Fall 2018 Edition

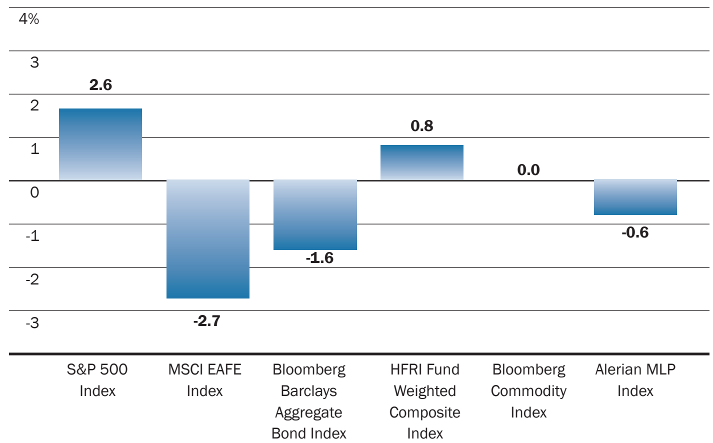
The Alternatives Landscape

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.

The global public equity markets generated mixed results in the first half of 2018, leaving 2017's record low levels of volatility and strong performance behind. Diversifying asset classes such as alternatives also posted mixed results, albeit more muted. Hedge funds generated slightly positive performance during a volatile period and commodity-related investments came in flat. Illiquid strategies, including private equity and private real estate, have performed well on an absolute basis and have caught up to or outpaced more liquid peers for the one-year period ending March 31, 2018.

LIQUID STRATEGIES: 2018 RETURN YEAR-TO-DATE

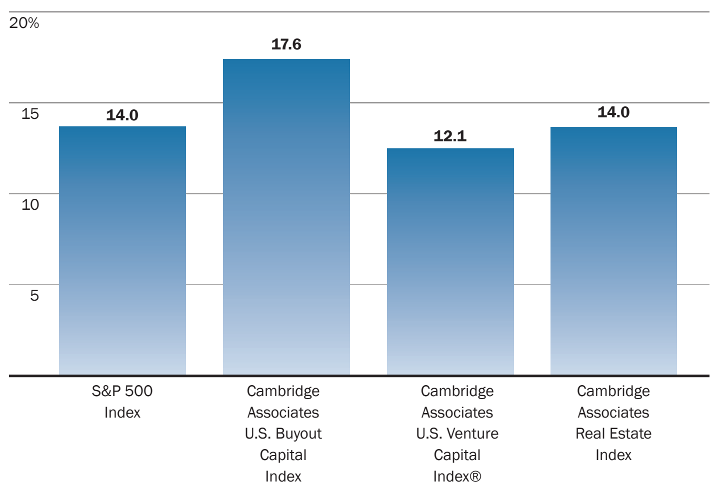
As of June 30, 2018



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 March 31, 2018



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

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HEDGE FUND UPDATE

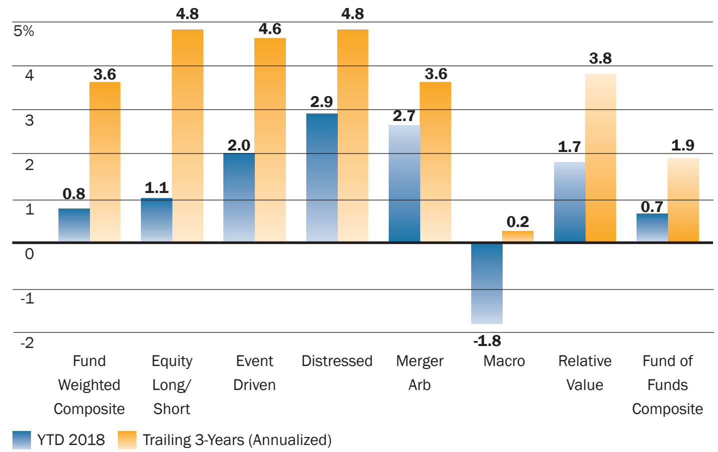
The broad hedge fund universe, as measured by the HFRI Fund Weighted Composite Index, generated absolute and risk-adjusted returns during the first half of 2018. Over the past year and a half, managers were able to find opportunities on both the long and short side of portfolios as equity market valuations have become increasingly rich, merger and acquisition volume has remained elevated, and equity market correlations have generally declined as compared to recent years.

Event driven has been the best performing strategy across the broad hedge fund universe year-to-date. Within event driven, special situations, distressed credit, and merger arbitrage have performed well. While credit spreads have remained fairly stable throughout the first half of the year, returns have been driven by idiosyncratic opportunities and elevated volatility during the first quarter. The transaction-related positions within merger arbitrage portfolios continued to generate positive returns with low levels of risk as we continued to see strong merger and acquisition volume. Additionally, the favorable legal ruling for AT&T surrounding the U.S. government's challenge of its acquisition of Time Warner led to deal spreads tightening and improved corporate confidence for vertical acquisitions.

Relative value managers performed well as market volatility increased in the first quarter of 2018. While the opportunity set appeared robust, volatility has declined over the past few months. Following strong results in 2017, equity long/short managers continued to generate strong alpha on both the long and short side of the portfolio. Managers that maintained a fundamental growth bias tended to outperform fundamental value managers, specifically in healthcare and information technology, as was the case within the global equity market. Returns within the underlying global macro strategy diverged significantly between discretionary and systematic strategies. Discretionary traders performed well during the first half of the year, while quantitative systematic strategies have struggled given the choppy market environment.

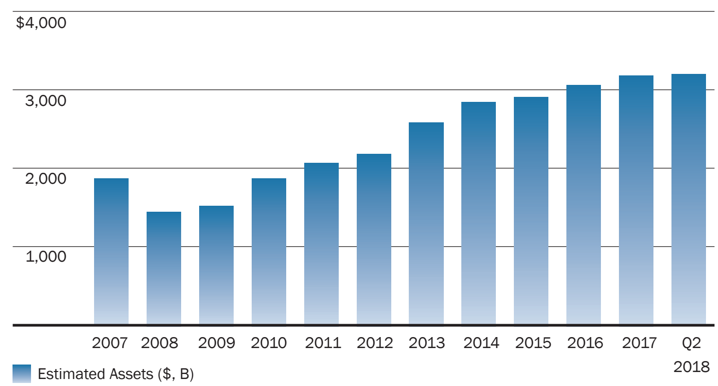
Total hedge fund assets under management reached a new peak of \$3.24 trillion at the end of June, driven by positive fund performance, while net cash flows were modestly negative during the first two quarters. Hedge funds experienced net outflows of \$1.9 billion during the first half of the year, as inflows in the first quarter were offset by outflows in the second quarter.

2018 Year-to-Date and Trailing Three Year HFRI Index Performance



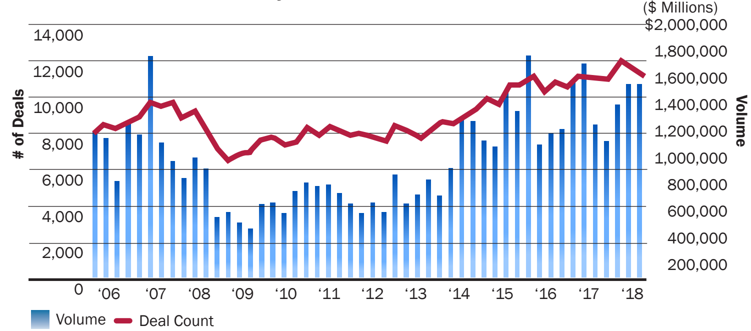
Source: Hedge Fund Research, Inc. See endnotes for index names. Data as of June 30, 2018.

Hedge Fund Universe Growth



Source: HFR Industry Reports, © HFR, Inc., 2018.

Global M&A Deal Volume by Quarter



Source: Bloomberg. Data as of June 30, 2018.

PRIVATE EQUITY UPDATE

Short-term returns within the private equity landscape remained competitive as the broad private equity, growth equity, and buyout asset classes all outperformed the Russell 3000® Index over the one-year period ending March 31, 2018. Each of these asset classes, as well as venture capital, have outperformed over the past five years, which has been a historically strong run for U.S. markets.

After experiencing increases from 2009 to 2011 and 2013 to 2016, median purchase price multiples appear to have settled near 10.5x trailing EBITDA levels. Debt as a percentage of total deal value was up slightly in 2017, now sitting at five- and ten-year historical averages. As the Fed increases interest rates, private equity managers will need to find ways to attractively finance their investments as debt markets likely will not be as favorable in the coming years as they have been in recent history.

Based on activity recorded in the first half of the year, annualized 2018 private equity deal value is slightly behind the pace of 2015 through 2017, but the number of completed deals has increased to a new all-time high. This trend suggests that investors (PE Funds, corporate buyers, etc.) may be combating elevated purchase price multiples by moving into smaller deals. The two most well-known methods to invest below market purchase multiples are acquiring broken or troubled companies (known as value and turn around investing) and acquiring smaller capitalization companies that are tracked less by large intermediary banks.

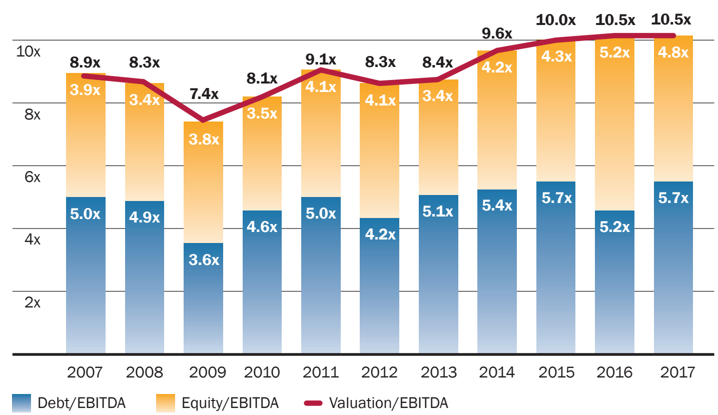
In venture capital, 2018 is expected to see a record level of deal value, while the number of deals completed is on pace to decrease for the third consecutive year. The rise of mega-funds and the emergence of non-traditional investors explains much of why average deal sizes increased for the fifth straight year. The venture capital community now knows non-traditional investors (mutual funds, sovereign funds, family offices, etc.) will participate in late-stage rounds (they participated in 60% of Series D rounds thus far in 2018); the looming uncertainty is whether or not this capital will remain after a market dislocation and if these investors will meaningfully migrate into earlier stage investing. If either of these occurs, investors may see the "stay private longer" trend elongated as venture-backed companies attract meaningful institutional capital without dealing with public market scrutiny.

Market Performance (%)
As of March 31, 2018

Asset Class	1-Year %	5-Year %	10-Year %	20-Year %
U.S. Private Equity	16.4	13.4	10.3	11.9
U.S. Buyout	17.6	15.3	10.8	11.7
U.S. Growth Equity	23.4	16.2	12.2	---
U.S. Venture Capital	12.1	15.7	9.6	21.4
Russell 3000® Index	13.8	13.0	9.6	6.7

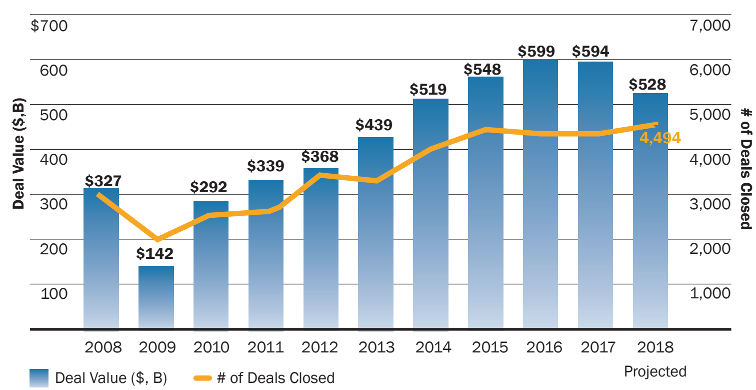
Source: Cambridge Associates and Russell. See endnotes for index names. Data as of March 31, 2018.

U.S. Mergers and Acquisitions Multiples



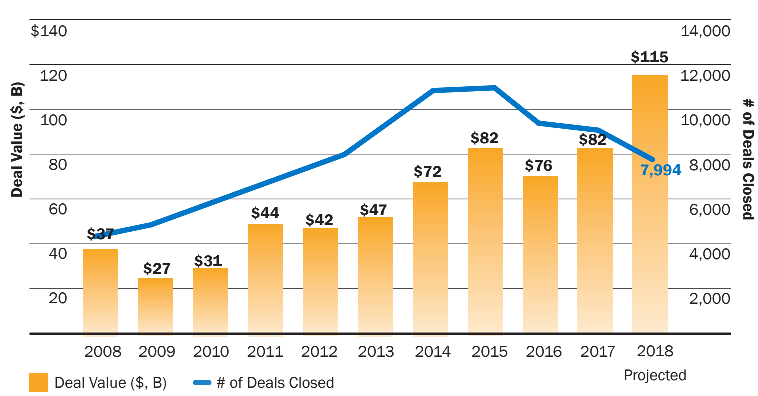
Source: PitchBook Data, Inc. Data as of December 31, 2017

U.S. Private Equity Activity



Source: PitchBook Data Inc. Data as of June 30, 2018.

U.S. Venture Capital Activity



Source: PitchBook Data Inc. Data as of June 30, 2018.

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PRIVATE CREDIT UPDATE

Through the first half of 2018, revenue growth remained robust for large companies, represented by the S&P 500 Index in the first chart, and middle market companies. Most notable is the uptick in year-over-year revenue growth for larger companies, providing further evidence of US economic strength. According to the National Center for the Middle Market, 72% of middle market companies suggested that their overall financial performance was better than a year ago. Looking forward, nearly half expect to add to the size of their workforce, but expressed some concern about their ability to do so in a tightening labor market[1].

Returns across direct lending have moderated more recently as competition has increased and spreads have tightened. On a trailing one-year basis as of March 2018, the Cliffwater Direct Lending Index posted a trailing return of 8.4%, outpacing it's public credit counter-parts but trailing equities.

Middle market loans and leveraged loans, both of which are floating rate in nature, have benefited as short term rates have risen. For context, 3 Month LIBOR increased by approximately 1%, rising to 2.3% as of June 30, 2018. Though spreads for middle market loans have compressed over the past year, which can be seen in the third chart, rising short-term rates have fully offset narrowing spreads.

Despite significant demand among investors, the first half of 2018 saw middle market spreads widen modestly to LIBOR plus 466 basis points. Large corporate spreads continued to narrow during the first half of 2018, as CLO and investor demand for primary loan issuance remained robust. Corporate spreads finished the second quarter trading at LIBOR plus 321 basis points.

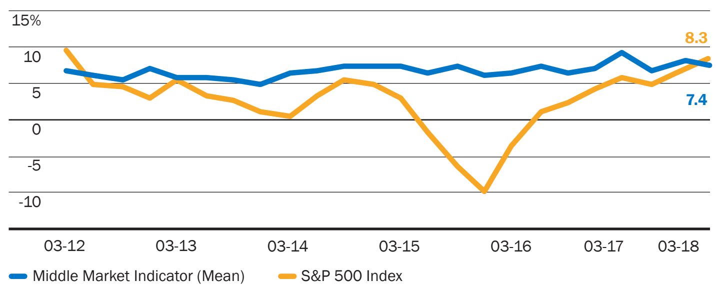
According to Pitchbook, the first half of 2018 was stronger in terms of the number and aggregate value of middle market transactions when compared to the first half of 2017. In the first six months of the year, private equity firms invested in 1,358 middle market deals worth $178.5 billion, representing increases of 16% and 5%, respectively[2]. Middle market lending surpassed $90 billion during the first half of 2018, representing an 11% increase when compared to the first half of 2017[3].

1 Source: 2Q 2018 Middle Market Indicator Report, National Center for the Middle Market

2 Source: Pitchbook 2Q 2018 US PE Middle Market Report

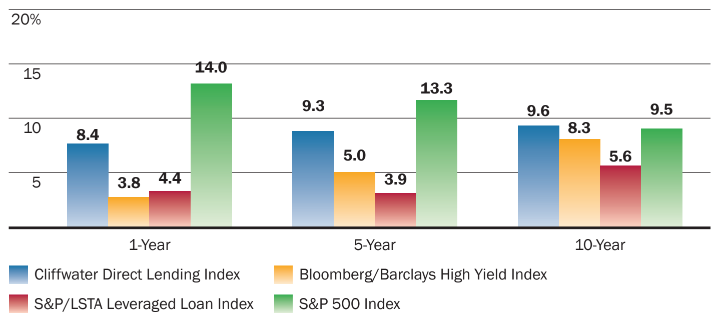
3 Source: Leveraged Loan Monthly, July, 2018 Thomson Reuters LPC

Year-Over-Year Revenue Growth Comparisons



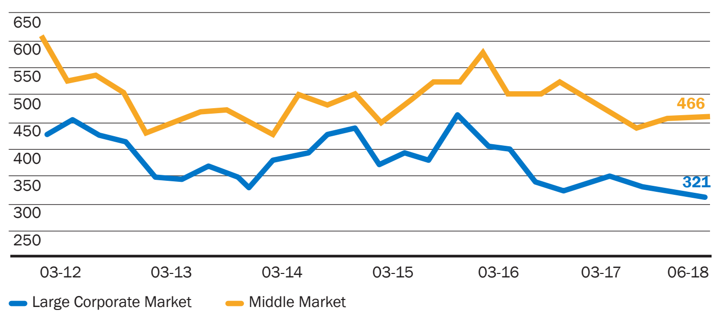
Source: National Center for the Middle Market and S&P Dow Jones Indexes, a division of S&P Global. Data as of June 30, 2018.

Trailing Annualized Market Returns



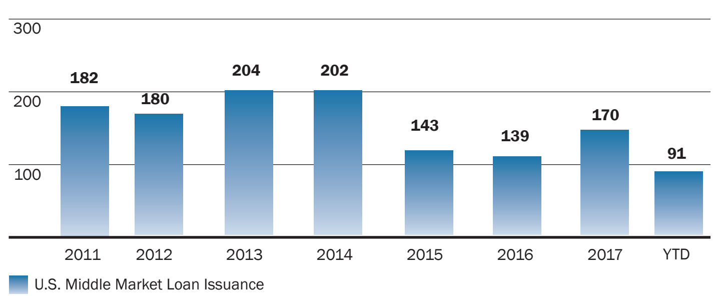
Source: Morningstar Direct, Cliffwater, LLC. Bloomberg Finance, LP, LCD, an offering of S&P Market Intelligence, and S&P Dow Jones Indices, a division of S&P Global. Data as of March 31, 2018.

Middle Market Loan Spreads (basis points)



Source: Leveraged Loan Monthly, July 2018. Thompson Reuters, LPC. Data as of June 30, 2018.

Middle Market Loan Issuance



Source: Leveraged Loan Monthly, July 2018 Thomson Reuters LPC.

The Alternatives Landscape

REAL ASSETS UPDATE

Real assets strategies produced mixed results in the first six months of 2018. Natural resource stocks and REITs generated positive results while Master Limited Partnerships (MLPs) sold off primarily due to an unfavorable tax ruling announced in March.

Oil prices have essentially doubled since bottoming out at the end of 2015 (chart three). Despite the fact that U.S. crude oil production hit a record high in June according to the U.S. Energy Information Administration, strong global demand led to higher oil prices. As a result of the increased demand, U.S. crude inventory continues to plot below its five-year average which can been seen in the fourth chart.

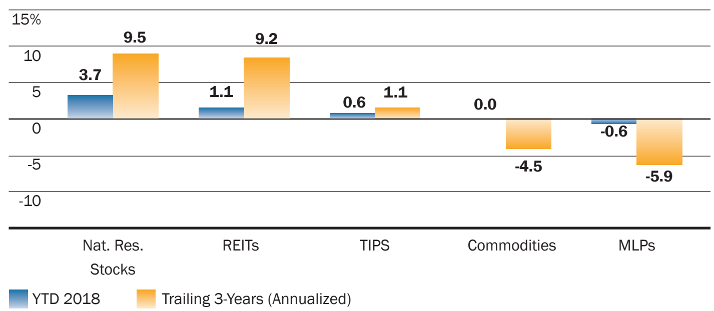
Natural resource stocks produced strong results as they benefited from the continued rise in U.S. public equities. The return was driven mostly by the aforementioned rise in WTI oil prices as crude oil jumped by approximately 23% for the first six months of the year.

Year-to-date, REITs produced positive results, led by hotels and self storage. The weak link in the REIT space continues to be shopping centers (-5%) as the brick and mortar area continues to battle the Amazon effect.

Within the commodities area, agriculture-related commodities such as cocoa (+28%) and wheat (+8%) performed well. Cocoa prices benefited from a shortage of cocoa beans in the Ivory Coast. However, coffee (-13%) and soybeans (-12%) struggled due to the continued glut of supply. Finally, metal-related commodities, in aggregate, struggled due in large part to the potential implications of the tariff rhetoric, led by copper (-11%) due to its strong Chinese demand.

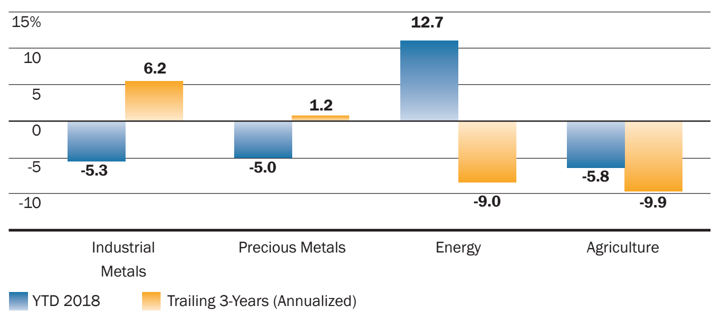
MLPs came under significant pressure during the first quarter of 2018 as the Federal Energy Regulatory Commission ruled that it would no longer allow MLPs to recover an income tax allowance in their cost of service rates. As a result of the ruling, MLPs sold off aggressively as the ruling spooked investors. Since the end of the first quarter, MLPs have rebounded as concerns about the overall impact to earnings due to the tax ruling have abated. In addition, 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



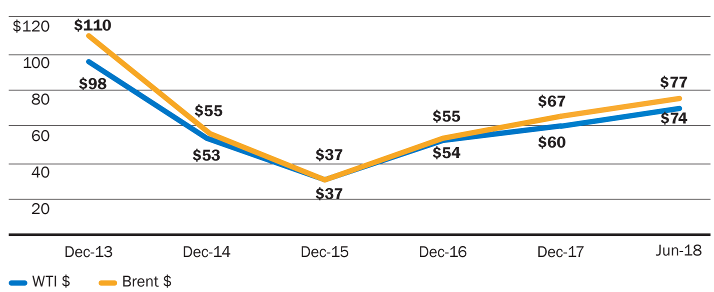
Source: Morningstar Direct, S&P Dow Jones Indices LLC, a division of S&P Global, FTSE, ICE data Indices LLC, Bloomberg Finance, LP, Alerian.
Data shown as of June 30, 2018. See endnotes for index names.

Commodity Sector Returns



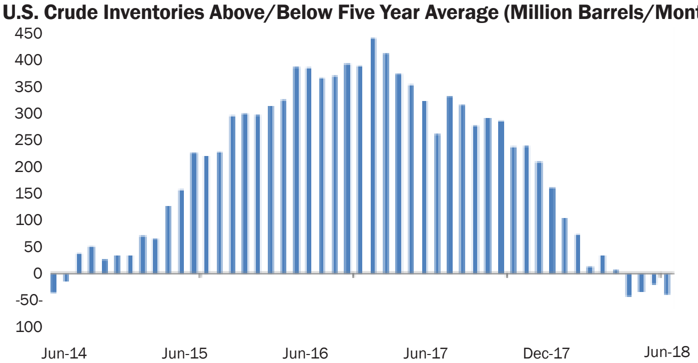
Source: Morningstar Direct, Bloomberg Finance, LP. Data shown as of June 30, 2018.
See endnotes for index names.

Spot Crude Oil Prices



Source: U.S. Energy Information Administration (June 2018).

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



Source: U.S. Energy Information Administration (December 2017).

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REAL ESTATE UPDATE

The moderation of commercial real estate returns continued during the first half of 2018. As displayed in the first chart, income returns have remained relatively stable while the appreciation component of the NCREIF Property Index continues to decline.

The goldilocks environment of global synchronized growth has given way to slowing economic growth outside of the U.S. Domestic employment, labor markets, and corporate profits continued to hold up in the U.S. in the first half of the year. All three bode well for demand for real estate and increases in net operating income.

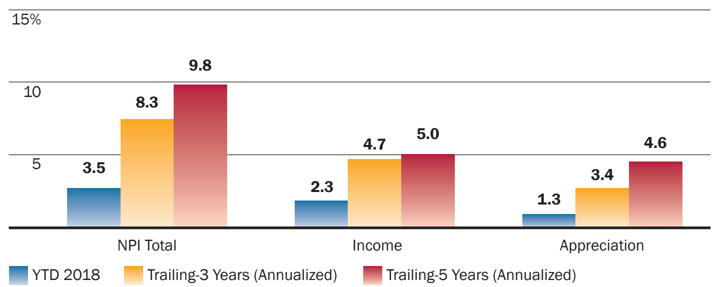
Industrial properties continued to significantly outperform other property sectors over the last three years. E-commerce and last mile delivery continue to drive demand for modern warehouse space to the detriment of brick and mortar retailers. The second chart highlights the strong returns within the industrials sector and the diminished results in the retail sector.

The decline in cap rates for core real estate, as shown in the third chart, has mirrored the declines in 10-Year Treasury yields, though the spread between cap rates and Treasuries declined by three basis points during the second quarter. Historically, low cap rates indicate that core real estate's valuations are expensive.

In general, development has been restrained during this real estate cycle. Over-development does not appear to be a near-term outcome given increasing materials costs due to tariffs coupled with the current administration's immigration policies, which potentially exacerbate the construction labor shortage. Tariffs and immigration policies help justify the current low cap rates seen in most commercial real estate sectors.

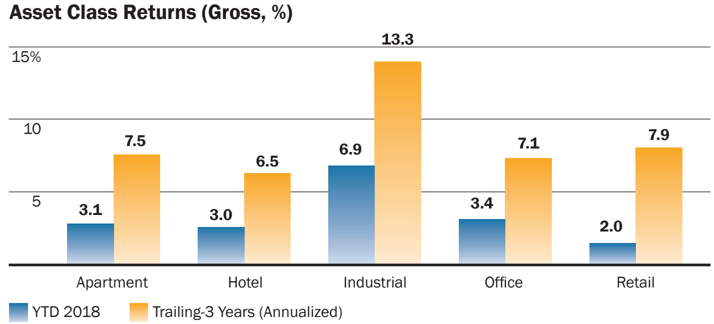
Fundamentals continue to show strength with net operating income growth, as shown in chart four, holding near 5% where it has been for several years. Rental rates have also increased in most markets. Without an unexpected macro interruption, commercial real estate should produce returns similar to historic levels in the mid- to high-single digits.

NCREIF Property Returns (Gross, %)



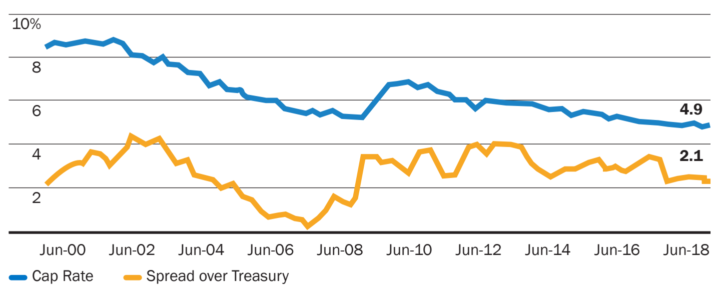
Source: National Council of Real Estate Fiduciaries NCREIF Property Index. Data as of June 30, 2018.

Asset Class Returns (Gross, %)



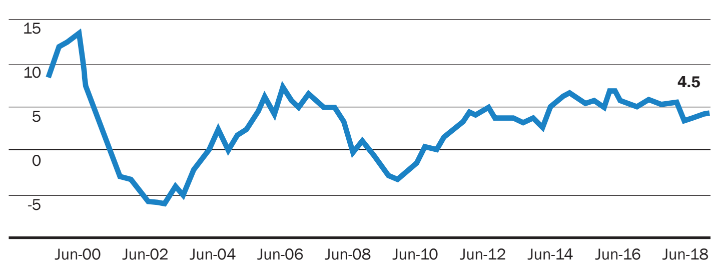
Source: National Council of Real Estate Fiduciaries NCREIF Property Index. Data as of June 30, 2018.

Cap Rates and Treasury Spreads (%)



Source: NCREIF National Council of Real Estate Fiduciaries as of June 30, 2018 and FRED.
Note: Spread represents the difference between the Cap Rates and 10 Year Treasury Yield.

NOI Growth (Four Quarter Moving Average)



Source: NCREIF National Council of Real Estate Fiduciaries NCREIF Property Index as of June 30, 2018.

ENDNOTES

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Investments in securities are subject to investment risk, including possible loss of principal. Investments in international securities, even though publicly traded in the U.S., may involve risks which are in addition to those inherent in domestic investments.

Equity investments are more volatile than bonds and subject to greater risks. Small- and mid-cap stocks involve greater risk than large-cap stocks.

Bonds are subject to interest rate, price, and credit risks. Generally when interest rates rise, bond prices fall.

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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 HFRI Index Performance as of June 30, 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. REITs are represented by FTSE NAREIT Index; Natural Resource Stocks are represented by S&P Global Natural Resources Index; TIPS are represented by ICE BofA Merrill Lynch 1–5 Year US Inflation-Linked Treasury Index; MLPs are represented by Alerian MLP Index; and Commodities are represented by Bloomberg Commodity 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.

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