U.S. Mezzanine Debt

And Its Relationship to Other Credit Driven Asset Classes

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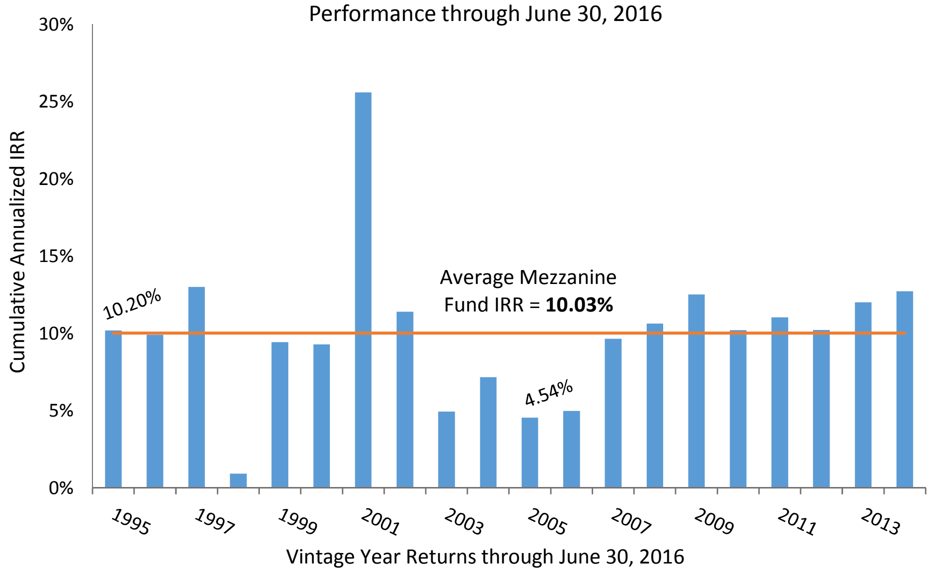
Mezzanine debt encompasses a set of junior securities that sit in priority just above equity and below senior and other secured debt. These securities are generally non-traded and can be attractive to investors that seek both current yield and potential capital gains through equity warrants, conversion features, and corporate control in distressed situations. It is not uncommon for mezzanine debt to be underwritten to offer a 15-20% gross return. On the other hand, mezzanine debt can present greater risks compared to more senior securities, including weaker covenants and higher losses (lower recoveries) given default. This report looks at past performance to gauge the attractiveness of mezzanine debt, both absolute and relative to other corporate securities.

We find that investment funds focused on mezzanine debt produced realized returns and risk levels consistent with their capital structure ranking and absolute returns averaging 10% over the 20 year history examined. More generally, we also find significant return premiums for private debt compared equivalent public debt during the study period.

Research Results

Exhibit 1 reports mezzanine debt fund "vintage year" returns from 1995 through 2014. Performance is measured through June 30, 2016. More recent 2015 and 2016 vintage funds are omitted, following industry convention, because they are too early in development to have returns representative of longer term performance. For example, mezzanine funds started in 1995 earned a 10.20% return, while mezzanine funds started in 2005 earned a 4.54% return.

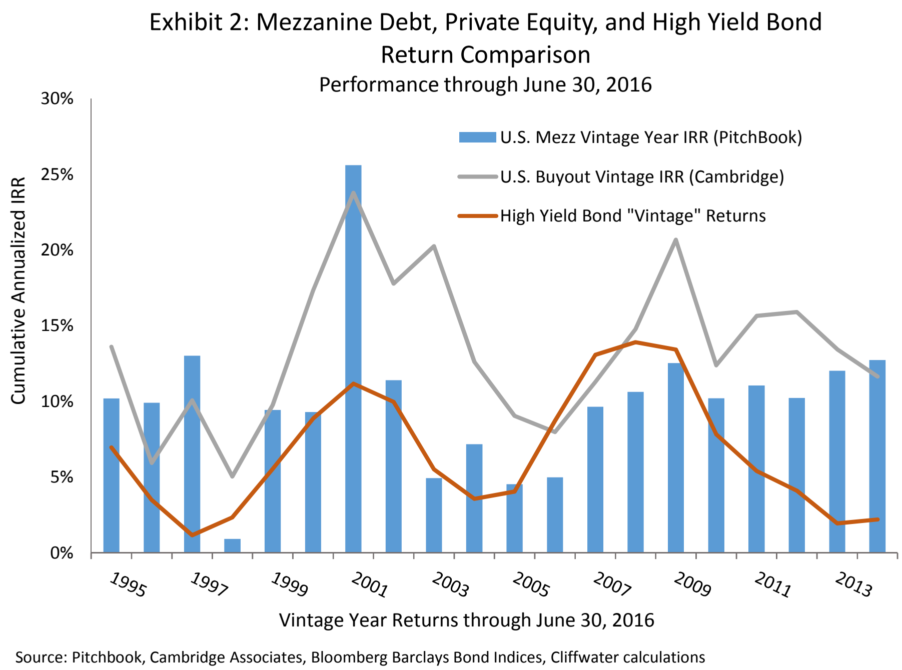
Exhibit 1: U.S. Mezzanine Fund Return (IRR) by Vintage Year
Performance through June 30, 2016



Source: PitchBook U.S. Mezzanine Funds

As the exhibit shows, individual vintage year returns vary considerably from 1% to 26%, but average **10.03%** for an investor that placed equal investments in all 121 mezzanine funds across the 20 vintage years.

In Exhibit 2, we compare past performance for mezzanine funds with two related asset classes: U.S. buyouts and high yield bonds.



The top gray line plots vintage year U.S. buyout fund returns, as represented by the Cambridge Associates U.S. Buyout Index. U.S. mezzanine debt returns should be closely associated with U.S. buyout funds, but with lower return and risk. Exhibit 2 supports a positive correlation between mezzanine and buyout funds; vintage years showing higher mezzanine fund returns also typically show higher buyout fund returns, and vice versa. As we report later, the measured correlation between mezzanine and buyout fund vintage year returns is positive and equal to 0.50.

The average of the 20 vintage year U.S. buyout fund returns equals 13.45%, which is a 3.42% above the 10.03% average of the 20 vintage year mezzanine fund returns reported in Exhibit 1. The higher buyout fund returns compared to mezzanine fund returns is also consistent with investor expectations for higher returns on equity securities compared to debt.

High yield bond vintage year returns are also shown by a red line in Exhibit 2. These high yield vintage year returns are formulaic, based upon the Bloomberg Barclays U.S. High Yield Index, and designed to mirror in timing and length the drawdown patterns of mezzanine funds.[1] Ideally, a "public market equivalent" calculation is called for but the necessary fund flows are not available. Our formula is an effort to approximate a public market equivalent for mezzanine funds, using high yield bonds as the public equivalent.

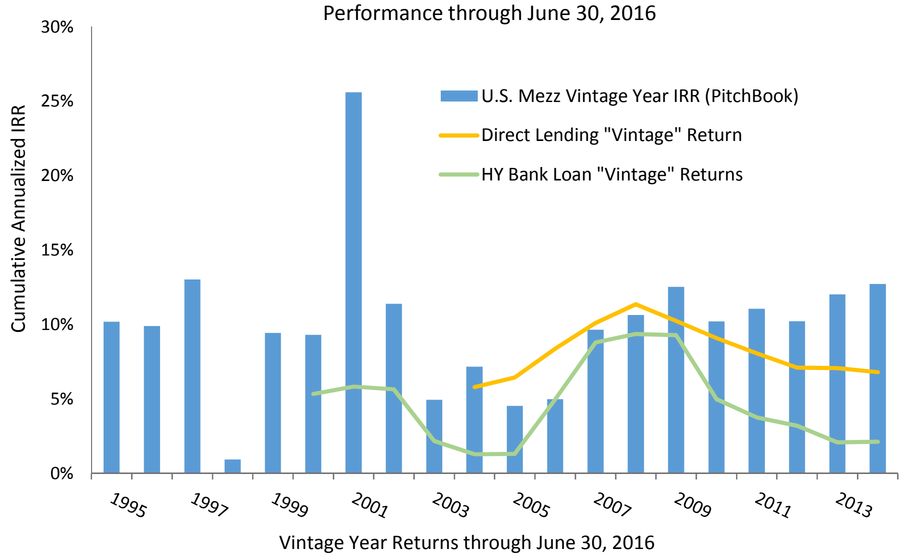
[1] High yield bond vintage return for year "t" is calculated by a simple average of four sets of compound annualized returns: years t, t+1, t+2; years t+1, t+2, t+3; years t+2, t+3, t+4; and years t+3, t+4, t+5. The lagged returns and their duration are meant to mirror the effective drawdown and investment life of mezzanine funds. Periodic returns are based upon the Bloomberg Barclays U.S. High Yield Index.

As with U.S. buyout and mezzanine funds, the pattern of vintage returns for high yield bonds and mezzanine funds appears to be very similar in Exhibit 2 with high and low vintage returns overlapping. This similarity in vintage return pattern between high yield bonds and mezzanine funds is also reflected in a positive 0.30 correlation.

The average of the 20 vintage year high yield bond returns equals 6.67%, which is 3.36% below the 10.03% average of the 20 vintage year mezzanine fund returns reported in Exhibit 1. The lower high yield bond average return is likely explained by their liquidity and somewhat lower credit risk relative to mezzanine debt.

Finally, Exhibit 3 compares mezzanine fund performance with two senior debt alternatives: middle market direct lending and broadly syndicated bank loans. Vintage year returns for direct lending and bank loans are calculated with the same methodology used for high yield bonds in Exhibit 2. Direct lending returns are based upon the Cliffwater Direct Lending Index, adjusted for fees and expenses, and bank loan returns are based upon the Bloomberg Barclays High Yield Loan Index.[2] Since neither index series goes back to 1995, we report calculations for the longest periods available.

Exhibit 3: Mezzanine Debt, Direct Lending, and Leveraged Loan Return Comparison
Performance through June 30, 2016



Source: PitchBook, Bloomberg Barclays Bond Indices, Cliffwater Direct Lending Index, Cliffwater calculations

The top yellow line plots vintage year calculations for U.S. direct lending, measured by the Cliffwater Direct Lending Index (CDLI) and adjusted for representative fees.[3,4] Index data for the

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[2] We report the Bloomberg Barclays High Yield Bond and High Yield Loan Indices gross of fees.

[3] The Cliffwater Direct Lending Index (the "CDLI") is an index comprised of all underlying assets held by public and private Business Development Companies that satisfy certain eligibility requirements. The CDLI is asset-weighted by reported fair value. Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. The CDLI performance has been prepared for informational purposes only. Past performance is not indicative of future returns. The index returns are provided for information only. Reference to an index does not imply that a portfolio will achieve returns, volatility or other results similar to the index. Please see additional CDLI and Index disclosures at the end of this report.

[4] We apply a 1.0% management fee, a 0.20% administrative fee, and a 10% performance fee (subject to a 7% preferred return) to the CDLI, whose returns are calculated gross of fees and expenses. The fees and expenses specified are representative of a direct lending portfolio based upon Cliffwater's experience with advising its institutional clients.

CDLI goes back to 2004, its start date. Vintage year calculations for bank loans (green line) are measured by the Bloomberg Barclays High Yield Loan Index and go back to its 2000 start date.

Both the direct lending and bank loan returns follow a pattern of returns similar to mezzanine debt funds with measured correlations of 0.31 and 0.30, respectively, for the time periods shown in Exhibit 3. As with buyout funds and high yield bonds, these positive correlations are expected and we believe attributable to systemic business risk found in the U.S. economy that impacts most risk assets.

The average of the 11 vintage year direct lending returns equals 8.23%, adjusted for fees and expenses. Over the same time period the average mezzanine fund produced an IRR equal to 9.61%, or 1.38% above direct lending. Higher returns for mezzanine funds are expected given their greater credit risk compared to direct lending.

The average of the 15 vintage year syndicated bank loan returns equals 4.68%. For the same time period, the average mezzanine fund produced an IRR equal to 10.47%, or 5.79% above syndicated bank loans.

The table in Exhibit 4 summarizes our findings for return, risk, and correlation.

Exhibit 4: Return, Volatility, and Correlations across Selected Asset Classes

	Average Vintage Return	Vintage Volatility†	U.S. Buyout	U.S. Mezz	Direct Lending	High Yield Bonds	Bank Loans	1-5 Yr Treas	90-day T-bills	Start Date
U.S. Buyout	13.45%	12.86%	1.00							1995
U.S. Mezzanine	10.03%	10.83%	0.50	1.00						1995
Direct Lending††	8.23%	3.99%	0.12	0.31	1.00					2004
High Yield Bonds	6.67%	9.03%	0.38	0.30	0.94	1.00				1995
Bank Loans	4.68%	6.22%	0.04	0.30	0.97	0.96	1.00			2000
1-5 Yr Treasuries	3.92%	4.88%	-0.32	-0.32	-0.05	-0.12	0.06	1.00		1995
90-day T-bills	2.34%	4.50%	-0.17	-0.32	-0.45	-0.38	-0.35	0.88	1.00	1995

† Vintage volatility equals the standard deviation of calendar vintage year returns multiplied by the square root of 5, the estimated average weighted life of a vintage fund. This calculation converts standardard deviation based upon multi-year returns to an equivalent annualized standard deviation, assuming return independence. The selection of five (5) years for average life is based upon Cliffwater estimates and a desire to be consistent across asset classes.

†† Direct lending vintage return is based upon the Cliffwater Direct Lending Index and is adjusted downward for fees and expenses representative of a direct lending portfolio based upon Cliffwater's experience with advising its institutional clients.

Vintage returns shown in Exhibit 4 are consistent with both the priority of claims on corporate assets and the existence of an illiquidity premium.

Mezzanine debt fund return and risk, at 10.03% and 10.83%, respectively, falls between U.S. buyout and direct lending outcomes, as we would expect. Its 10.03% return has also provided a 3.36% premium to high yield bonds, its closest public equivalent in degree of credit risk.

Correlations are positive across the credit asset classes, and with U.S. buyout funds. These correlations turn negative with U.S. Treasury notes and bills, which we believe validates the “risk on” character of the credit and equity asset classes.

Conclusion

We find that mezzanine debt funds provided a unique, but not superior, return and risk opportunity for investors over the last 20 years when compared to other credit oriented asset classes, and private equity, represented in U.S. buyout funds. Our return and risk measurements place mezzanine debt between U.S. buyouts and direct lending, and well above high yield bonds, it closest public market equivalent. We are also able to demonstrate significant return premiums within the credit markets for private debt compared to public debt during the study period. Mezzanine debt funds produced returns over 3% above high yield bonds, its public equivalent, while direct lending did the same compared to bank loans, its public equivalent.

Our findings are, of course, limited by our data but consistent with general industry perceptions.

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Statements that are nonfactual in nature, including opinions, projections and estimates, assume certain economic conditions and industry developments and constitute only current opinions that are subject to change without notice. Further, all information, including opinions and facts expressed herein are current as of the date appearing in this report and is subject to change without notice.

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

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

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

Any information presented prior to the Launch Date (September 30, 2015) of the CDLI is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-tested calculations are based on the same methodology that was in effect when the CDLI was officially launched. Please refer to the methodology paper for the CDLI (available at www.CliffwaterDirectLendingIndex.com) for more details about the CDLI, including the Base Date/Value (September 30, 2004 at 1,000) and the Launch Date of the CDLI and the manner in which the CDLI is rebalanced, the timing of such rebalancing and the eligibility criteria for the CDLI.

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

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

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

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

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

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

The Cambridge Associates U.S. Buyout Index is based on data compiled from U.S. institutional-quality buyout funds, including fully liquidated partnerships, formed between 1995 and 2014. Thomson Financial Inc. is the owner and/or licensor of the Cambridge Associates LLC data contained or reflected in this material.

The PitchBook U.S. Mezzanine Index is based on data compiled from U.S. institutional-quality mezzanine funds, including fully liquidated partnerships, formed between 1995 and 2014.

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