



LSDI

**LINCOLN SENIOR
DEBT INDEX**

INTRODUCING: The Lincoln Senior Debt Index

Lincoln International is pleased to release the third quarterly Lincoln Senior Debt Index (“LSDI”). The LSDI represents years of research and analysis of data and was developed by professionals from Lincoln’s Valuations & Opinions Group (“VOG”) in collaboration with Professor Pietro Veronesi, the Chicago Board of Trade Professor of Finance at The University of Chicago, Booth School of Business. “Investors in the direct lending market continue to experience significant total return advantages relative to the broadly syndicated market as the quarterly yield difference between the direct lending market and broadly syndicated loan market was 4.4%, the highest since the quarter ending December 31, 2018. This yield difference, which can be interpreted as compensation for relatively lower liquidity, occurs even as middle market corporate defaults continue to decrease” said Professor Veronesi.

The LSDI provides insight into the direct lending market as it is a fair value index consisting of four components:

1. Total return (income return plus capital gain return);
2. Price (i.e., fair value);
3. Spread; and,
4. Yield to maturity.

Each of the four components are then categorized into three types of senior loans:

1. All senior loans – consisting of first lien, unitranche and second lien loans;
2. Senior loans – consisting of first lien and unitranche loans; and,
3. Second lien loans.

Lincoln additionally provides descriptive statistics, including: (a) loan-to-value; (b) how the quarterly change in total return is impacted by changes in interest rates and changes in credit; (c) stress testing resulting in how value changes in the current and subsequent quarters as spreads change; and, (d) default rates.

The U.S. non-investment grade corporate loan market has two segments: the broadly syndicated loan (“BSL”) market, which attracts larger companies (i.e., as an approximation companies with EBITDA greater than \$100 million) and direct lending market (i.e., companies less than \$100 million of EBITDA). While correlated, there are subtle but significant differences between the two markets. Both markets primarily provide floating rate loans; however, divergences exist in terms of market liquidity and the size of the companies and credit facilities. Given the greater liquidity in the BSL market, pricing and terms are a function of technical market and competitive factors whereas the direct lending market, which is more illiquid, has a stronger orientation to assessing company fundamentals.

In contrast to the S&P/LSTA U.S. Leveraged Loan 100 Index, whose constituents are companies borrowing in the BSL market, the LSDI constituents are virtually all companies borrowing in the direct lending market.

The direct lending market is a significant source of capital to private equity-backed middle market companies. The Lincoln Senior Debt Index benefits market participants by providing information facilitating a greater understanding of the attributes of this important source of capital to the private sector.

How We Obtain the Information

On a quarterly basis, Lincoln values over 2,500 private companies primarily owned by private equity funds for over 100 alternative investment funds and lenders to funds. Most of these companies are levered via borrowings from the direct lending market. A significant percentage of the LSDI constituents are based upon valuations of loans provided for non-public business development companies (BDCs) and other private investment vehicles and, therefore, not disclosed in public filings.

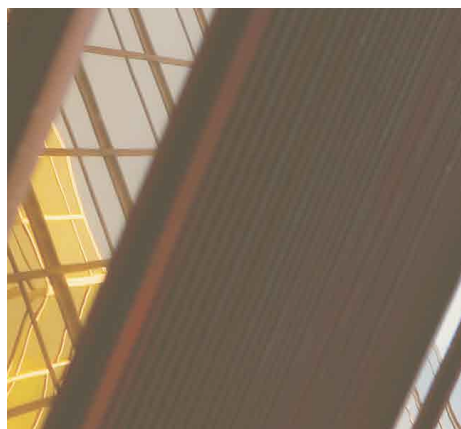
For many of the private companies valued quarterly, Lincoln advises on the fair value of at least one senior debt security in the capital structure. All valuations conform with GAAP and fair value principles and have been reviewed by fund management, fund boards, limited partners and auditors.

Additional information can be found in our Methodology section at the end of this report and on our web site.

KEY OBSERVATIONS: Lincoln Senior Debt Index

Q2

2021



98.5

Average Fair Value of
Loans in the Index as
of Q2 2021



Returns from credit risk continue to dominate returns from changes in interest rates

The two primary risks in this asset class are interest rate risk and credit risk. For the quarter ending June 30, 2021 the Lincoln Senior Debt Index return was 2.0% of which credit risk accounted for 1.8% while the return due to changes in interest rates or LIBOR was 0.2%.

- The change in quarterly return due to credit improvements of 1.8% remained high, relative to its historical contributions, but decreased from the prior three quarters of record setting levels, demonstrating that companies in the second quarter of 2021, on average, have continued to successfully manage through the economic challenges created by COVID-19 and are beginning to stabilize after the recovery seen over the past three quarters.
- The strong corporate earnings performance was consistent with our findings from our Lincoln Middle Market Index ("LMMI"), i.e., our enterprise value, fair value index. For more information on the LMMI visit [An Overview of the Lincoln Middle Market Index](#) on the Lincoln web site.

Performance

The LSDI increased from 158.2 as of March 31, 2021 to 161.4 as of June 30, 2021. The U.S. leveraged finance market performed positively in the second quarter of 2021, continuing the trend from the second half of 2020 and consistent with most other debt and equity asset classes.

Fair value price range

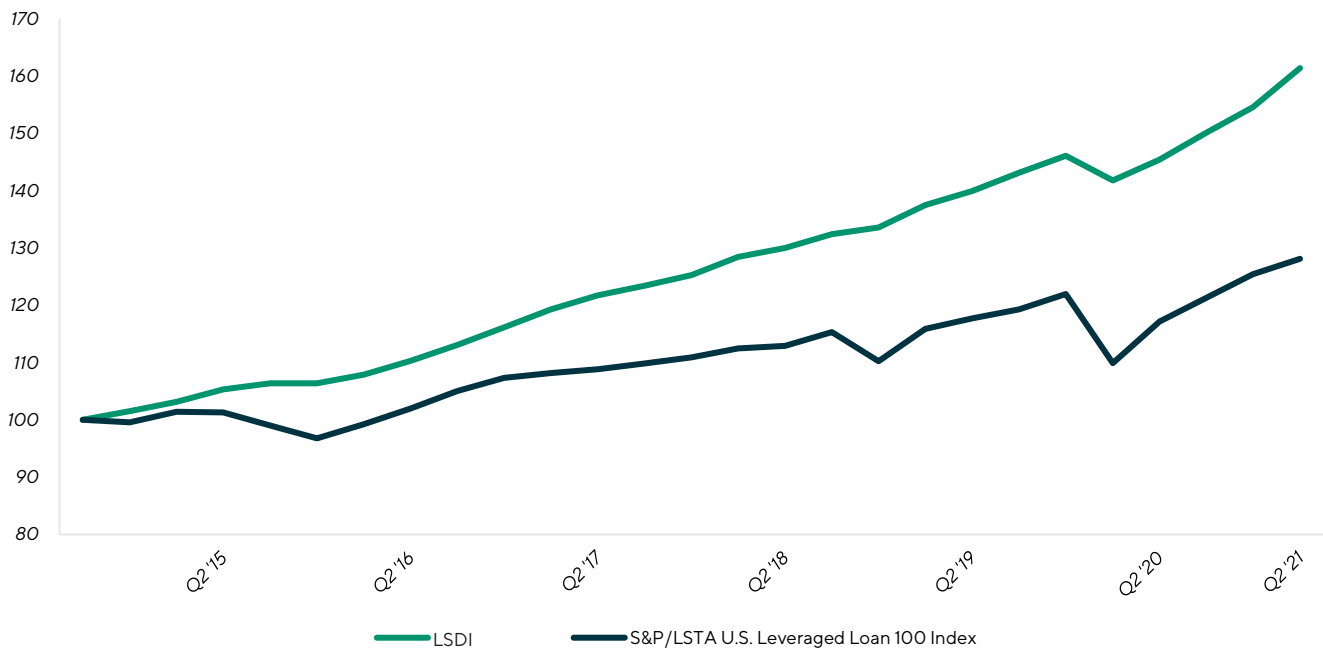
The LSDI closed out Q2 2021 at 98.8. This is the highest price since its peak period of the first and second quarters of 2018. The price of 98.8 compares favorably with the pre-COVID-19 price of 98.2 as of December 31, 2019.

RESULTS: Total Returns

Q2

2021

Comparison of Total Return - LSDI (All Loans) vs. S&P/LSTA U.S. Leveraged Loan 100 Index



Observations:

Investment returns are generated from two sources: (1) capital gains and losses; and, (2) income returns. In the leverage lending asset class, income returns dominate capital gains or losses resulting in positive quarterly total returns.

Since the inception of the Lincoln Senior Debt Index, both the S&P/LSTA U.S. Leverage Loan 100 index, which measures the performance of the BSL market, and direct lending markets have experienced an increase in total returns. While income returns were offset by capital losses due to COVID-19 in the first quarter of 2020, total returns began to recover by the second quarter of 2020 and have continued to trend upward thereafter.

Given the higher cost of debt for middle market direct lending loans versus loans in the BSL market, yields are significantly greater in the direct lending market accounting for the LSDI generating total returns higher than the BSL market.

RESULTS: Total Returns (cont.)

Q2

2021

Correlation and Comparison of Quarterly Returns – LSDI (All Loans) to Broadly Syndicated Loan Market



Observations:

While the correlation between the Lincoln Senior Debt Index and S&P LSTA 100 Investment is high at 86%:

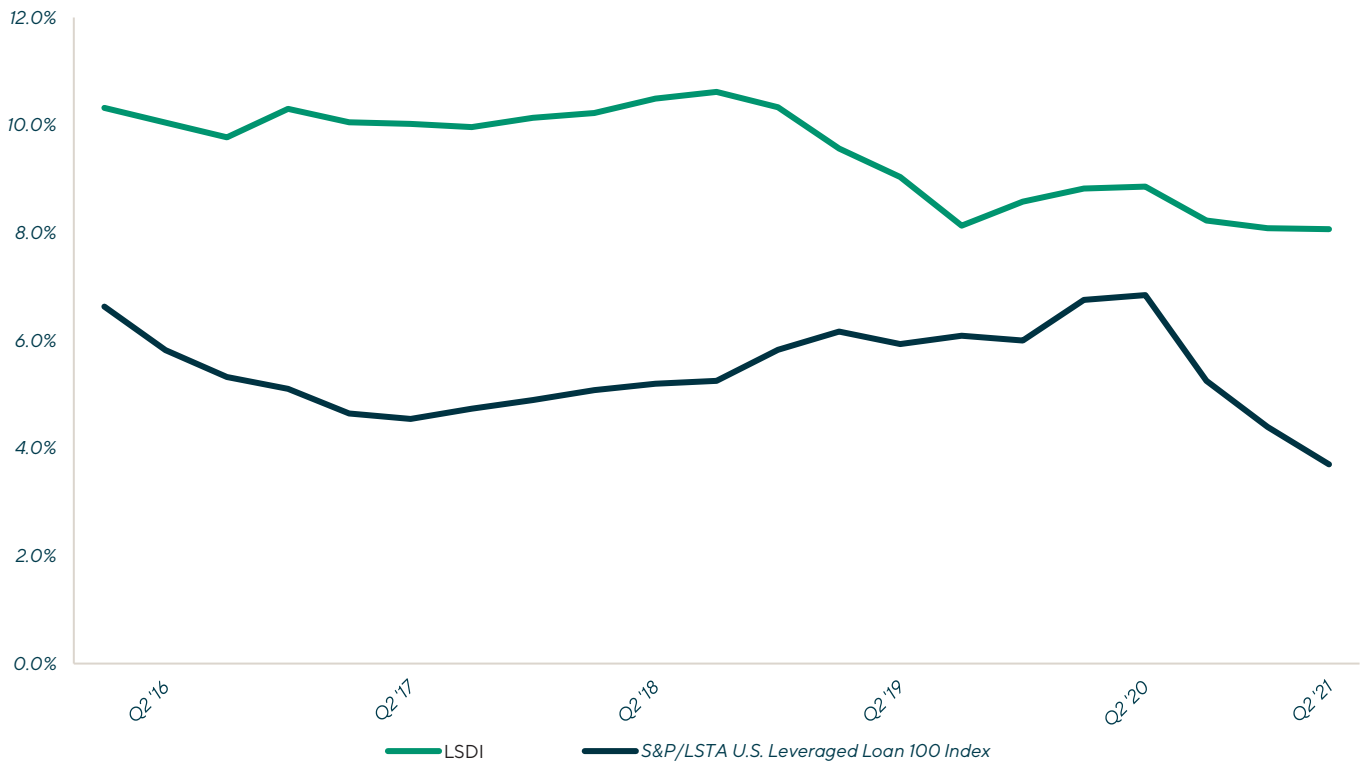
- The Lincoln Senior Debt Index is significantly less volatile; while,
- Generating higher returns.

Investments in the direct lending market experience higher returns and lower volatility than the BSL market.

The direct lending market experiences negative returns much less frequently than the BSL market given its higher yields.

- From the third quarter of 2014, the inception of the LSDI, through the second quarter of 2021, it only reported one negative quarterly return period; the first quarter of 2020.

Comparison of Yields - LSDI (All Loans) to Broadly Syndicated Loan Market



Observations:

The average yield of the Lincoln Senior Debt Index is approximately 9.5%.

On average, loans in the direct lending market yield approximately 4.1% higher returns than broadly syndicated loans.

- The tightest difference was 2.0% in the second quarter of 2020 and the widest was 5.5% in the second quarter of 2017.

Interestingly, as of December 31, 2019, direct lending yields were 8.6% versus BSL yields of 6.0%. As of June 30, 2021, direct lending yields declined only 50 bps to 8.1% whereas BSL yields declined 2.3% to 3.7%. We attribute the significant decline in BSL yields to the BSL market experiencing high capital inflows combined with purchases by CLOs, who are the largest buyers of broadly syndicated loans. In contrast, middle market direct lending is less illiquid and, therefore, less accessible as the BSL market is less impacted by these market forces.

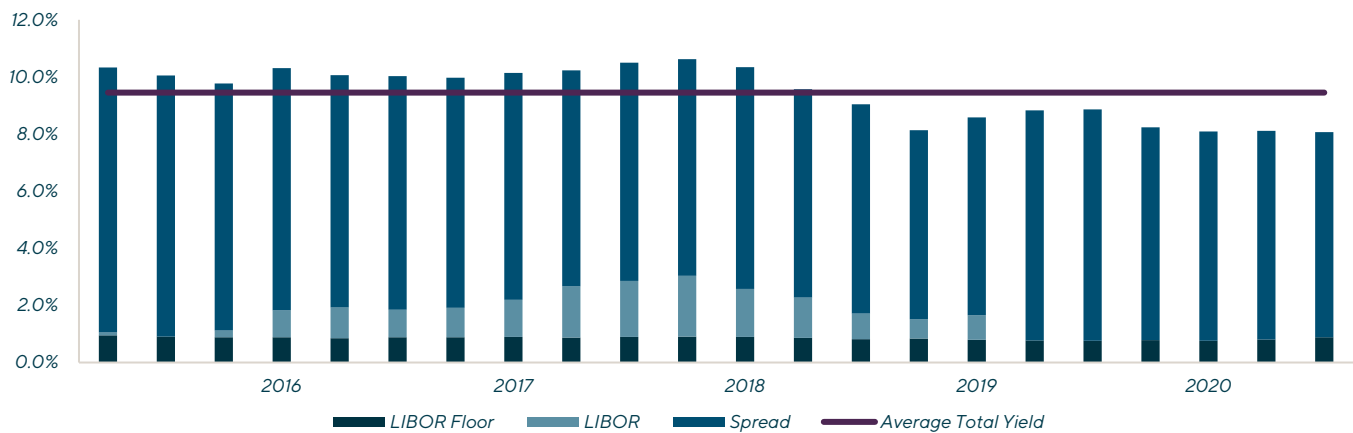
RESULTS:

Decomposing Yields in the Direct Lending Market – LIBOR Floors and Spreads

Q2

2021

Decomposing Yield - LIBOR, LIBOR Floors and Spreads - All Loans



Note: LIBOR Floor reflects weighted average for each period while LIBOR reflects the extent to which LIBOR was above the floor

Observations:

The average yield of the Lincoln Senior Debt Index has been approximately 9.5% since its inception.

It is common that direct lending loans contain LIBOR floors of 1.0%, although we have noted some tightening of LIBOR floors in the last quarter or two. In contrast, LIBOR floors in the BSL market are not as prevalent. Consequently, as LIBOR declines below 1.0% the benefit to yield resulting from the LIBOR floor will partially mitigate a decline in LIBOR.

- As an example, the spread as of June 30, 2021 and June 30, 2019 were, approximately the same, 7.2% and 7.3%, respectively. However, LIBOR was 1.7% as of June 30, 2019 versus 0.8% as of June 30, 2021. Therefore, while the LIBOR floor partially tempers the 90 basis points decline in LIBOR, the yield as of June 30, 2019 was 9.0% versus the yield as of June 30, 2021 of 8.1%.
- While yield in the direct lending market has remained in a band between 8.0% and 10.0%, the components of yield vary as LIBOR and spreads change.

Over time, the direct lending market has become increasingly competitive as the supply of capital has increased along with the number of market participants. Therefore, we have observed spreads declining over time.

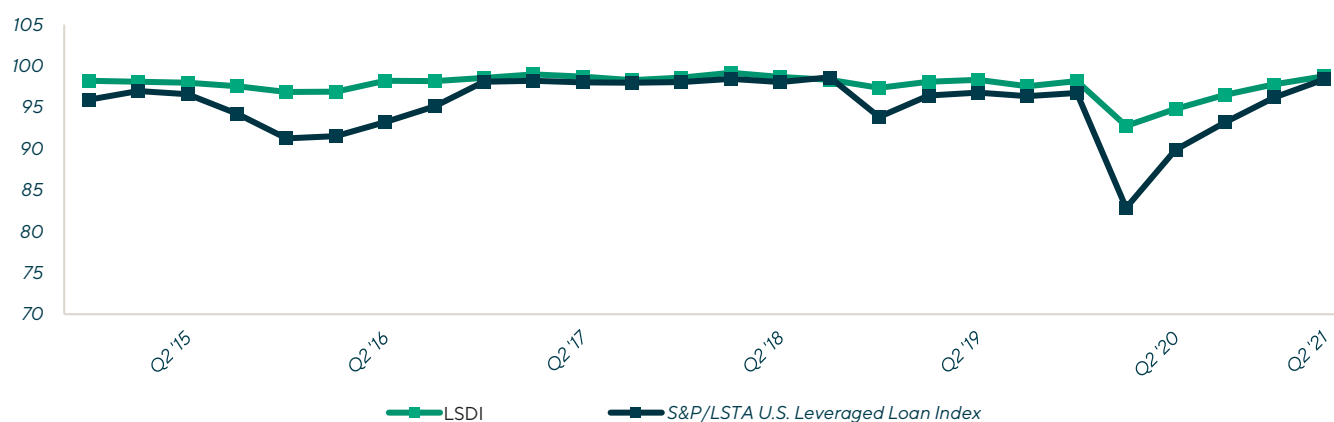
Ignoring the impact of LIBOR floors, the change in spreads has a greater impact on the fair value of a loan versus changes in LIBOR. As direct lending loans are based on a floating rate, LIBOR, from a valuation point of view, the loan's discounted cash flow model contains LIBOR in the numerator and denominator, thus, cancelling each other out. However, the numerator is LIBOR plus the contractual spread whereas the denominator is LIBOR plus the market required spread – the fair value spread. Therefore, it is the change in the denominator or credit spread that positively or negatively impacts fair value.

RESULTS: Fair Value – Price – Trends

Q2

2021

Fair Value - LSDI (All Loans) Compared to the S&P/LSTA U.S. Leveraged Loan Index



Note: Price based on fair value of the Lincoln Senior Debt Index and average bid of the S&P/LSTA U.S. Leveraged Loan Index

Observations:

The Lincoln Senior Debt Index closed out the quarter at 98.8. This is the highest price since its peak in Q1 and Q2 of 2018, comparing favorably with the pre-COVID-19 price of 98.2 in Q4 2019.

Over time, prices, on a fair value basis, have ranged between 97.0 to 99.0 (excluding the first two quarters of 2020).

There are several reasons for this phenomenon, whereby, loans in the direct lending market do not experience the same price volatility as observed in the BSL market:

- It is common for loans in the direct lending market to contain LIBOR floors as compared to loans in the BSL market. Therefore, in low interest rate environments the impact of LIBOR floors becomes a significant component of total return. In effect, whenever LIBOR is below 1.0% (the typical floor for a loan in the direct lending market) the loan becomes a fixed rate investment. In contrast, the prevalence of this subsidy in low interest rate environments is much lower in the BSL market;
- Loans in the direct lending market trade much less frequently than loans in the BSL market; and,
- Investors in the BSL market have a greater ability to liquify their investments should they decide to exit, as trading is a viable option. In contrast, investments in direct lending funds are structured, whereby, investor redemptions are limited. Capital flows, therefore, are not as volatile as the BSL market.

RESULTS:

Bifurcation of the Impact on Total Return Due to Credit Risk and Interest Rate Risk

Q2

2021

Decomposition of Index Returns: Interest Rate versus Credit Risk



Observations:

The Lincoln Senior Debt Index quarterly return in Q2 2021 was 2.0%, of which credit risk accounted for 1.8% while the return due to changes in LIBOR was 0.2%. The change in quarterly return due to credit improvements of 1.8% decreased from the 3.2% contribution in Q1 2021, but was still above historical levels.

The increase in LSDI due to improvements in credit is consistent with the LMMI which captures enterprise fair value performance. Middle market financial performance continued to improve in the second quarter of 2021, driven by the COVID-19 vaccine rollout and aggressive monetary and fiscal policy.

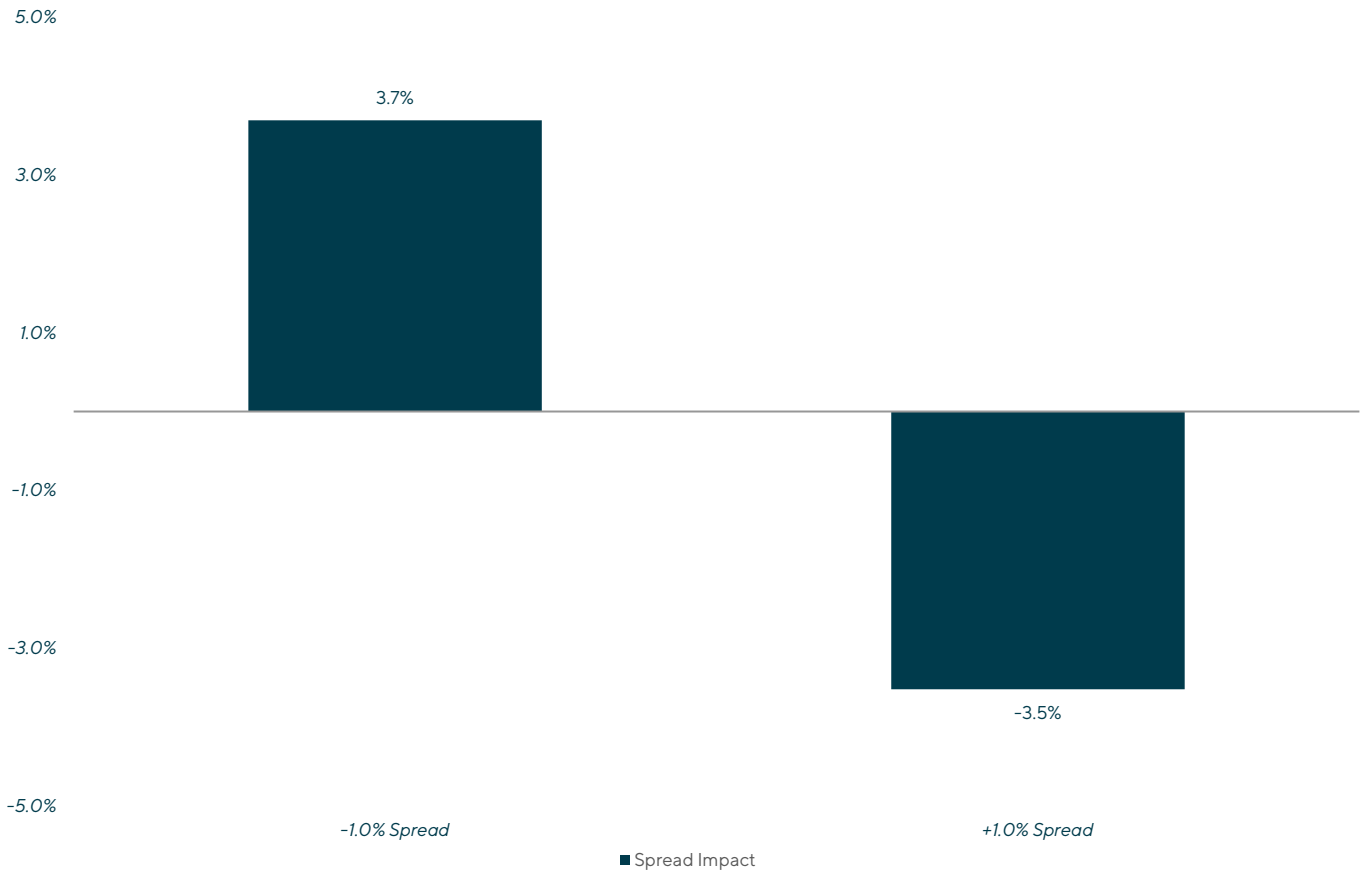
Reinforcing the economy's wide improvement, quarterly total return for each industry exceeded 2.0%, with the exception of the technology industry. While generating quarterly total returns of 1.3% in the second quarter of 2021, total return growth in the technology sector has been declining since Q3 2021.

RESULTS: Spread Sensitivity

Q2

2021

Q2 2021 Lincoln Senior Debt Index Spread Sensitivity



Observations:

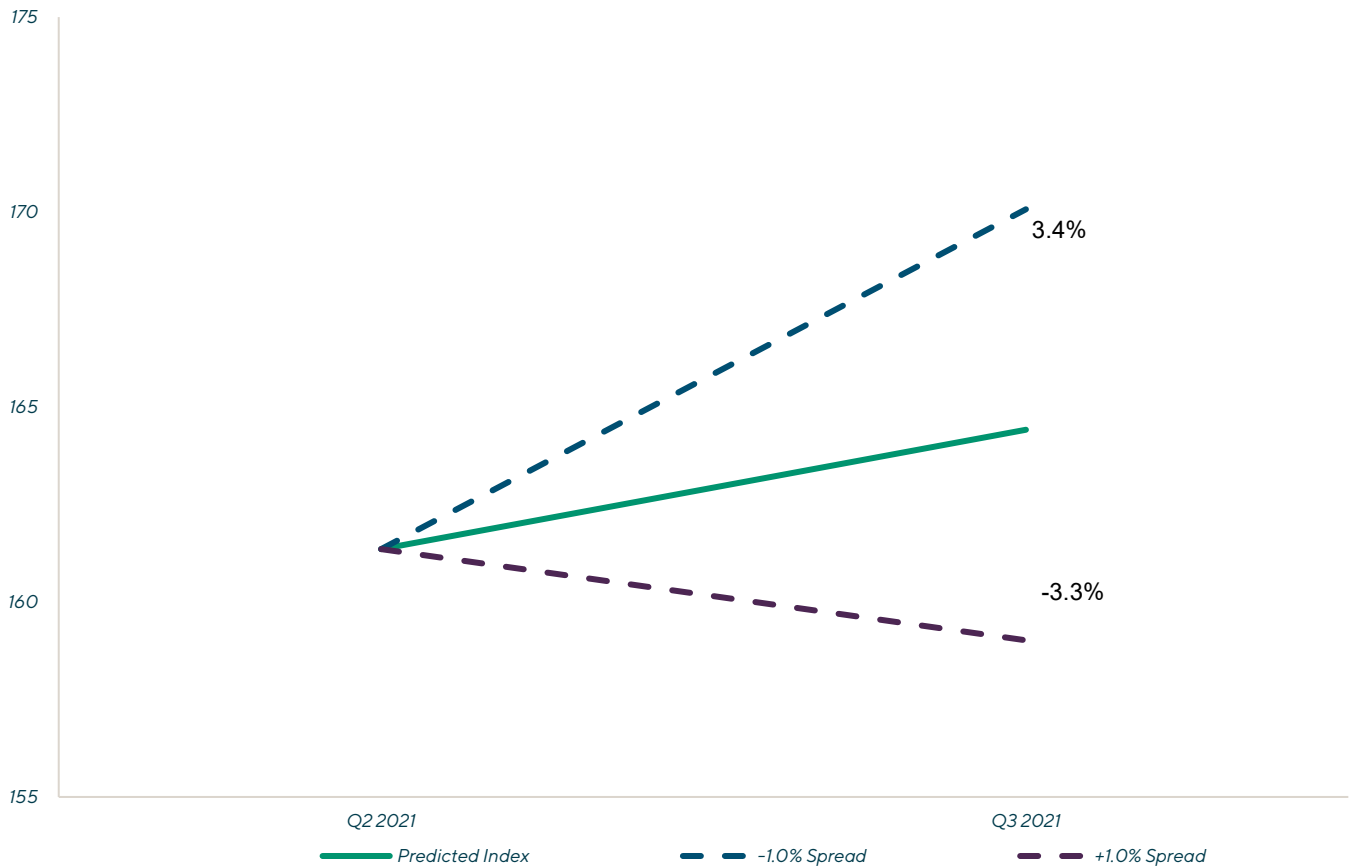
Measuring the immediate impact on total returns, as of June 30, 2021, a 1.0% increase in spreads would decrease the value of the Lincoln Senior Debt Index by 3.5% from 161.4 to 155.7. Conversely, the impact from a 1.0% decrease in spreads would increase the LSDI by 3.6%.

RESULTS: Spread Sensitivity (cont.)

Q2

2021

Projected Q3 2021 Lincoln Senior Debt Index Spread Sensitivity



Observations:

Measuring the impact on total returns as of the next quarter, if LIBOR remains unchanged between June 30, 2021 and September 30, 2021, a 1.0% increase in spreads would decrease the predicted value of the Lincoln Senior Debt Index by 3.3%, from 164.4 to 159.0. Conversely, the predicted impact from a 1.0% decrease in spreads would be an increase of 3.4%, from 164.4 to 170.1.

RESULTS: Default Rates

Q2

2021

Direct Lending Default Experience

| Date | Size Weighted Defaults |
|---------------------------|------------------------|
| 2018 | 5.7% |
| Q2 18' | 5.8% |
| Q3 18' | 5.5% |
| Q4 18' | 5.8% |
| 2019 | 6.2% |
| Q1 19' | 5.0% |
| Q2 19' | 8.2% |
| Q3 19' | 6.1% |
| Q4 19' | 5.4% |
| 2020 | 7.0% |
| Q1 20' | 5.0% |
| Q2 20' | 9.4% |
| Q3 20' | 9.0% |
| Q4 20' | 5.6% |
| 2021 | 3.6% |
| Q1 21' | 4.1% |
| Q2 21' | 3.1% |
| Historical Average | 5.8% |

Note: Defaults defined as loan covenant defaults (not monetary defaults).

Observations:

- As expected, the default rate increased dramatically in the second and third quarter of 2020 and has been declining ever since ending at 3.1% as of June 30, 2021.

SUMMARY:

Q2 2021 Lincoln Senior Debt Index

From 2014 through June 30, 2021, a portfolio of direct lending loans has yielded higher returns and lower volatility relative to broadly syndicated loans.

The Lincoln Senior Debt Index provides market participants many unique valuation insights into the fair value of direct lending loans and represents a significant enhancement to the information available within an opaque market.

METHODOLOGY:

Source of Data and Sample Size

Q2

2021

On a quarterly basis, Lincoln determines the enterprise fair value of over 2,500 portfolio companies for approximately 100 private equity sponsors and lenders. These portfolio companies report quarterly financial results to the sponsor (i.e., private equity group) or lender. Lincoln obtains company and loan level information to create The Lincoln Senior Debt Index.

All information is prepared in accordance with the fair value measurement principles of generally accepted accounting principles. Finally, each valuation is then vetted by auditors, company management, boards of directors and regulators.

Additional information about the methodology of The Lincoln Senior Debt Index can be found at: <https://www.lincolninternational.com/perspectives/an-overview-of-the-lincoln-senior-debt-index/>

Academic Advisor

Professor Pietro Veronesi is the Chicago Board of Trade Professor of Finance at The University of Chicago, Booth School of Business. He is also a research associate of the National Bureau of Economic Research and a research fellow of the Center for Economic and Policy Research.

Professor Veronesi's research has appeared in numerous publications, including the *Journal of Political Economy*, *American Economic Review*, *Quarterly Journal of Economics*, *Journal of Finance*, *Journal of Financial Economics* and *Review of Financial Studies*. He is the recipient of several awards, including the 2015 AQR Insight award, the 2012 and 2003 Smith Breeden prizes from the *Journal of Finance*; the 2008 WFA award; the 2006 Barclays Global Investors Prize from the EFA; the 2006 Fama/DFA prizes from the *Journal of Financial Economics*; and the 1999 Barclays Global Investors/Michael Brennan First Prize from the *Review of Financial Studies*. Professor Veronesi teaches both masters- and PhD-level courses. He is the recipient of the 2009 McKinsey Award for Excellence in Teaching.

Professor Veronesi's undergraduate work was in economics at Bocconi University where he received a laurea magna cum laude with honor in 1992. He earned a master's degree with distinction in 1993 from the London School of Economics. He joined the Chicago Booth faculty upon obtaining his PhD in Economics from Harvard University in 1997.

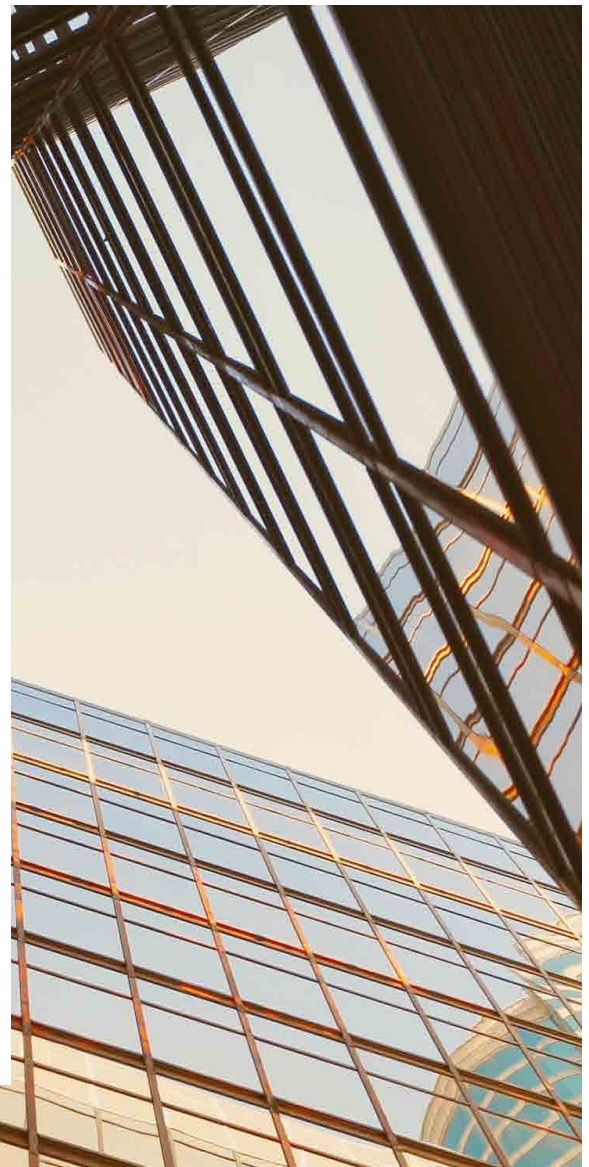


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