2023 Q4 Report on US Direct Lending

Private debt is a rapidly growing asset class among institutional investors, a trend that is expected to continue. This report focuses on fourth quarter 2023 and long-term performance for one of the largest segments of private debt, US middle market corporate lending.

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The Cliffwater Direct Lending Index

Our analysis relies upon the Cliffwater Direct Lending Index ("CDLI") an asset-weighted index of approximately 14,800 directly originated middle market loans totaling **$315 billion** as of December 31, 2023.[1] The CDLI assists investors in better understanding private debt as an asset class and to benchmark lender performance. The CDLI is used globally by investors and lenders as the index of choice for understanding the return and risk characteristics of US middle market debt.

Launched in 2015, the CDLI was reconstructed back to 2004 using publicly available quarterly SEC filings required of business development companies, whose primary asset holdings are US middle market corporate loans. Importantly, SEC filing and transparency requirements eliminate common biases of survivorship and self-selection found in other industry universe and index benchmarks. And finally, loan assets in the CDLI are managed for total return by independent asset managers, unlike similar loans within insurance companies where statutory and other regulatory requirements can result in non-performance objectives. See CliffwaterDirectLendingIndex.com for further information on the CDLI.

CDLI Returns[2]

	Fourth Quarter 2023	**Calendar 2023**	**Trailing 5 Yrs.***	**Trailing 10 Yrs.***	**From Sep 2004 Inception***
Interest Income	2.99%	12.08%	9.99%	10.28%	10.81%
+ Net Realized Gains (Losses)	-0.08%	-0.86%	-1.00%	-0.98%	-1.03%
+ Net Unrealized Gains (Losses)	0.03%	0.92%	0.15%	-0.37%	-0.25%
= CDLI Total Return**	**2.95%**	**12.13%**	**9.09%**	**8.84%**	**9.46%**

* Annualized returns through December 31, 2023.
** Return subcomponents may not add exactly to total return due to compounding effects.

The CDLI returned a healthy 12.13% for calendar 2023, due largely to above average 12.08% in interest income. Realized losses equaled -0.86% for the year, slightly below their -1.03% long-term average. Unrealized gains from loan markups equaled 0.92% for the year, reversing almost one-half the unrealized losses from loan markdowns in 2022.

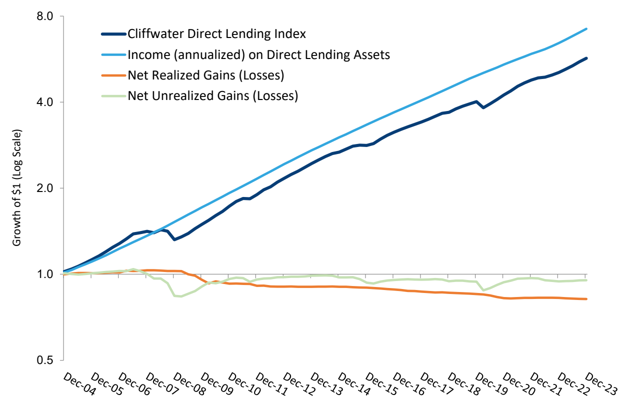
A history of attractive middle market direct loan returns and low volatility, captured by the CDLI, has contributed to Index assets growing from $130 billion three years ago to $315 billion today.

[1] The Cliffwater Direct Lending Index (the "CDLI") seeks to measure the unlevered, gross of fees performance of U.S. middle market corporate loans, as represented by the underlying assets of Business Development Companies ("BDCs"), including both exchange-traded and non-traded BDCs, subject to certain eligibility requirements. The CDLI is asset-weighted by reported fair value.

[2] 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. Please see additional CDLI disclosures at the end of this report.

Exhibit 1 plots CDLI total return, in dark blue, together with its income, realized, and unrealized net gain (loss) components. Visual inspection shows that quarterly income drives total return over time, reduced periodically by net realized and unrealized losses.

Exhibit 1: Components of CDLI Returns
(Sep 2004 to Dec 2023)

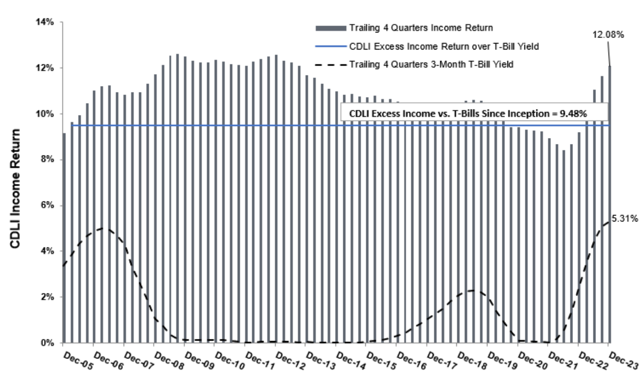


Income Return

Total returns have historically been driven by high single-digit or low double-digit interest income returns, averaging 10.81% over the lifetime of the CDLI, and with a historical range between 8% and 12%. Higher yields have been associated with economic distress and high reference rates and lower yields associated with economic growth and low reference rates.

Exhibit 2 shows historical trailing four-quarter income returns for the CDLI, starting from its September 2004 inception. Also shown are trailing four-quarter 3-month T-bill yields which helps explain some, but not nearly all the variation in CDLI income through time.

Exhibit 2: CDLI Income Return (trailing four quarters ending Dec 2023)



The four-quarter CDLI yield rose for the sixth consecutive quarter, primarily from the rise in 3-month SOFR, now the most common reference rate for private direct loans.

Exhibit 3 shows (in blue) the jump in senior loans within the CDLI immediately after the 2008 Financial Crisis and its steady increase thereafter from 38% at the end of 2009 to 81% on December 31, 2023.[3] This trend toward senior loans has likely put downward pressure on CDLI yields over time.

Exhibit 3: Percentage of Senior Loans in CDLI
(Sep 2004 to Dec 2023)

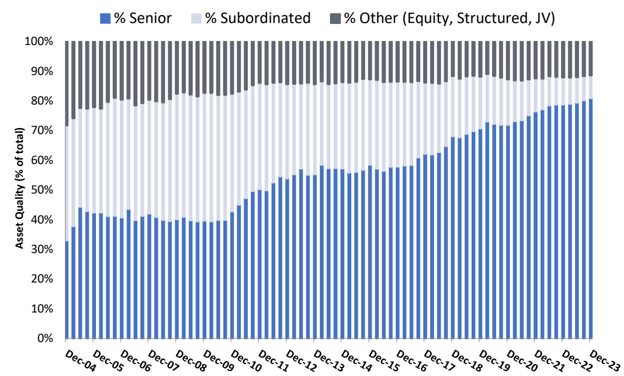
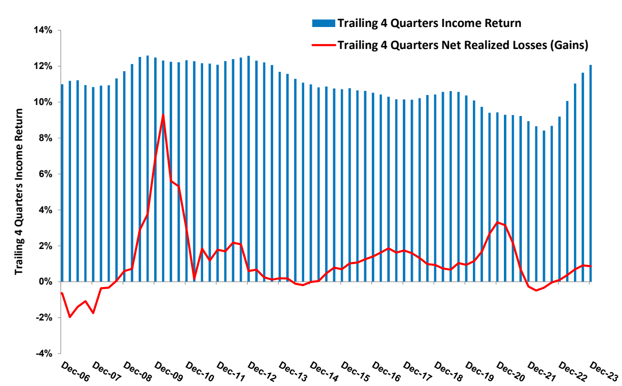


Exhibit 4 plots trailing four-quarter income return (Exhibit 2) against four-quarter realized losses. The spread between lines measures income captured after realized losses in loan principal. Noteworthy is that for all rolling four-quarter periods realized losses are a small percentage of income earned. The worst four-quarter period ended March 31, 2005, when income totaled 12.32% and realized losses totaled 9.30%, a 3.02% difference. Unrealized gains (losses) may push short-term total returns up or down, but they quickly revert to reflect just income and net realized gains (losses).

Exhibit 4: CDLI Income Return versus CDLI Realized Losses
(trailing four quarters ending Dec 2023)



[3] Senior secured loans include unitranche loans, which represent approximately one-half of total senior secured loans in CDLI.

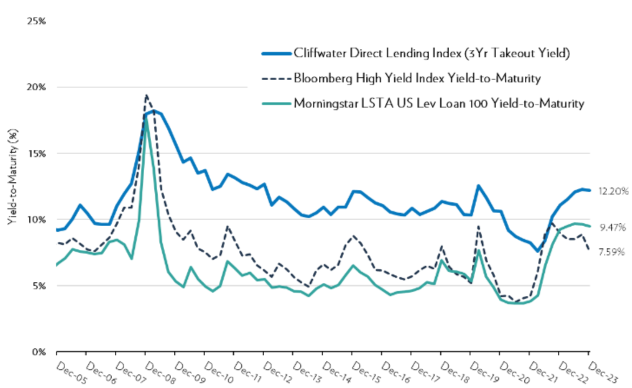
Yield-to-Maturity | Current Yield

There are two common measures of yield: yield-to-maturity and current yield. Yield-to-maturity is the total return (IRR) equating current loan price to scheduled interest payments and principal (par value) at maturity. Hence, yield-to-maturity assumes no losses from defaults, something that is not likely if loans are trading at a discount. Current yield equals coupon interest divided by current price, implying that the investor will receive the then current price at maturity and the difference between the then price and stated principal will be lost, presumably because of default. When loans are priced at a discount to par value, which they often are, current yield is a conservative (lower) calculation of total return and yield-to-maturity is an aggressive (higher) calculation of total return.

Exhibit 5 provides a comparison of yield-to-maturity, again reflecting current interest income plus the amortization of unrealized gains or losses, across the CDLI, the Morningstar LSTA US Leveraged Loan Index, and the Bloomberg High Bond Index from the September 30, 2005 through December 31, 2023.

While most direct loans in the CDLI have a 5- to 7-year stated maturity, refinancing and corporate actions reduce their average life to approximately 3 years (see Exhibit 23). We calculate a "3yr takeout yield" for the CDLI and compare it to an equivalent yield-to-worst calculations for broadly syndicated high yield bonds and leveraged loans in Exhibit 5. [4]

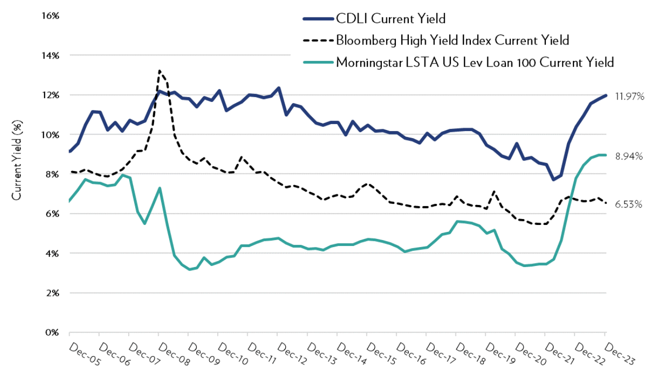
Exhibit 5: CDLI, High Yield Bond, and Leveraged Loan Yield-to-Maturity Comparisons, Sep 2004 to Dec 2023



The CDLI 3yr takeout yield dropped slightly from 12.26% on September 30, 2023, to 12.20% on December 31, 2023, due primarily to tightening credit spreads. Over the same period, the yield-to-maturity on the Morningstar LSTA US Leveraged Loan 100 Index declined slightly from 9.63% to 9.47% and the yield-to-maturity on the Bloomberg High Yield Bond Index fell from 8.88% to 7.59%. The Morningstar LSTA US Leveraged Loan 100 Index yield declined due to spread tightening, with offset SOFR increases. In contrast, the Bloomberg High Yield Bond Index yield-to-maturity fell due to rising bond prices.

Exhibit 6 compares the same three credit indices shown in Exhibit 5 but substitutes the more conservative current yield calculation.

Exhibit 6: CDLI, High Yield Bond, and Leveraged Loan Current Yield Comparisons, Sep 2004 to Dec 2023



Current yields on the CDLI, Morningstar LSTA US Leveraged Loan 100 Index, and Bloomberg High Yield Bond indexes equaled 11.97%, 8.94%, and 6.53%, respectively, as of December 31, 2023. Quarter-over-quarter, the CDLI yield rose while the Morningstar LSTA US Leveraged Loan 100 Index yield remained unchanged and the Bloomberg High Yield Bond Index yield fell.

While the CDLI income return component largely drives long term total return, net gains (losses) can impact returns over shorter time periods and can be very important in differentiating individual manager (lender) performance. [5]

Net Gains (Losses)

Net gains (losses) are defined as the periodic change in loan valuation. It is substantially like a price change for traded securities. We divide net gains (losses) into two components, realized and unrealized.

Realized gains (losses) represent the component of valuation change for completed transactions. In the case of a portfolio of loans, such as the CDLI, realized gains (losses) mostly come in the form of realized losses

[4] "3Yr Takeout Yield" is calculated by assuming loans will be repaid at par in three years, the average life of direct loans.

[5] Long term net gains (losses) will almost always be negative for loans.

generated by write-downs of loan principal that result from borrower default. The amount of the write-down depends upon the value of the post-default collateral or new principal amount.

Unrealized gains (losses) represent the component of valuation change that is sourced by a change in market price or, in the case of a portfolio of loans, such as the CDLI, a change in “fair value” not attributable to a transaction.[6]

It is instructive to review the mechanisms by which gains and losses for direct loans typically are generated, as well as the linkage between realized and unrealized gains and losses.

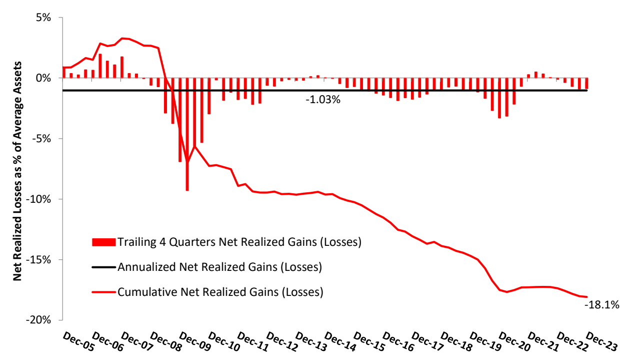
- Loan values are established quarterly based upon a fair value assessment as to what the loan is worth. Fair value takes account of the probability and size of future loan impairments based upon individual loan circumstances.
- Price changes in the broader traded credit markets, including high yield bonds and bank loans, help guide expectations for future loan impairments and fair values.
- Quarterly changes in fair value create unrealized net gains (losses) which cause fair value to differ from cost (par) value. Most likely, fair value will be below cost value to reflect some probability of impairment.[7]
- Unrealized losses from reductions in fair value usually occur in advance of actual loan impairments as the certainty of loss increases as default approaches.
- A subsequent default event triggers a realized loss which is a permanent reduction in the cost value of the loan.
- The realized loss (from a default or restructuring) replaces the existing unrealized loss through an offsetting unrealized gain. The new unrealized gain equals the prior unrealized loan loss if the default event and realized loss was correctly anticipated.
- Over time, investors observe a build-up in net realized losses, as defaults accumulate. These realized losses are similar in construct to loss rates[8] reported by rating agencies and banks for high yield bonds and bank loans.
- Unrealized losses generally build in the early stages of a credit downturn and reverse in later stages as realized losses from defaults replace them.

Net Realized Gains (Losses)

Realized losses for middle market loans had been unusually low throughout 2021 and early 2022 but started to pick up in 2023 with realized losses equal to -0.25% in the first quarter, -0.30% in the second quarter, and -0.24% in the third quarter.

Exhibit 7 reports the long-term track record on realized losses using CDLI trailing four quarter net realized gains (losses) and since inception cumulative net realized gains (losses). From CDLI inception on September 30, 2004, realized losses on private direct middle market loans have averaged -1.03% per year.

Exhibit 7: CDLI Net Realized Gains (Losses)
(Trailing 4 quarters realized losses, Sep 2004 to Dec 2023)



CDLI realized losses can be divided into three subperiods. The 2004-2007 period saw strong economic growth that produced modest realized gains largely from equity stubs and warrants attached to direct loans, particularly second-lien and mezzanine loans which were a greater fraction of the CDLI prior to 2008.

The first period of significant realized losses includes the three years from 2008 through 2010 and is defined by the 2008 Financial Crisis and its aftermath. During that time, cumulative realized losses for the CDLI equaled -10.16%.

[6] ASC 820 (previously FAS 157) defines “fair value” as “*the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date*.” Assets with a value that cannot be determined by observable measures, which would include the direct loans in the CDLI, are considered Level 3 assets (illiquid) and where valuation models are used to determine fair value. Best practice is to use an independent, third-party valuation firm to set or recommend fair value.

[7] An exception might be venture debt, where equity and warrants are offered by borrowers as enhancements, among others.

[8] Default and recovery rates are frequently reported for high yield bonds and loans. The credit loss rate equals the default rate multiplied by one minus the recovery rate.

We frequently use this 3-year -10.16% cumulative loss as a basis to stress test direct loan portfolios.[9]

CDLI realized losses were relatively non-existent during the three-year period from 2012 to 2014 following the Financial Crisis. The second period of significant realized losses occurred during the 2015 Oil Crisis and a disruption in traditional retail caused realized losses to increase. These realized losses peaked at -1.86% for the four quarters ending June 2017 but declined over the subsequent 2.75 years ending March 31, 2020, to -1.00%.

COVID, starting in 2020, represents the third period of significant realized losses. The COVID recession produced realized losses equal to -3.30%, encompassing all realized losses during calendar year 2020.

In summary, during the three most troubled periods for the CDLI, realized loss rates equaled -10.16% (Financial Crisis), -1.86% (Oil Crisis) and -3.30% (COVID). Unrealized losses totaling over 2% in 2022 foreshadowed significant realized losses in the first three quarters of 2023. However, realized losses fell in the fourth quarter, perhaps a harbinger of low loss rates ahead.

Exhibit 8 shows realized losses for CDLI, high yield bonds, and leveraged loans over a 19-year period ending 2023.

Exhibit 8: 19-Year Credit Loss Rates (2005 to 2023)

	High Yield Bonds[a]			Leveraged Loans[a]			CDLI Middle Market Debt[b]
	Default Ratio	Recov Rate	Credit Loss	Default Ratio	Recov Rate	Credit Loss	Credit Loss
2005	2.8%	56%	1.23%	3.0%	84%	0.48%	-0.89%
2006	0.9%	55%	0.41%	0.5%	84%	0.08%	-0.63%
2007	0.4%	55%	0.18%	0.2%	69%	0.06%	-1.74%
2008	2.3%	27%	1.68%	3.7%	58%	1.55%	0.59%
2009	10.3%	36%	6.59%	12.8%	61%	4.99%	6.91%
2010	0.8%	41%	0.47%	1.8%	71%	0.52%	2.96%
2011	1.7%	49%	0.87%	0.4%	67%	0.13%	1.78%
2012	1.3%	53%	0.61%	1.4%	55%	0.63%	0.60%
2013	0.7%	53%	0.33%	1.7%	69%	0.53%	0.19%
2014	2.9%	48%	1.51%	4.3%	73%	1.16%	-0.01%
2015	1.8%	25%	1.35%	1.7%	48%	0.88%	0.70%
2016	3.6%	31%	2.48%	1.5%	63%	0.56%	1.41%
2017	1.3%	53%	0.60%	1.8%	57%	0.79%	1.75%
2018	1.8%	40%	1.08%	1.7%	63%	0.64%	0.93%
2019	2.6%	23%	2.02%	1.6%	49%	0.84%	0.87%
2020	6.2%	22%	4.84%	4.0%	48%	2.08%	3.30%
2021	0.3%	50%	0.15%	0.5%	56%	0.22%	-0.27%
2022	0.8%	55%	0.38%	1.0%	60%	0.39%	0.09%
2023	2.1%	33%	1.41%	2.1%	38%	1.30%	0.86%
Inception	2.35%	42%	**1.48%**	2.41%	62%	**0.94%**	**1.02%**
Last 10 Yrs	2.34%	38%	**1.58%**	2.03%	56%	**0.88%**	**0.96%**

[a] Source: JPMorgan Markets
[b] Source: Cliffwater Direct Lending Index (Realized Credit Losses)

[9] The largest four quarter (one year) realized loss was -6.91% in 2009.

Exhibit 8 shows that average annual realized credit losses for middle market loans (1.02%), represented by the CDLI, are slightly higher than for leveraged loans (0.94%).

Net Unrealized Gains (Losses)

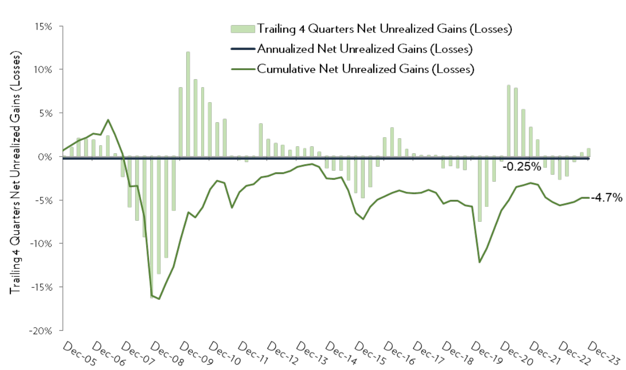
Unrealized gains or losses will reflect changes in overall market credit spreads or will harbinger expected but uncertain future credit losses in the same way that banks book reserves against future realized losses. CDLI unrealized gains or losses come from quarter-to-quarter changes in (independent) valuations of existing loans.

The CDLI experienced significant -6.80% net unrealized losses during the first quarter of 2020, the largest since the fourth quarter of 2008 when net unrealized losses totaled -9.71%. Those first quarter 2020 unrealized losses of 6.80% were entirely reversed and more so with 10.33% in unrealized gains over the subsequent seven quarters ending December 31, 2021.

Unrealized losses began anew in 2022, totaling -2.64% for the full year. Some of those unrealized losses are now being realized in 2023 (-0.86%) with an offsetting unrealized gain (+0.92%).

Exhibit 9 reports rolling four quarter and cumulative net unrealized gains (losses) for the CDLI. We would expect a long-term cumulative return for unrealized gains (losses) close to zero because, as discussed earlier, unrealized losses will either convert to net realized losses upon a credit default, or they will be reversed when principal is fully repaid. For example, unrealized losses expanded in 2007-08, again in 2013-14 and most recently in 2020, anticipating rising realized losses ahead. During all three periods unrealized losses reversed to unrealized gains as markets recovered and some portion of those unrealized losses converted into realized losses. And that pattern has again played out over the last two years.

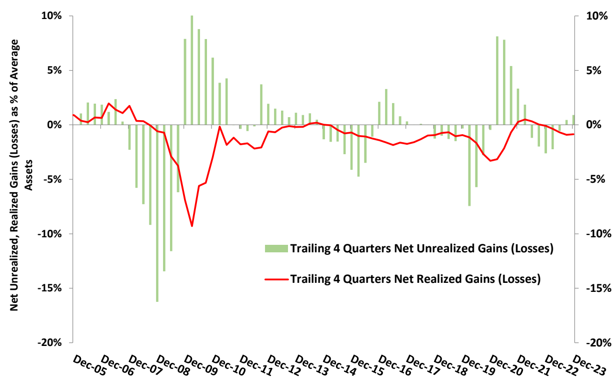
Exhibit 9: CDLI Net Unrealized Gains (Losses)
(Trailing 4 quarters and since inception ending Dec 2023)



Unrealized Losses as a "Loan Loss Reserve"

A key observation is that unrealized loan write-downs in times of severe stress, like 2008, 2015 and 2020, have well exceeded subsequent realized losses. This is illustrated in Exhibit 8 where unrealized losses, shown in green bars, peak a few quarters before realized losses, shown in the red line, and importantly, the unrealized losses overestimate subsequent realized losses. These relationships suggest that private loan valuations do a good, if not conservative, job in forecasting realized losses.

Exhibit 10: CDLI Unrealized versus Realized Gains (Losses)
(Trailing 4 quarters and since inception ending Dec 2023)



Loan Valuation

Expected future gains or losses, realized or unrealized, are partially telegraphed by the ratio of loan "fair value" to amortized cost, the latter representing remaining principal value.[10] This ratio of fair value to cost is shown in Exhibit 11 for the CDLI together with similar ratios for high yield bonds, represented by the Bloomberg High Yield Bond Index, and broadly syndicated bank loans, represented by the Morningstar LSTA US Leveraged Loan 100 Index.

Exhibit 11: Comparison of Market Value versus Cost (Principal) Value for CDLI with High Yield Bond and Bank Loan Prices, Sep 2004 to Dec 2023[11]

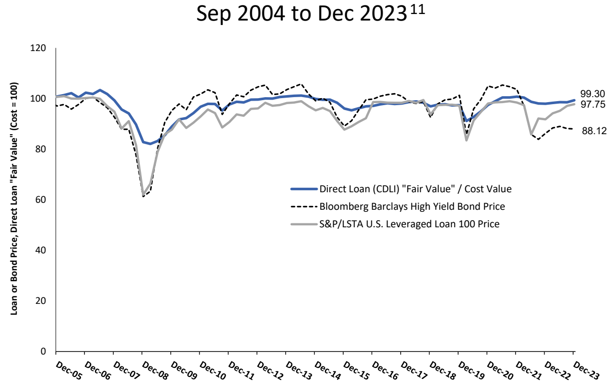


Exhibit 11 shows that valuations for all three indices fell sharply in the first half of 2022, due to the Russian Invasion, but have since been recovering.

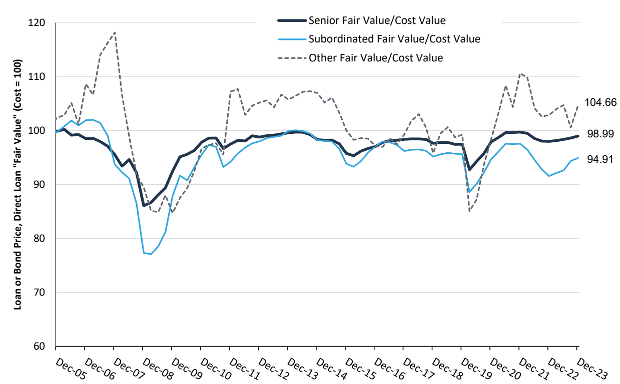
Exhibit 11 shows the similarity in valuation over time between direct loans, high yield bonds, and bank loans. The direct loans in the CDLI are valued quarterly using "fair value" accounting rules while high yield bonds and bank loan prices are market (broker) determined. Despite differing sources for price Exhibit 11 shows that direct loan valuation follows the high yield bond and bank loan markets though with somewhat less volatility.

Senior versus Subordinated Loan Pricing

Exhibit 12 groups middle market loans into senior and subordinated subsets to better understand pricing and volatility associated with credit seniority. The heavier blue line represents the asset-weighted average price for senior loans (including unitranche) and the thinner line represents the same for subordinated loans. The dashed line represents the asset-weighted price for equity-related holdings (equity, warrant, CLO equity, other) within CDLI.

Clear valuation differences exist between senior and subordinated middle market loans within the CDLI. Senior loans are less volatile and hold their value better in down markets compared to subordinated loans.

Exhibit 12: Comparison of Market Value versus Cost (Principal) Value for Senior and Subordinated Loans within the CDLI, Sep 2004 to Dec 2023



Total Return

Exhibits 13 reports trailing four quarter CDLI total return, combining income (Exhibit 2), net realized gain(loss) (Exhibit 7), and net unrealized gain(loss) (Exhibit 9). Exhibit 14 reports quarterly CDLI returns. These quarterly returns show that except for severe (3 Sigma) events, quarterly CDLI returns are mostly positive with modest

[10] Most loans in the CDLI are directly originated, not secondary purchases, therefore, cost value equates to principal value.

[11] "Direct Loan (CDLI) "Fair Value" / Cost Value" is calculated based on the SEC filings of the BDCs that comprise the CDLI.

downside, particularly compared to most other asset classes.

Exhibit 13: CDLI Total Return (trailing four quarters)
Sep 2004 to Dec 2023

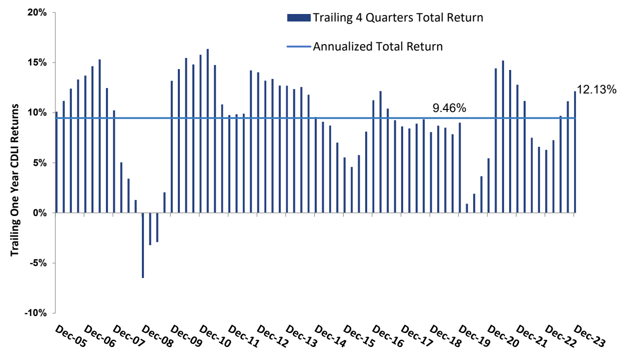


Exhibit 14: Quarterly CDLI Total Return
Sep 2004 to Dec 2023

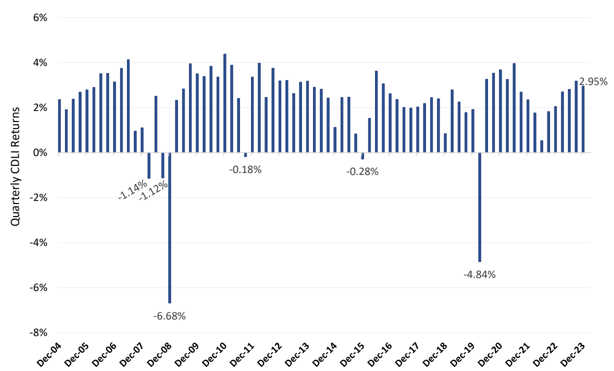


Exhibit 15 compares CDLI calendar year returns to high yield bonds, syndicated loans, and investment grade bonds. The asset class with the highest calendar year return is highlighted.

Several observations are worth noting:

1. The CDLI earned returns well above the three public fixed income indices, both for the last 10-year period and from inception of the CDLI index.
2. The CDLI outperformed the three other public debt indices in 12 of the 19 calendar years.
3. In years when the CDLI underperforms the public indices, it generally trails by a small amount.
4. The CDLI has demonstrated far lower downside risk compared to the public indices. The lowest calendar year return for the CDLI equals -6.50%, compared to -26.15%, -29.10%, and -13.01% for the Bloomberg High Yield, the Morningstar LSTA US Leveraged Loan, and the Bloomberg Aggregate Bond indices, respectively.

Exhibit 15: Calendar Year Return Comparison: 2005-2023

Calendar Year	Cliffwater Direct Lending Index (CDLI)	Bloomberg High Yield Bond Index	Morningstar LSTA US Leveraged Loan Index	Bloomberg Aggregate Bond Index
2005	10.10%	2.74%	5.06%	2.43%
2006	13.70%	11.87%	6.74%	4.33%
2007	10.23%	1.88%	2.08%	6.96%
2008	-6.50%	-26.15%	-29.10%	5.24%
2009	13.18%	58.21%	51.62%	5.93%
2010	15.79%	15.11%	10.13%	6.56%
2011	9.75%	4.98%	1.51%	7.86%
2012	14.03%	15.81%	9.67%	4.23%
2013	12.68%	7.46%	5.29%	-2.02%
2014	9.57%	2.46%	1.59%	5.94%
2015	5.54%	-4.46%	-0.70%	0.57%
2016	11.24%	17.14%	10.11%	2.66%
2017	8.62%	7.50%	4.14%	3.55%
2018	8.07%	-2.08%	0.46%	0.02%
2019	9.00%	14.20%	8.65%	8.73%
2020	5.45%	7.11%	3.12%	7.51%
2021	12.78%	5.28%	5.20%	-1.54%
2022	6.29%	-11.19%	-0.77%	-13.01%
2023	12.13%	13.45%	13.32%	5.53%
L10 Years	**8.84%**	**4.59%**	**4.41%**	**1.81%**
Inception	**9.45%**	**6.35%**	**4.82%**	**3.11%**

Risk Premiums

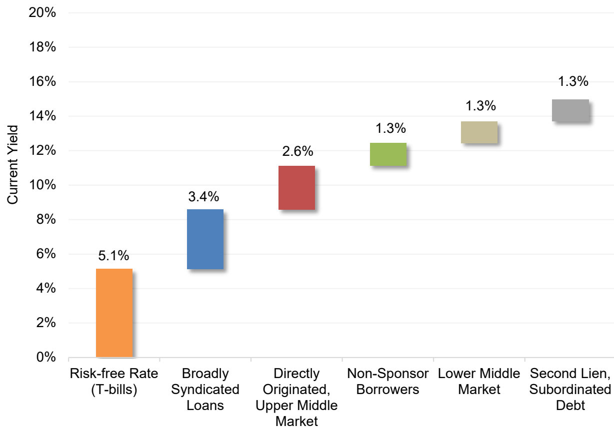
Cliffwater decomposes gross yields for the CDLI into five major risk factors, excluding the risk-free rate. Yield premiums associated with each of these five risk factors are calculated quarterly. We calculate these yield premiums through a cross-sectional regression where the dependent variable is total portfolio yield[12] and the three independent variables are: (1) expected/actual share of sponsor/non-sponsor lending (measured by percentage allocations to sponsor or non-sponsor lending); (2) expected/actual portfolio company size (measured by average EBITDA); and (3) loan seniority (measured by percentage allocations to senior or subordinated debt). The independent variables are scaled such that higher values represent higher expected risk (e.g., non-sponsor borrower, smaller borrower, and more junior debt).

By design, the intercept term is the yield on private direct loans that are larger sized, sponsor-backed, and senior. The yield on a broadly syndicated loan, measured by the Morningstar LSTA U.S. Leveraged Loan Index yield, is subtracted from the intercept yield to separately capture the "Directly Originated, Upper Middle Market" yield premium, or what is also commonly called the "liquidity premium." The yield on the broadly syndicated loan is

[12] Yield for middle market loans is defined as trailing four-quarter interest income.

further divided into the risk-free T-bill rate and a liquid credit premium for non-investment grade broadly syndicated loans. Exhibit 16 reports the five yield premiums, averaged over the four quarters ending December 31, 2023.

Exhibit 16: Risk Premiums in Direct US Middle Market Loans[13]



The bars displayed are additive, where total yield equals the sum of each bar's value multiplied by the portfolio exposure to the risk factor, which can be fractional. This allows investors to estimate the yield for a direct lending portfolio by multiplying portfolio exposure to each factor by the factor's yield premium.

The left-most starting point in Exhibit 16 is the risk-free rate, which measured 5.1% for the trailing four quarters. The five risk premiums shown from left to right are:

1. *Broadly Syndicated Loans*. The additional yield from credit risk found in broadly syndicated loans ("BSL"), measured by the Morningstar LSTA US Leveraged Loan Index over the trailing four quarters, equaled 3.4% on December 31, 2023.[14]

2. *Directly Originated, Upper Middle Market.* There was a 2.6% yield premium for moving from liquid BSL to illiquid direct senior loans backed by upper middle market, sponsor-driven borrowers. We view this yield premium as mostly a "liquidity premium" because underlying loan characteristics are most like BSL.

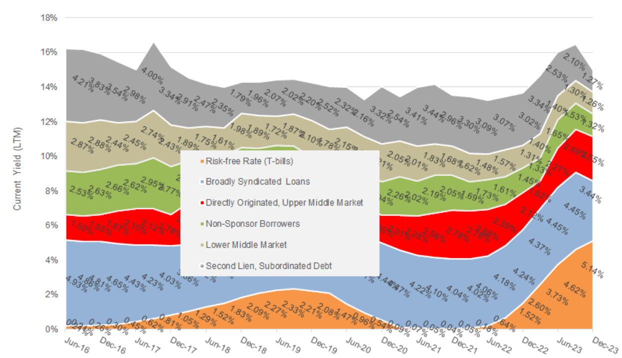
3. *Non-Sponsor Borrowers*. A 1.3% yield premium existed for holding debt of companies not controlled by private equity firms, something we refer to as the "governance premium." Non-sponsor borrowers might be viewed as riskier because management behavior, particularly under corporate distress, could be less predictable and costlier to lenders compared to sponsor-backed borrowers. Additionally, these deals may be more difficult to source and/or may involve less sophisticated borrowers which can drive more lender-friendly terms and pricing.

4. *Lower Middle Market.* We also found a 1.3% yield premium for lending to lower middle market borrowers, companies with EBITDA less than $10 million, compared to upper middle market borrowers with EBITDA over $100 million. This could be the "size premium" often found in other asset classes.

5. *Second Lien, Subordinated Debt.* Coincidentally, subordinated loans also had a 1.3% higher yield when compared to senior loans within the US middle market.

Exhibit 17 plots the measured risk premiums over the last seven years, the period over which Cliffwater has been conducting these measurements.

Exhibit 17: Time Varying Risk Premiums[13]
Jun 2016 to Dec 2023



Senior-Only Direct Loans (CDLI-S)

CDLI-S is comprised of only senior loans within the CDLI and was created in 2017 to address the comparative performance of senior middle market loans and the entire universe of middle market loans represented by CDLI.

CDLI-S follows the same construction methodology as CDLI but only includes loans held by managers of BDCs that have an investment style that Cliffwater has determined clearly focuses on senior secured loans. Cliffwater generates the same quarterly performance and portfolio data for CDLI-S as is available for CDLI, except that the

[13] Cliffwater research based on public information and confidential responses of direct lending managers to Cliffwater inquiries. Source information may be over a year old and subject to interpretation by direct lending manager respondents. Risk premiums are estimates only and estimated using a cross-sectional three-factor regression of public and private BDCs' four quarter gross yields against Cliffwater's best estimates of each manager's loan seniority, expected/actual portfolio company size by average EBITDA and expected/actual share of sponsor vs. non-sponsor lending. Broadly syndicated loan yield as reported by the interest return of the Morningstar LSTA U.S. Leveraged Loan Index. See Chapter 9, Private Debt: Opportunities in Corporate Direct Lending, Stephen L. Nesbitt (Wiley 2019) for a detailed description of this analysis.

[14] Yield for broadly syndicated loans is defined as trailing 12-month interest income.

beginning date is September 30, 2010, for CDLI-S compared to September 30, 2004, for CDLI. The shorter historical series for CDLI-S is attributable to the post-2008 introduction of most senior-only direct lending strategies. As with the CDLI, CDLI-S should not suffer from biases (backfill and survivorship) found in other databases because all source data comes from required SEC filings.

Exhibit 18: CDLI, CDLI-S Comparison as of Dec 2023

	CDLI-S	CDLI
# Loan Holdings	4,178	14,827
Total Assets	$114b	$315b
Non-Accrual (as % of Cost)	0.5%	1.5%
Implied Recovery Rate	67%	52%
% Senior	93%	81%

Exhibit 18 provides some key differences between the CDLI and CDLI-S indices. Loans in the CDLI-S are generally represented by larger borrowers with a track record of lower realized losses and lower rate of non-accrual status.

Exhibit 19 reports the performance for CDLI-S over its entire 13.25-year history with comparisons to the broader CDLI. The 8.23% inception return for CDLI-S is attractive but remains 1.53% below the 9.76% CDLI return for the same period. CDLI-S interest income (yield) was 2.28% below that for the CDLI. However, that deficit was partially offset by -0.15% realized losses for the CDLI-S compared to the -1.00% CDLI realized loss rate from the September 2010 CDLI-S inception.

Exhibit 19: Senior Direct Loan Performance

CDLI-S(enior) Returns	Q4 2023	Last Four Quarters	Last 5 Years*	Last 10 Years*	From CDLI-S Incep. Sept 2010
CDLI-Senior Total Return**	**2.97%**	**12.29%**	**8.61%**	**8.11%**	**8.23%**
= Income	2.95%	11.78%	8.95%	8.47%	8.46%
+/- Net Realized Gains(Losses	-0.05%	-0.47%	-0.34%	-0.19%	-0.15%
+/- Net Unrealized Gains(Loss	0.07%	0.94%	0.03%	-0.21%	-0.10%

CDLI Returns	Q4 2023	Last Four Quarters	Last 5 Years*	Last 10 Years*	From CDLI-S Incep. Sept 2010
CDLI Total Return**	**2.95%**	**12.13%**	**9.09%**	**8.84%**	**9.76%**
= Income	2.99%	12.08%	9.99%	10.28%	10.74%
+/- Net Realized Gains(Losses	-0.08%	-0.86%	-1.00%	-0.98%	-1.00%
+/- Net Unrealized Gains(Loss	0.03%	0.92%	0.15%	-0.37%	0.09%

* Annualized returns

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

Venture-Only Direct Loans (CDLI-V)

CDLI-V is comprised of only venture-backed loans within the CDLI, to investigate the comparative performance of this lesser-known type of lending against the entire universe of middle market loans represented by CDLI.

CDLI-V follows the same construction methodology as CDLI but only includes loans held by managers of BDCs that have an investment style that Cliffwater has determined clearly focus on venture lending. Cliffwater generates the same quarterly performance and portfolio data for CDLI-V as is available for CDLI, except that the beginning date is March 31, 2005 for CDLI-V compared to September 30, 2004 for CDLI. As with the CDLI, CDLI-V should not suffer from biases (backfill and survivorship) found in other databases because all source data comes from required SEC filings.

Exhibit 20 provides some key differences between the CDLI and CDLI-V indices.

Exhibit 20: CDLI, CDLI-V Comparison as of Dec 2023

	CDLI-V	CDLI
# Loan Holdings	1,045	14,827
Total Assets	$8.8b	$315b
Non-Accrual (as % of Cost)	4.0%	1.5%
Implied Recovery Rate	48%	52%
% Senior	93%	81%

Exhibit 21 reports performance for CDLI-V over its entire 18.75-year history with comparisons to the broader CDLI for the same period.

Exhibit 21: Venture Direct Loan Performance

CDLI-V Returns	Q4 2023	Last Four Quarters	Last 5 Years*	Last 10 Years*	From CDLI-V Incep. Mar 2005
CDLI-Venture Total Return**	**2.60%**	**11.98%**	**11.53%**	**11.40%**	**11.74%**
= Income	3.67%	15.22%	13.02%	13.13%	13.14%
+/- Net Realized Gains(Losses	-1.11%	-2.16%	-1.10%	-0.95%	-0.92%
+/- Net Unrealized Gains(Loss	0.05%	-0.77%	-0.28%	-0.64%	-0.37%

CDLI Returns	Q4 2023	Last Four Quarters	Last 5 Years*	Last 10 Years*	From CDLI-V Incep. Mar 2005
CDLI Total Return**	**2.95%**	**12.13%**	**9.09%**	**8.84%**	**9.47%**
= Income	2.99%	12.08%	9.99%	10.28%	10.91%
+/- Net Realized Gains(Losses	-0.08%	-0.86%	-1.00%	-0.98%	-1.08%
+/- Net Unrealized Gains(Loss	0.03%	0.92%	0.15%	-0.37%	-0.27%

* Annualized returns

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

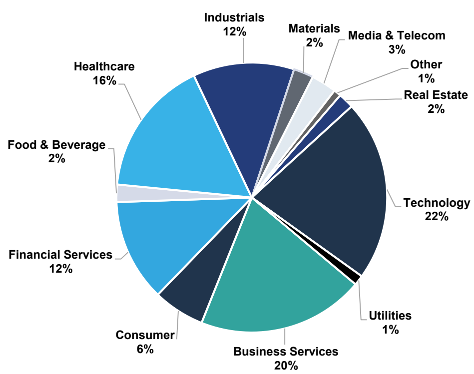
Venture lending, as represented by CDLI-V, has performed well from its inception, achieving an 11.74% total return compared to 9.47% for the CDLI for the same period. The reason for the higher return primarily lies with higher interest income which equaled 13.14% from inception compared to 10.91% for CDLI. This higher interest income for CDLI-V, however, did not come with higher realized losses, which total -0.92% from inception for CDLI-V, compared to a -1.08% realized loss rate for CDLI for the same period.

Unfortunately, our CDLI-V return series does not include the period from 2000 to 2003 when venture capital was hardest hit from the Internet Bubble. We would expect much higher realized losses from venture lending for that period, which is not captured by our data.

Diversification

Exhibit 22 displays industry diversification for the 14 thousand loans in the CDLI as of December 31, 2023. Weights are determined by the total fair value of the loans within the CDLI.

Exhibit 22: CDLI Industry Weights as of Dec 2023

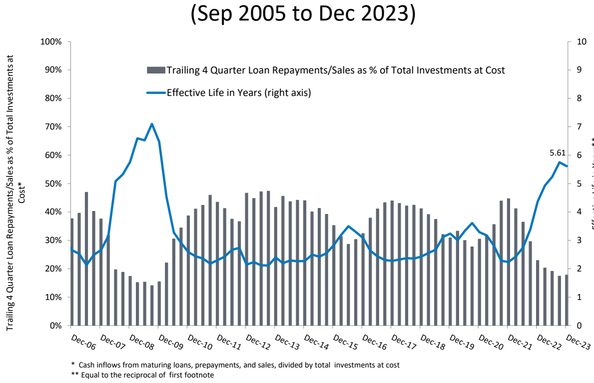


The CDLI remains very diversified by industry group with weights not dissimilar from market capitalization weights for the Russell 2000 Equity Index, but for the absence of a banking sector.

Effective Loan Life

Exhibit 23 updates the effective life of direct loans in the CDLI.

Exhibit 23: Loan Repayment and Effective Life
(Sep 2005 to Dec 2023)



The blue bars measure loan repayment activity through the third quarter, primarily from maturities, prepayments and, to a lesser extent, sales as a percentage of loan cost. The inverse of this ratio measures effective loan life which is represented by the red line and measured by the right axis. The effective loan life on December 31, 2023, equaled 5.61 years, down slightly from 5.81 in the prior quarter, but still well above its 3.20 historical average.

The rising effective loan life throughout 2022 and 2023 is consistent with a lower level of principal repayments experienced in a slower M&A marketplace.

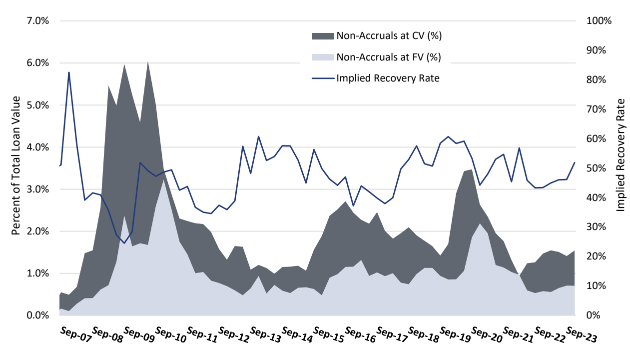
Non-Accruals and Implied Recoveries

Another indicator of future realized loss is the percentage of loans on non-accrual status, meaning loans that are no longer current in paying interest income and would be considered in default.

Exhibit 24 provides non-accrual loan amounts both as a percentage of cost value and fair value. Also shown in Exhibit 24 is the implied recovery rate, equal to the fair value of loans on non-accrual divided by the cost (par) value of those same loans. It is this implied recovery rate that should be compared to the often-cited recovery rates for high yield bonds and bank loans. As Exhibit 24 shows, non-accruals were on the rise, climbing from a low of 0.93% on March 31, 2022, to 1.55% on March 31, 2023, a level where they have remained over the past three quarters. The 1.54% December 31, 2023 non-accrual rate remains well below its 2.19% average over the 16.5 years Cliffwater has measured this statistic for CDLI.

Recovery rates have been consistent over the measurement period, averaging around 50% as shown in Exhibit 20 (right axis). These recovery rates seem right given that senior broadly syndicated loan recovery rates average close to 70% and subordinated high yield bond recovery rates average 40%.

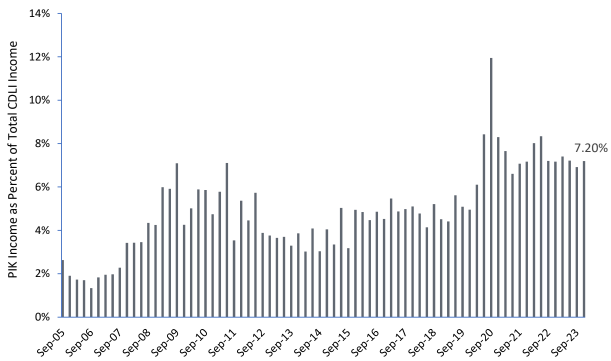
Exhibit 24: CDLI Non-Accruals and Recovery Rates
(Sep 2007 to Dec 2023)



Payment-In-Kind (PIK) Income

Interest income from a loan portfolio is mostly comprised of quarterly cash payments. However, in some situations interest is paid in an additional non-cash principal, referred to as payment-in-kind or PIK income. Generally, PIK income is less desirable than cash interest income and high proportions of PIK can indicate a deterioration in loan quality. Exhibit 25 shows the history of CDLI PIK income as a percent of total CDLI Income.

Exhibit 25: CDLI PIK Income as % of Total Income, Sep 2005 to Dec 2023



PIK income is another indicator of market stress, rising during periods of economic strain and falling during periods of economic growth. PIK income had been on the rise after COVID, reaching 12% at September 2020, but declined shortly thereafter and has remained at approximately 7% since.

Disclosures

The views expressed herein are the views of Cliffwater LLC ("Cliffwater") only through the date of this report and are subject to change based on market or other conditions. All information has been obtained from sources believed to be reliable but its accuracy is not guaranteed. Cliffwater has not conducted an independent verification of the information. No representation, warranty, or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained in this report. This report is not an advertisement, is being distributed for informational and discussion purposes only, should not be considered investment advice, and should not be construed as an offer or solicitation of an offer for the purchase or sale of any security. The information herein does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. Cliffwater shall not be responsible for investment decisions, damages, or other losses resulting from the use of the information. Past performance is not indicative of future returns, which may vary. Future returns are not guaranteed, and a loss of principal may occur.

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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. Cliffwater is a service mark of Cliffwater LLC.

The Cliffwater Direct Lending Index (the "CDLI") seeks to measure the unlevered, gross of fees performance of U.S. middle market corporate loans, as represented by the underlying assets of Business Development Companies ("BDCs"), including both exchange-traded and unlisted BDCs, subject to certain eligibility requirements. The CDLI is an asset-weighted index that is calculated on a quarterly basis using financial statements and other information contained in the U.S. Securities and Exchange Commission ("SEC") filings of all eligible BDCs. 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.

The CDLI: Senior-Only (CDLI-S) is comprised of six BDC direct loan portfolios within the CDLI that Cliffwater has determined focus on investing in senior secured direct corporate loans. Data begins on September 30, 2010. Total return is comprised of income return, net realized gains (losses), and net unrealized gains (losses). Other industry participants may make different determinations regarding the focus of these BDC portfolios.

The CDLI-V is comprised of only venture-backed loans within the CDLI held by managers of BDCs that have an investment style that Cliffwater has determined clearly focus on venture lending. Other industry participants may make different determinations regarding the focus of these BDC portfolios.

Past performance of the CDLI, CDLI-S or CDLI-V is not an indication of future results. It is not possible to invest directly in the CDLI, CDLI-S or CDLI-V. The CDLI, CDLI-S and CDLI-V 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, CDLI-S and CDLI-V have 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, CDLI-S, CDLI-V or a product that is intended to track the performance of the CDLI, CDLI-S or CDLI-V. 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, CDLI-S or CDLI-V performance shown.

Any information presented prior to the Launch Date of the CDLI (September 30, 2015), CDLI-S (September 30, 2017) and CDLI-V (June 30, 2020) 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 and CDLI-S were 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 reconstituted and the eligibility criteria for the CDLI.

Prospective application of the methodology used to construct the CDLI, CDLI-S and CDLI-V 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, CDLI-S and CDLI-V. 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, CDLI-S and CDLI-V methodology and selection of the CDLI, CDLI-S and CDLI-V 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, CDLI-S and CDLI-V 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 (a substantial majority (approximately 75%) of reported total assets are represented by direct loans made to corporate borrowers, as categorized by each BDC and subject to Cliffwater's discretion) to the BDC. In addition, the criteria regarding the timing of SEC filings was not applied for periods prior to the Launch Date. All other eligibility criteria were applied to determine whether to include the BDC in the historical CDLI, CDLI-S or CDLI-V, as applicable, composition and return. Index returns generally are published 75 days after calendar quarter-end.

The CDLI, CDLI-S and CDLI-V 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.

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If a BDC meets the eligibility criteria, but has not filed its report on Form 10-K or 10-Q with the SEC at the time the index is reconstituted, asset information from its report will be included in the index at the time of the next reconstitution.

References to market or composite indices (such as the S&P 500), 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.

The Bloomberg U.S. High Yield Index (Bloomberg 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.

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