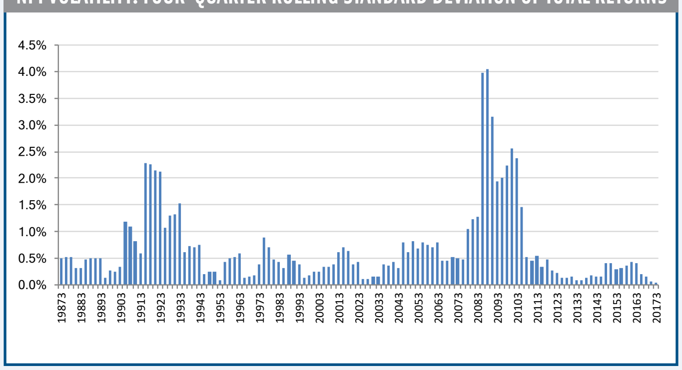
PRIVATE REAL ESTATE PERFORMANCE: STEADY AS SHE GOES

By Sara Rutledge, NCREIF Director of Research

The quarterly NCREIF Property Index (NPI) total returns decelerated from a 2.5%-to-3% trend in 2015 to a current pace below its since inception average of 2.26%. Following this moderation, total returns have been stable over the past five quarters in the 1.5%-to-1.75% range with the lowest volatility in NPI history.

To measure NPI volatility similar to the VIX index, the standard deviation of total returns was calculated on a rolling four-quarter basis. Return volatility averaged 0.67% over the entire history of the NPI by this measure with a maximum of 4.05% in first quarter 2009 and minimum of 0.05% in the current quarter. Not only does the current quarter represent the lowest volatility in history, but it was preceded by a quarter with the second lowest volatility. In addition to the current quarter, only two other periods had trailing four-quarter volatility less than 0.10% – 0.09% in third quarter 1995 and 0.06% in second quarter 2017.

NPI VOLATILITY: FOUR-QUARTER ROLLING STANDARD DEVIATION OF TOTAL RETURNS

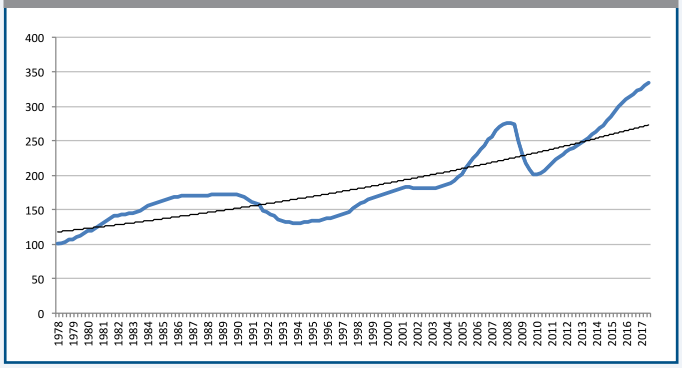


The NPI total return was 1.70% in the third quarter 2017, representing investment performance for 7,165 commercial properties, totaling $543.5 billion of market value. This was down from 1.75% in the prior quarter and 1.77% in the third quarter 2016. The third quarter 2017 total return consisted of a 1.14% income return and 0.56% appreciation. Over the past five quarters, both components of the total return have been relatively stable with the quarterly income return ranging from 1.14%-to-1.16% and appreciation in the 0.40%-to-0.60% range. For the trailing year, the annual NPI total return was 6.89%, consisting of a 4.66% income return and 2.15% appreciation.

Low, stable appreciation allowed the Market Value Index (MVI) to continue reaching for new highs. The MVI is a NCREIF measure similar to a price index that shows value changes among NPI properties with consistent characteristics (i.e. not undergoing significant capex). The MVI increased by 1.4% in the third quarter 2017 and 5.4% over the past year, to a new high of 334.1. The index began at 100 in the fourth quarter 1977 and has averaged 3.3% annual growth since inception.

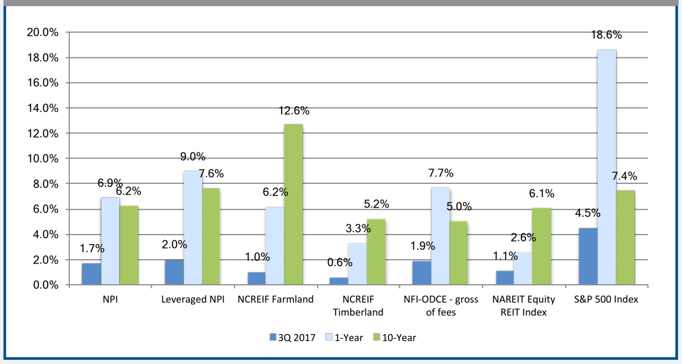
At this level, the MVI has not only surpassed its prior peak of 275.8 in first quarter 2008, but it is also well above its long-term trend. The 66.2% recovery in values since the MVI trough in the first quarter 2010 has resulted in an MVI that is 21.1% above its prior peak.

MVI LEVEL WITH EXPONENTIAL TRENDLINE



The NPI represents unleveraged property performance. However, about half of the properties in the NPI utilize leverage, which can provide an opportunity for higher returns given the longevity of low interest rates. For the 3,568 NPI properties utilizing leverage, the aggregate loan-to-value ratio is 41.5%. The leveraged NPI total return outpaced the NPI at 2.01% in the third quarter 2017and was 8.96% for the trailing year.

TOTAL RETURNS BY ASSET CLASS



Comparing across asset classes, the private commercial real estate market, measured by the NPI, had higher returns than the public market, measured by the NAREIT Equity REIT Index, for the quarter, year and trailing decade. This is despite the inclusion of leverage in the NAREIT Index versus the unleveraged NPI. Farmland property performance was the strongest over the ten-year period because it weathered the Great Recession without depreciation, but income has been under pressure over the last couple years on slower agricultural export growth.

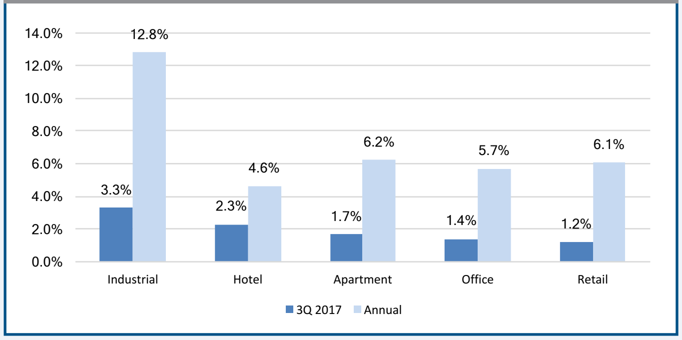
The leveraged NPI continued to show higher returns due to favorable leverage as unleveraged returns still exceed the cost of debt financing. The NCREIF Fund Index – Open-end Diversified Core Equity (NFI-ODCE) total return was between the NPI and leveraged NPI due to more conservative aggregate leverage among these core funds, ranging from 15%-to-34% over the index history beginning in 2000. NFI-ODCE leverage continued to edge down in the third quarter 2017, to 21.3%, from 21.5% last quarter and 22.1% a year ago.

The 23 NFI-ODCE funds total $220.9 billion of gross real estate assets and returned 1.87% gross of fees in the third quarter 2017. This was up from 1.70% in the second quarter 2017, but down compared to 2.07% in the third quarter 2016. The NFI-ODCE income return has been essentially flat over the past year and was 1.07% in the third quarter 2017. Quarterly appreciation has averaged 0.70% in 2017 with 0.79% appreciation in the third quarter, down from the 1.02% quarterly average in 2016 and 2.38% in 2015.

For the trailing year, the annual NFI-ODCE total return gross of fees was 7.66%, down from 10.08% for the year ending third quarter 2016 and below the annualized since inception return of 8.72%. The annual total return was comprised of a 4.36% income return and 3.19% appreciation.

Returning to the NPI, industrial remains the strongest performer by property type with total returns of 3.29% in the third quarter and 12.80% for the trailing year. Other NPI property types continue to trail industrial by a wide margin. In the third quarter, hotel experienced a reversal in its six-quarter depreciation trend with slight 0.08% appreciation in the third quarter, resulting in the second strongest quarterly total return, at 2.30%. Apartment landed in

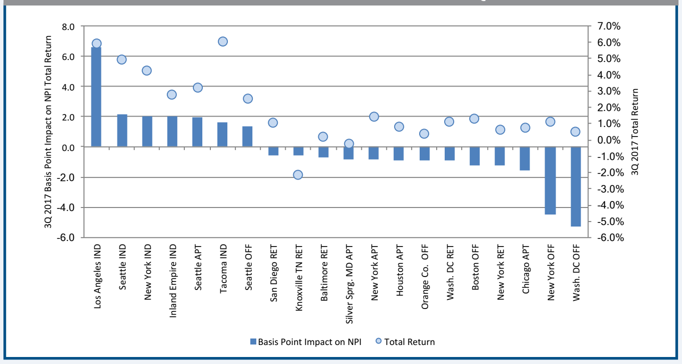
NPI TOTAL RETURNS BY PROPERTY TYPE



the middle of the pack for the quarter with a 1.66% total return, while having the second strongest trailing year total return of 6.22%. Office and retail both experienced a step down in quarterly appreciation this quarter for weaker total returns of 1.40% and 1.20%, respectively. Over the trailing year, total returns for both office and retail are roughly 6%, similar to the apartment sector.

Taking a deeper look into performance by property type, NCREIF examines the most influential market/property type combinations on the NPI for the Indices' Review webinar each quarter. For each property type, the five most impactful market/property type combinations on the third quarter NPI are included in the accompanying chart, ranked by their basis point impact on the NPI. Negative impacts do not necessarily imply a negative market/property type total return, but always reflect a drag on the overall NPI. In the third quarter, 13 out of these 20 markets were a drag on the NPI, although only two – Knoxville Retail and Silver Spring Apartment – had negative quarterly total returns.

TOP 20 MARKET/PROPERTY TYPE COMBINATIONS IMPACTING 3Q 2017 NPI TOTAL RETURN



Grouping these markets together, the opposing influences on the NPI from industrial and retail stand out with all sizeable industrial impacts contributing a combined 14.35 basis points (bps) to the NPI, while the top five retail contributions represented a combined 4.03 bps drag on the NPI. The positive contributions from industrial continue to be driven by West Coast markets. The drag from retail markets was led by weak total returns in markets well-represented in the NPI, namely Washington DC, New York, and San Diego.

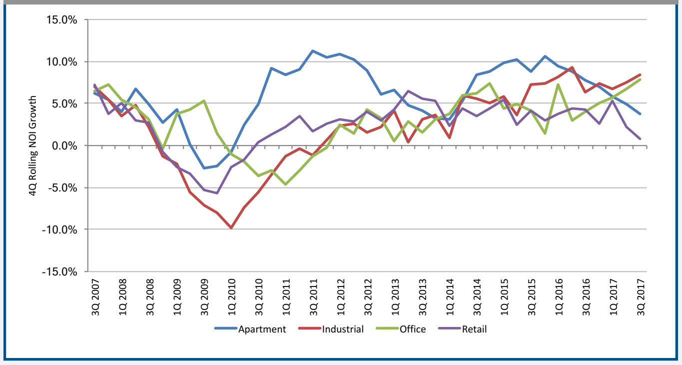
Similar to retail, weak office returns in New York, Washington DC, and Boston served as a combined 10.97 bps drag on the NPI as these three office markets alone account for nearly 15% of total NPI market value. Seattle made positive contributions to the NPI from both its office and apartment total returns, which was notable for being the only market with positive contributions in both sectors and highlights the strength of its tech-driven economy. The remaining apartment market impacts on the NPI were a collective 4.09 bps drag.

NCREIF indicators of space market fundamentals remain healthy. After rising to a 16-year high of 93.3% last quarter, occupancy for NCREIF-tracked properties held steady in the third quarter. Quarterly occupancy changes were varied by property type, while year-over-year occupancy was fairly steady for all property types. Industrial still has the highest occupancy rate, at 96.1%, which was up 20 bps over the quarter. Retail was the only other property type to experience gains in the third quarter with occupancy up by 50 bps to 93.1%. Office occupancy was down slightly over the quarter to 88.6%, while apartment occupancy fell 60 bps to 93.5%.

Net operating income (NOI) growth was 5.1% (including hotels) for the trailing year, down slightly from 5.4% in the prior year while remaining above its 3.2% long-term annual pace. Rental income growth also remains above average, at 3.4%, but decelerated by 70 bps versus the prior year suggesting that NOI growth is being supported by both rising income and declining expenses. Industrial leads for both measures, followed by office. Apartment NOI and rental income growth have slipped below their respective long-term averages for the trailing year. Retail considerably lagged the other property types with 1.4% rental income growth for only 0.8% annual NOI growth.

Transaction volume for NPI properties totaled $11.8 billion in the third quarter 2017 with 193

ANNUAL NET OPERATING INCOME GROWTH TRENDS BY PROPERTY TYPE



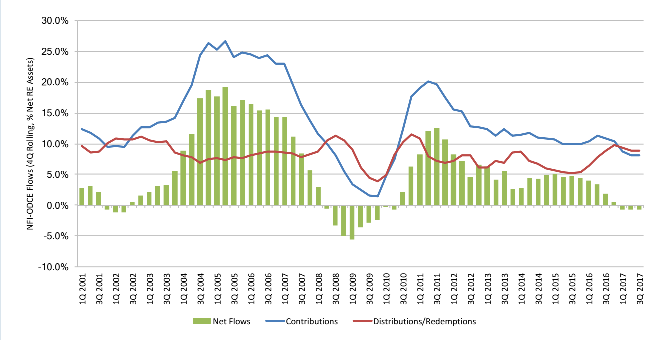
properties sold, compared to $9.7 billion for 216 properties during the same quarter a year ago. For the trailing year, sales volume reached a new high of $40.5 billion with 705 NPI properties sold, compared to 774 properties sold for $37.5 billion over the year ending third quarter 2016.

Transaction activity among NPI properties remains more robust than reported by data providers covering the broader market. Given this late stage of the real estate cycle, it is intuitive to consider that institutional investors may be selling assets held over the cycle to capture value in order to reinvest in higher yield strategies. Two observable metrics in the NCREIF data suggest this is at least part of the story with average sale prices rising on higher volume and fewer sold properties as well as moderately negative net flows into the NFI-ODCE funds.

Quarterly net NFI-ODCE fund flows have been negative for three of the past four quarters. After turning positive in the second quarter 2017, net flows were negative $1.6 million in the third quarter for the narrowest gap between quarterly contributions and distributions/redemptions in the series history, with both at roughly $4.1 billion each. For the trailing year, annual contributions were $14.6 billion with distributions/redemptions of $15.8 billion for negative net flows of $1.3 billion.

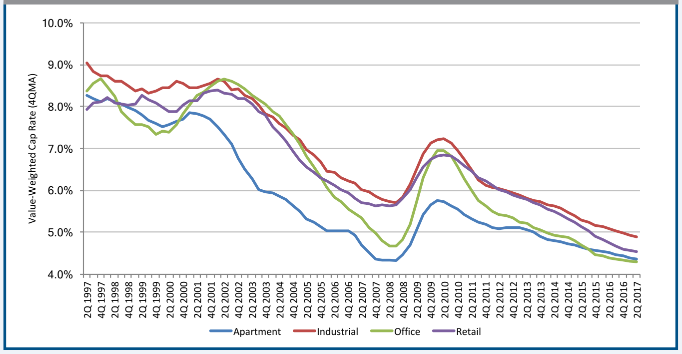
Examining NFI-ODCE fund flows as a share of net real estate assets provides additional context given the nearly ten-fold expansion in net assets over the series history, from $18.8 billion in first quarter 2000 to $181.4 billion in the third quarter 2017. Trailing year contributions have not achieved the same highs in this cycle versus the last, when they peaked at 26.7% of net real estate assets. Contributions have trended down from a high of 20.0% in 2011 to 10.4% in 2016 and 8.2% for the year ending third quarter 2017. This context also shows that, although distributions/redemptions remain near their 2016 high of $16.8 billion, the 8.9% for the year ending third quarter 2017 is still below prior cyclical peaks of over 11% of net real estate assets.

ANNUAL NFI-ODCE FUND FLOWS AS A SHARE OF NET REAL ESTATE ASSETS



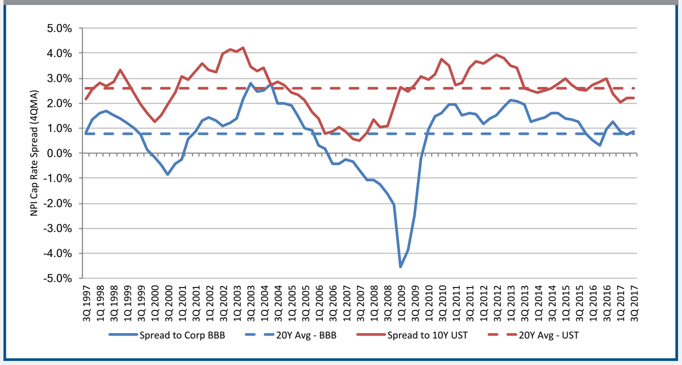
Cap rate compression continued for NCREIF properties in the third quarter 2017, although the change was slight. The implied valuation cap rate was 4.38% in the third quarter, down marginally from 4.47% last quarter. All property types experienced modest cap rate compression over the quarter and range from 4.16% for apartment to 4.79% for industrial.

NPI IMPLIED APPRAISAL CAP RATES BY PROPERTY TYPE



Although cap rates remain historically low, spreads to other yields imply relatively fair pricing for the asset class. The NPI cap rate spread to the 10-Year US Treasury was 219 bps in the third quarter 2017, compared to a 259-bps twenty-year average. Similarly, the NPI cap rate spread to the US Corporate BBB bond yield was 95 bps in the third quarter, compared to a 77-bps twenty-year average.

NPI IMPLIED APPRAISAL CAP RATE SPREADS: 10-YEAR US TREASURY AND CORPORATE BBB EFFECTIVE YIELD



With the NPI total return staying within a narrow range over the past year, four-quarter volatility for returns has achieved an historic low. Sold properties are achieving new highs for volume as larger assets trade and modestly negative net NFI-ODCE fund flows appear to signal an equilibrium for core real estate investment demand at low cap rates. Cap rate spreads near long-term averages should insulate values from rising interest rates, while also implying relatively fair values for the asset class. Elevated occupancy bodes well for property income, although trends are becoming mixed by property type as retail begins to struggles and industrial remains strong. With support from the macroeconomy, institutional real estate may continue to experience steady, yet below average performance in the near-term.