2020 Q1 Report on U.S. Direct Lending

Private debt is a rapidly growing asset class among institutional investors, a trend that is expected to continue. This report focuses on first quarter 2020 performance for one of the largest segments of private debt, U.S. middle market corporate lending.

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The Cliffwater Direct Lending Index

Our performance analysis relies upon the Cliffwater Direct Lending Index, or CDLI, an asset-weighted index of over 6,000 directly originated middle market loans totaling $115 billion in assets at March 31, 2020.[1] The CDLI is a first-of-its-kind index used by institutional investors to better understand asset class characteristics and to benchmark manager performance.

Launched in 2015, the CDLI was reconstructed back to 2004 using quarterly SEC filings required of business development companies, whose primary asset holdings are U.S. 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 www.CliffwaterDirectLendingIndex.com for further information on the CDLI.

CDLI Returns[2]

	First Quarter 2020	Trailing 4 Quarters	From Sept 2004 Inception*
Interest Income	2.31%	10.09%	11.03%
+ Net Realized Gains (Losses)	-0.35%	-1.15%	-1.04%
+ Net Unrealized Gains (Losses)	-6.80%	-7.44%	-0.83%
= CDLI Total Return**	**-4.84%**	**0.92%**	**9.03%**

* Annualized returns through March 31, 2020.
** Return subcomponents may not add exactly to total return due to compounding effects.

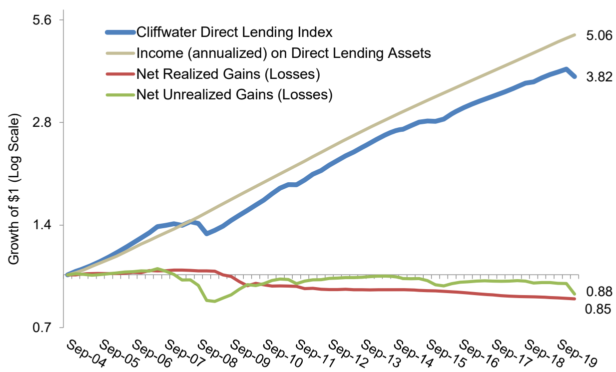
The CDLI experienced a **-4.84% total return in the first quarter**, a significant loss attributable to COVID related unrealized losses. Interest income continues to fall, equaling 2.31% for the first quarter, down from 2.36% in interest income during the fourth quarter. The drop in yield was due to falling Libor, the standard reference rate in direct loans. The **0.92% CDLI total return for the trailing year** was well below the **9.03% CDLI since inception total return** due to lower interest income and COVID unrealized losses.

[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 unlisted 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.

Net realized losses for the CDLI equaled -0.35% for the first quarter, up from the -0.30% in realized losses for the fourth quarter and bringing the trailing four quarter realized losses to -1.15%, up from -0.94% last quarter. From inception, CDLI net realized losses equal −1.04%, annualized, roughly the same as realized losses for broadly syndicated bank loans for the same period.

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

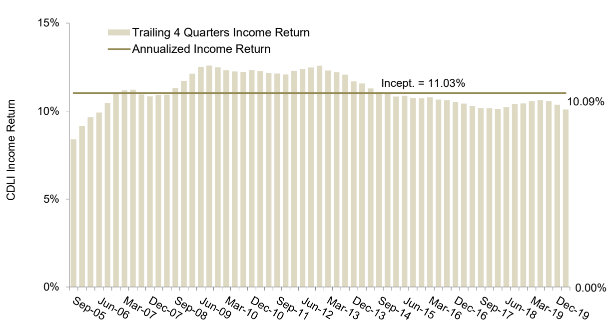
Exhibit 1: Components of CDLI Returns
(Sept 2004 to Mar 2020)



Income Return

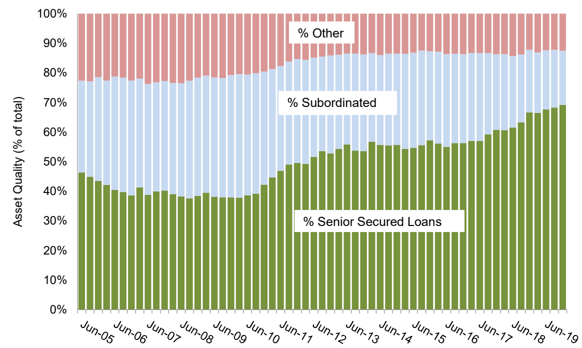
Total returns have historically been driven by consistent double-digit income returns, averaging 11.03% over the lifetime of the CDLI, and with a historical range between 10% and 12%. Higher yields have been associated with economic distress and lower yields associated with economic growth. Exhibit 2 shows historical trailing four quarter income returns for the CDLI, starting at its September 2004 inception.

Exhibit 2: CDLI Income Return (trailing four quarters ending Mar 2020)



The decline in yield spreads within the CDLI over the last few years is a result of credit spread compression and the increase in lower yielding senior loans in the CDLI, and commensurate decline in second lien and subordinated loans. The percentage of senior loans in the CDLI has grown from 38% at the end of 2009 to 72% at March 31, 2020. Exhibit 3 shows (in green) the jump in senior loans, both immediately after the 2008 Financial Crisis and over the last three years.

Exhibit 3: Percentage of Senior Loans in CDLI

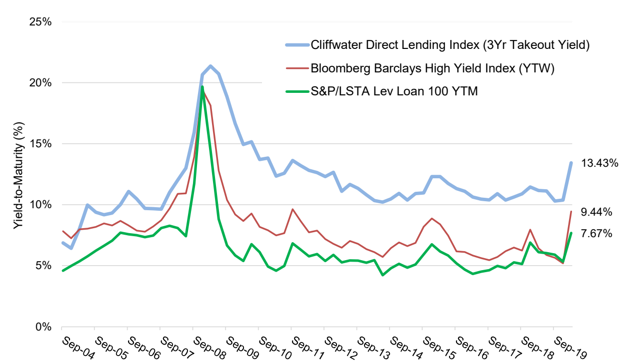


Yield-to-Maturity

Total return investors prefer to think of yield through the lens of "yield-to-maturity," reflecting current interest income plus the amortization of unrealized gains or losses. Unrealized gains or losses equal the difference between current fair value and principal paid at maturity (or cost value if the loan was not issued at par).

While most direct loans have a 5-year stated maturity, refinancing and corporate actions reduce their average life to approximately 3 years. We calculate a "3Yr Takeout Yield" for the CDLI[3], which is compared to an equivalent yield-to-worst calculation for broadly syndicated high yield bonds and leveraged loans in Exhibit 4.

Exhibit 4: CDLI, High Yield Bond, and Leveraged Loan Yield-to-Maturity Comparisons, Sep 2004 to Mar 2020



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

The CDLI 3yr takeout yield jumped to 13.34% at March 31, 2020. By comparison, the yield-to-worst for the Bloomberg Barclays High Yield Index and S&P/LSTA Leveraged Loan Index rose to 9.44% and 7.67%, respectively.

The yield spreads between the CDLI and broadly syndicated indices have remained large and consistent since the 2008 Financial Crisis. The 10-year average yield-to-maturity spread between the CDLI and the Bloomberg Barclays High Yield and S&P/LSTA Leveraged Loan Indices equals 4.64% and 6.19%, respectively.

Net Gains (Losses)

While the CDLI income return component largely drives long term total return, net gains (losses) can significantly impact returns over shorter time periods and can be very important in differentiating individual manager (lender) performance.[4]

Net gains (losses) are defined as the periodic change in loan valuation. It is the equivalent of 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 that reflects 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 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.[5]

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.[6]
- 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 (par) 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[7] 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.

This background should help put the realized losses and unrealized gains reported for the CDLI over the quarter and trailing year in better context.

Net Realized Gains (Losses)

First quarter CDLI net realized losses equaled -0.35% and the trailing four quarter net realized loss equaled -0.94%. From its 2004 inception through March 31, 2020, the annual CDLI realized loss rate equaled -1.04% and realized losses over the past couple years have averaged at about that long term annual rate. Exhibit 5 reports CDLI trailing four quarter net

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

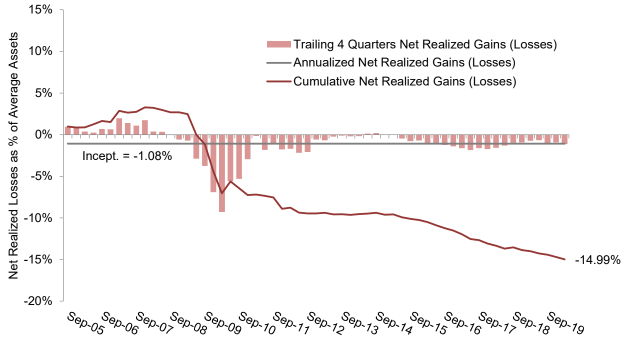
[5] ASC 820 (previously FAS 157) defines "fair value" as "*the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date*." Assets with a value that cannot be determined by observable measures, which would 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 outside valuation firm to independently set or recommend fair value.

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

[7] Default and recovery rates are more frequently reported for high yield bonds and loans. The credit loss rate is equal to the default rate multiplied by one minus the recovery rate.

realized gains (losses) and since inception cumulative net realized gains (losses).

Exhibit 5: CDLI Net Realized Gains (Losses)
(Trailing four quarters and since inception)



CDLI realized losses can be divided into four 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 second period 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%. We frequently use this three-year, -10.16% cumulative loss as a basis to stress test direct loan portfolios.[8]

CDLI realized losses were relatively non-existent during the three-year 2012 to 2014 period following the Financial Crisis. But 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 have declined over the subsequent two and three-quarter years ending March 31, 2020 to -1.00%, not too different from the -1.04% since inception realized loss ratio.

Net Unrealized Gains (Losses)

As discussed above, 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, the largest since the fourth quarter of 2008 when net unrealized losses totaled -9.71%.

Exhibit 6: CDLI Net Unrealized Gains (Losses)
(Trailing four quarters and since inception)

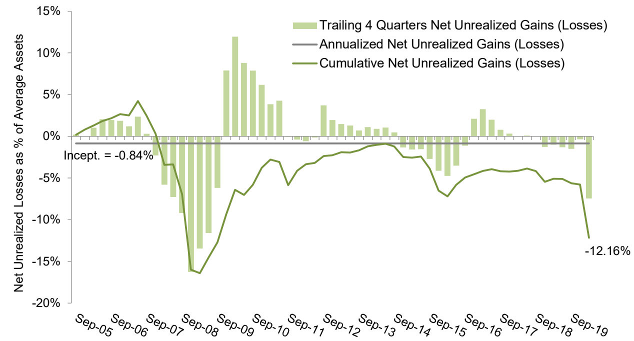
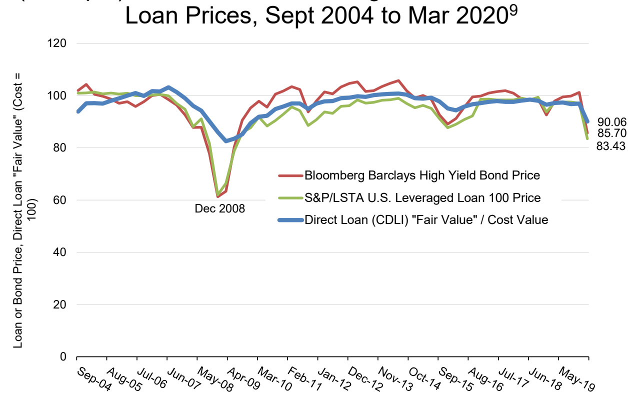


Exhibit 6 reports rolling four quarter and cumulative net unrealized gains (losses) for the CDLI. Cumulative and annualized net unrealized losses equaled -12.16% and -0.83%, respectively, since inception.

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 and again in 2013-14, anticipating rising realized losses ahead. During both periods unrealized losses fell as markets recovered and some portion converted into realized losses.

Expected future gains or losses are partially telegraphed by the ratio of loan value to amortized cost, the latter representing remaining principal value. This ratio of value to cost is shown in Exhibit 7 for the CDLI together with similar ratios for high yield bonds and broadly syndicated bank loans.

Exhibit 7: Comparison of Market Value versus Cost (Principal) Value for CDLI with High Yield Bond and Bank Loan Prices, Sept 2004 to Mar 2020[9]



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

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

The CDLI was valued at 90.06 at March 31, 2020, equal to a 9.94% discount from cost or principal value. This 9.94% discount represents the net unrealized loss embedded in the CDLI, which might suggest further realized losses exceeding 3% per year for the next three years.[10] The 9.94% valuation discount can also be interpreted as the equivalent of a *"loan loss reserve"* found in bank accounting.

Exhibit 7 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 determined. Despite differing sources for price, Exhibit 7 shows that direct loan valuation follows the high yield bond and bank loan markets though with less volatility

Total Return

Exhibit 8 reports trailing four quarter CDLI total return, combining the income return (Exhibit 2), net realized gain(loss) (Exhibit 5), and net unrealized gain(loss) (Exhibit 6) components. The 0.92% trailing four quarter CDLI total return ending March 31, 2020 was the fourth worse since inception of the CDLI.

Exhibit 8: CDLI Total Return (Trailing four quarters)
Sept 2004 to Mar 2020

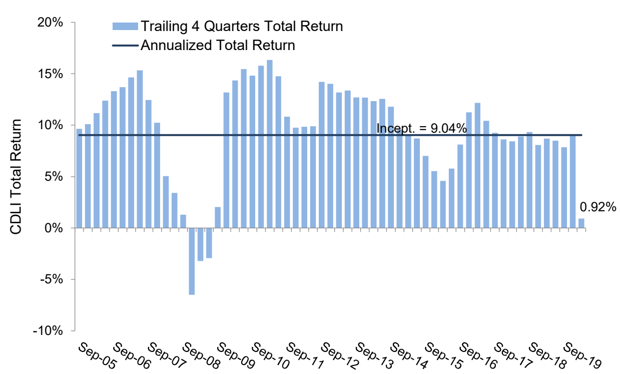


Exhibit 9 compares CDLI calendar year returns with returns for broadly syndicated high yield bonds and loans. The asset class with the highest calendar year return is highlighted.

The CDLI outperformed the two public debt indices in all but four calendar years. During those four years, broadly syndicated high yield bonds and loans were rebounding from stressed credit conditions in the prior year. In contrast, the CDLI has demonstrated greater consistency in calendar year performance.

Exhibit 9: Calendar Year Return Comparison, 2005 to 2019

Calendar Year	CDLI	Bloomberg Barclays High Yield Bond Index	S&P/LSTA Leveraged Loan Index
2005	10.10%	2.74%	5.06%
2006	13.70%	11.87%	6.74%
2007	10.23%	1.88%	2.08%
2008	-6.50%	-26.15%	-29.10%
2009	13.18%	58.21%	51.62%
2010	15.79%	15.11%	10.13%
2011	9.75%	4.98%	1.51%
2012	14.03%	15.81%	9.67%
2013	12.68%	7.46%	5.29%
2014	9.57%	2.46%	1.59%
2015	5.54%	-4.46%	-0.70%
2016	11.24%	17.14%	10.11%
2017	8.62%	7.50%	4.14%
2018	8.07%	-2.08%	0.46%
2019	9.00%	14.20%	8.65%

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[11] 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 S&P/LSTA U.S. Leveraged Loan Index yield, is subtracted from the intercept yield to separately capture what we call 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 further divided into the risk-free T-bill rate and a liquid credit premium for non-investment grade broadly syndicated loans.

Exhibit 10 reports our findings for the five yield premiums, measured over the four quarters ending

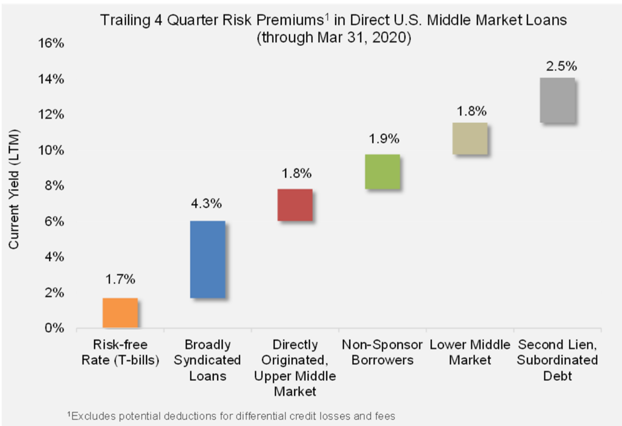
[10] Equal to 1.10% divided by 3 years, the average effective loan life.

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

March 31, 2020. Therefore, the risk premiums represented in Exhibit 10 reflect average values covering the four quarters ending March 31, 2020.

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.

Exhibit 10: Available Risk Premiums in Direct US Middle Market Loans[12]

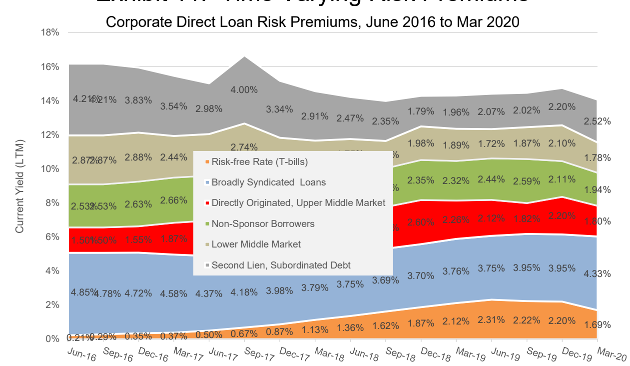


The left-most starting point in Exhibit 10 is the risk-free rate, which measured 1.7% for the trailing four quarters. The five risk premiums shown from left to right are:

1. *Broadly Syndicated Loans*. The additional yield from credit risk found in broadly syndicated loans ("BSL"), measured by the S&P/LSTA U.S. Leveraged Loan Index over the trailing four quarters, equaled 4.3% at March 31, 2020.[13]
2. *Directly Originated, Upper Middle Market.* There was a 1.8% 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 1.9% 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 found a 1.8% 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.* Subordinated loans had a 2.5% higher yield when compared to senior loans within the U.S. middle market.

Exhibit 11 plots the measured risk premiums over the last two and one-half years, the period over which Cliffwater has been conducting these measurements.

Exhibit 11: Time Varying Risk Premiums[13]



Several observations are worth noting:

1. Overall, the time period has been characterized by risk premium (spread) compression. Disregarding the risk-free rate, the sum of all five premiums has declined from 15.95% to 12.37%. However, spread compression has leveled off in recent quarters.
2. Only the "Directly Originated, Upper Middle Market" premium increased, from 1.50% to 1.80% over the measurement period. We interpret this risk premium as the traditional "liquidity premium."
3. The largest decline has come in the risk premium for "Second Lien, Subordinated Debt" where the risk premium has fallen from 4.21% to 2.52%. This trend may be consistent with the view that

[12] 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 through March 31, 2020 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 S&P/LSTA U.S. Leveraged Loan Index through March 31, 2020. See Chapter 9, Private Debt: Opportunities in Corporate Direct Lending, Stephen L. Nesbitt (Wiley 2019) for a detailed description of this analysis.

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

lenders are moving down the capital structure to enhance or preserve total yield. An alternative view is that senior loans are not what they used to be. The growth of unitranche loans, which are categorized as "senior", might statistically transfer second lien spread to directly originated, upper middle market senior spread. This may cause an overstatement in Directly Originated spread and understatement in Second Lien spread. We are working to further assess any such estimation error, if it exists, but our current belief is that it would not change the basic trends found in Exhibit 11.

Senior-Only Direct Loans (CDLI-S)

CDLI-S is a more recently introduced index 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 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 BDC 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 12 provides some key differences between the CDLI and CDLI-S indices. Loans in the CDLI-S are generally represented by larger, sponsored borrowers with a track record of lower realized losses and lower rate of non-accrual status.

Exhibit 12: CDLI, CDLI-S Comparison as of Mar 2020

	CDLI-S	CDLI
#Loans	783	6,063
Total Assets	$10b	$115b
EBITDA (avg.)	$71m	$38m
Non-Accrual	1.54%	6.25%
%Sponsor	85%	78%
%Senior	95%	70%

Exhibit 13 reports performance for CDLI-S over its entire 9.50-year history with comparisons to the broader CDLI.

Exhibit 13: Senior Direct Loan Performance

CDLI-S(enior) Returns	Q1 2020	Last Four Quarters	Last 5 Years*	From CDLI-S Incep. Sept 2010
CDLI-Senior Total Return**	**-4.74%**	**1.35%**	**6.24%**	**7.28%**
= Income	1.87%	8.59%	8.16%	8.23%
+/- Net Realized Gains(Losses)	-0.29%	-0.57%	-0.29%	-0.10%
+/-Net Unrealized Gains(Losses)	-6.33%	-6.24%	-1.63%	-0.86%

CDLI Returns	Q1 2020	Last Four Quarters	Last 5 Years*	From CDLI-S Incep. Sept 2010
CDLI Total Return**	**-4.84%**	**0.92%**	**6.89%**	**9.19%**
= Income	2.31%	10.09%	10.40%	11.06%
+/- Net Realized Gains(Losses)	-0.35%	-1.15%	-1.22%	-1.00%
+/-Net Unrealized Gains(Losses)	-6.80%	-7.44%	-2.05%	-0.73%

* Annualized return.

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

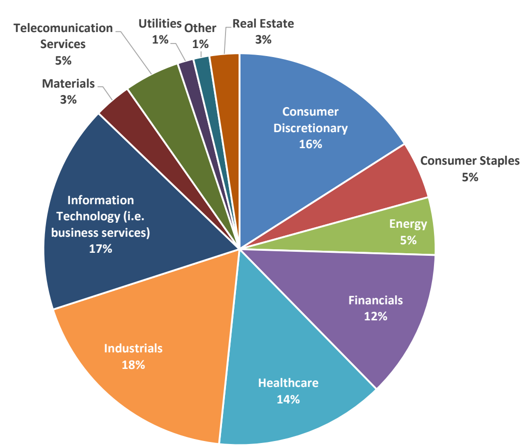
The 7.28% inception return for CDLI-S is attractive but remains almost 2% below the 9.19% CDLI return for the same time period. CDLI-S interest income (yield) was 2.83% below that for the CDLI. However, that deficit was partially offset by -0.10% realized losses for the CDLI-S compared to the -1.00% CDLI realized loss rate from the September 2010 CDLI-S inception.

CDLI-S comparisons improve when risk is considered. The 2.35% annualized standard deviation for CDLI-S from inception was below the 3.12% CDLI standard deviation for the same time period, making the return-to-risk ratio higher for CDLI- S. Benefits from lower CDLI-S risk should materialize over the next several quarters as senior loans should see fewer credit losses compared to all CDLI loans. One final point is that senior loans are much more likely to secure better financing terms when leverage is used in portfolio construction.

Diversification

Exhibit 14 displays industry diversification for the over 6,000 loans in the CDLI as of March 31, 2020. Weights are determined by aggregate fair value of the loans.

Exhibit 14: CDLI Industry Weights as of Mar 31, 2020

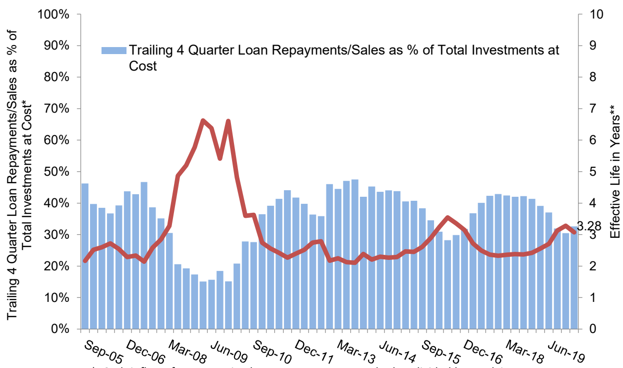


The CDLI remains very diversified by industry group with the weights not dissimilar from market capitalization weights for the Russell 2000 Equity Index, but for the absence of a banking sector.

Effective Loan Life

Exhibit 15 updates the effective life of direct loans in the CDLI through March 31, 2020.

Exhibit 15: Loan Repayment and Effective Life



* Cash inflows from maturing loans, prepayments, and sales, divided by total investments at cost
** Equal to the reciprocal of first footnote

The blue bars measure loan repayment activity through the first quarter, primarily from maturities, prepayments and, to a lesser extent, sales as a percent of loan cost. The inverse of this ratio measures loan effective life which is represented by the red line and measured by the right axis. Prepayment activity has remained relatively consistent over the past couple years, producing an effective loan life equal to 3.28 years at March 31, 2020, compared to new loan stated life that ranges from 5 to 7 years.

Summary

COVID related losses in the form of unrealized losses in loan valuations had a significant negative impact on the first quarter CDLI return, the second worse since its 2004 start date. Key questions going forward will be whether future realized losses (permanent impairments) approximate the -6.80% in unrealized first quarter losses and whether interest income will rise as it did after the 2008 Financial Crisis.

Appendix A follows, providing quarterly data on both the CDLI and CDLI-S for their entire histories, including a breakdown of total return into its interest income, realized gains(losses), and unrealized gains(losses) components.

Appendix A: CDLI and CDLI-S Total Return

Cliffwater Direct Lending Index (CDLI)

	Q1	Q2	Q3	Q4	Calendar Year
2004				2.35%	
2005	1.90%	2.37%	2.68%	2.78%	10.10%
2006	2.89%	3.50%	3.52%	3.14%	13.70%
2007	3.74%	4.12%	0.95%	1.10%	10.23%
2008	-1.14%	2.50%	-1.12%	-6.68%	-6.50%
2009	2.32%	2.82%	3.94%	3.49%	13.18%
2010	3.38%	3.83%	3.36%	4.37%	15.79%
2011	3.88%	2.41%	-0.18%	3.35%	9.75%
2012	3.97%	2.45%	3.74%	3.19%	14.03%
2013	3.20%	2.62%	3.13%	3.18%	12.68%
2014	2.90%	2.81%	2.42%	1.12%	9.57%
2015	2.45%	2.46%	0.82%	-0.28%	5.54%
2016	1.52%	3.62%	3.05%	2.61%	11.24%
2017	2.36%	2.00%	1.97%	2.02%	8.62%
2018	2.18%	2.44%	2.38%	0.84%	8.07%
2019	2.78%	2.25%	1.77%	1.91%	9.00%
2020	-4.84%				

Cliffwater Direct Lending Index-Senior Only (CDLI-S)

	Q1	Q2	Q3	Q4	Calendar Year
2010				2.18%	
2011	1.82%	1.80%	0.40%	2.39%	6.56%
2012	3.08%	1.92%	2.55%	2.12%	10.03%
2013	2.48%	2.02%	2.16%	2.27%	9.23%
2014	2.11%	1.98%	1.94%	1.58%	7.82%
2015	2.08%	1.86%	1.32%	1.14%	6.56%
2016	1.65%	2.28%	2.51%	1.94%	8.63%
2017	1.88%	1.76%	1.54%	2.03%	7.39%
2018	2.29%	1.77%	2.08%	1.25%	7.60%
2019	1.91%	1.96%	2.33%	1.87%	8.43%
2020	-4.74%				

Appendix B: CDLI and CDLI-S Income Return

Cliffwater Direct Lending Index (CDLI)

	Q1	Q2	Q3	Q4	Calendar Year
2004				1.57%	
2005	1.92%	2.36%	2.28%	2.29%	9.15%
2006	2.38%	2.62%	2.79%	2.78%	10.99%
2007	2.56%	2.65%	2.54%	2.68%	10.84%
2008	2.63%	2.67%	2.89%	3.05%	11.72%
2009	3.00%	3.03%	2.96%	2.95%	12.49%
2010	2.85%	2.96%	2.93%	3.06%	12.33%
2011	2.80%	2.86%	2.91%	3.00%	12.08%
2012	2.99%	2.96%	2.98%	3.09%	12.54%
2013	2.74%	2.88%	2.85%	2.74%	11.69%
2014	2.64%	2.62%	2.65%	2.65%	10.99%
2015	2.49%	2.66%	2.55%	2.62%	10.72%
2016	2.54%	2.55%	2.52%	2.52%	10.52%
2017	2.45%	2.43%	2.39%	2.52%	10.16%
2018	2.43%	2.52%	2.55%	2.55%	10.43%
2019	2.56%	2.56%	2.50%	2.36%	10.36%
2020	2.31%				

Cliffwater Direct Lending Index-Senior Only (CDLI-S)

	Q1	Q2	Q3	Q4	Calendar Year
2010				2.02%	
2011	1.67%	1.67%	1.85%	2.03%	7.42%
2012	2.07%	2.16%	2.18%	2.39%	9.09%
2013	2.23%	2.22%	2.09%	1.97%	8.79%
2014	1.92%	1.93%	1.99%	2.04%	8.12%
2015	1.87%	1.89%	1.84%	1.89%	7.71%
2016	1.96%	1.94%	2.05%	1.83%	8.00%
2017	1.79%	1.88%	1.99%	1.91%	7.79%
2018	1.91%	2.02%	2.14%	2.09%	8.41%
2019	2.14%	2.27%	2.10%	1.98%	8.88%
2020	1.87%				

Appendix C: CDLI and CDLI-S Realized Net Gains(Losses)

Cliffwater Direct Lending Index (CDLI)

	Q1	Q2	Q3	Q4	Calendar Year
2004				-0.02%	
2005	0.52%	0.47%	-0.01%	-0.09%	0.89%
2006	0.01%	0.35%	0.42%	-0.13%	0.63%
2007	1.33%	-0.21%	0.10%	0.52%	1.74%
2008	-0.05%	-0.25%	-0.29%	-0.02%	-0.59%
2009	-0.18%	-2.43%	-1.17%	-3.29%	-6.91%
2010	-2.74%	1.54%	-0.87%	-0.88%	-2.96%
2011	0.07%	-0.17%	-0.20%	-1.49%	-1.78%
2012	0.16%	-0.66%	-0.10%	0.01%	-0.60%
2013	0.08%	-0.23%	0.02%	-0.07%	-0.19%
2014	0.09%	0.06%	0.11%	-0.24%	0.01%
2015	0.03%	-0.36%	-0.22%	-0.16%	-0.70%
2016	-0.29%	-0.40%	-0.40%	-0.32%	-1.41%
2017	-0.50%	-0.65%	-0.17%	-0.44%	-1.75%
2018	-0.34%	-0.38%	0.18%	-0.39%	-0.93%
2019	-0.14%	-0.31%	-0.19%	-0.30%	-0.94%
2020	-0.35%				

Cliffwater Direct Lending Index-Senior Only (CDLI-S)

	Q1	Q2	Q3	Q4	Calendar Year
2010				0.19%	
2011	0.19%	0.05%	0.02%	-0.24%	0.02%
2012	-0.19%	0.16%	-0.01%	0.05%	0.01%
2013	0.09%	0.12%	-0.09%	-0.44%	-0.32%
2014	0.01%	0.03%	0.41%	0.03%	0.49%
2015	0.14%	-0.10%	0.25%	0.03%	0.32%
2016	-0.13%	-0.41%	0.21%	0.05%	-0.28%
2017	-0.26%	-0.11%	0.22%	-0.17%	-0.32%
2018	0.00%	-0.46%	0.09%	-0.06%	-0.42%
2019	-0.02%	-0.16%	-0.08%	-0.04%	-0.31%
2020	-0.29%				

Appendix D: CDLI and CDLI-S Unrealized Net Gains(Losses)

Cliffwater Direct Lending Index (CDLI)

	Q1	Q2	Q3	Q4	Calendar Year
2004				0.80%	
2005	-0.54%	-0.47%	0.42%	0.59%	-0.01%
2006	0.50%	0.53%	0.32%	0.49%	1.86%
2007	-0.15%	1.69%	-1.69%	-2.10%	-2.28%
2008	-3.73%	0.08%	-3.72%	-9.71%	-16.25%
2009	-0.50%	2.22%	2.16%	3.83%	7.89%
2010	3.26%	-0.68%	1.30%	2.19%	6.17%
2011	1.01%	-0.28%	-2.89%	1.84%	-0.38%
2012	0.82%	0.16%	0.86%	0.10%	1.94%
2013	0.38%	-0.02%	0.25%	0.50%	1.11%
2014	0.17%	0.13%	-0.33%	-1.29%	-1.32%
2015	-0.07%	0.16%	-1.51%	-2.74%	-4.12%
2016	-0.72%	1.47%	0.93%	0.41%	2.10%
2017	0.41%	0.22%	-0.25%	-0.05%	0.33%
2018	0.10%	0.30%	-0.34%	-1.32%	-1.26%
2019	0.36%	0.00%	-0.54%	-0.15%	-0.34%
2020	-6.80%				

Cliffwater Direct Lending Index-Senior Only (CDLI-S)

	Q1	Q2	Q3	Q4	Calendar Year
2010				-0.03%	
2011	-0.04%	0.08%	-1.47%	0.60%	-0.83%
2012	1.21%	-0.39%	0.38%	-0.32%	0.87%
2013	0.16%	-0.32%	0.15%	0.74%	0.73%
2014	0.18%	0.01%	-0.47%	-0.50%	-0.76%
2015	0.07%	0.07%	-0.77%	-1.33%	-1.95%
2016	-0.17%	0.75%	0.25%	0.06%	0.88%
2017	0.34%	-0.01%	-0.67%	0.29%	-0.06%
2018	0.38%	0.22%	-0.16%	-0.78%	-0.34%
2019	-0.20%	-0.15%	0.31%	-0.07%	-0.11%
2020	-6.33%				

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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There can be no assurance that any expected rates of return will be achieved. Expected rates of return are subjective determinations by Cliffwater based on a variety of factors, including, among other things, investment strategy, prior performance of similar strategies, and market conditions. Expected rates of return may be based upon assumptions regarding future events and conditions that prove to be inaccurate. Expected rates of return should not be relied upon as an indication of future performance and should not form the primary basis for an investment decision. No representation or assurance is made that the expected rates of return will be achieved.

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.

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

Any information presented prior to the Launch Date of the CDLI (September 30, 2015) and CDLI-S (September 30, 2017) 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 and CDLI-S 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 and CDLI-S. 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 and CDLI-S methodology and selection of the CDLI and CDLI-S 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 and CDLI-S 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 or CDLI-S, as applicable, composition and return. Index returns generally are published 75 days after calendar quarter-end.

The CDLI and CDLI-S 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 and CDLI-S are derived from sources that are considered reliable, but Cliffwater does not guarantee the veracity, currency, completeness or accuracy of the CDLI or CDLI-S or other information furnished in connection with the CDLI and CDLI-S. 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, CDLI-S or any data included therein, omissions therefrom or the use of the CDLI or CDLI-S 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.

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 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.

The S&P/LSTA U.S. Leveraged Loan 100 Index is a market value-weighted index designed to measure the performance of the U.S. leveraged loan market. The index consists of 100 loan facilities drawn from a larger benchmark – the S&P/LSTA Leveraged Loan Index.