

APARTMENT INDEX

END OF CAP RATE COMPRESSION AND OVERBUILDING WEIGH ON RETURNS

Apartment returns continued to moderate as cap rate compression ends. Reflecting stability in cap rates and moderating rent growth, total apartment returns for the year ended in the third quarter of 2017 slowed to 6.22%. Income returns year-over-year reached 4.45% and returns attributed to capital appreciation also fell to 1.71%. Income returns have remained steady while appreciation returns slowed because of the end of cap rate compression. Total apartment returns were the second highest, after industrial real estate, despite generating the lowest current income return.

Within the apartment sector, garden apartments performed the best, with a year-over-year return of 8.62%. Low-rise apartments generated a 6.66% return while high-rise apartments lagged with a 4.90% year-over-year return. These data reflect the continued impact of over-supply of luxury apartments in many markets. Class B and C older suburban apartments, which house renters by necessity, have and will continue to outperform luxury, urban high-rise apartments which house renters by choice.

Supporting this view is the reduction in the proportion of renter households to 36.2% from 36.9% in early 2016. The high level of new apartment deliveries, with completions in all 5-unit and greater multifamily buildings reaching an annualized rate of 358,000 in September 2017 compared with 321,000 in 2016 and 195,000 in 2013, will continue to adversely impact the luxury market for the next several years.

Markets with a high proportion of necessity renters generated higher apartment returns. Additionally, secondary markets that recovered later than large cities had higher returns, in particular the income component, and reflected the stage of the investment cycle locally. Some the strongest year-over-year apartment returns in the larger secondary markets were 15.63% in Las Vegas, 13.96% in Inland Empire, 10.16% in Orange County, and 9.44% in Charlotte. The large amount of construction deliveries in recent quarters has yet to slow income returns but a slowdown in capital appreciation, caused by the end of cap rate compression and high asset values, contributed to a slowdown of total returns in Seattle to 9.17%.

Conversely, apartment returns lagged in regions with a large volume of new construction or lackluster economic growth. The lowest year-over-year apartment returns were in Houston 0.28%, where the combination of an economy still recovering from the oil-induced recession, overbuilding of high-end units, and effects of the hurricane constrained investment returns. Total returns slowed in San Francisco to 3.78%, and rent growth slowed substantially because of the large amount of construction in recent years and monthly rents constrained by an affordability ceiling. Other regions where year-over-year total returns lagged were Chicago with 3.04%, Charleston with 3.35%, San Antonio with 3.83%, and Philadelphia with 3.86%.

Looking forward, the high level of construction activity will continue to weigh on the apartment sector and maintain returns in single-digit territory.

Kenneth Rosen
 Chairman
 Rosen Consulting Group

APARTMENT TOTAL RETURNS

	Total NPI	Total Apartment	East	Midwest	South	West
3rd Q 2017	1.70	1.66	1.28	1.21	1.52	2.21
2nd Q 2017	1.75	1.45	1.28	1.14	1.26	1.81
One Year	6.89	6.22	4.99	4.32	5.76	8.15
Three Years	9.83	8.87	6.72	7.63	8.67	11.57
Five Years	10.35	9.47	7.39	9.01	9.88	11.47
Ten Years	6.23	6.10	4.23	7.10	6.85	7.25
Twenty Years	9.60	9.39	9.10	8.84	9.23	10.56

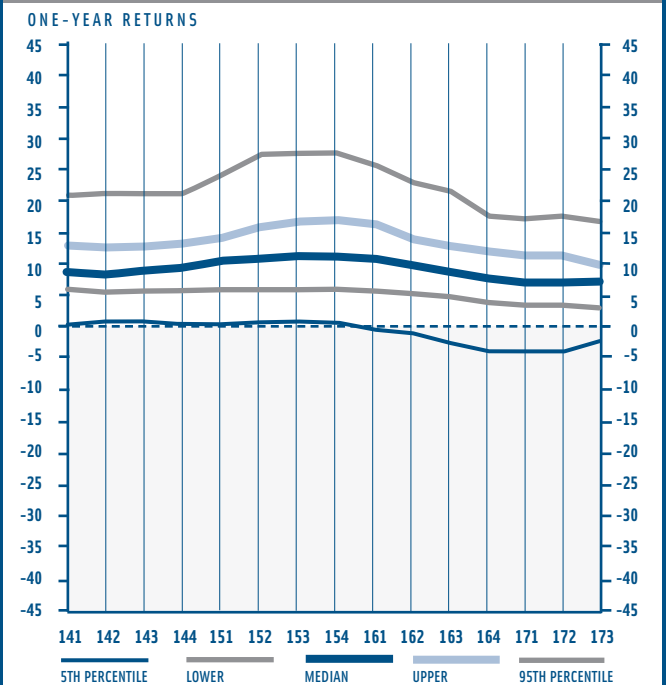
APARTMENT INCOME RETURNS

	Total NPI	Total Apartment	East	Midwest	South	West
3rd Q 2017	1.14	1.07	1.01	1.08	1.09	1.10
2nd Q 2017	1.16	1.10	1.06	1.13	1.15	1.09
One Year	4.66	4.45	4.25	4.51	4.72	4.44
Three Years	4.86	4.63	4.37	4.63	5.00	4.60
Five Years	5.14	4.82	4.51	4.94	5.25	4.78
Ten Years	5.56	5.05	4.66	5.34	5.53	4.98
Twenty Years	6.66	6.00	5.87	6.14	6.30	5.88

APARTMENT APPRECIATION RETURNS

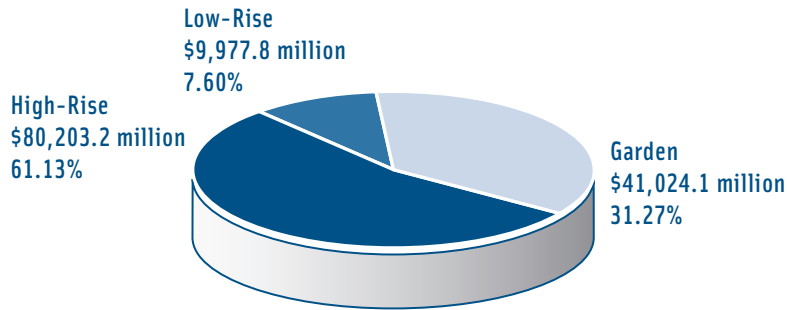
	Total NPI	Total Apartment	East	Midwest	South	West
3rd Q 2017	0.56	0.59	0.27	0.13	0.43	1.11
2nd Q 2017	0.59	0.35	0.22	0.00	0.11	0.72
One Year	2.15	1.71	0.72	-0.19	1.00	3.59
Three Years	4.80	4.11	2.27	2.91	3.54	6.74
Five Years	5.02	4.49	2.78	3.93	4.46	6.46
Ten Years	0.64	1.02	-0.41	1.69	1.27	2.19
Twenty Years	2.80	3.25	3.10	2.59	2.80	4.49

APARTMENT INDEX—QUARTILE RANGE OF RETURNS



APARTMENT SUB-TYPES INDEX

TOTAL APARTMENT



Apartment Properties	1,582
Garden Properties	654
HighRise Properties	790
LowRise Properties	138
Total Market Value	\$131,205.1M

GARDEN TOTAL RETURNS

	Total NPI	Total Apartment	Total Garden
3rd Q 2017	1.70	1.66	2.41
2nd Q 2017	1.75	1.45	2.08
One Year	6.89	6.22	8.62
Three Years	9.83	8.87	11.27
Five Years	10.35	9.47	11.09
Ten Years	6.23	6.10	7.13
Twenty Years	9.60	9.39	9.73

GARDEN INCOME RETURNS

	Total NPI	Total Apartment	Total Garden
3rd Q 2017	1.14	1.07	1.23
2nd Q 2017	1.16	1.10	1.26
One Year	4.66	4.45	5.13
Three Years	4.86	4.63	5.33
Five Years	5.14	4.82	5.49
Ten Years	5.56	5.05	5.60
Twenty Years	6.66	6.00	6.33

GARDEN APPRECIATION RETURNS

	Total NPI	Total Apartment	Total Garden
3rd Q 2017	0.56	0.59	1.18
2nd Q 2017	0.59	0.35	0.82
One Year	2.15	1.71	3.36
Three Years	4.80	4.11	5.72
Five Years	5.02	4.49	5.38
Ten Years	0.64	1.02	1.46
Twenty Years	2.80	3.25	3.25

HIGH-RISE TOTAL RETURNS

	Total NPI	Total Apartment	Total High-Rise
3rd Q 2017	1.70	1.66	1.27
2nd Q 2017	1.75	1.45	1.11
One Year	6.89	6.22	4.90
Three Years	9.83	8.87	7.54
Five Years	10.35	9.47	8.54
Ten Years	6.23	6.10	5.08
Twenty Years	9.60	9.39	9.91

HIGH-RISE INCOME RETURNS

	Total NPI	Total Apartment	Total High-Rise
3rd Q 2017	1.14	1.07	0.98
2nd Q 2017	1.16	1.10	1.02
One Year	4.66	4.45	4.10
Three Years	4.86	4.63	4.25
Five Years	5.14	4.82	4.41
Ten Years	5.56	5.05	4.52
Twenty Years	6.66	6.00	5.57

HIGH-RISE APPRECIATION RETURNS

	Total NPI	Total Apartment	Total High-Rise
3rd Q 2017	0.56	0.59	0.29
2nd Q 2017	0.59	0.35	0.10
One Year	2.15	1.71	0.78
Three Years	4.80	4.11	3.20
Five Years	5.02	4.49	4.00
Ten Years	0.64	1.02	0.54
Twenty Years	2.80	3.25	4.18

LOW-RISE TOTAL RETURNS

	Total NPI	Total Apartment	Total Low-Rise
3rd Q 2017	1.70	1.66	1.67
2nd Q 2017	1.75	1.45	1.51
One Year	6.89	6.22	6.66
Three Years	9.83	8.87	9.26
Five Years	10.35	9.47	9.79
Ten Years	6.23	6.10	6.79
Twenty Years	9.60	9.39	

LOW-RISE INCOME RETURNS

	Total NPI	Total Apartment	Total Low-Rise
3rd Q 2017	1.14	1.07	1.08
2nd Q 2017	1.16	1.10	1.11
One Year	4.66	4.45	4.46
Three Years	4.86	4.63	4.65
Five Years	5.14	4.82	4.89
Ten Years	5.56	5.05	5.03
Twenty Years	6.66	6.00	

LOW-RISE APPRECIATION RETURNS

	Total NPI	Total Apartment	Total Low-Rise
3rd Q 2017	0.56	0.59	0.59
2nd Q 2017	0.59	0.35	0.40
One Year	2.15	1.71	2.13
Three Years	4.80	4.11	4.45
Five Years	5.02	4.49	4.73
Ten Years	0.64	1.02	1.70
Twenty Years	2.80	3.25	