CLIFFWATER LLC

U.S. Direct Lending

& the Cliffwater Direct Lending Index

Updated November 1, 2016

Direct lending is receiving significant institutional interest due to its attractive potential return and moderate risk. Though illiquid, direct lending portfolios provide immediate cash flow with little or none of the J-curve effects associated with private equity.

*We introduced the **Cliffwater Direct Lending Index ("CDLI")**[1] earlier this year as a research tool to advance the study of direct lending as an asset class and as a benchmark to evaluate the performance of direct lending managers. The CDLI is currently comprised of over 6,000 direct loans with a capitalization equal to approximately $76 billion, and a quarterly return history that begins September 30, 2004.*

We find that direct lending, measured by the CDLI, has produced an unlevered, 9.70% annualized gross-of-fee return since September 2004 with low volatility, outperforming most major asset classes with the exception of private equity. Looking ahead, Cliffwater believes that direct lending portfolios managed by experienced institutional managers can produce strong risk-adjusted, net-of-fee returns.

Background

We define direct lending as loans made to middle market companies without the traditional intermediary role of a bank or broker. We estimate the total size of the U.S. direct lending market at about $400 billion[2]. By comparison, bank originated corporate (commercial and industrial) loans total $2 trillion.[3] Traditional direct lending investors include insurance companies, specialty finance companies, and asset managers (on behalf of both institutional and individual investors).

Institutional interest in direct lending has grown significantly since the 2008 Financial Crisis for three reasons. First, middle market companies are increasingly looking to non-bank suppliers of financing as governmental regulation has curtailed traditional bank financing. Second, investors are looking for additional sources of stable cash flow to help them achieve their return objectives. And third, experienced asset managers, with established credit platforms and seeing opportunity, are stepping into the void left by banks and developing direct lending products that meet investor specifications. These direct lending products include separately managed accounts, private commingled funds, and pooled vehicles such as Business Development Companies (BDCs).[4]

Investors find direct lending portfolios attractive not only for their high yields but also because most loans are floating rate, which means they will not suffer capital losses should interest rates rise. Also, direct lending portfolios can be fully built out over a one to two year time frame, unlike private equity which can take five years or more to get fully invested. And finally, direct loans are

[1] See important disclosures at the end of this report.
[2] Federal Reserve Financial Accounts (Z.1), September 16, 2016 release
[3] Federal Reserve Financial Accounts (Z.1), September 16, 2016 release
[4] See Cliffwater Research Report, "*Business Development Companies (BDCs), A Liquid Alternative to Private Debt*," dated Jan 30, 2015, at www.BDCs.com, for a detailed description of Business Development Companies.

generally of higher quality with credit loss rates that historically have been at or below those experienced by high yield bonds and leveraged loans.

However, direct lending is like most real estate and private equity in that the underlying security is illiquid, unless held in a publicly traded vehicle, like a public BDC. Investors must therefore weigh the performance benefits of direct lending against a requirement that invested capital will be locked up for approximately five years, equal to the typical loan maturity.[5]

We believe that a major challenge for investors considering direct lending has been the absence of a direct lending index. Index returns are useful both to measure historical return and risk characteristics for asset allocation purposes, and to benchmark manager performance. Currently investors might collect and compare performance records of a few direct lending managers, but these records suffer from being self-reported with inconsistencies in loan valuation, asset quality, leverage, and time period.

To fill the need for a direct lending index, Cliffwater created the CDLI[6] in 2015 to assist investors in better understanding direct lending as an asset class, and as a tool for benchmarking past performance of direct lending managers.

Index Construction and Composition

Capturing loan data on the entire U.S. middle market is neither possible nor desirable. Many loans are held directly by insurance companies or private funds where disclosure is limited at best. However, a significant and growing segment of the direct lending market consists of loans originated and held by Business Development Companies where quarterly SEC disclosures provide a vast amount of loan (asset) information, permitting quarterly return calculations based upon reported income, realized gains or losses, and unrealized gains or losses calculated by independent valuation firms.

We constructed the Cliffwater Direct Lending Index from almost 12 years of quarterly SEC filings covering 62 reporting public and private BDCs that existed during all or part of that time period. Those BDCs collectively hold approximately $76 billion in assets covering 6,000+ loans at June 30, 2016.[7] The loans captured by our BDC database are a significant subset of the direct lending universe (~20%)[8], and importantly, represent loans that are originated and held to maximize risk-adjusted return to shareholders/investors.

The items below describe the construction of the CDLI:[9]

1. *Index Base Date*: September 30, 2004
2. *Index Launch Date*: September 30, 2015
3. *Data Universe*: All underlying assets held by private and public BDCs that satisfy certain eligibility requirements
4. *Index Reporting Cycle*: All index returns and characteristics are reported with a 2.5 month lag to allow sufficient time for release of SEC filings
5. *BDC Eligibility*:
    a. SEC regulated as a BDC under the Investment Company Act of 1940
    b. At least 75% of total assets represented by direct loans as of the calendar quarter-end

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[5] Our research shows that direct loan portfolios turn over every 3.3 years, shorter than the typical five year average loan maturity, due to prepayments, which improves the liquidity of a direct lending portfolio.
[6] See disclosures at the end of this report.
[7] Loan assets average $29 billion from 2004 to 2016, with higher growth occurring from 2010 to 2015.
[8] See Footnote 2, above.
[9] See disclosures at the end of this report.

c. Release SEC 10-K and 10-Q filings within 75 calendar days following the calendar quarter-end
d. Eligibility reviewed at quarterly eligibility dates (75 calendar days following the calendar quarter-end)

6. *Weighting*: Asset-weighted by reported "fair value"
7. *Rebalancing*: As of calendar quarter-end
8. *Reported Quarterly Index Characteristics*: total asset return, income return, realized gains(losses), unrealized gains(losses), and total assets
9. *Location*: www.CliffwaterDirectLendingIndex.com

The CDLI is consistent with other private asset indices in its quarterly reporting cycle, "fair value" asset valuation, and asset weighting.[10] Returns are unlevered and gross of both management and administrative fees.[11]

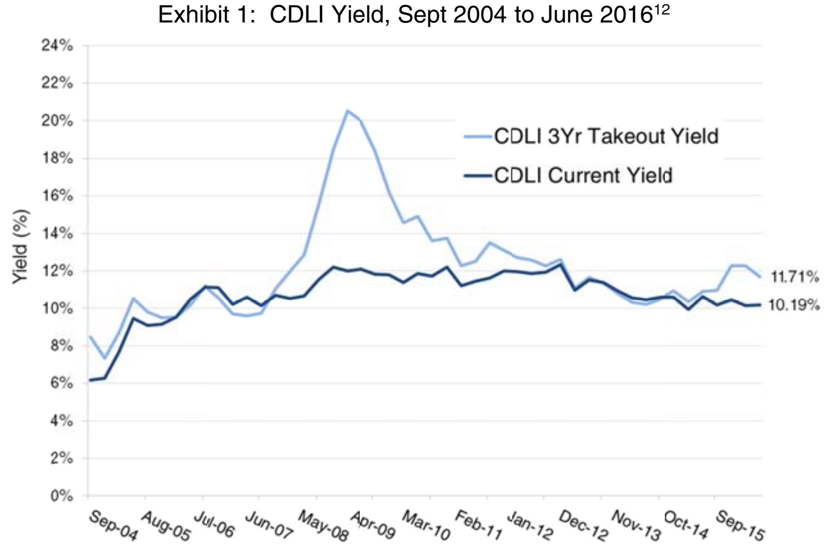
Theoretically, the CDLI is investable indirectly through public or private BDC share purchases. However, our primary CDLI return series excludes the application of leverage and imposition of fees, both management and administrative, which for some institutional investors can be negotiated based upon objectives and size of investment. We believe the CDLI return series is useful to potential investors as a building block upon which to customize returns series for expected fees and desired leverage. Later in this report we show example pro forma net-of-fee returns using the CDLI return series and leverage.

Characteristics of Direct Lending Portfolios

Yield

The opportunity for high current yield is what initially attracts investors to direct lending. Exhibit 1 provides two sets of historical yield data for the Cliffwater Direct Lending Index.

Exhibit 1: CDLI Yield, Sept 2004 to June 2016[12]



[10] Direct loans in the CDLI are valued using Statement of Financial Accounting Standards (SFAS) 157 guidance.
[11] CDLI construction is most comparable to the NCREIF equity real estate index. Direct loans represent over 90% of CDLI assets. Remaining assets generally represent equity/warrants attached to direct loans or structured finance assets.
[12] See additional disclosures at the end of this report.

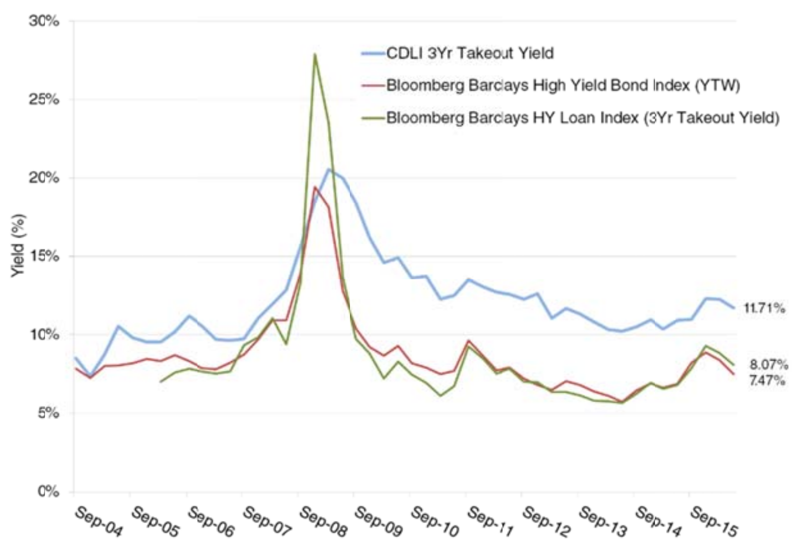
Current yield is calculated as the most recent quarter's interest payments divided by average assets over the quarter. For example, CDLI interest income during the 2016 second quarter totaled $2.0 billion on average assets valued at $77.6 billion. Dividing income by average assets gives a quarterly yield equal to 2.55%. We multiply the 2.55% quarterly yield by four, to get a 10.19% annualized yield, which we report as the CDLI yield at June 30, 2016. We utilize this measure of yield for strategic asset allocation purposes as this measure reflects the actual income distribution available to investors in the asset class.

Total return investors prefer to think of yield through the lens of "yield-to-maturity" or "yield-to-worst", reflecting current income <u>and</u> amortization of the difference between current value and principal paid at maturity or call date. These alternative calculations include both current yield and the amortization of unrealized gains and losses.

Our second yield calculation on Exhibit 1 follows this convention and adds the amortization of loan discounts or premiums to par value to current yield. While most direct loans have a 5 year stated maturity, loan refinancings, prepayments and corporate actions reduce the weighted average life of direct loans to approximately 3 years.[13] As such, we calculate a "3yr takeout yield", accreting the pull to par value for the CDLI when priced at a discount, or amortizing the CDLI roll down when priced at a premium to par, both in a linear fashion over a 3 year horizon. Our 3yr takeout yield calculation requires both par and current value for the CDLI. We calculate these values by aggregating individual portfolio par and current asset values[14] reported quarterly in BDC 10-Q financial statements.

Exhibit 2 compares the CDLI 3yr takeout yield with similar measures for traditional sources of credit: high yield bonds and leveraged loans.

Exhibit 2: Yield Comparison, Sept 2004 to June 2016[15]



[13] Portfolio turnover, equal to the value of loan maturities plus sales, divided by loan assets, averaged a 34% annual rate for the CDLI for the 2005 to 2016 (Q2) periods.

[14] Current loan values are "fair value" quarterly determinations by management and independent valuation firms.

[15] Inception date of the Bloomberg Barclays HY Loan Index is December 31, 2005. See additional disclosures at the end of this report.

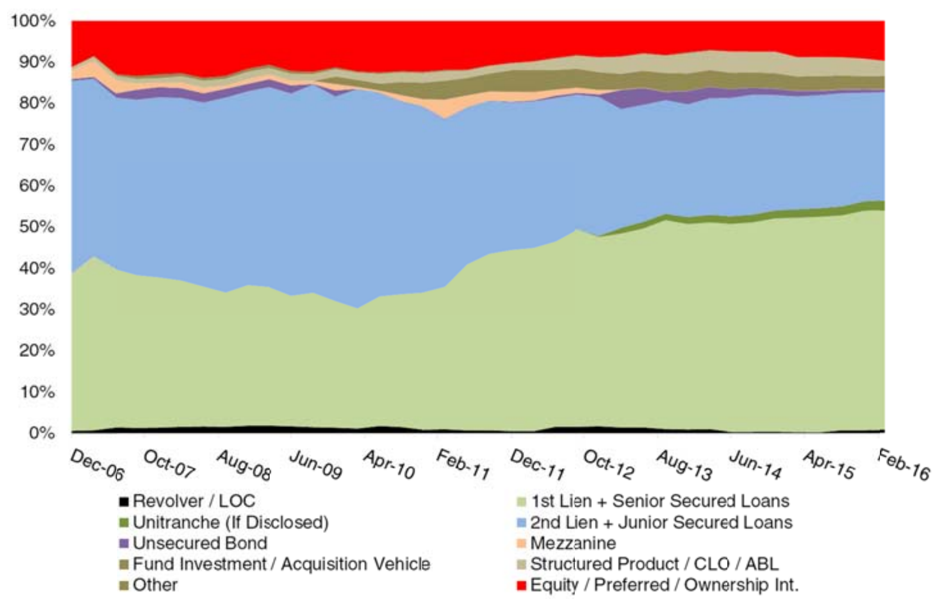
The CDLI 3yr takeout yield in Exhibit 2 have provided a consistent and significant spread over both high yield bonds and leveraged loans, with the exception of a six month period in 2008 when market dislocations caused distressed pricing for most traded credit instruments. The median CDLI yield spread over the Bloomberg Barclays High Yield Bond Index equals 3.49% for the entire time period and 4.33% over the last five years. The direct lending yield spread over high yield bonds equaled 4.23% at June 30, 2016.

These raw credit spreads are useful for investors only if fees are deducted. "JNK", a passively managed high yield bond ETF, has a gross expense ratio equal to 0.40%. Direct lending assets can't be managed passively, and fees vary by manager. We estimate a typical expense ratio equal to 2.40% for direct lending, or 2.00% above fees and expenses for traded high yield bonds.[16] Our estimated net-of-fee direct lending credit spread equals 2.23% (4.23% minus 2.00%) at June 30, 2016. Net-of-fee yield spreads between direct loans and high yield bonds would have been approximately the same 2.2% level over the past 5 years.

Middle Market Direct Lending Asset Composition by Seniority

Exhibit 3 below shows the composition of CDLI assets, by debt seniority, for the period December 31, 2006 to March 31, 2016.

Exhibit 3: Composition of CDLI Seniority, Dec 2006 to March 2016[17]



Cliffwater divides the claims on corporate assets into 10 categories, ordered by seniority. The largest category is 1st lien, senior secured loans which have first priority on collateral or cash flow in the event of corporate default. Averaging approximately 45% of total assets over the period since December 2006, senior debt has grown from 38% of assets before the Financial Crisis to over 55% of assets today. We attribute the increase in senior debt to the addition of new asset managers with a preference for senior lending, and greater senior financing opportunities as banks retreat from the middle market. Most of the increase in senior debt allocations has come

[16] Our 2.40% average expense ratio is based upon an unleveraged portfolio with a 1.25% management fee, 0.20% in administrative expenses, and a 10% incentive fee applied to the 3yr takeout yield over the life of the CDLI.

[17] Seniority determinations are based on Cliffwater's interpretations of SEC filings. Other industry participants may categorize assets differently. See additional disclosures at the end of this report.

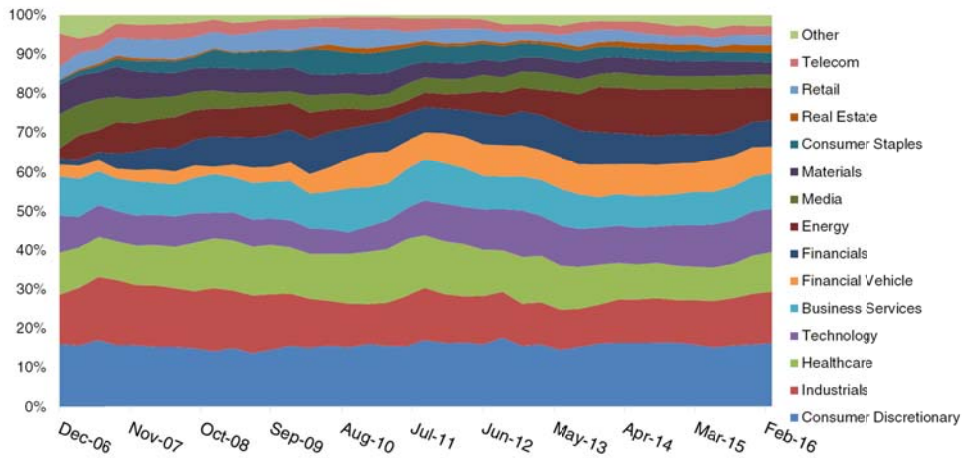
from reductions in equity-like securities, also reflecting the growing opportunity for non-bank financing that was previously filled by equity or structured finance investments. The second largest category is 2nd lien and junior secured loans which are junior to senior debt and is akin in credit quality to traded high yield bonds.

The other eight categories are all much smaller and range in credit quality. Revolver and unitranche loans are senior securities. Mezzanine, unsecured bonds, and preferred stock are all traditional junior securities. Fund investments and structured products are generally leveraged senior securities.

Middle Market Direct Lending Asset Composition by Industry

Middle market direct lending assets are well diversified across industry groups, as illustrated by the CDLI industry composition in Exhibit 4, and mirroring the basic business composition of the U.S. middle market.

Exhibit 4: CDLI Industry Composition, Dec 2006 to Mar 2016[18]



No single industry has averaged more than 16% of total direct lending assets over the period examined.

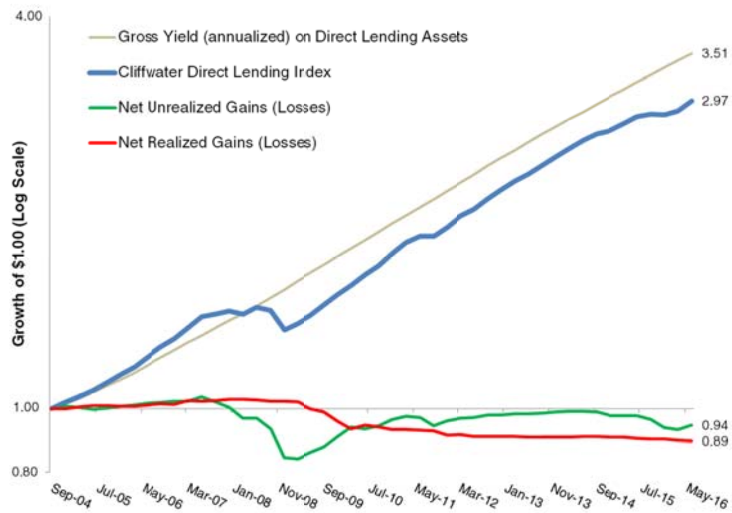
Direct Lending Returns and Risk

Exhibits 5 and 6 report the Cliffwater Direct Lending Index (CDLI) performance from its September 30, 2004 inception through June 30, 2016.[19] All returns are based upon quarterly data and are gross of fees.

Total returns are divided into the three major components investors use to assess performance for credit driven securities: income, unrealized gains (losses), and realized gains (losses). Income return is comprised of contractual interest payments and, to a much lesser degree, price discounts direct lenders commonly receive when they originate loans. Unrealized gains (losses) represent change in loan values as determined by valuation agents and are generally a reflection of movement in overall market spreads or change in assessment of specific loan credit risk, akin to a loan loss reserve. Finally, realized (gains) losses are predominately losses and are the product of loan specific defaults and recoveries, which result in a write off of loan principal.

[18] Industry categorizations are determined based on Cliffwater's interpretations of SEC filings. Other industry participants may categorize assets differently. See additional disclosures at the end of this report.
[19] Return calculations are based upon aggregated data from income statements and balance sheets and are not actual returns achieved by investors.

Exhibit 5: Components of Direct Lending Returns, Sept 2004 to June 2016[20]



The heavy blue line in Exhibit 5 plots the cumulative (growth of $1.00) CDLI return, consisting of gross yield (tan line) plus net realized gains/losses (red line) and plus net unrealized gains/losses (green line). The vertical axis uses a log scale so that a straight line indicates a constant rate of return. For example, gross yield[21] for the CDLI over the 11.75 year period appears as a straight line, suggesting that yields on direct lending assets have remained relatively constant over the period.

Exhibit 6 reports the CDLI returns for its entire history and trailing sub-periods.

Exhibit 6: Cliffwater Direct Lending Index (CDLI) Performance, Sept 2004 to June 2016[22]

		Trailing Periods ending June 2016*						Max Draw
				Last 12	Last 5	Last 10	Sept 2004	June-Dec
		Q2 2016	YTD	Months	Years	Years	Inception	2008***
	Gross Yield on Direct Lending Assets	2.55%	5.15%	10.66%	11.48%	11.65%	11.27%	6.02%
plus	Net Realized Gains (Losses)	-0.41%	-0.70%	-1.07%	-0.77%	-1.27%	-0.98%	-0.30%
plus	Net Unrealized Gains (Losses)	1.49%	0.75%	-3.48%	-0.57%	-0.78%	-0.51%	-13.07%
equals	Total Return**	3.62%	5.20%	5.77%	10.03%	9.48%	9.70%	-7.73%

* Periods greater than one year are annualized

** Return subcomponents may not add exactly to total return due to compounding effects

*** Max drawdown returns are not annualized

We make the following observations about the performance of direct lending assets, as captured by the CDLI:

1. Investment income (gross yield) on a diversified portfolio of direct middle market loans appears high and stable over the CDLI history at approximately 11% per year. High yield

[20] Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. The CDLI performance has been prepared for informational purposes only. Past performance is not indicative of future returns. See additional disclosures at the end of this report.

[21] Gross yield equals quarterly investment income divided by average gross assets.

[22] Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. See additional disclosures at the end of this report.

bonds and leveraged loans, by contrast, have yields that are generally known to be lower and more cyclical (see Exhibit 2).

2. Net realized losses, a measure of credit risk, average an annual -0.98% for the CDLI from its 2004 inception. By comparison, reported credit losses for high yield bonds and leveraged loans average -1.32% and -0.94%, respectively, for the same period.[23] The results suggest that the higher yields provided by direct lending are not offset by higher credit losses when compared to other traded high yield credit instruments.
3. Net realized losses were greatest in the years immediately following the 2008 Financial Crisis where about one-half of the 13% in net unrealized losses accumulated in 2008 later became realized losses during 2009-10. Net realized losses before and after those Crisis years averaged less than 0.20% per year.
4. Net unrealized losses for the CDLI equal -0.51% annualized over the cumulative period since inception and trend toward zero over time, which should be expected from shorter maturity, floating rate, direct loan investments.
5. The CDLI, gross of fees and unlevered, produced a fairly consistent 9.70% return from inception, net of realized and unrealized losses, but for a moderate drawdown during the 2008 Financial Crisis.
6. The CDLI experienced only one drawdown period over its history, during the six months from June 2008 through December 2008, shown in the last column in Exhibit 6, when the Index return fell -7.73% as a result of -13.07% in net unrealized losses.

Comparisons to other Asset Classes

Exhibits 7a and 7b compare direct lending performance, measured by the Cliffwater Direct Lending Index, with other private and publicly-traded asset classes.

Exhibit 7a highlights return, risk, and correlation statistics for the CDLI and six other major asset classes. Exhibit 7b plots cumulative returns (growth of $1.00) for the same asset classes. The bold blue line in Exhibit 7b represents the CDLI, copied from Exhibit 5. Return, risk, and correlation statistics are based upon quarterly series, even for those publicly traded asset classes where monthly data is available.

Exhibit 7a: Asset Class Return and Risk Comparison, Sept 2004 to June 2016[24]

					Correlations						
	Return*	Risk*	Return-to-Risk	2008 Draw Down**	CDLI	Cambridge Private Equity	NCREIF (Real Estate)	Russell 3000	Barclays High Yield Bond	S&P /LSTA Bank Loan	Barclays Aggregate
Private Asset Classes:											
Cliffwater Direct Lending (CDLI)	9.70%	3.75%	2.59	-8%	1.00	0.75	0.41	0.68	0.72	0.76	-0.29
Cambridge Private Equity	13.18%	10.35%	1.27	-28%		1.00	0.55	0.76	0.61	0.56	-0.26
NCREIF Property (Real Estate)	9.04%	5.86%	1.54	-24%			1.00	0.25	-0.08	-0.03	-0.19
Public Asset Classes:											
Russell 3000	7.97%	15.97%	0.50	-46%				1.00	0.77	0.68	-0.25
Bloomberg Barclays High Yield Bond	7.32%	11.36%	0.64	-27%					1.00	0.94	-0.01
S&P/LSTA U.S. Leveraged Loan	4.54%	10.87%	0.42	-30%						1.00	-0.20
Bloomberg Barclays Aggregate	4.59%	3.23%	1.42	-5%							1.00

*Annualized returns and risks. Risk is calculated as annualized standard deviation of historical returns.
**Drawdown periods differ by asset class but all range within the 2007-09 period affected by the Financial Crisis. Returns are not annualized.

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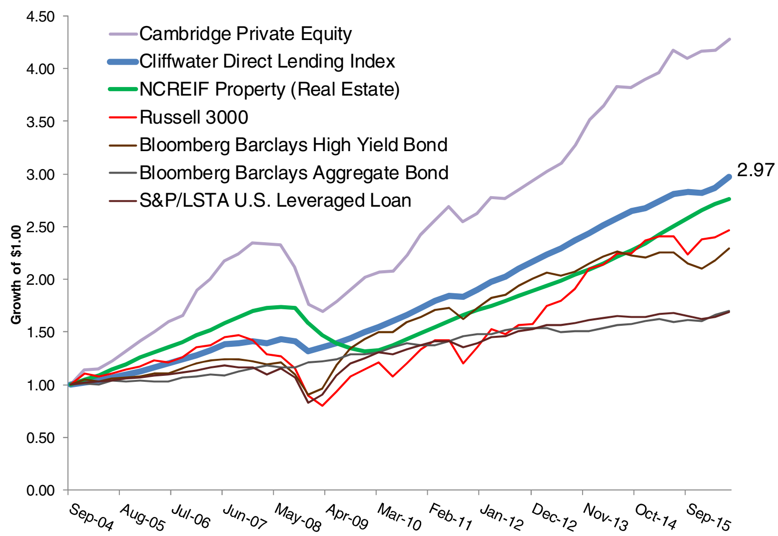
23 *J.P. Morgan.* J.P. Morgan reports default and recovery ratios. We calculate loss ratios from the J.P. Morgan data by combining reported default and recovery rates. The information provided regarding the realized credit losses of the other asset classes is provided for purposes of comparison.

24 The index returns are provided for information only. Reference to an index does not imply that a portfolio will achieve returns, volatility or other results similar to the index. Past performance is not indicative of future returns. See additional disclosures at the end of this report.

Exhibit 7b: Asset Class Performance Comparison, Sept 2004 to June 2016[25]



We make the following observations about the comparative performance of direct lending and the asset classes indicated above:

1. The three private asset classes shown in Exhibit 7a (private equity, real estate, and direct lending) all produced higher total returns over the study period when compared to the four publicly traded asset classes. This is consistent with investor expectations that illiquid private assets should outperform liquid publicly traded assets.
2. Direct lending, measured by the CDLI, outperformed most major asset classes but for private equity. The outperformance by the Cambridge Private Equity Index should be expected because it represents capital that has less seniority compared to direct loans in the corporate capital structure and therefore should have a higher return.
3. Direct lending outperformed the NCREIF index of institutional commercial real estate at a lower level of risk, which is of special note because both indices have common construction methodologies and similar oversight in asset valuation. Also, both asset classes share the common role of stable income and lower risk within diversified institutional portfolios.
4. The CDLI experienced the lowest level of risk, whether measured by standard deviation or drawdown, during the 2008 Financial Crisis except for the Bloomberg Barclays Aggregate Bond Index.
5. The CDLI earned the highest risk-adjusted return (return divided by risk) compared to the other asset classes over the measurement period.
6. The CDLI has similar correlations to equities, as measured by the Russell 3000 Index, as high yield bonds and leveraged loans, and higher correlations compared with private equity and real estate.

Based upon these CDLI historical return and risk measurements, we view direct lending as a valuable source of high and steady returns, driven primarily from interest income, but with

[25] Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. The CDLI performance has been prepared for informational purposes only. Past performance is not indicative of future returns. The index returns are provided for information only. Reference to an index does not imply that a portfolio will achieve returns, volatility or other results similar to the index. See additional disclosures at the end of this report.

moderate short term volatility that is linked to overall market risk and created by realized and unrealized credit losses. However, like private equity and real estate, valuation risk is likely understated for direct lending so that investors should be cautious making direct risk comparisons with the public traded asset classes, such as stocks, high yield bonds, and leveraged loans in Exhibit 7a.

A Practical Application including Fees and Leverage

The CDLI returns are generally not reflective of returns that investors might actually achieve because management fees and administrative expenses are not included and direct lending assets are often modestly levered, which they are not in the CDLI. In Exhibit 8 we provide underlying fee and leverage assumptions that are representative of an institutional direct lending separate account or commingled vehicle.[26] Those assumptions are then used in conjunction with the historical CDLI returns to project *investable* returns.

Exhibit 8: Example Specifications for a Direct Lending Portfolio

Direct lending asset returns	Cliffwater Direct Lending Index (CDLI)
Leverage (borrowing/net assets)	0.0 (unlevered) 0.6 (average for BDCs) 1.0 (moderate leverage) 2.0 (higher leverage)
Cost of debt	3.98%, equal to the average 2004-15 historical financing cost of the 62 BDCs in the CDLI, taken from 10-Qs/Ks
Management fee	1.00% of gross assets
Administrative expenses	0.20% of gross assets
Carried interest/preferred return	10% / 7%

The net of fee return for this direct lending portfolio example is calculated in Exhibit 9, assuming leverage equal to 0.60 (60%) of net assets. This is the average leverage used by BDCs on their loan portfolios over the last 11.75 years. The fees selected for our example are representative of an institutional account, but less than fees typically charged by the average publicly-traded BDC.

Exhibit 9: Example Direct Lending Portfolio after Fees, Expenses & Leverage

9.70%	Asset return net of realized, unrealized losses
+ 5.82%	Gross return from 0.6 times leverage
- <u>2.39%</u>	<u>Cost of leveraged financing</u> (@3.98% of borrowings)
= 13.13%	Gross of fee return
- 0.32%	Administrative expenses (@0.20% of gross assets)
- 1.60%	Management fees (@1.00% of gross assets)
- <u>1.12%</u>	Incentive fees (@ 10% of return net of management fee)
10.09%	Net return to investors
21%	Manager fees as a % of gross of fee return

The net, after fee return for the direct lending portfolio with average performance (CDLI) and 0.6 leverage ratio equals **10.09%**.[27] In this example, total management fees paid equal 2.72% of net assets and represent 21% of the direct lending portfolio's 13.13% gross return.[28]

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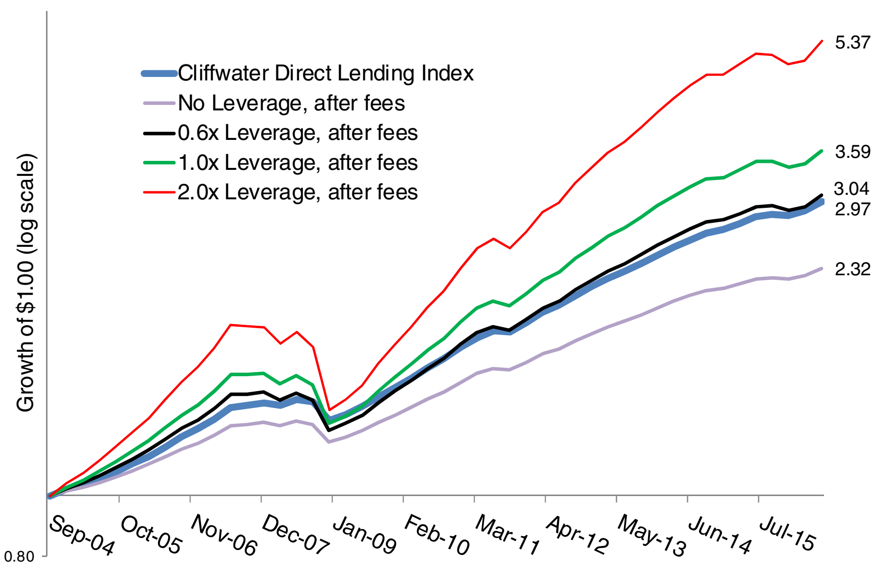
[26] Fees estimates are based upon Cliffwater experience with advising clients on direct lending portfolios and will generally be lower for accounts that are larger, focus on senior debt, or use less or no leverage.
[27] Performance may vary when accounts are managed by actual managers.

The cumulative return for the 0.6 levered direct lending portfolio is plotted in Exhibit 10, where one dollar grows to $3.04 over the 11.75 year period. With fees and moderate leverage, the portfolio produced a cumulative return similar to the asset returns for the CDLI, which is repeated from Exhibit 5. Exhibit 10 also includes cumulative returns calculated for direct lending portfolios with no leverage, a 1.0 leverage ratio, and a 2.0 leverage ratio.

Exhibit 10: Performance Simulation for Direct Lending Portfolios:
Sept 2004 to June 2016[29]



Portfolio return and risk statistics for the CDLI and the four alternatively levered direct lending portfolios are reported in Exhibit 11. Return and risk calculations in Exhibit 11 are net of the manager fee, administrative expenses, and financing costs used in Exhibit 9.

Exhibit 11: Simulated Return and Risk for Levered Direct Lending Portfolios:
Sept 2004 to June 2016[30]

	Return	Risk*	Return/ Risk	2008 Draw Down**
Cliffwater Direct Lending Index	9.70%	3.75%	2.59	-8%
No Leverage, after fees	7.44%	3.37%	2.20	-8%
0.6x Leverage, after fees	9.92%	5.42%	1.83	-13%
1.0x Leverage, after fees	11.49%	6.79%	1.69	-16%
2.0x Leverage, after fees	15.38%	10.22%	1.51	-25%

*Risk is calculated as annualized standard deviation of historical returns
**June-Dec 2008

As expected, direct lending return and risk increases with leverage. Asset managers often use leverage with direct lending and other credit instruments to enhance returns. Investors might

[28] Based on Cliffwater's research, manager fees for other alternative asset classes, such as private equity and hedge funds, have generally ranged from 30% to 40% of gross return.
[29] Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. The CDLI performance has been prepared for informational purposes only. Past performance is not indicative of future returns. See additional disclosures at the end of this report.
[30] See additional disclosures at the end of this report.

think about the optimal amount of leverage by comparing the risk and 2008 drawdown columns in Exhibit 11 with comparable data for private equity and real estate in Exhibit 7a. Comparisons with publicly-traded high yield bonds and leveraged loans are interesting as well but risk statistics for those asset classes are based upon market price and not quarterly determinations of SFAS 157 "fair value."

We believe most institutional investors in direct loan portfolios might consider leverage up to two turns (2.0) but would most likely select one turn (1.0). One turn of leverage (1.0) would bring a direct lending portfolio to a level of volatility comparable to private unlevered real estate while two turns (2.0) of leverage would bring a direct lending portfolio to a level of volatility comparable to private equity. We believe most investors would want equal emphasis put on yield and risk in a direct lending portfolio and therefore would lean toward one turn of leverage. One turn of leverage produces a projected risk equal to 6.4% and 2008 drawdown equal to -15%, roughly one-half the level for a portfolio of U.S. buyout funds.

Our leverage analysis, however, is based upon a direct lending portfolio whose composition reflects the overall direct lending market, captured by the CDLI, which consists of both senior and subordinated loans. Portfolios consisting primarily of less risky senior secured loans might well consider higher levels of leverage.

Manager Selection and Credit Losses

Direct lending is a dynamic market as managers continuously originate and refinance middle market corporate loans every three to four years. The Cliffwater Direct Lending Index captures the collective (asset-weighted) work product of the managers represented in the Index. Not surprisingly, some managers have produced better outcomes than others. These differences have been significant and suggest that investors need to look well beyond stated portfolio yield when selecting managers.

As an example, in Exhibit 12 we show asset performance for two different direct lending managers that manage BDCs, for the Sept 2004 to June 2016 time period. Both manager track records are real and are included as part of the Cliffwater Direct Lending Index.

Exhibit 12: Performance Comparison of Two Direct Lending Managers

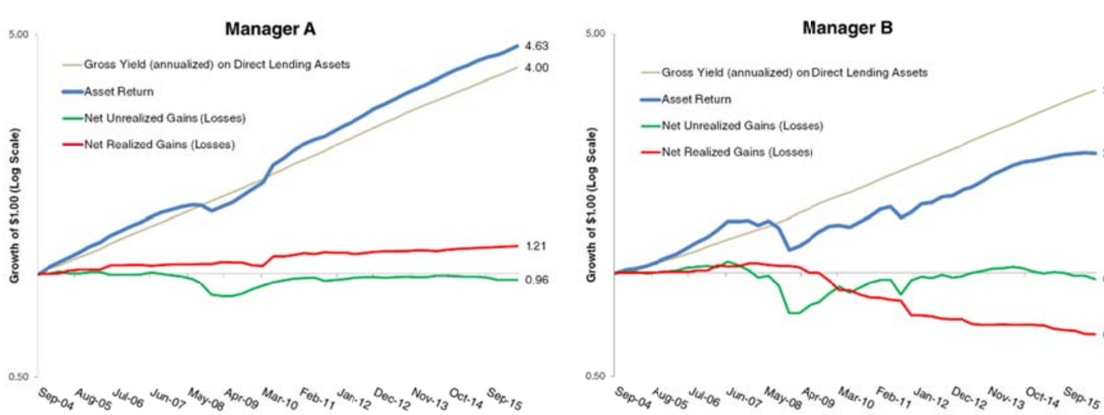


Exhibit 12 shows clearly that not all managers are alike when executing a direct lending investment program. A dollar invested with Manager A at September 2004 would have grown to $4.63 as shown in the blue line, representing a 13.93% annualized return, gross of fees. Manager A's 13.93% asset performance is also 4.23% above the 9.70% return for the CDLI, indicative of significant manager skill at direct lending. On the other hand, a dollar invested with

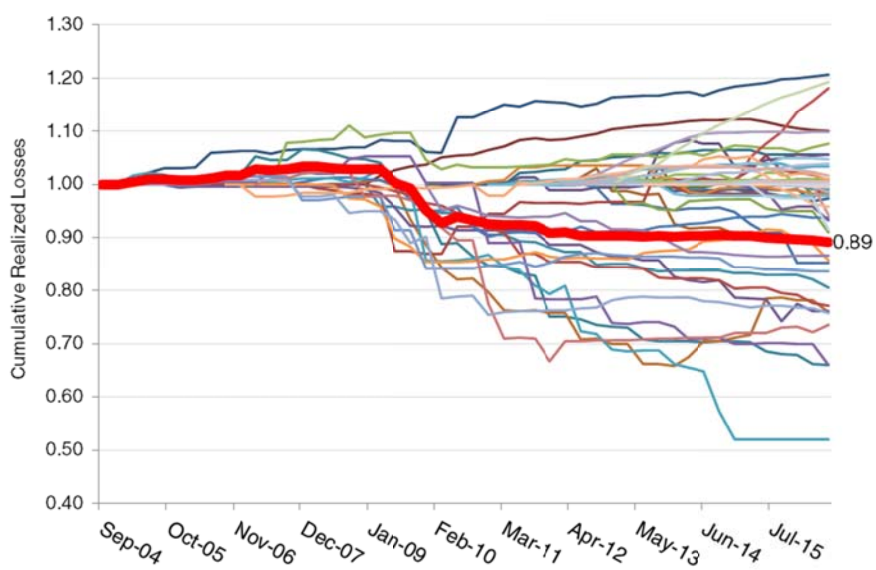
Manager B for the same period would have grown to $2.24, representing a 7.10% annualized return which is 2.60% below the CDLI.

The performance difference between the two managers is largely explained by realized credit losses, shown in the two respective red lines in Exhibit 12. Manager A produced net realized gains at a 1.62% annualized rate while Manager B produced net realized losses at a -3.48% annualized rate. The absolute difference between the two managers' realized gain (loss) returns equals 5.10% (1.62% plus 3.48%), which accounts for three-quarters of the 6.83% (13.93% minus 7.10%) absolute difference between their total asset returns.

Higher net realized losses are not necessarily bad. Manager B could be investing in higher yielding, more junior debt, expecting the higher income to offset higher net realized losses. However, in our comparison Manager B in fact produced lower portfolio income compared to Manager A. Manager A has generated a 12.52% return from interest income, compared to 11.03% for Manager B. The 1.49% difference explains most of the remaining difference in asset returns.

More broadly, we find that net realized losses also explain most of the performance differences across the 62 direct lending managers comprising the Cliffwater Direct Lending Index. Exhibit 13 illustrates this point by plotting cumulative net realized gains (losses) by manager. The length of track record varies across managers with many starting a BDC after the Financial Crisis. As a result, Exhibit 13 contains track records of net realized gains (losses) of differing lengths. The dark red line represents aggregate CDLI net realized losses. The graphic is however useful in showing the dispersion of outcomes across managers and the importance of manager selection.

Exhibit 13: Cumulative Net Realized Gains (Losses) for Direct Lending Asset Managers and the Cliffwater Direct Lending Index (in red): Sept 2004 to June 2016[31]



[31] "Direct Lending Asset Managers" consist of the managers of the BDCs included in CDLI. See additional disclosures at the end of this report.

Conclusion

We believe investors should consider direct lending when constructing a diversified portfolio, either as an alternative to liquid credit investment, such as high yield bonds or leveraged loans, or as part of an allocation to private assets. Allocations to direct lending of up to 10% of total assets could seem appropriate, depending upon investor objectives.

Our Cliffwater Direct Lending Index (CDLI) provides the types of information – historical returns, risk, correlations, yields, credit losses – that we believe potential investors should find useful in making asset allocation decisions and the Index returns are easily manipulated to create customized portfolio solutions and benchmarks that are often found in direct lending.

We expect the direct lending market to continue to grow, and with it, greater institutional participation which could improve performance further through superior underwriting and better fee structures.

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Disclosures

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The Cliffwater Direct Lending Index (the "CDLI") is an index comprised of all underlying assets held by public and private Business Development Companies ("BDCs") that satisfy certain eligibility requirements. The CDLI is asset-weighted by reported fair value. Cliffwater believes that the CDLI is representative of the direct lending asset class. The CDLI is owned exclusively by Cliffwater, and is protected by law including, but not limited to, United States copyright, trade secret, and trademark law, as well as other state, national, and international laws and regulations. Cliffwater provides this information on an "as is" and "as available" basis, without any warranty of any kind, whether express or implied.

Past performance of the CDLI is not an indication of future results. It is not possible to invest directly in the CDLI. The CDLI returns shown are not based on actual advisory client returns and do not reflect the actual trading of investible assets. The performance of the CDLI has not been reviewed by an independent accounting firm and has been prepared for informational purposes only.

Index returns do not reflect payment of any sales charges or fees a person may pay to purchase the securities underlying the CDLI or a product that is intended to track the performance of the CDLI. The imposition of these fees and charges would cause the actual and back-tested performance of these securities or products to be lower than the CDLI performance shown.

Any information presented prior to the Launch Date (September 30, 2015) of the CDLI 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 CDLI was officially launched. Please refer to the methodology paper for the CDLI (available at www.CliffwaterDirectLendingIndex.com) for more details about the CDLI, including the Base Date/Value (September 30, 2004 at 1,000) and the Launch Date of the CDLI and the manner in which the CDLI is rebalanced, the timing of such rebalancing and the eligibility criteria for the CDLI.

Prospective application of the methodology used to construct the CDLI may not result in performance commensurate with any back-tested returns shown. The back-test period does not necessarily correspond to the entire available history of the CDLI. Another limitation of back-tested hypothetical information is that generally the back-tested calculation is prepared with the benefit of hindsight. Back-tested data reflect the application of the CDLI methodology and selection of the CDLI constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the financial markets in general which cannot be, and have not been, accounted for in the preparation of the CDLI information set forth, all of which can affect actual performance.

When Cliffwater was unable to determine the nature of a BDC's investments because of limited information included in historical SEC filings, Cliffwater did not apply the portfolio composition criteria (at least 75% of total investments represented by direct loans) to the BDC. All other eligibility criteria were applied to determine whether to include the BDC in the historical CDLI composition and return. All CDLI returns and characteristics are reported with a 2.5 month lag to allow sufficient time for SEC filings.

The CDLI may include inaccuracies or typographical errors. Due to various factors, including the inherent possibility of human or mechanical error, the accuracy, completeness, timeliness and correct sequencing of such information and the results obtained from its use are not guaranteed by Cliffwater.

The CDLI is derived from sources that are considered reliable, but Cliffwater does not guarantee the veracity, currency, completeness or accuracy of the CDLI or other information furnished in connection with the CDLI. No representation, warranty or condition, express or implied, statutory or otherwise, as to condition, satisfactory quality, performance, or fitness for purpose are given or duty or liability assumed by Cliffwater in respect of the CDLI or any data included therein, omissions therefrom or the use of the CDLI in connection with any product, and all those representations, warranties and conditions are excluded save to the extent such exclusion is prohibited by applicable law.

The asset classes referenced above are defined as follows: (i) high yield bonds is represented by the Bloomberg Barclays U.S. High Yield Index, (ii) leveraged loans is represented by the Bloomberg Barclays High Yield Loan Index to the extent index characteristics and analytics are being discussed and the S&P/LSTA U.S. Leveraged Loan Index to the extent returns are being discussed, and (iii) direct lending is represented by the CDLI.

This report may include sample or pro forma performance. Such information is presented for illustrative purposes only and is based on various assumptions, not all of which are described herein. Such assumptions, data, or projections may have a material impact on the returns shown. Nothing contained in this presentation is, or shall be relied upon as, a representation as to past or future performance, and no assurance, promise, or representation can be made as to actual returns.

References to market or composite indices, benchmarks or other measures of relative market performance over a specified period of time (each, an "index") are provided for information only. Reference to an index does not imply that a portfolio will achieve returns, volatility or other results similar to the index. The composition of an index may not reflect the manner in which a portfolio is constructed in relation to expected or achieved returns, portfolio guidelines, restrictions, sectors, correlations, concentrations, volatility or tracking error targets, all of which are subject to change over time. Investors cannot invest directly in indices and, unlike an account managed by Cliffwater, an index is unmanaged and fully invested. Index returns reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses, which would reduce returns.

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The Bloomberg Barclays High Yield Loan Index (Bloomberg Barclays HY Loan) provides broad and comprehensive total return metrics of the universe of syndicated term loans. To be included in the index, a bank loan must be dollar denominated, have at least $150 million funded loan, a minimum term of one year, and a minimum initial spread of LIBOR+125.

The Bloomberg Barclays U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.

The Bloomberg Barclays U.S. High Yield Index (Bloomberg Barclays High Yield Bond) covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included. Original issue zeroes, step-up coupon structures, 144-As and pay-in-kind bonds (PIKs, as of October 1, 2009) are also included.

The S&P/LSTA U.S. Leveraged Loan Index is a market value weighted index tracking institutional leveraged loans in the United States based upon market weightings, spreads and interest payment, including Term Loan A, Term Loan B and Second Lien tranches.

The Russell 3000 Index is a capitalization-weighted stock market index that seeks to track the entire U.S stock market. It measures the performance of the 3,000 largest publicly held companies incorporated in the United States based on market capitalization.

The Cambridge Private Equity Index is based on data compiled from global institutional-quality buyout, growth equity, private equity energy, venture capital and mezzanine funds, including fully liquidated partnerships, formed between 1986 and 2016.

The NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only. All properties in the index have been acquired, at least in part, on behalf of tax-exempt institutional investors.

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