Spring 2019 Edition

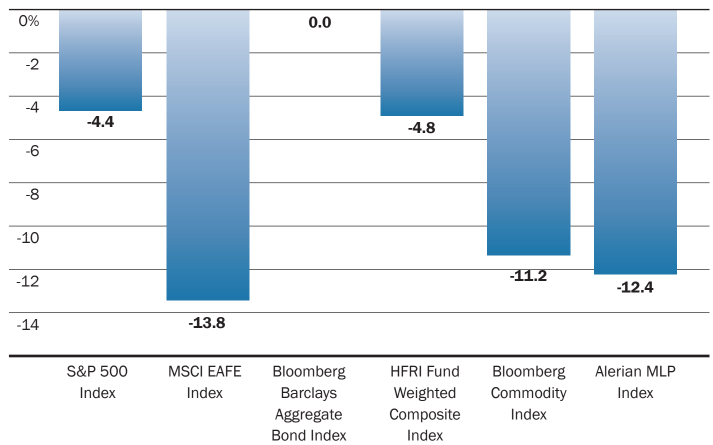
The Alternatives Landscape

The Alternatives Landscape provides a broad overview of the current environment for the primary alternative asset classes: hedge funds, private equity, private credit, real assets, and real estate.

Markets declined sharply during the fourth quarter of 2018 due to lowered investor confidence, driven by an anticipated deceleration in global growth, combined with an escalation in the U.S./China trade rhetoric and a reduction in global monetary stimulus. The S&P 500 Index posted a negative calendar year return for the first time in nine years. Diversifying asset classes such as alternatives also posted negative results during 2018. Hedge funds declined approximately half as much as global public equities while commodity-related investments experienced a more precipitous decline. Illiquid strategies, including private equity and private real estate, generated favorable results on an absolute basis for the one-year ending September 30, 2018, with private equity even outpacing more liquid peers.

LIQUID STRATEGIES: 2018 RETURN

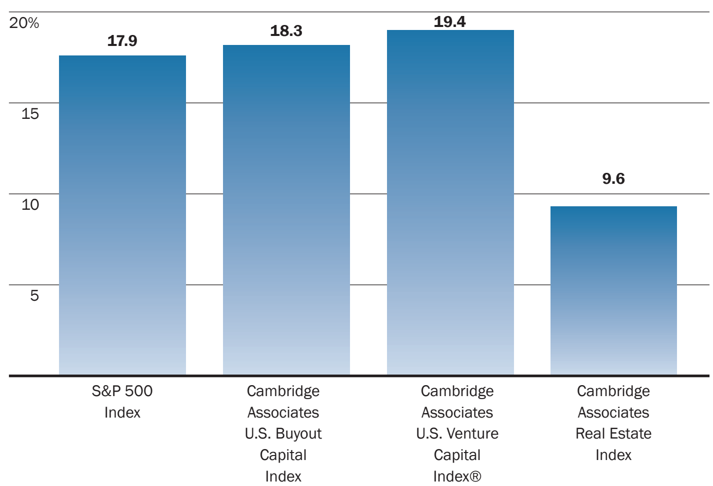
As of December 31, 2018



Source: S&P Dow Jones Indices, LLC, a division of S&P Global, MSCI, Bloomberg Finance, LP, Hedge Fund Research, Inc. and Alerian.

ILLIQUID STRATEGIES: ONE YEAR RETURN

As of September 30, 2018



Source: S&P Dow Jones Indices, LLC, a division of S&P Global and Cambridge Associates.

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HEDGE FUND UPDATE

The broad hedge fund universe, as measured by the HFRI Fund Weighted Composite Index, declined by 4.8% during 2018. Overall, hedge funds protected capital relative to global equities, declining approximately half as much during a volatile year. Managers were able to find opportunities on both the long and short side of portfolios as equity market valuations in the U.S. became rich prior to the market decline in the fourth quarter. Additionally, merger and acquisition volume remained elevated while equity and credit market volatility spiked throughout the year.

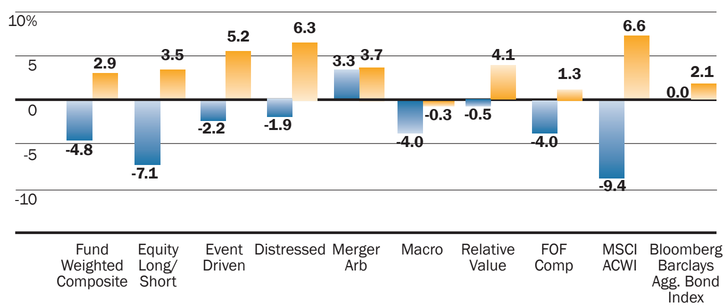
Of the four core hedge fund strategies, relative value managers performed the best during the year. The strategies employ minimal net market exposure, which protected capital during periods of elevated equity and credit volatility.

Event driven strategies also performed well relative to global equities and the broad hedge fund universe. Within event driven, merger arbitrage strategies generated positive returns, as global mergers and acquisitions volume remained elevated for most of the year. While credit spreads remained fairly stable through Q3 2018, high yield spreads widened during Q4 2018, which led to modestly negative returns for distressed strategies. Distressed strategies continued to benefit from one off idiosyncratic opportunities, but credit default levels remain muted, which has limited the opportunity set for distressed managers.

Returns within the underlying global macro strategies diverged significantly between discretionary and systematic strategies. Discretionary traders performed well, while quantitative systematic strategies struggled given the choppy market environment. Equity hedge strategies were the worst performing of the broad hedge fund strategies, but were able to protect capital relative to global equities for the year. Within equity hedge strategies, sector specific managers in healthcare and information technology generated positive returns and managers that maintained lower net exposures also performed well.

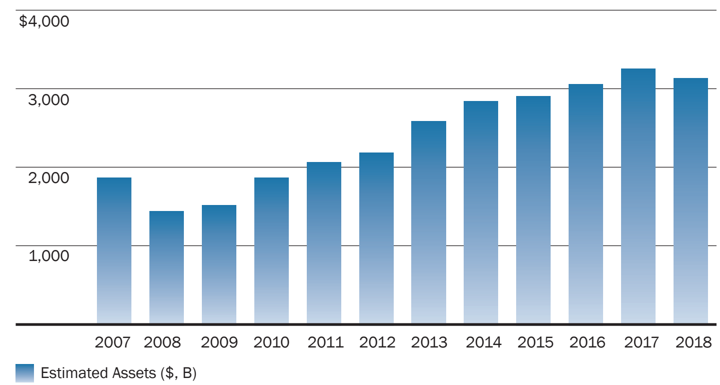
Total hedge fund assets under management experienced a modest decline of approximately $100 billion during 2018, as industry assets ended the year at $3.1 trillion. The decline in assets under management was primarily driven by negative performance, but the industry did experience net outflows, with the majority of net outflows being driven from equity hedge strategies.

2018 and Trailing Three Year Performance as of December 31, 2018



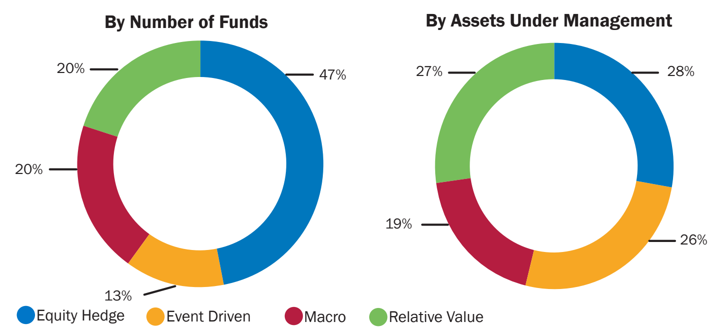
Source: Hedge Fund Research, Inc. www.hedgefundresearch.com. MSCI and Bloomberg. See endnotes for HFRI index names. Data as of December 31, 2018.

Hedge Fund Universe Growth



Source: HFR Industry Reports, © HFR, Inc., 2019, www.hedgefundresearch.com. Data as of December 31, 2018.

Hedge Fund Universe Composition



Source: HFR Industry Reports, © HFR, Inc., 2018. www.hedgefundresearch.com. Data as of December 31, 2018.

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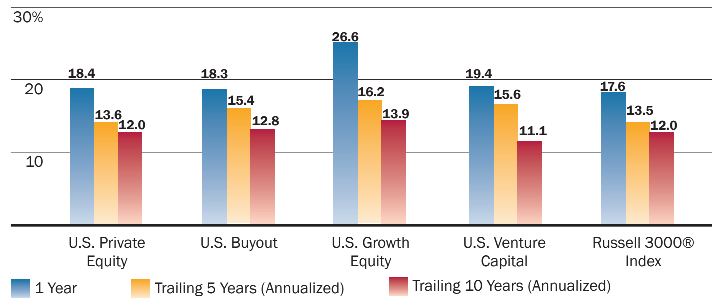
PRIVATE EQUITY UPDATE

Short-term returns within the private equity landscape remained competitive as all major asset classes (private equity, growth, buyout, and venture capital) outperformed the Russell 3000 Index over the one-year period ending September 30, 2018. Over the past ten years, only venture capital returns have trailed the public markets, while all four major private equity classes outperformed over the past five years.

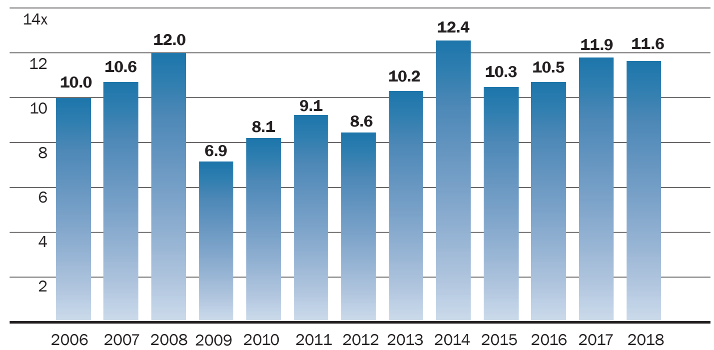
Market Performance as of September 30, 2018



Source: Cambridge Associates and Russell. See endnotes for index names. Data as of September 30, 2018.

Purchase multiples remain generally elevated but have been fairly range bound over the past six years outside of a 2014 spike. The median purchase price multiple declined modestly in 2018 following an uptick in 2017 towards the top of the recent range, but remains below the record levels seen in 2008. Whether or not these elevated levels are the new normal is unknown, but data over the past six years points to this being so. Per our conversations with managers across various private equity industries, at least part of the increase in purchase multiples is due to the rise in deals being completed by corporates, who are willing to pay higher multiples given the known synergies between themselves and a target company (synergies that a financial buyer does not have).

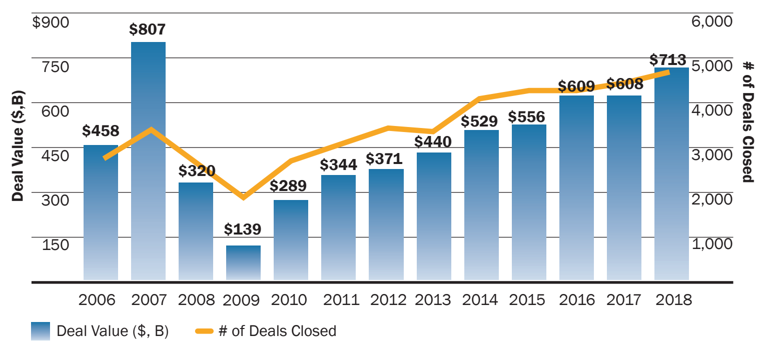
U.S. Private Equity Median Buyout EV/EBITDA Multiples



Source: PitchBook's 2018 Annual U.S. PE Breakdown. Pitchbook Data Inc. Data as of December 31, 2018.

Deal flow was quite strong in the U.S. during 2018, eclipsing the $700 billion mark for the first time since 2007. This increase in deal value is no surprise given that managers who closed funds during the record setting 2016 and 2017 fundraising period are well into the investment stage. Per Pitchbook data, deals valued at $2.5 billion or more represented 25% of all U.S. private equity deals in 2018, up from 19% the year before. The largest deals of the year included JAB Holdings' $21 billion acquisition of Dr. Pepper Snapple and the subsequent merger with Keurig Green Mountain, as well as Blackstone's $17 billion acquisition of Refinitiv, Thomson Reuters' financial & risk division.

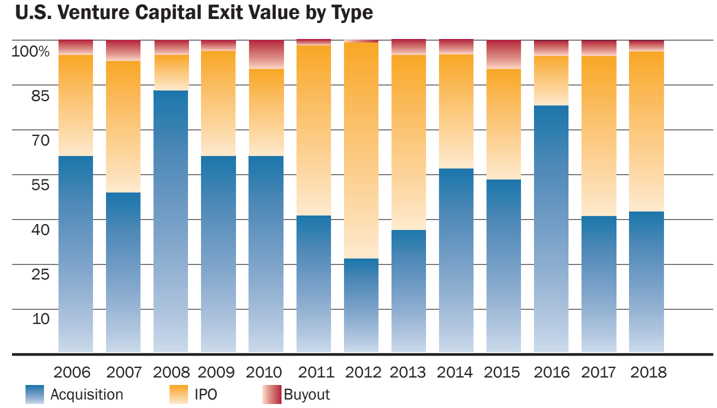
U.S. Private Equity Activity



Source: PitchBook's 2018 Annual U.S. PE Breakdown. Pitchbook Data Inc. Data as of December 31, 2018.

In venture capital, exit values increased again in 2018, and we saw another strong year for IPO exits which represented over half of all exit values for the second year in a row. Consequently, investors are now eagerly looking forward to 2019's looming IPO slate which should be headlined by Lyft, Uber, Airbnb, Slack, Pinterest, and WeWork. Some of these exits have been years in the making, and a successful public capital raise could significantly drive fund level returns.

U.S. Venture Capital Exit Value by Type



Source: 4Q 2018 PitchBook-NVCA Venture Monitor. Pitchbook Data Inc. Data as of December 31, 2018.

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PRIVATE CREDIT UPDATE

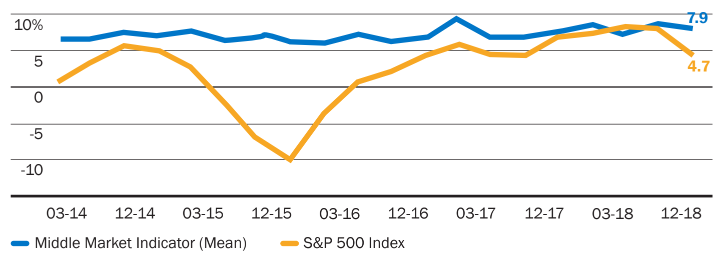
Revenue growth remained robust for large companies, represented by the S&P 500 Index, and middle market companies through the third quarter of 2018, but a divergence surfaced between the two during the fourth quarter. While revenue growth for large companies declined from 8.0% to 4.7% during the fourth quarter, middle market companies experienced a smaller decline (from 8.6% to 7.9%). Despite this decline, 79% of middle market companies reported increases in revenue growth compared to one year ago, the highest ever recording by the Middle Market Indicator. Expected growth for the next 12 months was reported at 5.9%.

While returns across direct lending have moderated more recently as competition has increased and as spreads have tightened, the Cliffwater Direct Lending Index (CDLI) has still managed to outpace public credit counterparts. The CDLI posted a total return of 0.8% in the fourth quarter, down from 2.4% in the prior quarter. For calendar year 2018, the CDLI returned 8.1%, versus 8.6% in 2017.

The lower performance was largely driven by unrealized losses of -1.3% in the fourth quarter. However, the realized losses of -0.9% for the calendar year was slightly lower than the annualized rate of -1.0% since inception. Significant increases to the supply of capital in credit markets has recently been putting downward pressure on credit spreads, and the U.S. middle market, which has historically been less sensitive to macro trends, has shown it is not immune to these recent pressures. Middle market lending has historically been driven by consistent double-digit income returns, ranging between 10-12%. Over the last several years, spread compression in the middle market has pushed income returns to the lower end of this range, though steadily rising short term rates has partially offset narrowing spreads. As of December 31, 2018, the CDLI trailing one-year income return was 10.4%, compared to the since inception annualized income return of 11.1%.

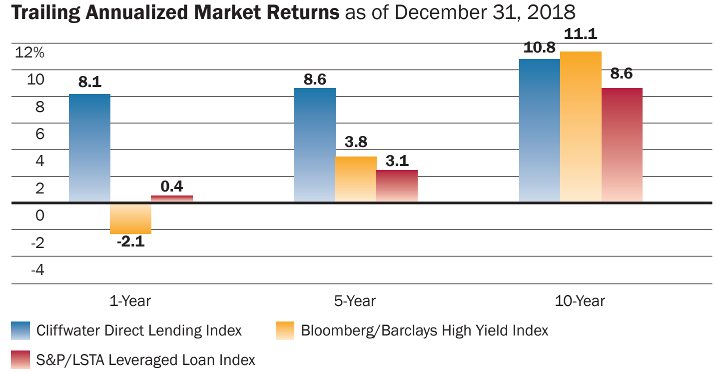
The recent robust fundraising environment for private debt strategies moderated slightly in 2018, though the total capital raised remains elevated compared to a few years ago and lenders had ample reserves to dole out in 2018. Middle market loan issuance reached a four year high with more than $182 billion of total issuance, a 7% increase from 2017. New issuance, however, dropped by 21% in 2018, to $71 billion.

Year-Over-Year Revenue Growth Comparisons



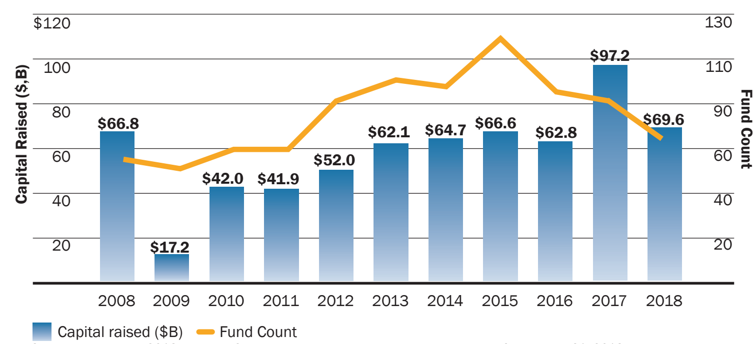
Source: National Center for the Middle Market. Data as of December 31, 2018.

Trailing Annualized Market Returns as of December 31, 2018



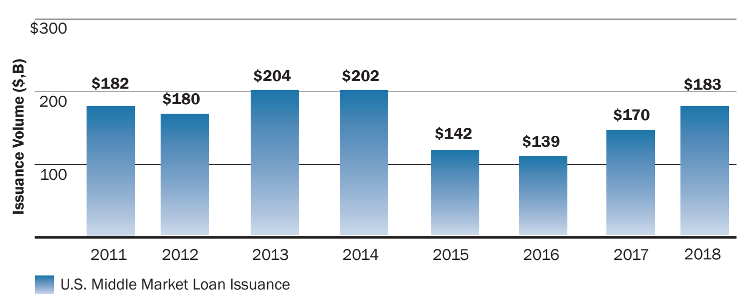
Source: Morningstar Direct, Cliffwater, LCD, an offering of S&P Global Market Intelligence, Bloomberg Finance, LP. Data as of December 31, 2018. Returns for Cliffwater Direct Lending Index before 2015 are back-tested. See endnotes for important disclosures.

North American and European Debt Fundraising Activity



Source: PitchBook's 2018 Annual U.S. PE Breakdown. Pitchbook Data Inc. Data as of December 31, 2018.

Middle Market Loan Issuance



Source: Leveraged Loan Monthly, December 2018. Thomson Reuters LPC. Data as of December 31, 2018.

REAL ASSETS UPDATE

Real assets strategies struggled during calendar year 2018 with natural resource stocks and commodity-related investments (including MLPs) experiencing double digit losses. The lone bright spot was TIPS as that area was able to generate a slight positive return. Real assets came under pressure due to higher interest rates, a stronger dollar, and concerns regarding global trade.

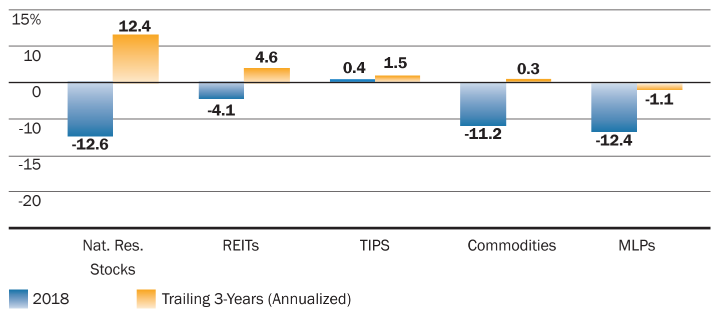
After benefitting from the rise in U.S. public equities over the past several years, natural resource stocks fell alongside public equities. Natural resource stocks were further exacerbated to the downside due to the large drop in crude oil prices. While U.S. crude inventory continues to plot below its five-year average, concerns surfaced about future higher inventory levels due to the fact that China essentially halted imports of U.S. oil given the current trade conflict.

Despite producing negative results, REITs held up reasonably well due to prudent balance sheet management, as evidenced by the lowest use of debt in nearly 20 years. Additionally, the occupancy rate for REITs property holdings stands at an all-time high. Some of the best REIT sub sectors in 2018 were health care, self-storage, and apartments. The weak link in the REIT space continues to be shopping centers (-15%) as the brick and mortar area continues to battle the Amazon effect.

Within commodities, agriculture-related commodities such as cocoa (+21%) and wheat (+4%) performed well as cocoa prices benefited from a shortage of cocoa beans in the Ivory Coast. However, coffee (-26%), sugar (-26%) and soybeans (-12%) all struggled due to the continued glut of supply. Finally, metal-related commodities struggled due in large part to the trade conflict, led by copper (-21%) and its strong Chinese demand historically.

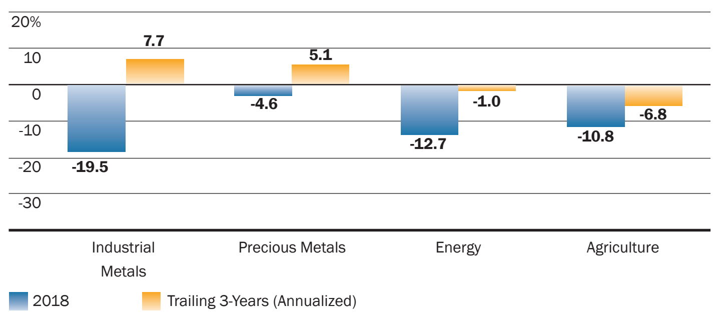
Master limited Partnerships (MLPs) came under pressure in 2018 due to an unfavorable tax ruling early in the year as well as the steep sell-off in oil prices late in the year. Regarding the tax ruling, the Federal Energy Regulatory Commission ruled that it would no longer allow MLPs to recover an income tax allowance in their cost of service rates. This ruling in effect would remove the double tax benefit for MLPs as it relates to setting pipeline rates. Despite recent headwinds, many investors continue to believe that MLPs look attractive from a yield standpoint and demand for transporting oil and natural gas remains robust.

Major Real Assets Strategy Returns as of December 31, 2018



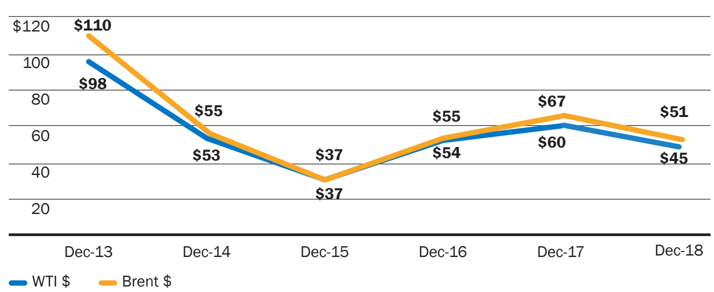
Source: Morningstar Direct, FTSE, S&P Dow Jones Indices, LLC, a division of S&P Global, Bank of America Merrill Lynch, Alerian, Bloomberg Finance, LP. Data shown as of December 31, 2018. See endnotes for index names.

Commodity Sector Returns as of December 31, 2018



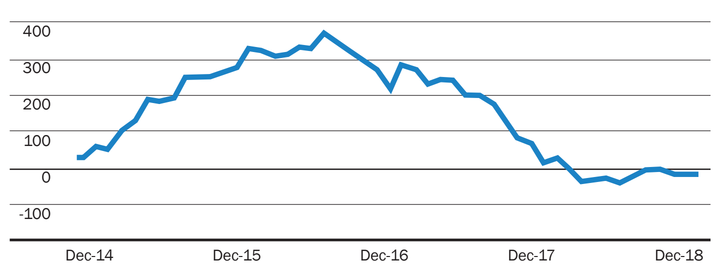
Source: Morningstar Direct, Bloomberg Finance, LP. Data shown as of December 31, 2018. See endnotes for index names.

Spot Crude Oil Prices



Source: U.S. Energy Information Administration. Data shown as of December 31, 2018.

U.S. Crude Inventories Above/Below Five Year Average (Million Barrels/Month)



Source: U.S. Energy Information Administration. Data shown as of December 2018.

REAL ESTATE UPDATE

Commercial real estate returns were lower in 2018 compared to prior years, though still one of the top performing asset classes for the year. While the income component of returns has remained relatively stable, the appreciation component of the NCREIF Property Index continued to decline, coming in at 2.1% for 2018.

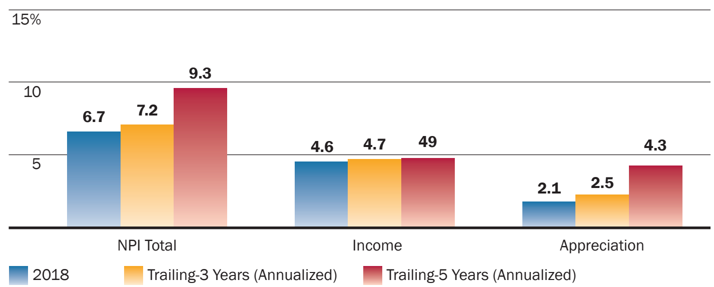
Industrial properties were again the best performing real estate sector of 2018, outperforming the Retail sector, which generated the lowest return, by over 12 percent. Many commercial real estate specialists have commented about the supply/demand imbalance for warehouses. The Hotel sector, which is the smallest component of the NCREIF Property Index at 0.5%, benefited from a strong recovery, returning 7.6%, followed by the Office and Apartment sectors at 6.8% and 6.1%, respectively.

Cap rates for core real estate have continued the steady decline experienced over the last decade. However, 10-Year Treasury yields have also declined over the same period but with more volatility. The spread between cap rates and Treasury yields tightened over the last three years, bottoming in the third quarter of 2018 at 1.7% before Treasury yields declined at the end of 2018. Historically, low cap rates indicate that core real estate's valuations are expensive.

Real estate space fundamentals are, for the most part, in relative balance as developers have shown restraint and demand has been solid as employment gains have remained strong. Market participants point to high end apartments in certain markets starting to show overbuilding and, hence, some weakness. Conversely, warehouse demand has been outpacing new development in the Industrials sector, leading to the strong returns referenced above. Market participants expect the Industrial imbalance to continue in the near term.

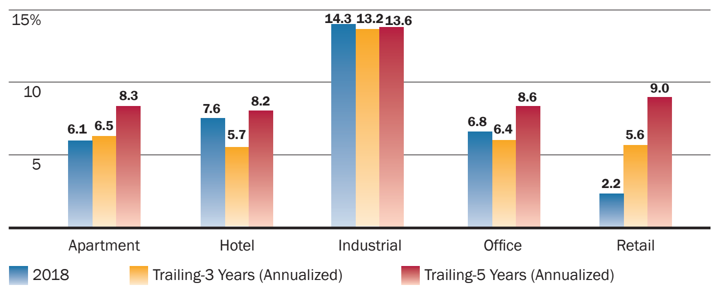
Fundamentals continue to remain strong with net operating income growth holding near the 4% to 6% range where it has been for several years. Rental rates have also increased in most markets. Without an unexpected macro interruption, commercial real estate is expected to produce returns similar to historic levels in the mid- to high-single digits.

NCREIF Property Returns (Gross) as of December 31, 2018



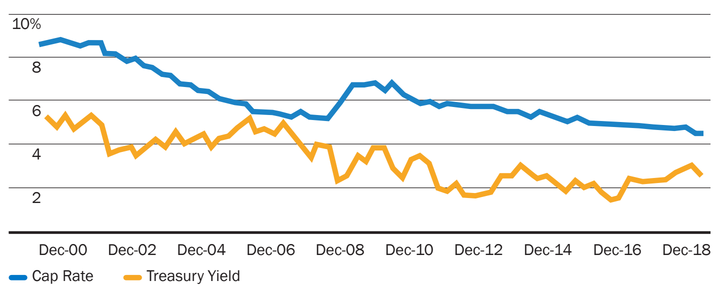
Source: National Council of Real Estate Fiduciaries NCREIF Property Index. Data as of December 31, 2018.

Asset Class Returns (Gross) as of December 31, 2018



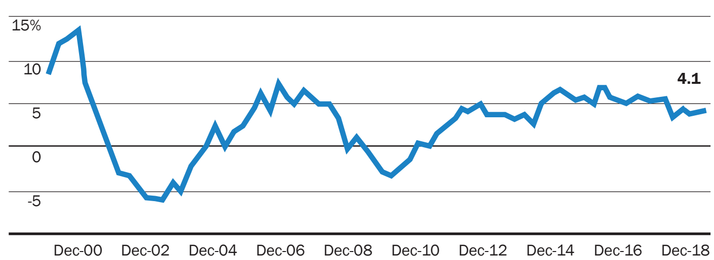
Source: National Council of Real Estate Fiduciaries NCREIF Property Index. Data as of December 31, 2018.

Cap Rates and Treasury Yields



Source: NCREIF National Council of Real Estate Fiduciaries and Board of Governors of the Federal Reserve System (US), 10-Year Treasury Constant Maturity Rate [DGS10], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/DGS10, as of December 31, 2018.

NOI Growth (Four Quarter Moving Average)



Source: NCREIF National Council of Real Estate Fiduciaries as of December 31, 2018.

ENDNOTES

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The HFRI Fund Weighted Composite Index, HFRI Equity Hedge (Total) Index, HFRI Event-Driven (Total) Index, HFRI ED: Distressed/Restructuring Index, HFRI ED: Merger Arbitrage Index, HFRI Macro (Total) Index, HFRI Relative Value (Total) Index, and the HFRI Fund of Funds Composite Index are being used under license from Hedge Fund Research, Inc., which does not approve of or endorse the contents of this report. www.hedgefundresearch.com

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Cliffwater Direct Lending Index (the Index) is an index comprised of all underlying assets held by public and private business development companies (a “BDC”) that satisfy certain eligibility requirements. Any information presented prior to the Launch Date (September 30, 2015) of the Index is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-tested calculations are based on the same methodology that was in effect when the Index was officially launched. Please refer to the methodology paper for the Index (available at www. CliffwaterDirect LendingIndex.com) for more details about the Index. Hypothetical performance results have many inherent limitations. No representation is being made that any performance will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of a hypothetical performance record is that decisions relating to the selection of managers and the allocation of assets among those managers were made with the benefit of hindsight based upon the historical rates of return of the selected trading advisors. Therefore, performance records invariably show positive rates of return. Another inherent limitation of these results is that the allocation decisions reflected in the performance record were not made under actual market conditions and, therefore, cannot completely account for the impact of financial risk in actual trading.

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Indexes referenced on page two, chart one: 2018 and Trailing Three Year Performance as of December 31, 2018. HFRI Fund Weighted Composite Index; HFRI Equity Hedge (Total) Index; HFRI Event-Driven (Total) Index; HFRI ED: Distressed/Restructuring Index; HFRI ED: Merger Arbitrage Index; HFRI Macro (Total) Index; HFRI Relative Value (Total) Index; HFRI Fund of Funds Composite Index.

Indexes referenced on page three, chart one: Market Performance (%). Cambridge Associates U.S. Private Equity Index; Cambridge Associates U.S. Buyout Index; Cambridge Associates U.S. Growth Equity Index; Cambridge Associates U.S. Venture Capital Index; Russell 3000® Index.

Indexes referenced on page five, chart one: Major Real Assets Strategy Returns. Natural Resource Stocks are represented by S&P Global Natural Resources Index; REITs are represented by FTSE NAREIT Index; TIPS are represented by ICE BofA Merrill Lynch 1–5 Year US Inflation-Linked Treasury Index; Commodities are represented by Bloomberg Commodity Index; and MLPs are represented by Alerian MLP Index.

Indexes referenced on page five, chart two: Commodity Sector Returns. Industrial Metals are represented by the Bloomberg Industrial Metals Subindex; Precious Metals are represented by the Bloomberg Precious Metals Subindex; Energy is represented by the Bloomberg Energy Subindex; and Agriculture is represented by the Bloomberg Agriculture Subindex.

Published April 17, 2019
TAL_0001_042019

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