PROPERTY PERFORMANCE MONITOR

First Quarter 2019

QUARTERLY HIGHLIGHTS

— Core real estate, as measured by the NCREIF Property Index (NPI), registered unleveraged total returns of 6.8% in the trailing four quarters as of 1Q 2019. Total returns have stabilized around 7.0% (annualized) for nine straight quarters.

— Industrial outperformed by a wide margin, returning 14.0%. Office and Apartment properties returned a distant 6.7% and 5.9%, respectively. The Retail sector continued to struggle, returning 3.2%.

— Performance bifurcation persisted within sectors. In the Retail sector, Neighborhood and Community center returns were in the mid-single digits while those of Malls were marginally positive; within the Apartment sector, Garden returns were nearly double those of High-Rise.

— West coast markets generally led the index while New York, Chicago and Washington, DC generally underperformed.

PRIVATE REAL ESTATE PROPERTY RETURNS

— Real estate returns ticked up 10 bps (trailing four-quarters) in 1Q 2019.

— Private real estate underperformed both bonds and equities in 1Q 2019, but outperformed bonds over the trailing four quarters.

— Listed REITs had a strong quarter, narrowing a valuation gap to their underlying real estate.

— Income accounted for two-thirds of total return in the first quarter (trailing four quarters), compared to a little more than half over the past 20 years.

— Overall vacancy remained near the lowest level in 18 years (6.1%). NOI growth was strong, at 4.4% (year-over-year, four-quarter moving average).

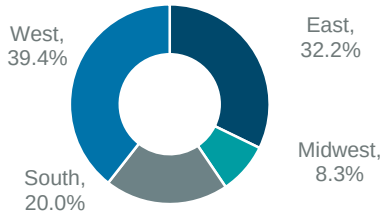
— The Industrial sector's total return was more than double that of the overall NPI.

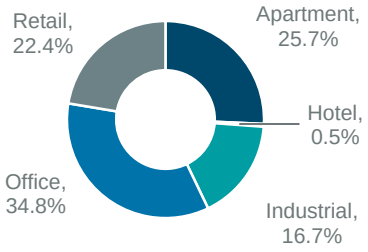
— The Bay Area and Seattle were notable outperformers, leading several other strong west coast markets. The bottom of the list was mixed but generally included Chicago and markets in the Northeast.

NPI MARKET CAPITALIZATION

Index market value: $630.0 billion

Property count: 7913





RECENT PERFORMANCE TRENDS

	Quarter	12 months trailing	
	1Q 2019	1Q 2019	4Q 2018
Private Real Estate (NPI)	1.8%	6.8%	6.7%
Broad Equities (large cap)	13.6%	9.5%	-4.4%
Bonds	2.9%	4.5%	0.0%
Listed Real Estate	17.2%	20.5%	-4.0%
10-Year Treasury[1]	2.4%	2.4%	2.7%
12-Month LIBOR[1]	2.7%	2.7%	3.0%
CPI (SA)	0.6%	1.9%	1.9%

Sources: NCREIF, Standard and Poor's, Barclay's, NAREIT, and Federal Reserve. As of March 31, 2019. Data shown is the latest available. Past performance is no guarantee of future results. **See appendix for definitions of indices, and performance over the past 5 years (12-month periods).**

[1] These figures represent annual yields. Source: Barclay's and Federal Reserve. As of March 31, 2019

NCREIF PROPERTY INDEX (NPI) PERFORMANCE BY SECTOR AND REGION

— Overall returns were steady. Industrial led the index over the past year, followed by Office and Apartment. Retail trailed far behind, despite posting a decent first-quarter performance (1.7%).

— Returns for all three Industrial subsectors remained in double digits, bolstered by both strong income yields and capital appreciation. In 1Q 2019, Industrial NOI growth continued historic momentum, posting 8.8% growth (year-over-year, four-quarter moving average).

— Within Retail, Regional and Super Regional shopping centers returned 2.1% over the past year, while Neighborhood and Community centers returned 4.7%. Overall, negative appreciation chipped away at returns.

— Late cycle mark-to-market opportunities supported Office returns. Suburban Office returned 7.4% year-over-year while CBD Office returned 6.1%. Suburban Office has outperformed CBD Office for twelve straight quarters.

— Garden Apartments were the standout subtype outside of Industrial, returning 8.6%. High-Rise Apartments were weak on a relative basis.

— Regional dynamics were unchanged, with the West leading the pack by a significant margin, followed by the South. The East remained stable while returns in the Midwest decelerated.

DETAILED PROPERTY TYPE NPI PERFORMANCE

	No. of props.	Market value (Mil)	Trailing four quarters		
			Total return	Income	Apprec.
Apartment					
Garden	642	$45,642	8.6%	4.9%	3.6%
High Rise	930	$99,778	4.6%	4.0%	0.7%
Low Rise	201	$16,536	6.0%	4.3%	1.6%
Industrial					
R&D	30	$798	11.8%	6.1%	5.5%
Flex	219	$3,865	12.9%	5.6%	7.1%
Warehouse	3,077	$98,126	14.1%	4.8%	9.1%
Office					
CBD	449	$131,168	6.1%	4.2%	1.9%
Suburban	971	$87,772	7.4%	5.0%	2.4%
Retail					
Community	254	$16,004	3.9%	5.4%	-1.4%
Neighborhood	479	$18,935	5.3%	5.0%	0.3%
Power	192	$15,766	4.1%	5.5%	-1.3%
Regional	61	$18,607	1.7%	4.6%	-2.8%
Super Regional	63	$53,807	2.3%	4.3%	-2.0%

Source: NCREIF Property Index as of March 31, 2019.
Past performance is no guarantee of future results.

RETURNS BY PROPERTY TYPE AND REGION

	Annual returns								Standard deviation	
	1 Year			3 years	5 years	10 years	20 years	Since inception[2]	20 years	Since inception[2]
Property Type	**Total**	**Income**	**Apprec.**							
Apartment	5.9%	4.3%	1.6%	6.3%	8.2%	8.6%	8.8%	10.3%	8.4%	7.6%
Industrial	14.0%	4.8%	8.9%	13.2%	13.7%	10.4%	10.0%	9.9%	8.3%	7.5%
Office	6.7%	4.5%	2.1%	6.3%	8.5%	7.5%	8.2%	8.4%	9.0%	9.5%
Retail	3.2%	4.7%	-1.4%	5.2%	8.4%	8.9%	10.0%	9.5%	7.6%	6.5%
Total Index	**6.8%**	**4.5%**	**2.2%**	**7.1%**	**9.1%**	**8.5%**	**8.9%**	**9.2%**	**8.1%**	**7.5%**
Region	**Total**	**Income**	**Apprec.**							
East	5.2%	4.4%	0.8%	5.4%	7.3%	7.5%	8.8%	9.9%	8.7%	9.0%
Midwest	4.1%	4.7%	-0.6%	5.3%	7.7%	7.5%	7.4%	8.0%	6.5%	5.8%
South	6.8%	4.9%	1.8%	6.9%	9.3%	8.7%	8.5%	8.3%	7.3%	6.7%
West	8.8%	4.5%	4.2%	9.0%	11.1%	9.6%	9.9%	9.8%	8.9%	8.4%
Total Index	**6.8%**	**4.5%**	**2.2%**	**7.1%**	**9.1%**	**8.5%**	**8.9%**	**9.2%**	**8.1%**	**7.5%**

Source: NCREIF Property Index. As of March 31, 2019. Past performance is not indicative of future returns.

[2] Index returns start in 1978, equivalent to a 41.25 year calculation.

MARKET ANALYSIS – BENCHMARK INSIGHTS AND PORTFOLIO IMPLICATIONS

The NCREIF Property Index is a value-weighted index of property returns and as such, a large portion of the index is located in just 20 markets. Local economic growth will affect properties located in the same market similarly, so we can estimate the effect of property geographical location on the overall index. Large metros, by value, will likely have the largest impact on the index, although small metro with particularly strong or weak performance may boost or weigh on returns from time to time. The following tables lists out which markets had the strongest positive and negative effect on returns during the past four quarters.

IMPACT OF TOP 20 MARKETS ON SECTOR PERFORMANCE

Apartment			Industrial			Office			Retail		
Metro	Metro returns[3]	Impact on sector returns	Metro	Metro returns[3]	Impact on sector returns	Metro	Metro returns[3]	Impact on sector returns	Metro	Metro returns[3]	Impact on sector returns
Denver	7.3%	7	Seattle	18.3%	31	San Francisco	10.6%	37	Washington, DC	5.6%	18
Boston	7.2%	6	Riverside	15.6%	19	Boston	8.6%	21	San Diego	7.1%	16
Houston	7.3%	5	New York	16.3%	15	Seattle	10.4%	19	Dallas	5.8%	14
Austin	7.8%	5	Los Angeles	15.3%	14	San Jose	10.3%	15	Orange County	7.8%	10
San Diego	7.8%	5	San Francisco	22.5%	11	Austin	12.8%	13	Boston	5.8%	9
Oakland	8.0%	5	Oakland	16.8%	11	Oakland	11.9%	11	Orlando	5.3%	5
Orange County	8.1%	4	Orange County	15.8%	6	Los Angeles	7.8%	9	Miami	4.6%	5
San Jose	7.8%	4	Portland	17.4%	6	Dallas	8.0%	4	San Jose	5.2%	5
Atlanta	6.8%	3	Denver	14.6%	1	Atlanta	8.7%	3	Oakland	4.8%	4
Seattle	6.2%	1	Miami	14.1%	0	Portland	7.4%	1	Seattle	4.3%	2
Los Angeles	6.0%	1	Fort Lauderdale	13.0%	-2	San Diego	6.2%	-1	San Francisco	3.8%	1
Fort Lauderdale	6.3%	1	San Jose	12.6%	-2	Minneapolis	5.3%	-1	Phoenix	3.1%	0
Miami	4.6%	-2	San Diego	12.5%	-3	Phoenix	4.2%	-2	Las Vegas	3.0%	-1
Washington, DC	5.7%	-2	Atlanta	12.9%	-4	Miami	4.4%	-3	Denver	2.6%	-2
Portland	3.6%	-4	Washington, DC	10.9%	-4	Denver	4.7%	-4	Los Angeles	2.8%	-2
Philadelphia	3.5%	-5	Harrisburg	9.2%	-7	Orange County	4.2%	-5	Atlanta	-0.2%	-9
San Francisco	3.9%	-5	Houston	11.5%	-7	Houston	4.8%	-6	Houston	1.1%	-13
Dallas	4.0%	-11	Baltimore	10.0%	-8	Chicago	5.4%	-6	Baltimore	-5.5%	-17
Chicago	2.2%	-27	Dallas	11.4%	-21	Washington, DC	3.6%	-36	New York	-0.6%	-21
New York	3.5%	-28	Chicago	9.5%	-40	New York	3.1%	-70	Chicago	-0.8%	-31

Source: NCREIF Property Index as of March 31, 2019. Past performance is no guarantee of future results. Forecasts are not a reliable indicator of future returns. Forecasts are based on assumptions, estimates, opinions and hypothetical models or analysis which may prove to be incorrect.

Apartments – Riverside, Tampa and Orlando, smaller, regional markets that fell outside of the top 20, boasted some of the highest total returns. Generally, regional markets outperformed while several gateway markets struggled; New York, Chicago, Washington, DC, and San Francisco all detracted from sector returns. Denver, Boston and San Diego made the largest positive contributions. Texas was largely a positive contributor, with the exception of Dallas, which has an outsized supply pipeline.

Industrial – Performance was strong, with only a handful of metros (e.g., Minneapolis and St. Louis) underperforming the overall NPI. West coast metros dominated, joined by New York. San Francisco, Seattle, and Portland were standouts. The major inland distribution hubs of Atlanta, Chicago, and Dallas, all of which have above-average construction activity, underperformed, although their returns were nevertheless near or into the double digits.

Office – Knowledge-based markets including the Bay Area, Boston, Seattle and Austin, delivered a large positive contribution to sector returns. Underperformance was concentrated in key gateway markets with substantial supply pipelines (New York, Washington, DC) or anemic growth (Chicago). Markets in Texas (Dallas and Austin) benefited from robust corporate demand, although returns in Houston remained below average.

Retail – West Coast markets generally produced the highest returns. The Sunbelt was mixed with Nashville, Raleigh, and Orlando producing strong returns and Atlanta delivering a (slightly) negative one over the past year. Metros with outsized mall exposure, namely Houston and Chicago, were generally the largest detractors. Baltimore (the worst performing metro) and New York imposed a significant drag on sector results. Boston, historically a chronic underperformer, delivered a positive contribution in the first quarter.

[3] Four-quarter cumulative returns ending first quarter 2019.

Appendix

PERFORMANCE OVER THE PAST 5 YEARS (12-MONTH PERIODS)

	3/31/2018-3/31/2019	3/31/2017-3/31/2018	3/31/2016-3/31/2017	3/31/2015-3/31/2016	3/31/2014-3/31/2015
Private Real Estate (NPI)	6.8%	7.1%	7.3%	11.8%	12.7%
Broad Equities (large cap)	9.5%	14.0%	17.2%	1.8%	12.7%
Bonds	4.4%	1.2%	0.4%	2.0%	5.7%
Listed Real Estate	20.5%	-1.1%	5.3%	4.7%	22.7%
10-Year Treasury[1]	2.4%	2.7%	2.4%	1.8%	1.9%
12-Month LIBOR[1]	2.7%	2.7%	1.8%	1.2%	0.7%
CPI (SA)	1.9%	2.4%	2.4%	0.9%	0.0%

[1] These figures represent annual yields.

Sources: NCREIF Property Index (NPI), S&P 500 Total Return (Broad Equities), Bloomberg/Barclay's U.S. Aggregate Total Return Index (Bonds), FTSE/NAREIT All Equity REITs Total Returns Index (Listed Real Estate), Federal Reserve (10-Year Treasury, 12-Month LIBOR, Consumer Price Index (CPI)). As of March 31, 2019. Data shown is the latest available.
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