 5.00%	2.50%	1.00% – 4.00%	2.92%	1.00% – 3.00%	2.80%
National Strip Shopping Center	1 – 11	7	0.00% – 3.00%	1.71%	2.00% – 3.00%	2.71%	0.00% – 3.00%	2.61%	1.00% – 4.00%	2.92%
Warehouse (National)	3 – 15	9	0.00% – 7.00%	2.60%	2.00% – 5.00%	3.14%	0.00% – 3.00%	2.30%	0.00% – 3.50%	2.35%
Warehouse (East North Central Region)	3 – 10	8	0.00% – 5.00%	2.60%	2.50% – 4.00%	3.00%	2.50% – 3.00%	2.90%	0.00% – 3.00%	2.13%
Warehouse (Pacific Region)	5 – 10	9	0.00% – 5.00%	2.60%	3.00% – 3.70%	3.20%	3.00% – 3.00%	3.00%	0.00% – 3.00%	2.25%
Apartment (National)	1 – 10	7	(2.00%) – 5.00%	2.41%	0.00% – 4.00%	2.73%	2.00% – 3.00%	2.73%	2.00% – 4.00%	2.87%
Apartment (Mid-Atlantic Region)	3 – 10	6	0.00% – 3.00%	1.60%	0.00% – 4.00%	2.68%	0.00% – 3.00%	2.00%	0.00% – 3.00%	2.70%
Apartment (Pacific Region)	3 – 10	7	0.00% – 7.50%	2.70%	2.00% – 5.00%	3.25%	0.00% – 3.00%	2.23%	2.00% – 3.00%	2.85%
Apartment (Southeast Region)	4 – 10	7	1.00% – 5.50%	3.05%	1.00% – 4.00%	2.88%	2.00% – 5.00%	3.00%	3.00% – 5.00%	3.33%
National Net Lease	3 – 20	8	0.00% – 4.00%	2.00%	1.00% – 10.00%	3.20%	0.00% – 4.00%	1.83%	1.00% – 10.00%	3.20%
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%	2.70%

Source: Personal survey conducted by PwC during July 2018.

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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 Wisconsion.

EXCESSIVE TENANT IMPROVEMENT ALLOWANCE[3]
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 leasin 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[1]
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[1]
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[3]
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[3]
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[1]
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[5]
Multifamily housing development consisting of at least four stories.

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

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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[1,3]
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[3]
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[3]
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)[4]
Room revenue divided by rooms sold.

LIMITED-SERVICE MIDSCALE & ECONOMY[3,4]
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[3,4]
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 UPSCALE[3,4]
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 service, 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[4]
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[3,4]
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[3]

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[2]
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[2]
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[2,3]
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[2,3]
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 CLASSES[3]

	In-line Retail Sales (psf)[3]	
Class	**Eff. 2Q18**	**Prior**
A+	$675 and up	$650 and up
A	$525 to $674	$500 to $649
B+	$400 to $524	$400 to $499
B	$325 to $399	$300 to $399
C+/C	Less than $325	Less than $300

STRIP SHOPPING CENTER[2,3]
An open row of stores either with or without anchor stores that offer convenience (neighborhood centers) and general merchandise (community centers).

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

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Editor-in-Chief: Susan M. Smith, MAI
Senior Editor: Amy E. Olson, CCIM
Business Manager: Maridel Gutierrez

Survey Inquiries: Please email all Survey inquiries to us-pwcsurvey@pwc.com.

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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.

www.pwc.com/us/realestatesurvey

Index of Special Topics*

Valuation Issues	Quarter Covered
Buyers vs. Sellers	Third
Concessions	First
Debt Service	Third
Leasing Commissions	First
Lodging - NOI Timing	Third
Lodging - Replacement Reserves	Third
Lodging - Management Fees	Third
Management Fees	First
Market Rent Change Rates	First
Rent Spikes	Third
Replacement Reserves	First
Tenant Improvement Allowances	Fourth
Vacancy Assumptions	Fourth

Semiannual Markets	Quarter Covered
National Development Land Market	Second & Fourth
National Lodging Highlights	First & Third
National Lodging Segments	First & Third
National Self-Storage Market	First & Third
National Student Housing Market	Second & Fourth

*Unless listed, all markets and topics are included in each issue

Index of Highlighted Special Reports

Topic	Quarter Debuted
Domestic Self-Storage Market	Second 2005
e-Commerce and Retail Real Estate	Second 1999
Effective Rent	Third 1993
Gaming Industry	Third 2009
Green Building Macro Trends	Third 2006
Institutional-Grade Real Estate	Second 1994
Investment Sales	Second 2009
Medical Office Space	Fourth 2007
Net Lease Market	First 2000
October 11, 2001*	2001
Power Centers	Third 1995
Real Estate Value Cycles	First 2000
Regional Mall Market	Second 1996
REITs	Second 1998
Retail: The 100-Million-Square-Foot Hangover	First 2009
Retail: The Perfect Storm, or More Hot Air?	Second 2009
Self Storage Industry	First 2003
Senior Housing Industry	First 2009
Terrorism Insurance	Second 2002
U.S. Single-Family Rental Housing	Fourth 2012

*16-page supplement following 9/11

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