



Board of Retirement Regular Meeting

Sacramento County Employees' Retirement System

Agenda Item 19

MEETING DATE: April 17, 2024

SUBJECT: Education: Private Equity and Private Credit Asset Classes

SUBMITTED FOR: Consent Deliberation and Action Receive and File

RECOMMENDATION

Receive and file presentations on the Private Equity and Private Credit asset classes.

PURPOSE

This item supports the Strategic Management Plan by contributing to the effective management and oversight of investment activities.

DISCUSSION

At the February 2024 meeting, Staff and Verus started the asset class education series, covering the Global Equity and Fixed Income asset classes, followed by the Absolute Return asset class in March. At the April meeting, Staff and Cliffwater will provide education presentations covering the Private Equity and Private Credit asset classes.

The objective of the asset class educational series is to:

- Assist the Board in understanding the role and objective of each asset class
- Review asset class construction
- Provide an overview of asset class performance in meeting their objectives
- Discuss asset class trends and considerations

The asset class overviews are intended to provide a backdrop for the Board as Verus conducts the Asset Liability Management (ALM) study later in the year and presents the Board with asset class mixes for consideration.

The final asset class education is scheduled for the May Board meeting on Real Assets and Real Estate.

ATTACHMENTS

- Board Order
- Private Equity and Private Credit Asset Classes presentation

Prepared by:

/s/

Jim Donohue
Deputy Chief Investment Officer

/s/

JR Pearce
Senior Investment Officer

Reviewed by:

/s/

Steve Davis
Chief Investment Officer

/s/

Eric Stern
Chief Executive Officer



Retirement Board Order

Sacramento County Employees' Retirement System

Before the Board of Retirement
April 17, 2024

AGENDA ITEM:

Education: Private Equity and Private Credit Asset Classes

THE BOARD OF RETIREMENT hereby approves Staff's recommendation to receive and file presentations on the Private Equity and Private Credit asset classes.

I HEREBY CERTIFY that the above order was passed and adopted on April 17, 2024 by the following vote of the Board of Retirement, to wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

ALTERNATES:

(Present but not voting)

James Diepenbrock
Board President

Eric Stern
Chief Executive Officer and
Board Secretary



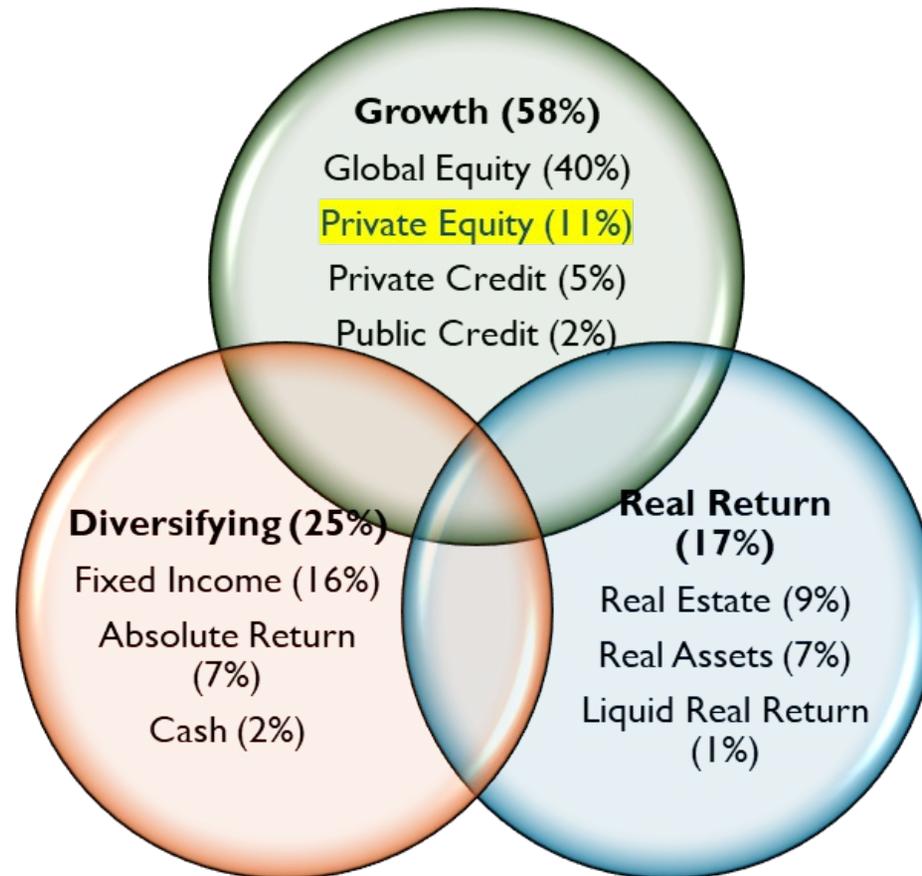
Education – Private Equity Overview

April 17, 2024

Introduction

- Portfolio fit and construction
- Roles and objectives of Private Equity
- Private Equity timeline
- Performance
- Private Equity considerations

Portfolio Fit



- Private Equity resides in the Growth Asset Category
- Target 11% (8-14% range); 13% as of 12/31/2023

Roles and Objectives

Enhance the total fund performance through investments in non-publicly traded securities

To compensate for illiquidity and higher risk, the portfolio is expected to generate a rate of return that exceeds the return of publicly traded equities

Market timing can lead to missed opportunities or investments made at unfavorable terms. Consistency helps smooth out the impact of market fluctuations.

Consistently investing over time helps build relationships with fund managers, co-investors, and other stakeholders, which can lead to access to better deals and opportunities

Governance

- Alternative assets/private markets protocol
- Includes Absolute Return; Private Equity; Private Credit; Real Estate; and Real Assets
 - The selection of investment managers is delegated to Staff, subject to the Board's ability to review, discuss, and object to the recommendations of Staff and consultant during the investment process.
 - Reports provided to the Board on a timely basis regarding actions recommended by Staff and Consultant.

Private Equity Timeline

2005

- 5% target
- Investment via Funds of Funds

2017

- Target allocation reduced to 9% as Private Credit was added

2011

- Private Equity target increased to 10%; Public Equities were reduced
- Moved away from Funds of Funds into direct fund investing
- Cliffwater hired as Alternatives Consultant

2021

- Target allocation increased to 11% (Actual allocation 14%)
- Added growth equity sub-strategy

Portfolio Construction

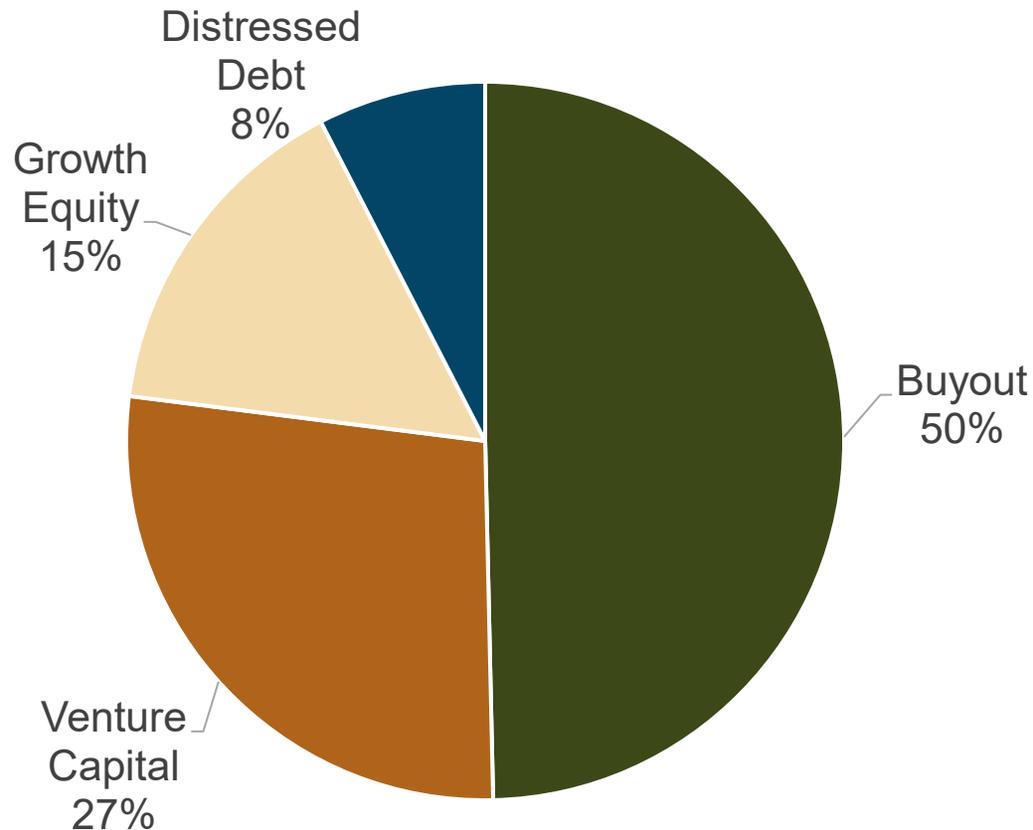
Sub-Strategy	Minimum	Target	Maximum	Policy Index Benchmark
Total Private Equity Portfolio	8%	11%	14%	Cambridge Associates PE/VC Index

Buyout	35%	55%	75%
Venture Capital	10%	20%	40%
Growth Equity	10%	15%	35%
Distressed Debt	5%	10%	30%
Other	0%	0%	15%

U.S. Private Equity	70%	80%	90%
Non-U.S. Private Equity	10%	20%	30%

- Balanced risk/reward target allocations in sub-strategies
- Geographic allocations based on exposures
- Difficult to rebalance without costs
- Flaws in all PE benchmark indexes

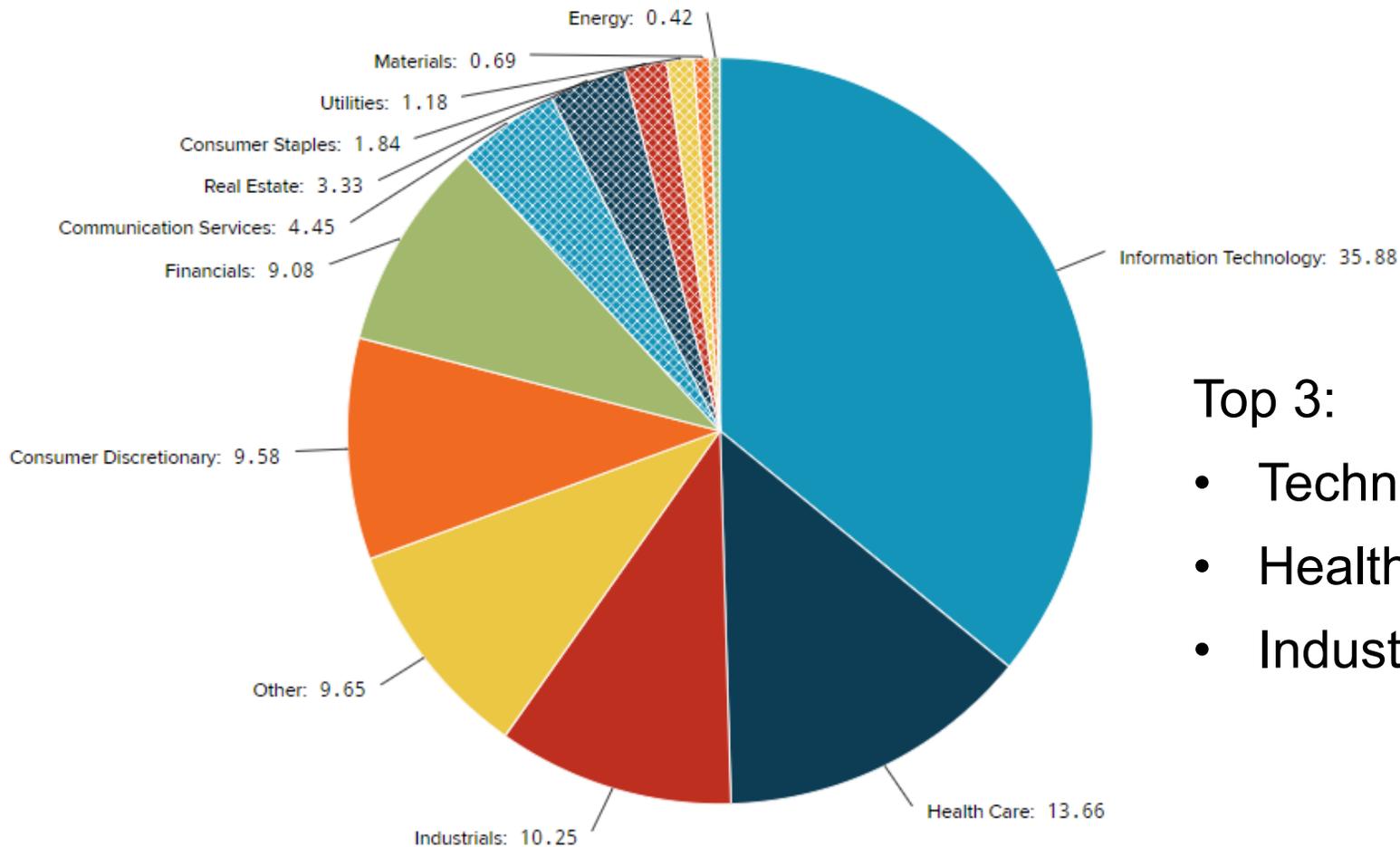
Private Equity Portfolio by Sub-Strategy



Source: MSCI

- SCERS has 32 GP relationships (20 active), 79 active fund investments, and 5 investments fully wound down or exited

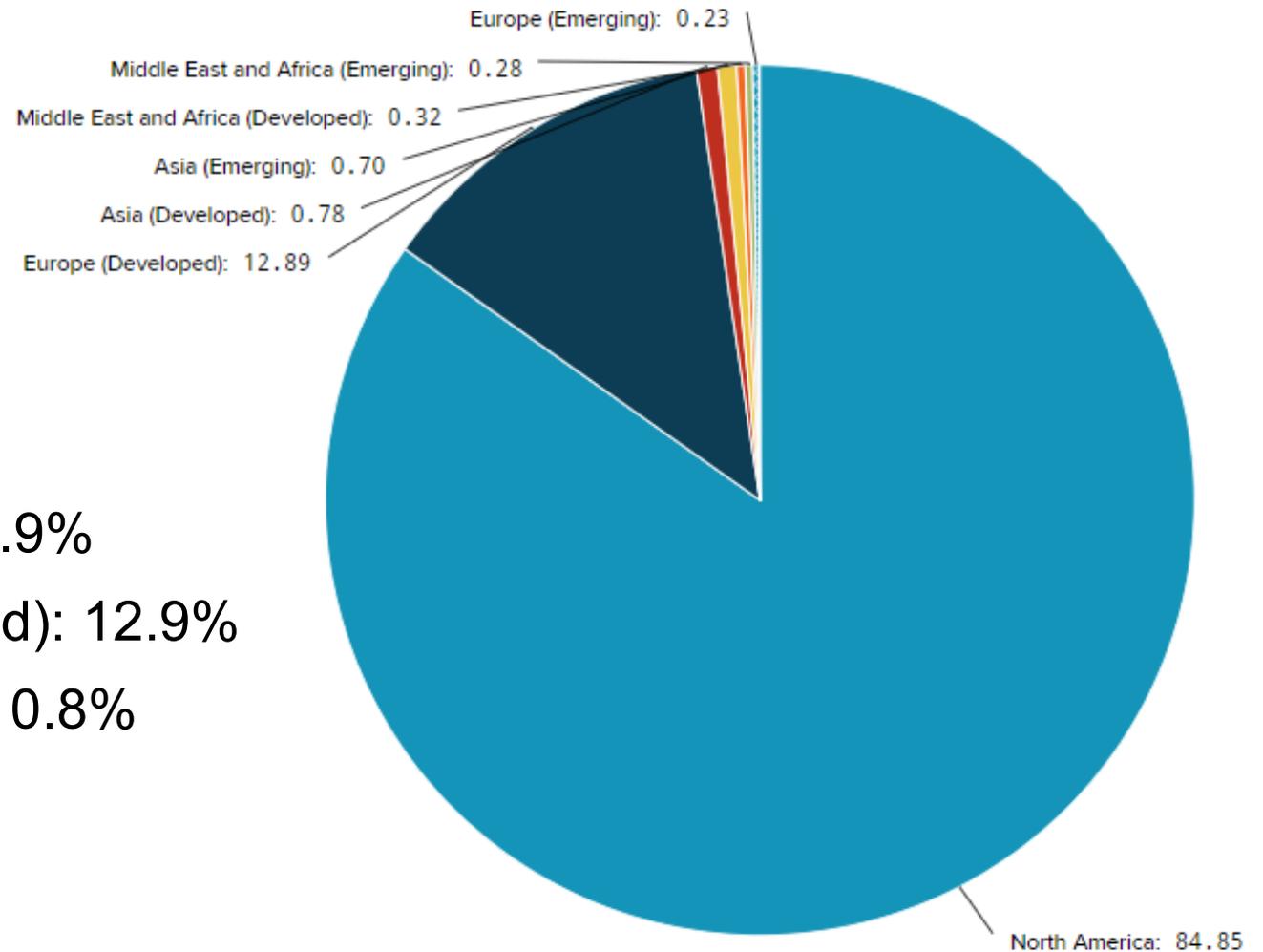
Diversification in PE Portfolio



Top 3:

- Technology: 35.6%
- Health Care: 13.7%
- Industrials: 10.3%

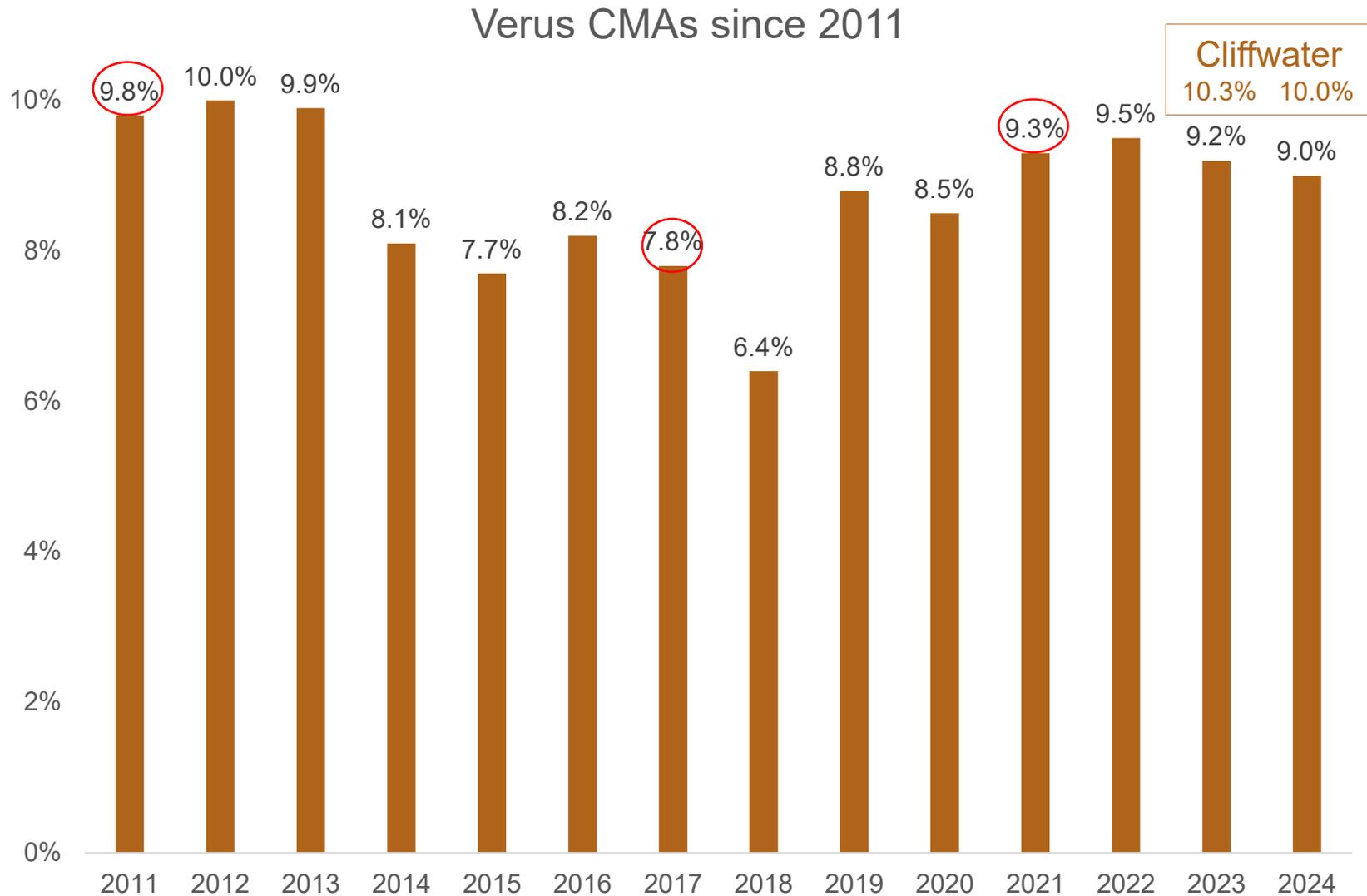
Diversification in PE Portfolio



Top 3:

- North America: 84.9%
- Europe (Developed): 12.9%
- Asia (Developed): 0.8%

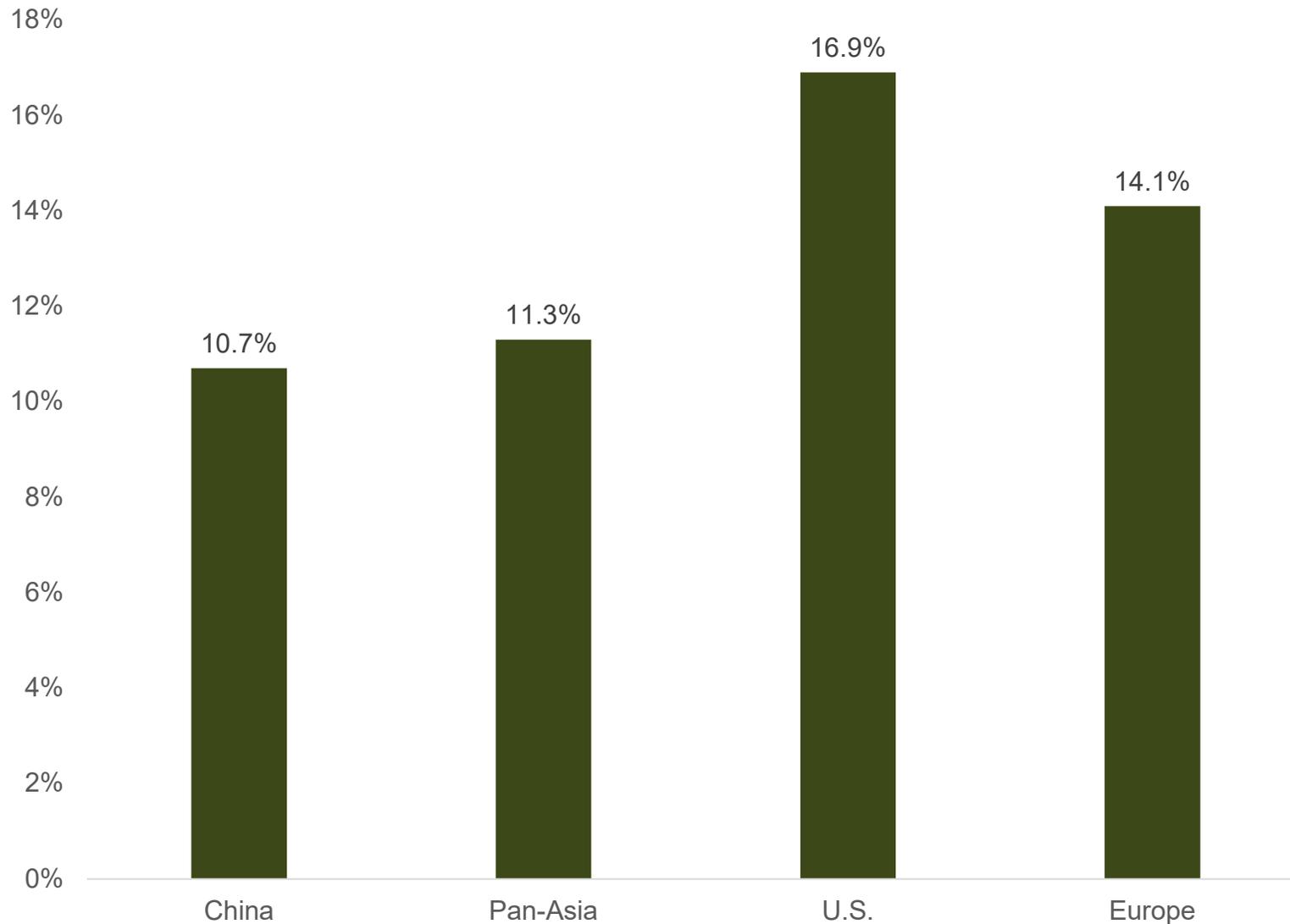
Capital Market Assumptions (CMA)



Source: Verus and Cliffwater

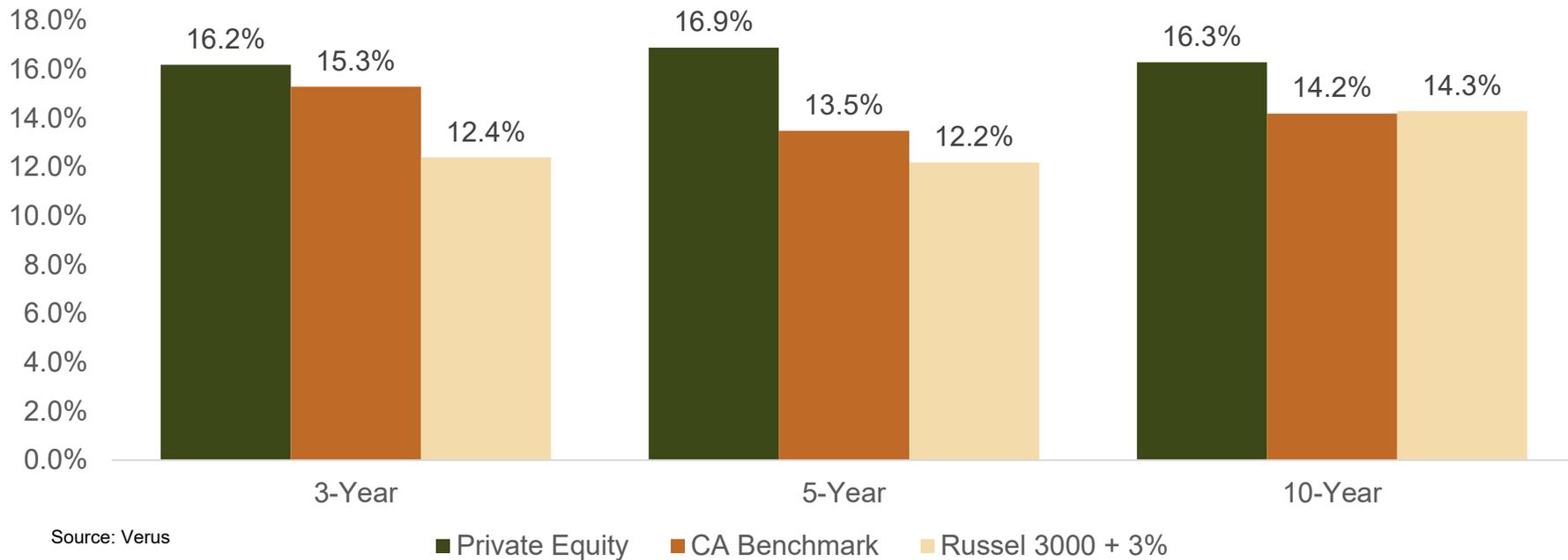
SCERS' 10-Yr PE Performance: 16.3%

Trailing 10-year Pooled Net IRR (in USD)



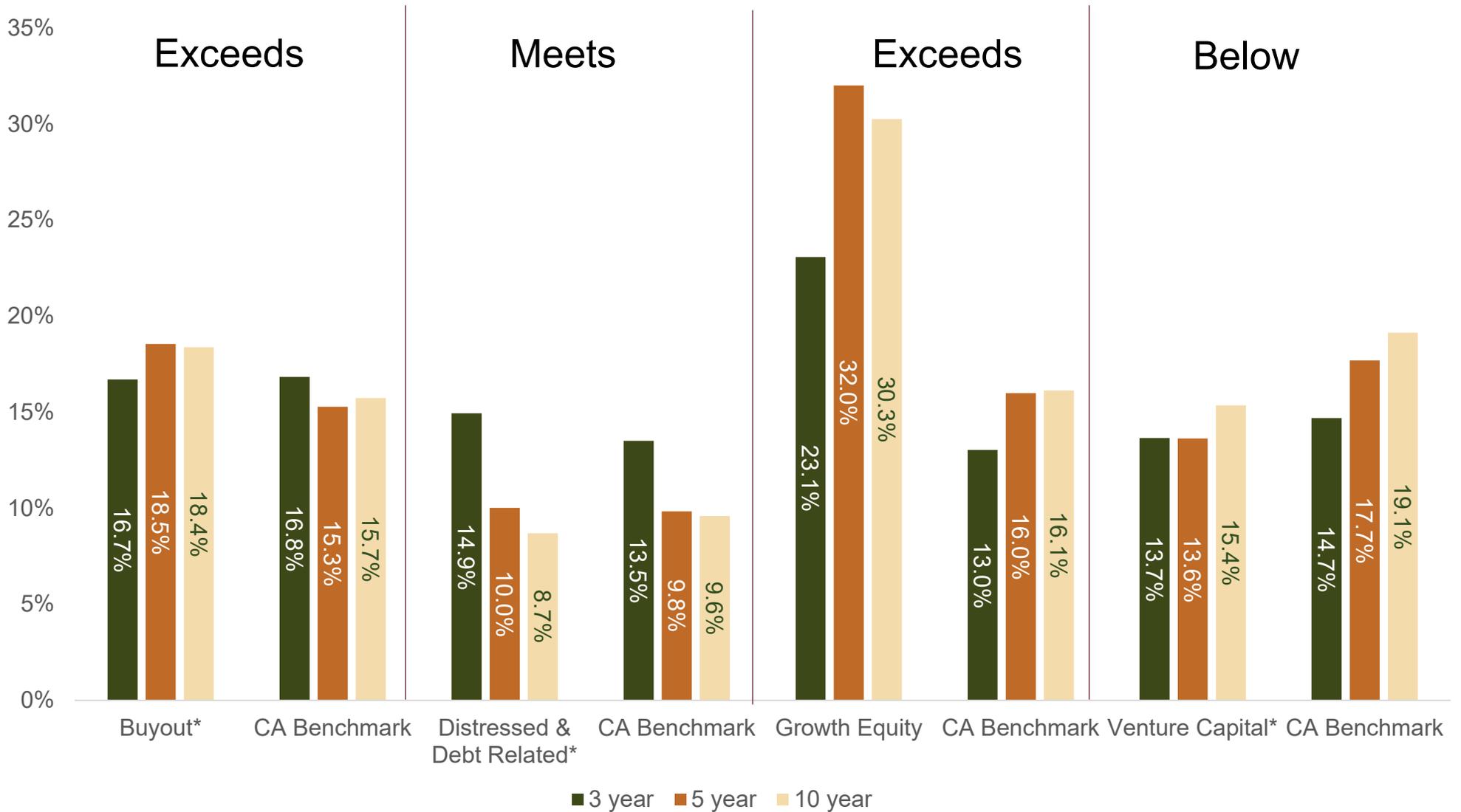
Source: Cambridge Associates

Private Equity Performance (net of fees as of 9/30/2023)



- Enhanced long-term return objective – 10-Year return of 16.3%
 - Has outperformed CA benchmark by 200 bps over the long term, and 500 bps over Russell 3000 index
- Greater volatility quarter over quarter reflects placement in the Growth asset category

Sub Asset Class Performance

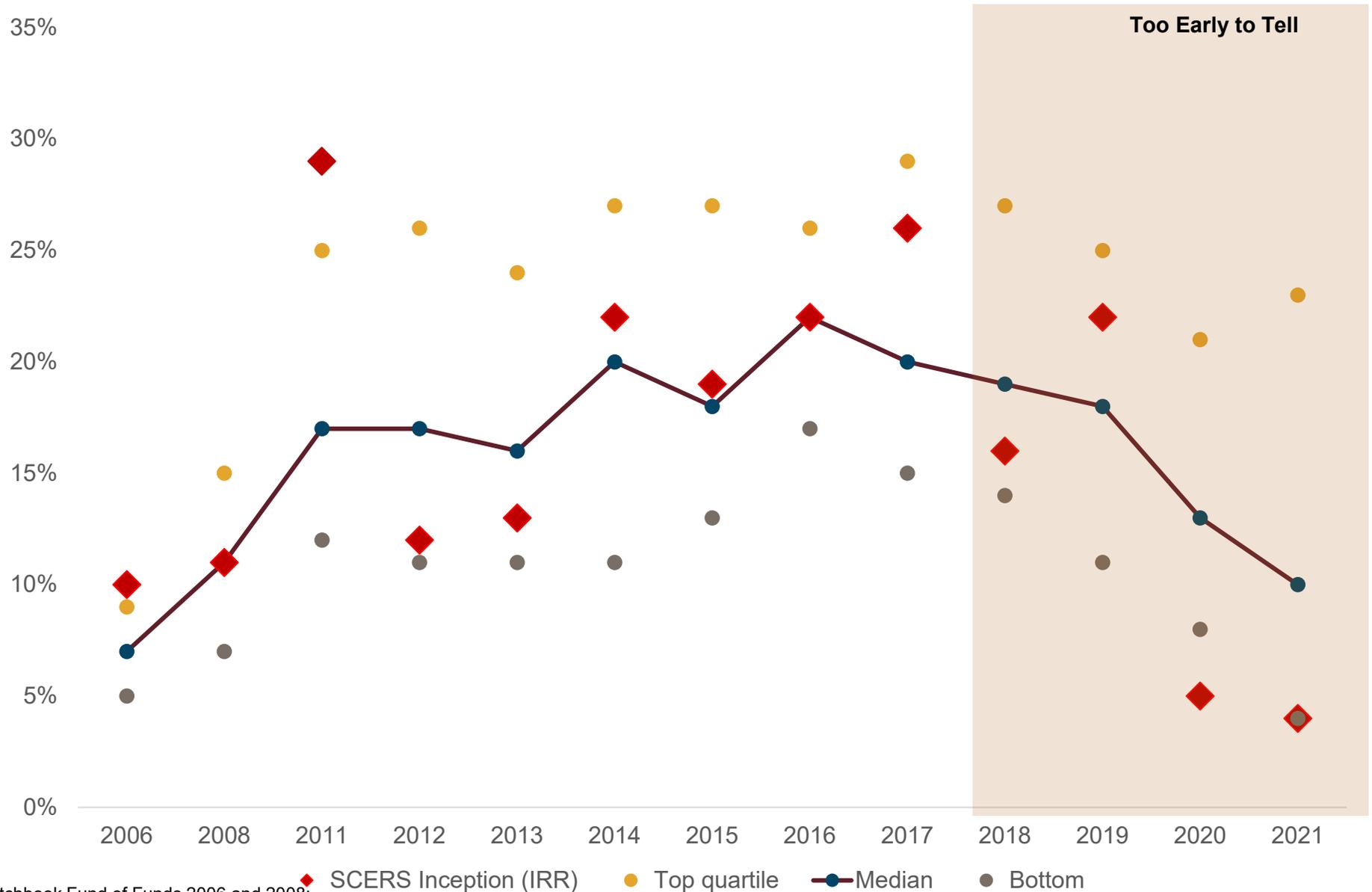


Source: Data as of September 2023; Cambridge Associates and Cliffwater

Note: Strategy groupings include the following Fund of Funds: Buyout includes HarbourVest Partners VIII - Buyout Fund, HarbourVest International Private Equity Partners VI-Partnership Fund, Goldman Sachs Private Equity Partners X, RCP Fund XIII, and RCP Direct III, Distressed & Debt Related includes HarbourVest Partners VIII - Mezzanine and Distressed Debt Fund, and Venture Capital includes HarbourVest Partners VIII - Venture Fund and Abbott Capital Private Equity Fund VI

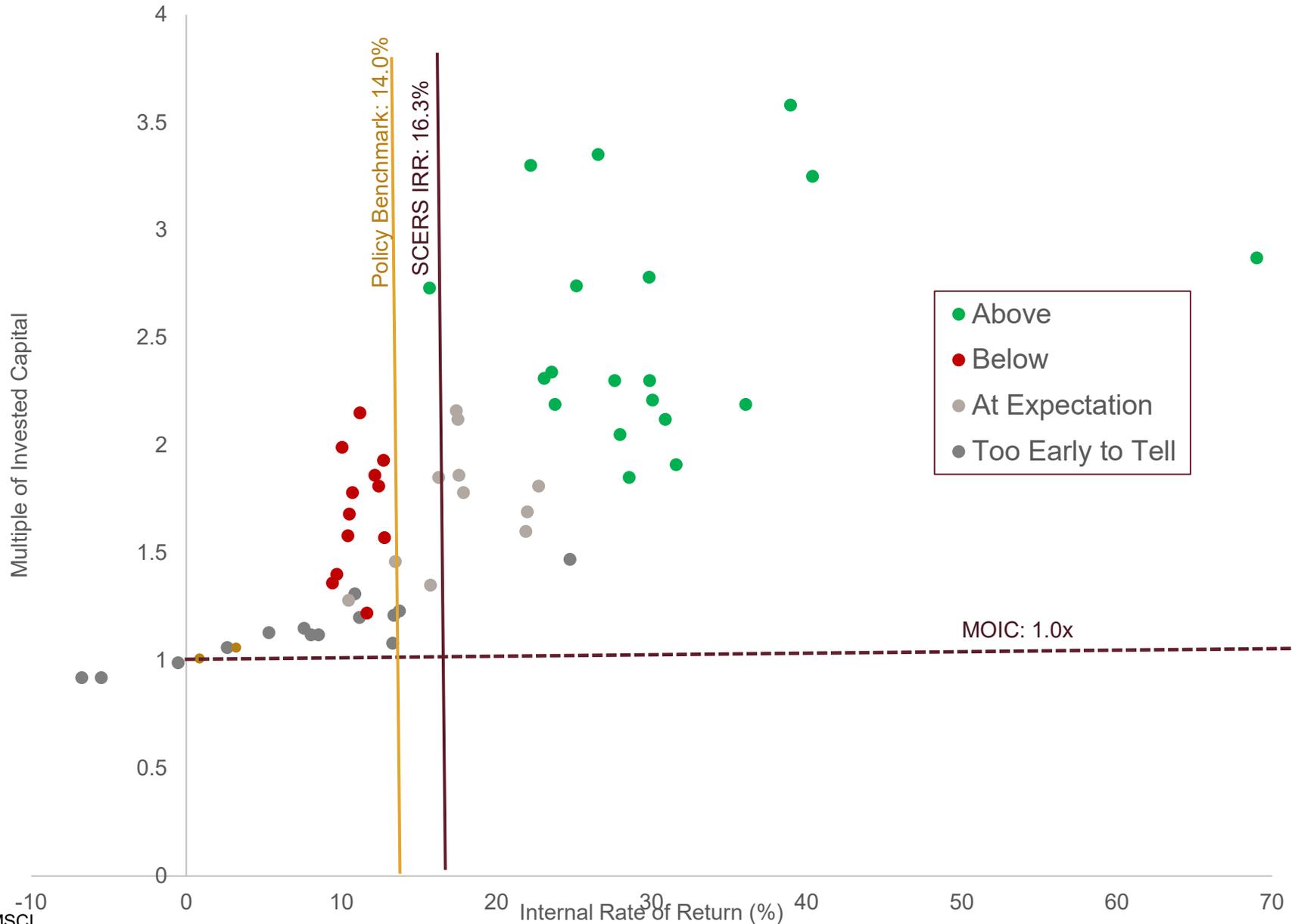
SCERS' Vintage Year Performance

as of September 2023



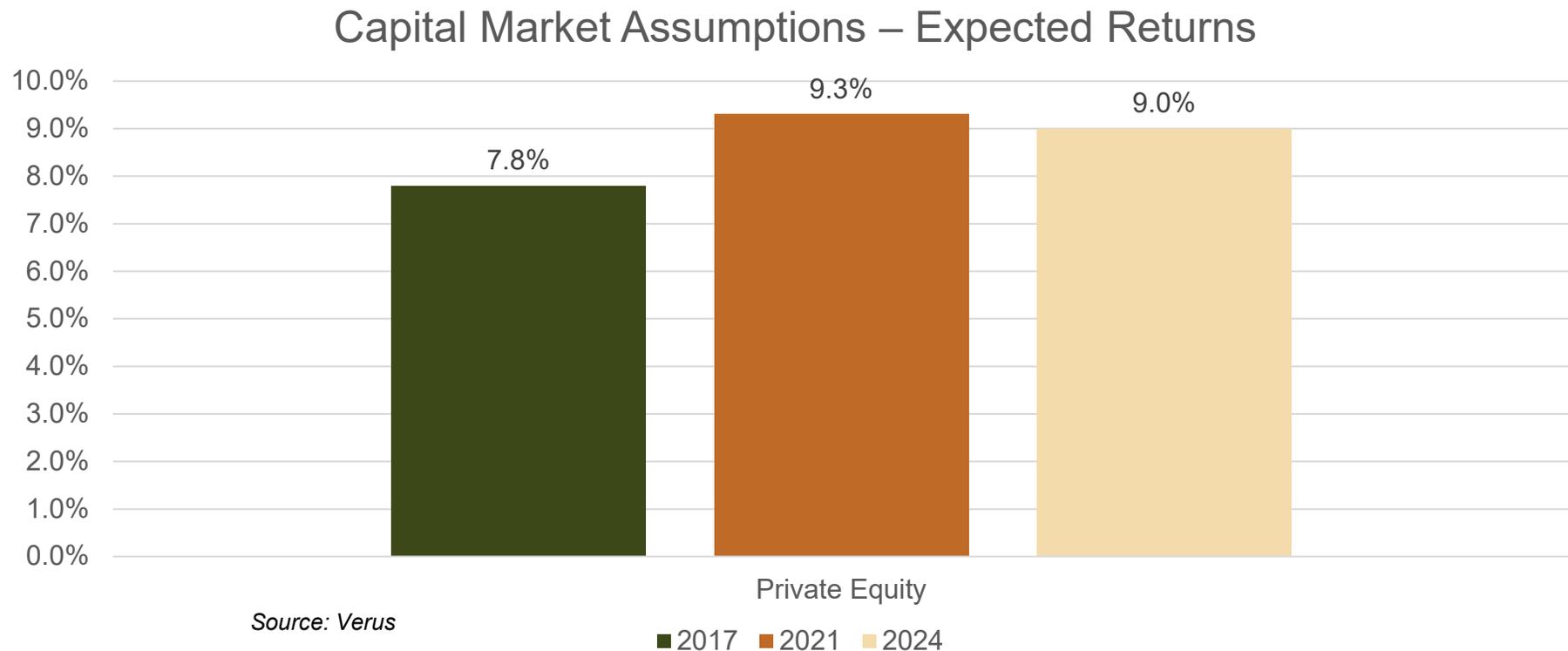
Source: Pitchbook Fund of Funds 2006 and 2008;
North American Private Equity 2010-2021 and MSCI

Private Equity Fund Performance



Source: MSCI

Private Equity Considerations



- Private Equity forecasted returns remain robust
- Recent returns have been muted
 - Slowdown in fundraising and deal activity
 - Limited valuation markdowns by managers

Private Equity Considerations

- Premium carried interest in private equity
- Holding periods returning to historical pace
- Platform versus boutique investing
- Specialist manager versus generalist
- Sub-asset classes considerations
 - Venture: early versus late stage
 - Buyouts: US versus Non-US
 - Mid Cap versus Large cap
 - Distressed versus Distressed Debt
 - Growth Equity: revisit
- Size of fund



Private Equity Considerations

- Private equity valuation delay in timing; slow down in volume of exits and new deals
- Initial Funds of Funds commitments will detract from performance across sub-asset classes. Direct fund commitments have performed substantially better
- Impact of J-Curve on Buyout and Venture
- Distribution to Paid-In (DPI) is 0.87
- Secondary funds have grown in number, specialization, and fund size. Despite competition for transactions, discounts remain high in a market where exit volume and scale remain muted
- As of March 2024, the co-investment strategy has five investments in the portfolio, with two written up, and the pipeline for new transactions is strong



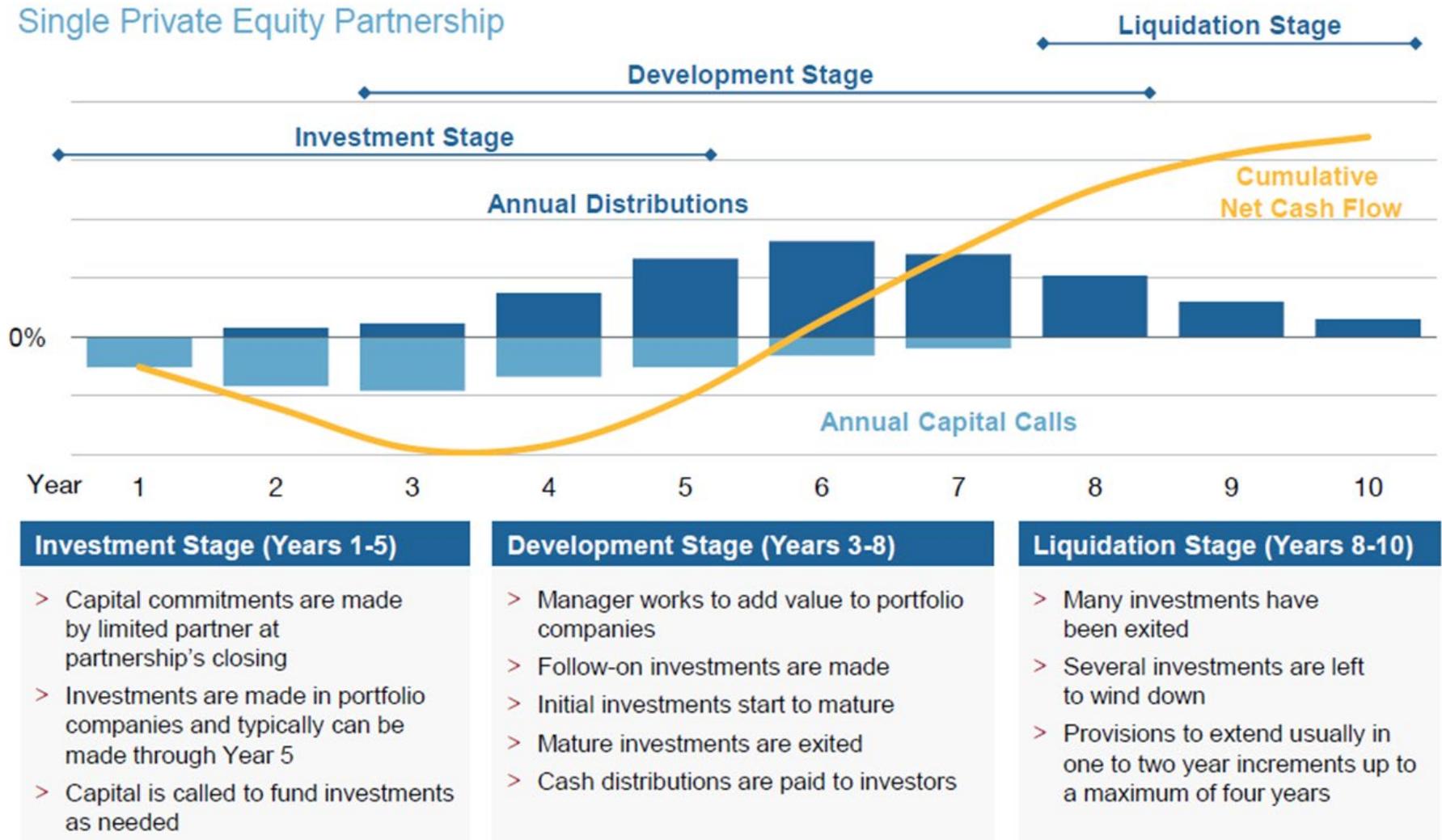
Appendix – Private Equity Concepts and Terminology

Private Equity Investment Structures

	Direct Funds	Fund of Funds (FoFs)
Strengths	<ul style="list-style-type: none"> — Single layer of fees — Customized portfolio — Increased control over investments: pacing, types of funds — Direct relationships with General Partners 	<ul style="list-style-type: none"> — Generally lowers risk through broad diversification across managers, strategies, sub-asset classes, and /or geographies — Simpler to implement
Considerations	<ul style="list-style-type: none"> — Operationally complex — Resource intensive — Can take longer to construct full PE program 	<ul style="list-style-type: none"> — Long-term commitment to vehicle with extra layer of management fees and carried interests — Historically lower net returns to LPs than direct funds — Potentially lack of transparency — Alignment of interests can vary — Longer fund life / illiquidity than direct — Significantly more difficult to withdraw / terminate after commitment

Source: Verus

J-Curve



Source: Verus

Definitions

Buyouts

A specialized form of private equity, characterized chiefly by risk investment in established private or publicly listed firms that are undergoing a fundamental change in operations or strategy.

Commitment

A Limited partner's obligation to provide a certain amount of capital to a private equity fund for investments.

Distributed to Paid in (DPI)

The ratio of money distributed to Limited Partners by the Fund, relative to contributions. Any reinvested capital (resulting from recallable distributions) should be included in the denominator.

Fund of Fund (s)

A fund set up to distribute investments among a selection of private equity fund managers, who in turn invest the capital directly. Fund of funds are specialist private equity investors and have existing relationships with firms. They may be able to provide investors with a route to investing in particular funds that would otherwise be closed to them. Investing in fund of funds can also help spread the risk of investing in private equity because they invest the capital in a variety of funds.

General Partner (GP)

The managing partner in a private equity management company who has unlimited personal liability for the debts and obligations of the limited partnership and the right to participate in its management. The General Partner is the intermediary between investors with capital and businesses seeking capital to grow.

Internal Rate of Return (IRR)

The discount rate at which the present value of future cash flows of an investment equals to the cost of the investment. It is determined when the net present value of the cash outflows (the cost of the investment) and the cash inflows (returns on the investment) equal zero, with the discount rate equal to the IRR.

Source: ILPA

Definitions (continued)

IRR (Gross)

The IRR based upon the performance of the investments, not taking into account management fees or carried interest.

IRR (Net)

The dollar-weighted internal rate of return, net of management fees, and carried interest generated by an investment in the fund. The return considers the daily timing of all cash flows and cumulative fair stated value at the end of the reported period.

J-Curve Effect

The curve is realized by plotting the returns generated by a private equity fund against time (from inception to termination). The common practice of paying the management fee and start-up costs out of the first draw-down does not produce an equivalent book value. As a result, a private equity fund will initially show a negative return. When the first realizations are made, the fund returns rise quite steeply. After about three to five years, the interim IRR will reasonably indicate the definitive IRR. This period is generally shorter for buyout funds than for early-stage and expansion funds.

Limited Partner (LP)

The investors in a limited partnership. Limited partners are not involved in the day-to-day management of the partnership and generally cannot lose more than their capital contribution.

Limited Partnership Agreement (LPA)

The document that constitutes a Limited Partnership. These will be the subject of discussion and negotiation before the first closing.

Management Fee

The management fee provides the partnership with resources such as investment and clerical personnel, office space, and administrative services required by the partnership.

Secondary Market

The market for the sale of partnership interests in private equity funds. Sometimes, LPs choose to sell their interest in a partnership, typically to raise cash or because they cannot meet their obligation to invest more capital according to the takedown schedule. Certain investment companies specialize in buying these partnership interests at a discount.

Definitions (continued)

Time-weighted (returns)

Instead of calculating the actual IRR of a series of cashflows over a given period (i.e., the compound return over time), time-weighted returns calculate the geometric mean, i.e., the average annual percentage return in any year.

Total Value to Paid In (TVPI)

The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. Any callable distributions should be included in the numerator of this ratio. Any reinvested capital (resulting from callable distributions) should be included in the denominator.

Venture Capital

A specialized form of private equity, characterized chiefly by higher-risk investment in new or young companies following a growth path in technology and other value-added sectors.



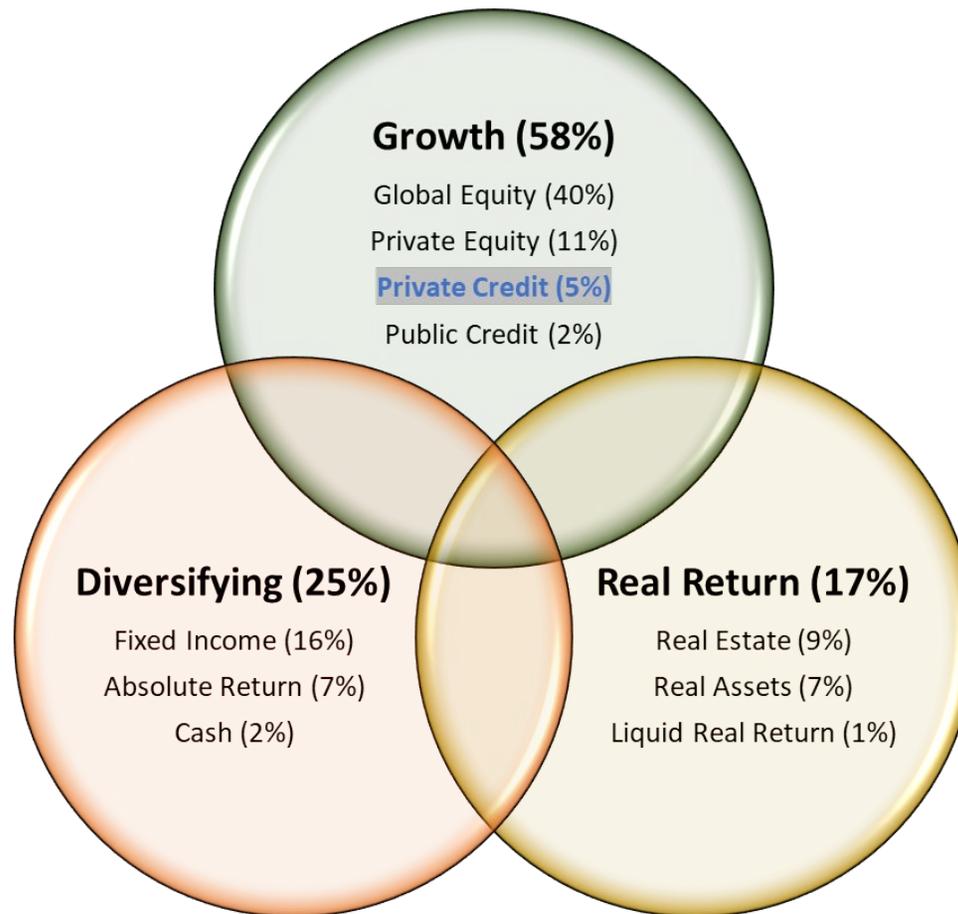
Education – Private Credit Overview

April 17, 2024

Introduction

- Portfolio fit and construction
- Roles and objectives of Private Credit
- Private Credit timeline
- Performance
- Private Credit considerations

Portfolio Fit



- Private Credit resides in the Growth Asset Category
- Target Allocation 5% (3-7% range); 3.1% as of 12/31/2023; expected to reach target in 2026

Roles and Objectives

Produce attractive risk-adjusted returns

Generate cash flow through private lending strategies

Consistent and diversified returns

Along with earning a 'illiquidity premium', achieve additional excess returns from the selection of investment managers

Governance

- Alternative assets/private markets protocol
- Includes Absolute Return; Private Equity; Private Credit; Real Estate; and Real Assets
 - The selection of investment managers is delegated to Staff, subject to the Board's ability to review, discuss, and object to the recommendations of Staff and consultant during the investment process
 - Reports provided to the Board on a timely basis regarding actions recommended by Staff and Consultant

Private Credit Timeline

2011

- Private lending strategies were included in Private Equity
- Cliffwater hired as alternative assets consultant

2021

- Increased target allocation to 5%
- 65% Direct Lending and 35% Opportunistic Lending
- 75% U.S. and 25% Non-U.S.
- Increasing focus on collateral-based lending and niche credit strategies

2017

- Dedicated Private Credit asset class added - 4% target
- 70% Direct Lending and 30% Opportunistic Lending
- 85% U.S. and 15% Non-U.S.
- Focus on foundational mandates, differentiated non-sponsored strategies, and asset-backed strategies

Portfolio Construction

Sub-Strategy	Minimum	Target	Maximum	Policy Index Benchmark
Total Private Credit Portfolio	3%	5%	7%	Credit Suisse Leveraged Loan Index + 2%

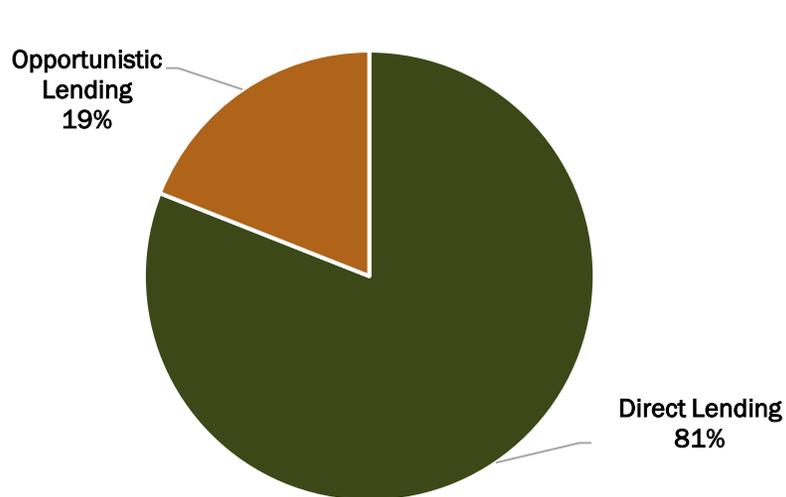
Direct Lending	50%	65%	90%
Opportunistic Lending	10%	35%	50%

U.S. Private Credit	65%	75%	100%
Non-U.S. Private Credit	0%	25%	35%

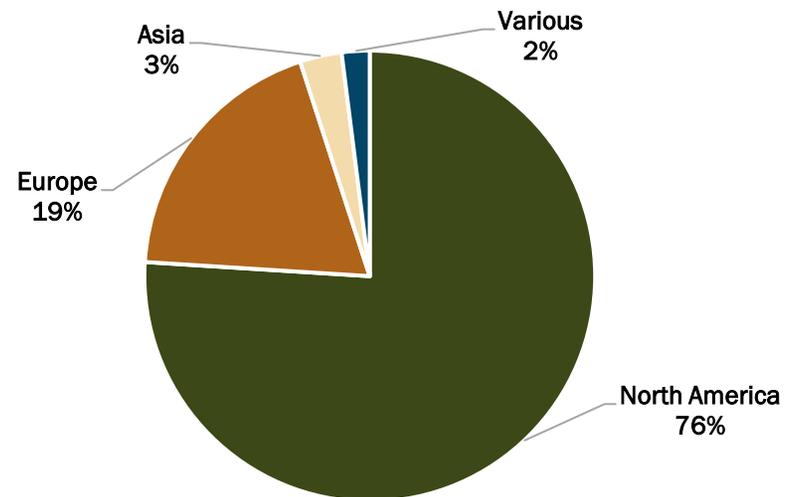
- Private Credit – senior secured private loans to performing companies; typically floating rate
 - Direct Lending – loans to middle market companies diversified across sectors; sponsored and non-sponsored
 - Opportunistic Lending – includes asset-backed loans, royalty streams, sector focus, and equity participation
- Public index benchmark plus a premium; limited private market indexes

Private Credit Exposures

Private Credit Strategy Exposures



Private Credit Geographic Exposures

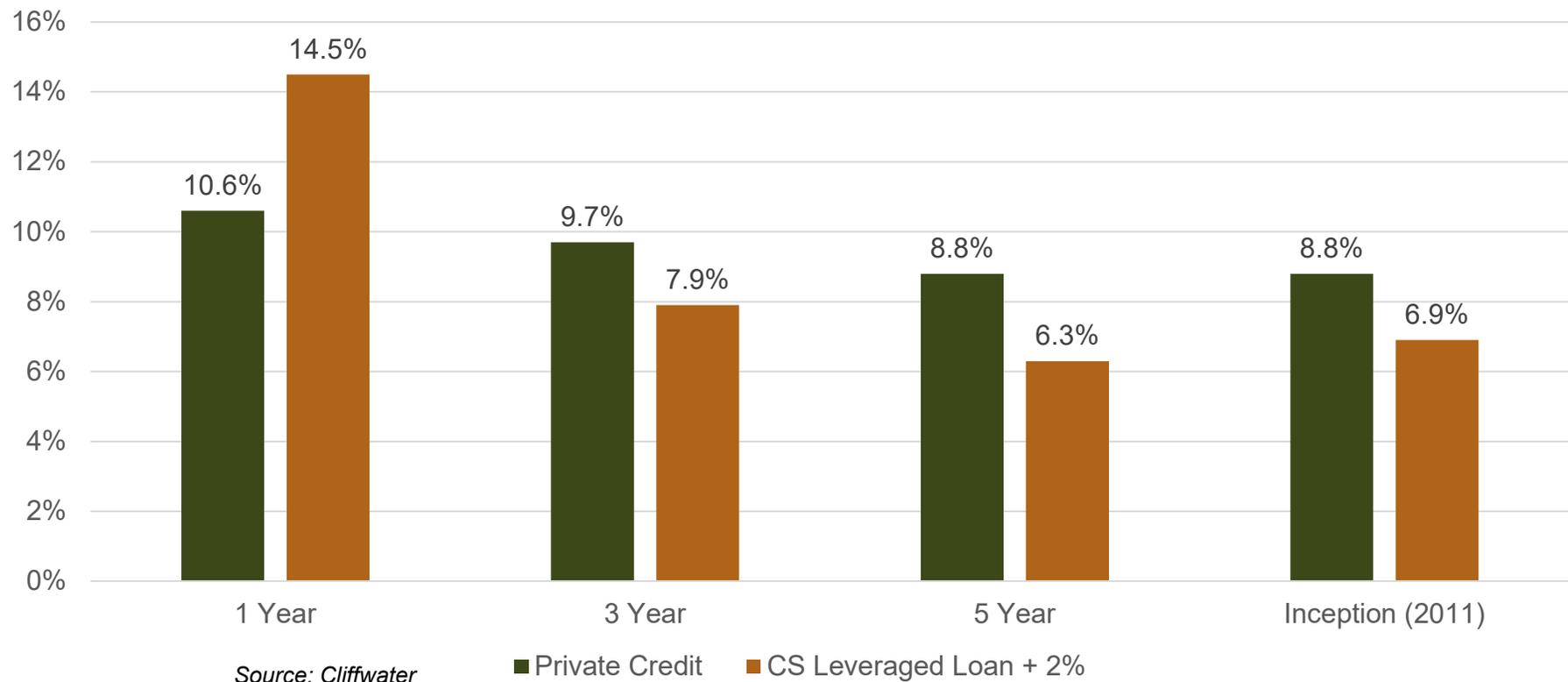


Source: Cliffwater, as of 09/30/23

- SCERS has 19 fund investments with 11 managers (target is 8-10 ongoing manager relationships)
- Includes one fund-of-one structure, one open-end fund, and the remaining in closed-end commingled funds
- Mostly U.S. Direct Lending centric
 - Opportunistic Lending and Non-U.S. of increasing focus

Private Credit Performance

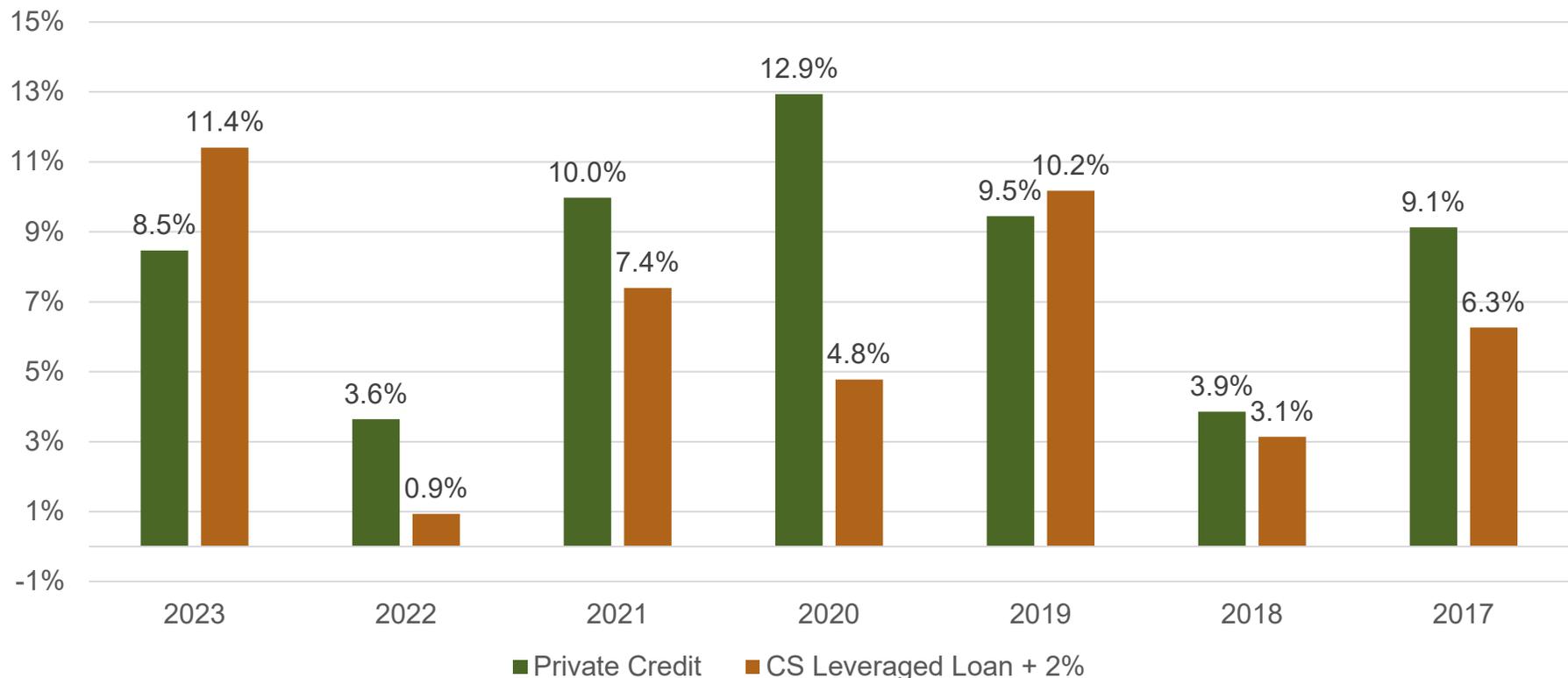
Private Credit Returns – Net of Fees (as of 9/30/2023)



- Performance has been consistent and has exceeded policy benchmark over the long-term
- Overall returns have met the private credit expectation of 8-10% net

Private Credit Performance

Private Credit Returns – Calendar Year Net of Fees (as of 9/30/2023)



Source: Cliffwater

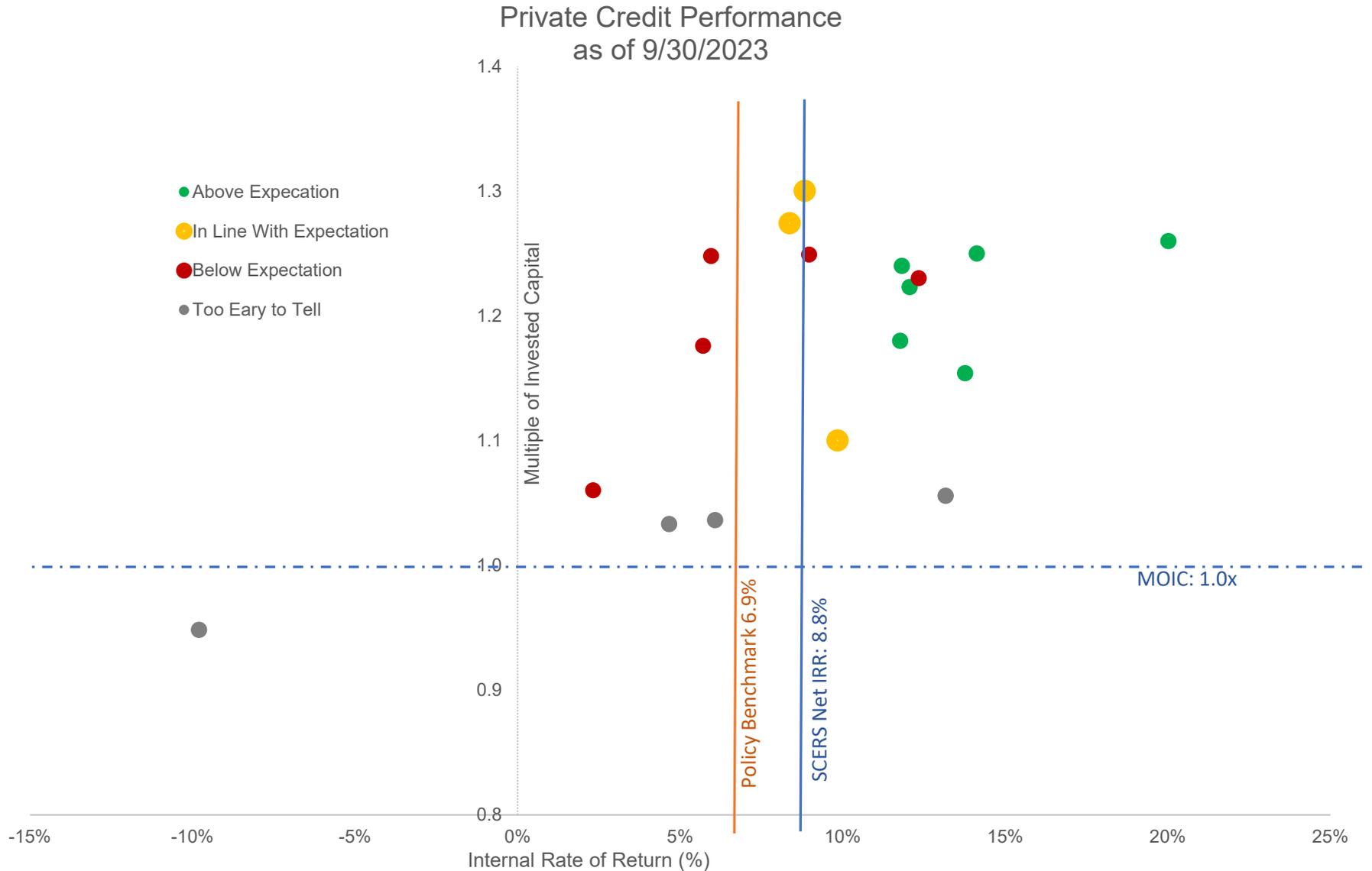
- Consistent positive returns across a variety of economic/market environments
 - Strong economic growth/low inflation, high inflation/rising interest rates, COVID-19, equity market rallies and sell offs

Private Credit Manager Performance

Manager	Value 09/30/23 (\$million)	Returns Since Inception	Inception Date
Direct Lending			
Ares Capital Europe V	\$32.2	11.8%	Aug-21
Ares Senior Direct Lending Fund III	\$0.0	N/A	Nov-23
Brookfield Infrastructure Debt Fund III	\$18.2	4.7%	Apr-23
BSP Levered US SOF I (Senior Secured Opportunities) Fund	\$27.0	6.0%	Feb-18
BSP Levered US SOF II (Senior Secured Opportunities)	\$38.2	12.0%	Jan-20
IFM USIDF (Offshore) B Feeder	\$37.8	9.8%	Apr-21
MCP Private Capital Fund IV (Feeder) SCSp	\$26.5	12.3%	May-20
Summit Partners Credit Fund, LP	\$0.2	8.8%	Dec-21
Summit Partners Credit Fund II, L.P.	\$10.3	5.7%	Nov-11
Summit Partners Credit Fund III, L.P.	\$16.3	14.1%	Dec-14
Summit Partners Credit Fund IV, L.P.	\$15.0	13.8%	Nov-18
TCP Direct Lending Fund VIII-S, LLC	\$117.7	8.4%	Mar-18
Opportunistic Lending			
Athyrium Opportunities Fund II	\$7.4	9.0%	Jul-15
Athyrium Opportunities Fund III	\$7.9	2.3%	Jun-17
OrbiMed Royalty & Credit Opportunities III, LP	\$17.2	20.0%	Oct-19
OrbiMed Royalty & Credit Opportunities IV, LP	\$7.4	13.2%	Oct-22
Shamrock Capital Debt Opportunities Fund I, L.P.	\$9.9	5.9%	Aug-21
Silver Point Specialty Credit Fund II, L.P.	\$32.1	11.8%	Aug-20
Silver Point Specialty Credit Fund III, L.P.	\$8.3	6.9%	Apr-23

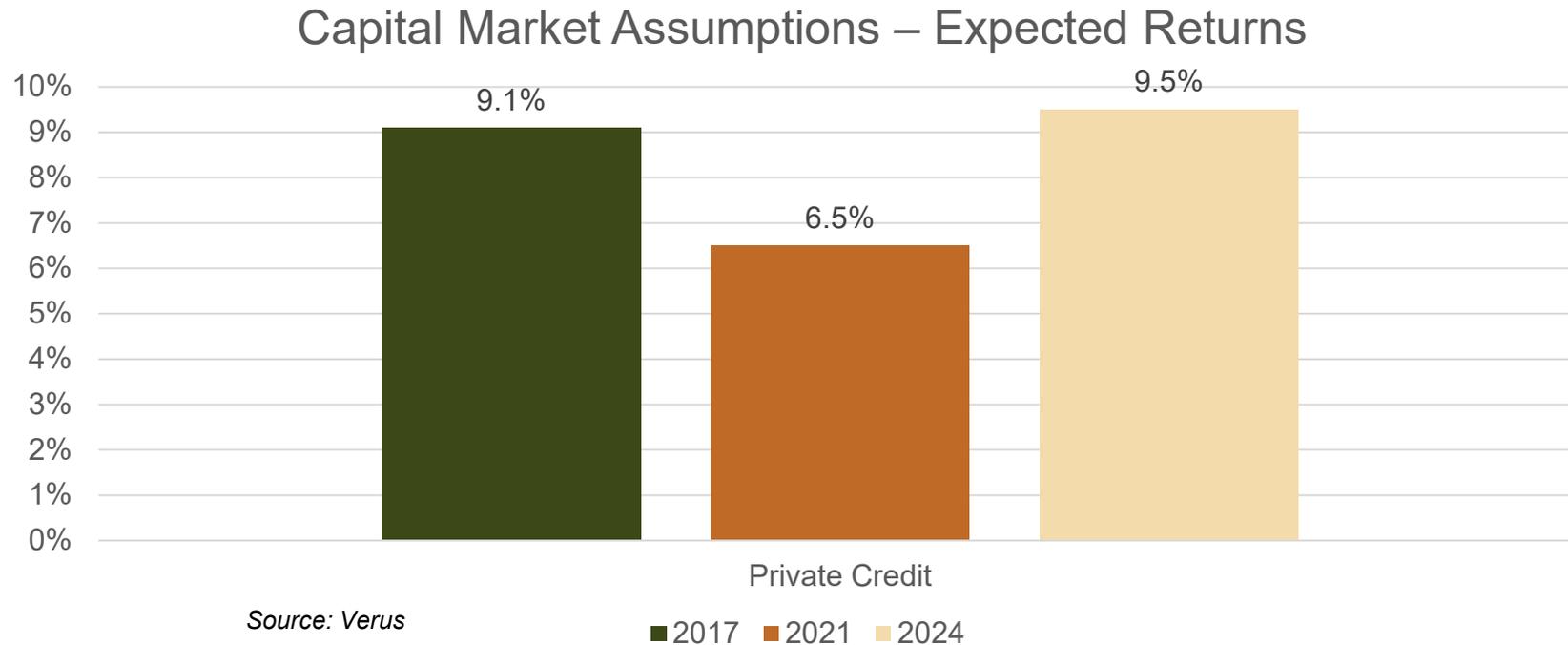
Source: Cliffwater and MSCI

Private Credit Fund Performance



Source: Cliffwater and MSCI

Private Credit Considerations



- Private credit forecasted returns benefitting from higher interest rates (floating rates)
 - Verus models private credit as the highest returning major asset class
 - Cash flow-based consistent returns
- Shorter duration loans with early prepayment result in higher IRRs but a lower multiple of invested capital than other asset classes; 1.2x since inception vs. 1.7x for Private Equity

Private Credit Considerations

- Reduced J-Curve - loans pay cash flows immediately and fund management fee is on invested capital
- Private credit valuations differ from public credit
 - Private loans are held to maturity
 - limited mark-to-markets by managers – **smoothed returns**
 - Public credit is priced daily based on interest rate spreads, volatility, issuer credit, and market sentiment
 - **Greater return volatility**
- Flood of capital into the asset class
 - Sponsored, private equity backed lending in particular
 - Increasing number of participants into the segment, with limited track records

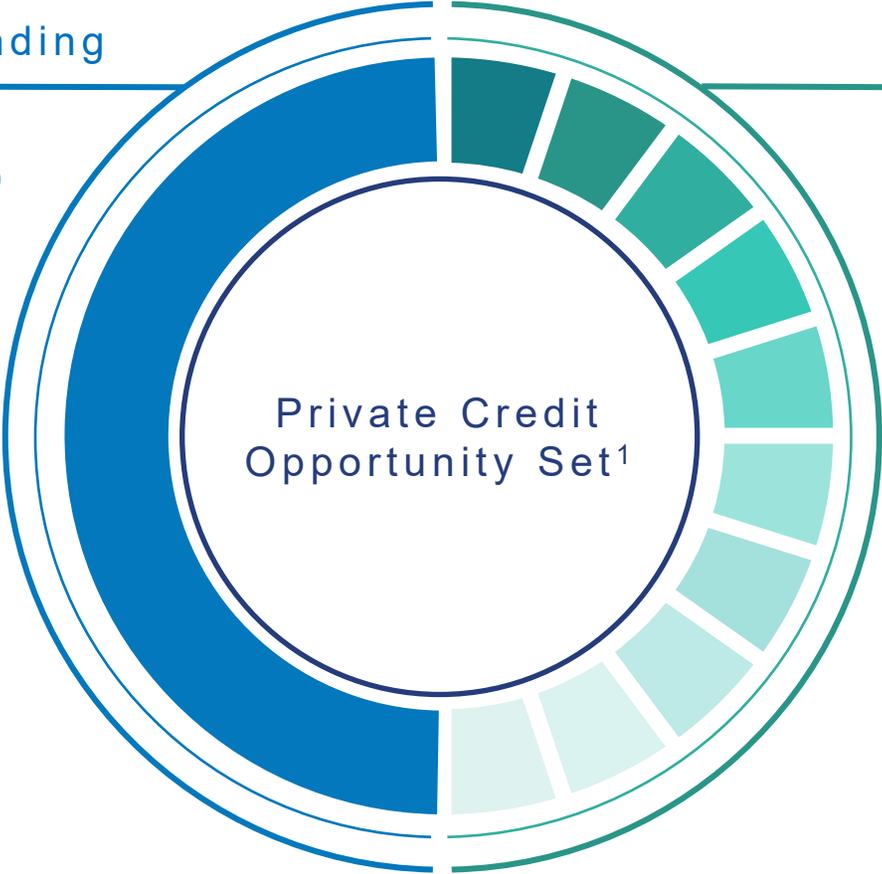


Appendix – Private Credit Concepts and Terminology

Private Credit as an Asset Class

Corporate Direct Lending

- Largest credit sector (~\$1.5T+)
- Broad industry/borrower exposure
- Floating rate loans, limiting interest rate risk²
- Principal security, with covenant protections, limiting losses
- Short three-year effective loan life offers opportunity for liquidity (33% of principal returned annually)³



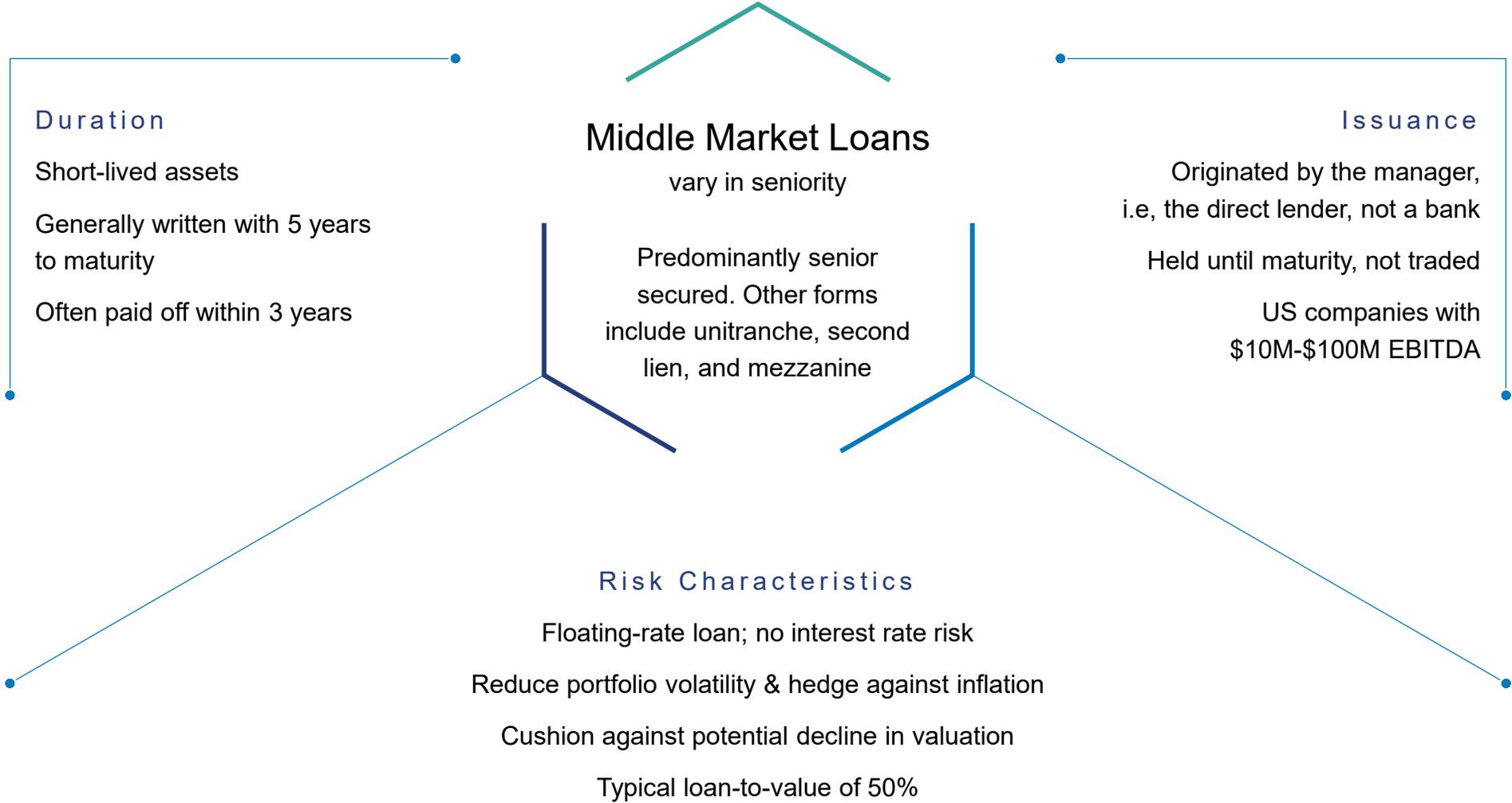
Enhanced Lending

- Asset-Based Lending
- Infrastructure Debt
- Leasing (Aircraft, Equipment)
- Royalties
- Venture Debt
- Mezzanine Debt
- Real Estate Debt
- Litigation Claims
- Rediscount Lending
- Specialty Direct Lending
- Structured Debt (CLO)

Source: Cliffwater

¹ For illustrative purposes only. The chart is only intended to identify the subsectors within the Private Credit opportunity set. ² When rates rise, principal values of securities may decline until such time as their rates reset, generally quarterly. ³ "How Liquid Are Direct Lending Portfolios?", Cliffwater 1/2/2017.

Direct Loan Characteristics



Source: Cliffwater

What is the U.S. Middle Market?

The U.S. Middle Market
is made up of companies with
Annual revenues between
\$10 million & \$1 billion

Responsible for roughly one-third of private U.S. GDP, enough to be the 5th largest economy in the world

Catalyst of economic opportunity – creating over 2 million jobs in the years spanning the global financial crisis from 2007 to 2010

Consists of nearly 200,000 companies – including family-controlled, private equity sponsored, and publicly owned businesses

2020 employment declines in the U.S. Middle Market (-2.2%) were significantly lower than smaller and larger businesses (-5.1% and -8.2% respectively)

Source: Cliffwater

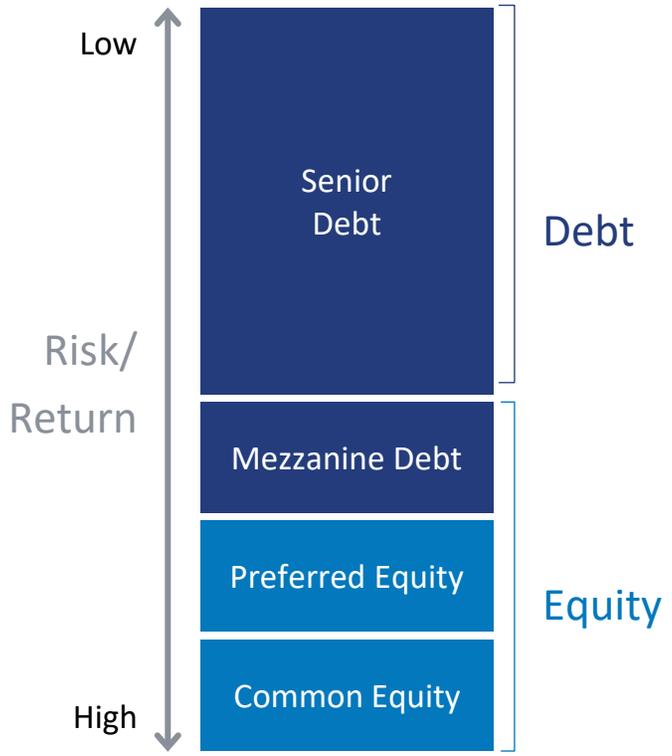
National Center for the Middle Market, Q4'20 Middle Market Indicator
National Center for the Middle Market, State of the Middle Market Economy: Managed Expectations Amid Stable Growth

Why Lend to Middle Market Companies?

Senior Secured

Middle market loans are predominantly senior secured, meaning they have a priority claim over any junior debt or equity, cushioning lenders against potential declines in valuation.

The Capital Stack

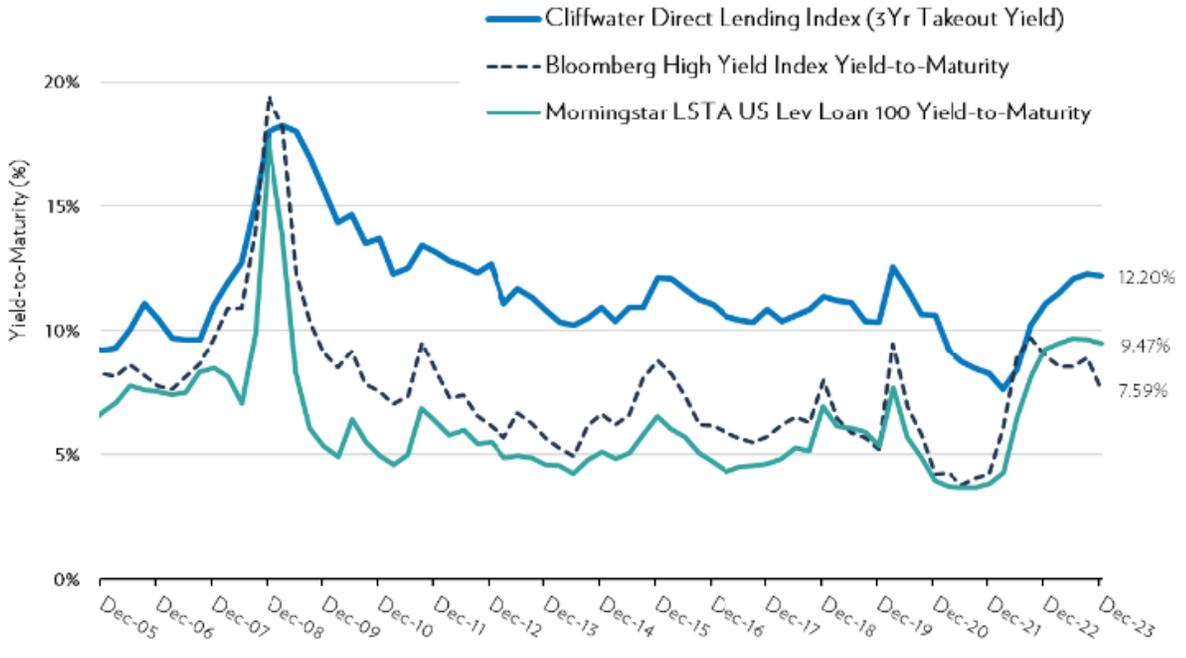


Source: Cliffwater

Return Potential

Yield premium continues to be very attractive relative to bank loans and publicly traded fixed income markets.

CDLI, High Yield Bond, and Leveraged Loan-to-Maturity Comparisons



Direct Lending and Bank Lending are Not the Same



Direct Lending

Full Enterprise Value Pledged as Collateral

Loans are typically secured by all assets and operations of a firm, including future cash flows and all equity. This makes a much larger term loan available with higher interest rates, S+5%-9%.

Significant Business Impact

Direct Lending Facilitates

Transformative acquisitions that can greatly boost earnings. Refinancings that can reduce operating costs and extend debt maturities. Debt lending also allows owners to execute their plans without equity dilution.



Bank Lending



Limited Collateral

Banks compete for loans secured by certain assets, such as accounts receivable and inventory, making this a market for relatively smaller transactions. Rates tend to be ~S+2%.

Modest Business Impact

Bank Lending Facilitates

Short-term liquidity and working capital loans. Bank lending does not generally add much buying power as borrowing capacity is too limited to facilitate meaningful expansion or acquisition.

Source: Cliffwater

Terminology note: Commercial bank lending as we define it here should not be confused with “bank loans”, “syndicated loans”, or “leveraged loans”, which are more closely related to direct lending but are arranged by investment banks and offered to investors.

The Simple Economics of Corporate Direct Lending



Middle market loans and high yield syndicated loans have roughly the same ~1% in historical loss rate. Good managers have reduced loss rates significantly.

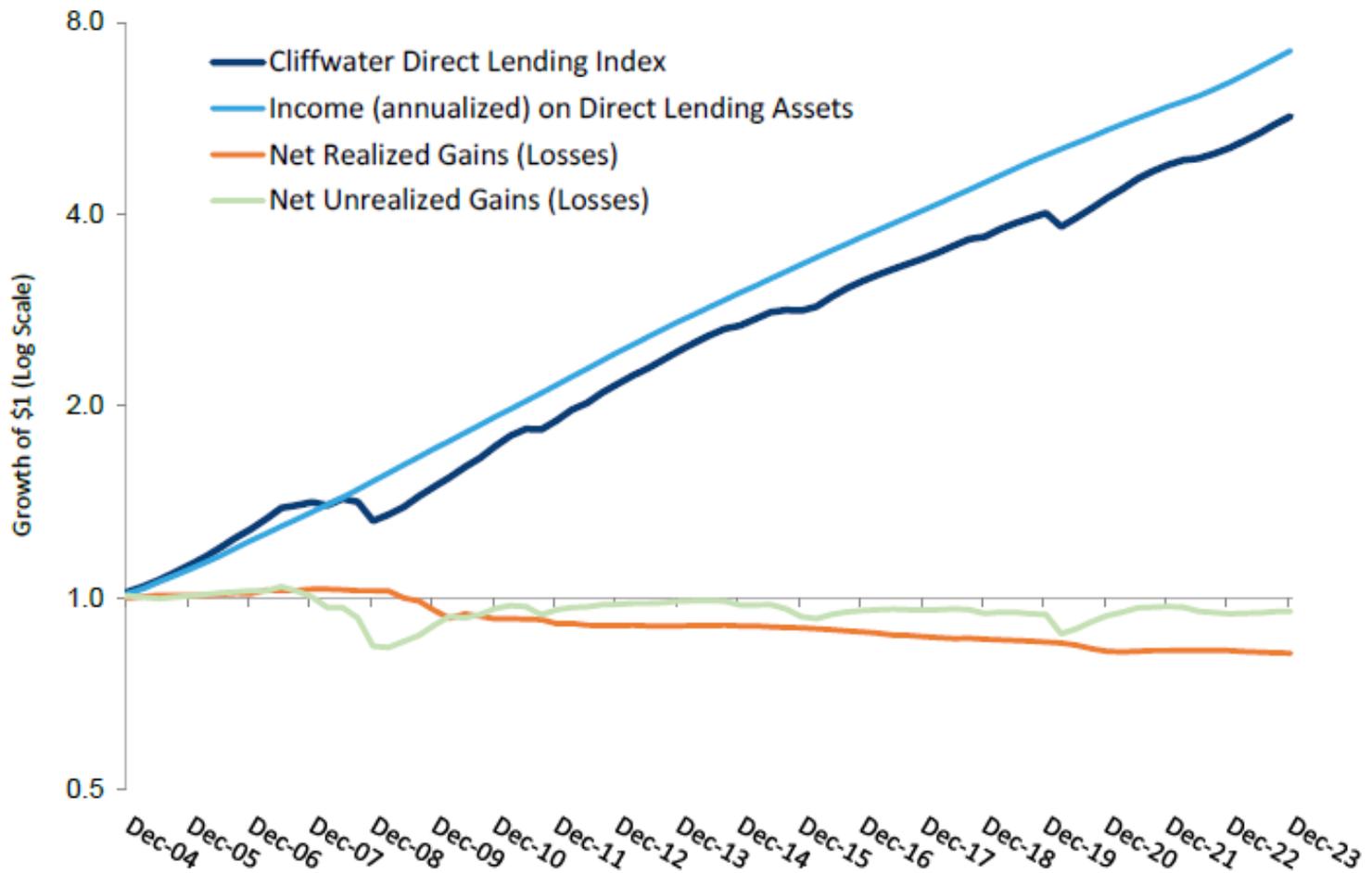
Fees are higher for direct loan strategies compared to liquid high yield credit, but there is opportunity to reduce fees through scale and co-investing and without sacrificing manager or credit quality.

Loan valuations reflect individual credit metrics and market yields. Price movements are generally small because of shorter 3- to 5-year average loan maturities and floating interest rates.

Source: Cliffwater

Direct Lending Return Components

Components of Cliffwater Direct Lending Index Returns
September 2004 to December 2023

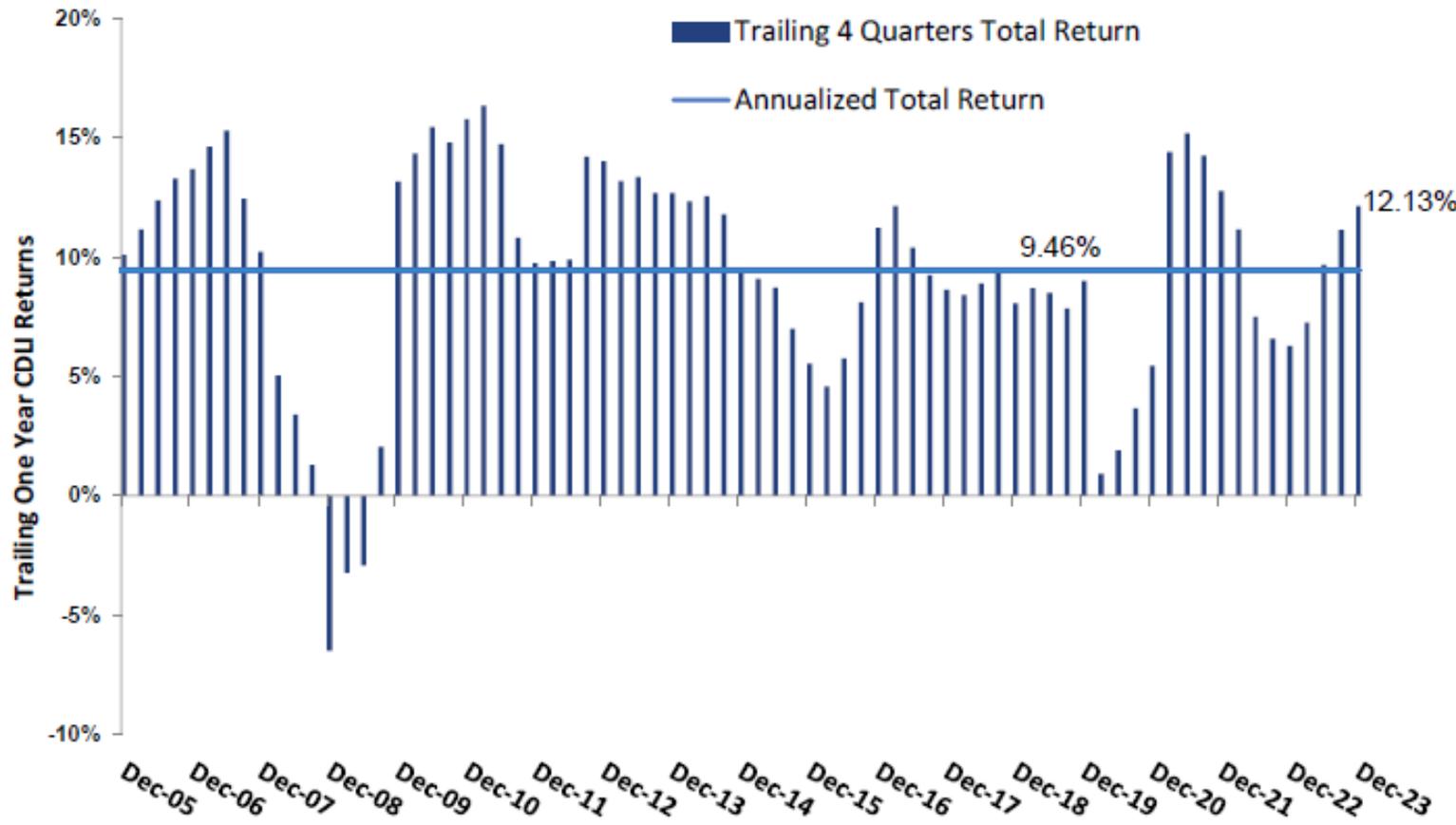


Source: Cliffwater

The performance of the CDLI has been prepared for informational purposes only. Past performance is not indicative of future returns. Please see additional disclosures at the end of this presentation.

Direct Lending Performance – Trailing Annual Total Returns

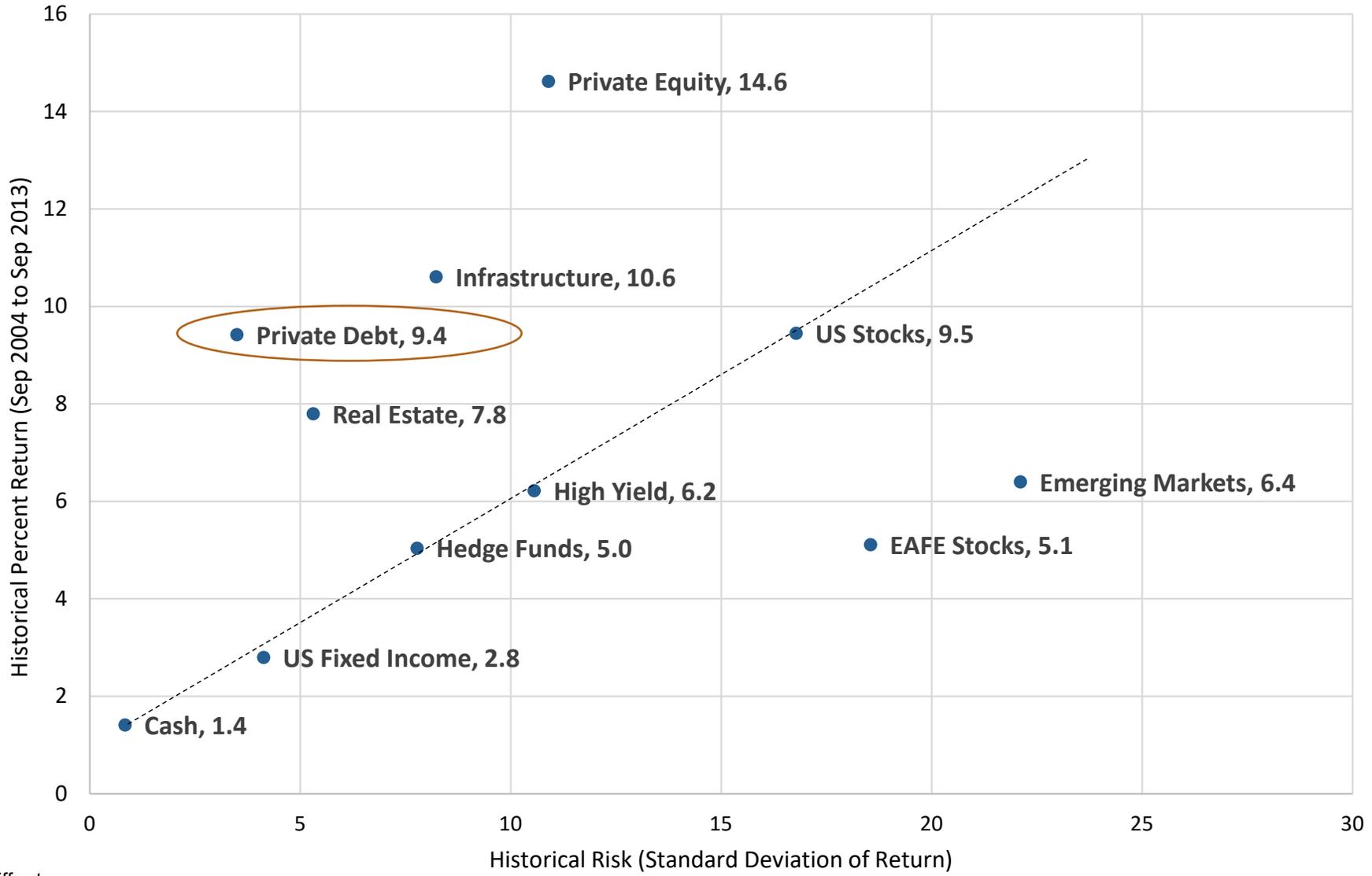
Cliffwater Direct Lending Index Total Return (trailing four quarters)
September 2004 to December 2023



Source: Cliffwater

The performance of the CDLI has been prepared for informational purposes only. Past performance is not indicative of future returns. Please see additional disclosures at the end of this presentation.

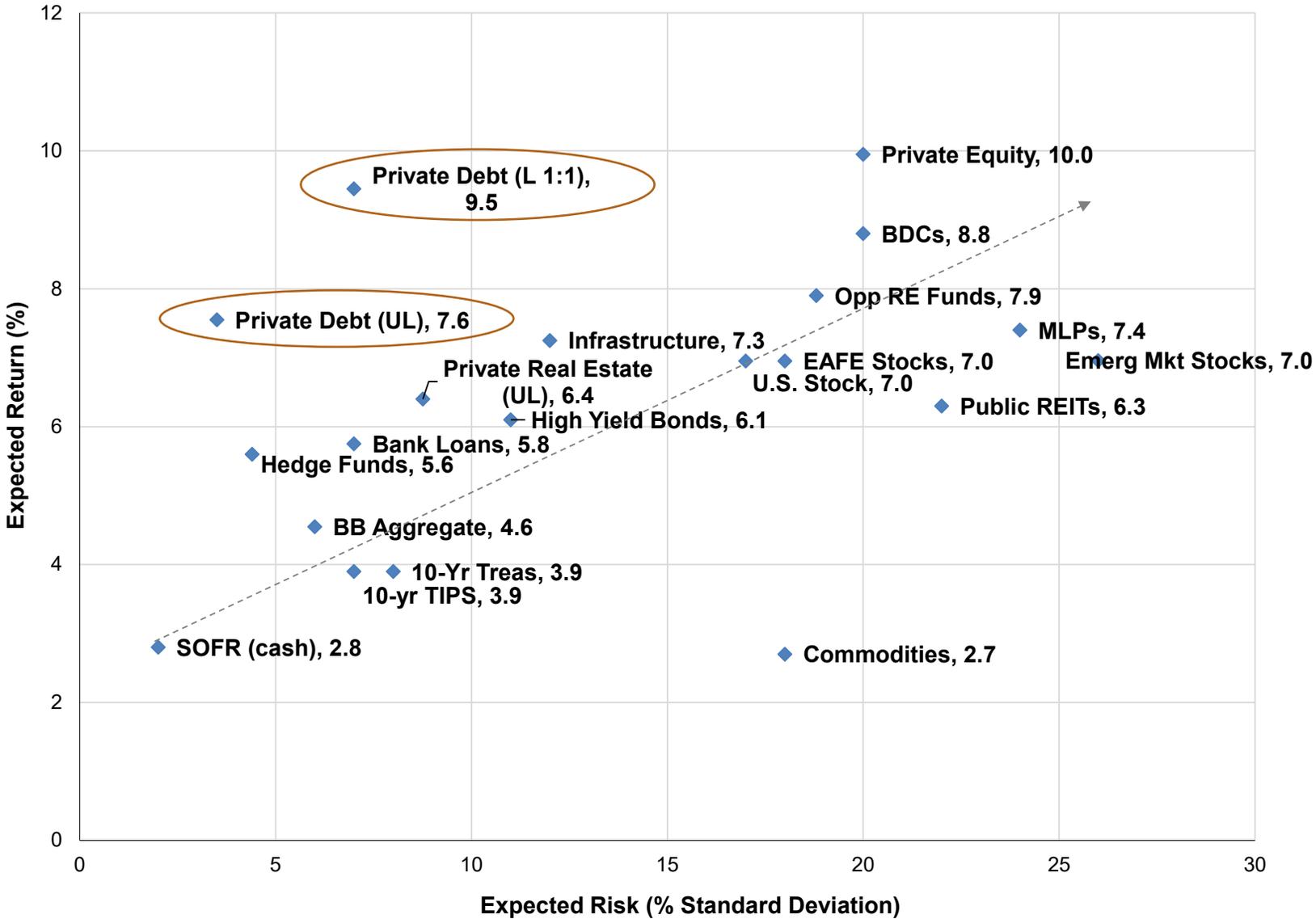
Asset Class Historical Return and Risk (9/04 – 9/23)



Source: Cliffwater

Past performance is not indicative of future returns.

Expected Asset Class Return and Risk*



Source: Cliffwater

*Cliffwater expectations. Please see Cliffwater's 2024 Asset Allocation Report for additional details and disclosures. Past performance is not indicative of future returns.

Private Credit Terms

Base Rate	A short-term, typically floating, interest rate (e.g., Libor, Prime, T-bill, Fed Funds) which, in addition to a constant spread to compensate for credit risk, determines the amount of interest periodically paid to the lender by the borrower; also called the reference rate.
Broadly Syndicated Loans (BSLs)	Larger secured and unsecured corporate loans originated by banks and nonbank lenders, with smaller shares then sold (syndicated) to other investors.
Collateralized Loan Obligation (CLO)	A structured investment vehicle comprised of loans and other fixed income securities. CLO cash flows are pooled into tranches and packaged as securities, with a separate credit rating for each, and sold to investors.
Covenant	Part of a loan or bond issue requiring the borrower to fulfill certain conditions on an ongoing basis.
Covenant Lite	A loan agreement or bond issue with a relatively small number of covenants, or where covenants are less stringent.
Credit Premium	The additional yield of a fixed income security to compensate the lender or investor for credit risk.
Credit Risk	The probability of a borrower defaulting on their loan.
Current Yield	The annual coupon payments of a bond or loan divided by its current price.
Default	The failure of a borrower to make scheduled coupon and/or principal payments. When a borrower defaults, the lender(s) have certain remedies, including foreclosure on collateral used to back the loan.
Duration	A measure of how changes in interest rates inversely affect the price of an asset.
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization is an adjusted measure of the net income of a business that allows better comparability across companies.
Effective Life	A measure of how long a depreciating asset will generate cash flow.

Source: Cliffwater

Private Credit Terms - continued

First-Out Loan	The senior component of a unitranche loan where first-out lenders, in exchange for a lower coupon rate, are the first to receive interest payments and have a more senior repayment position if the loan is paid off or refinanced, as opposed to Last-Out Loans.
Floating Rate	Loans whereby the coupon payment is not fixed, but is adjusted with the level of a reference rate such as U.S. T-bills or Libor.
Income Return	The portion of an asset's total return from interest or dividend income, rather than capital gains.
Incurrence Covenant	Part of a loan agreement or bond issue whereby the borrower is not allowed to take certain affirmative actions, such as incurring additional debt, an additional dividend payment or share repurchase, or acquiring or divesting a business (see also Maintenance Covenant).
Last-Out Loan	The junior component of a unitranche loan where last-out lenders, in exchange for a higher coupon rate, are the last to receive interest payments and have a more junior repayment position if the loan is paid off or refinanced (as opposed to First-Out Loans).
Leveraged Loans	Secured and unsecured loans originated by banks or non-bank lenders that are then syndicated to a group of investors; also known as "Broadly Syndicated Loans".
Loan-To-Value Ratio	The amount of aggregate debt compared with the total value of an asset, including equity and debt, typically used in the real estate industry. It is frequently cited as a measure of financial leverage and risk.
Lower Middle Market	Typically represents companies with annual EBITDA of less than \$25m.
Maintenance Covenants	Part of a loan agreement or bond issue whereby the borrower must maintain certain financial tests, such as net interest coverage or profitability (see also Incurrence Covenant).

Source: Cliffwater

Private Credit Terms - continued

Mezzanine	The layer of a company's financing, or capital structure, that falls between senior secured and asset backed debt and equity. Mezzanine financing often covers multiple capital structure segments, including subordinated debt, and may include equity warrants.
Non-Sponsored Borrower	A company borrowing from a direct lender that is not controlled by a private equity firms or investor.
Original Issue Discount	A form of loan origination fee, typically 2-4% of the loan balance, structured so that the loan amount received by the borrower is slightly less than the par value of the loan.
PIK Income	A bond interest payment in the form of additional securities of the same bond issue rather than cash.
Principal	The notional amount of a bond or loan, representing the amount borrowed, upon which coupon payments are calculated.
Recovery	The collection of a portion of the remaining amount due on a defaulted loan.
Reference Rate	A short term, typically floating, interest rate (e.g., Libor, Prime, T-bill, Fed Funds) which, in addition to a constant "spread" to compensate for credit risk, determines the amount of interest periodically paid to the lender by the borrower; also called the "Reference Rate".
Revolver	A secured credit line, typically provided by a commercial bank, for a company's short-term funding needs; revolvers are senior in the capital structure to other debt and equity; also called Revolving Credit Facility.
Senior Debt or Senior Secured Debt	A priority claim over subordinated debt, mezzanine, and equity in a company's capital structure, typically secured with collateral such as property, plant & equipment and receivables.

Source: Cliffwater

Private Credit Terms - continued

Senior First Lien	A senior secured claim to second-lien and other subordinated and junior debt, mezzanine, and equity, in a company’s capital structure, and is typically junior only to bank revolvers, accounts payable, and other short-term secured financing.
Sponsored Borrower	A company borrowing from a direct lender that is controlled by a private equity firm or investor; the direct lender typically works directly with the private equity sponsor to negotiate the size and terms of the loan.
Stretch Senior	A type of hybrid loan structure that combines senior debt and junior debt: the senior debt “stretches” to include junior parts of the capital structure.
Subordinated Debt	Typically unsecured debt that is junior to more senior secured debt; subordinated claims are paid out only after senior claims are satisfied.
Syndicate	A group of investors and lenders that contribute capital to participate in a loan; syndicate members acquire their loan interests from the loan originator or underwriter.
Unitranche Loan	A flexible hybrid loan that combines senior secured debt and subordinated debt at a single blended interest rate.
Upper Middle Market	Typically represents companies with annual EBITDA of more than \$75m.
Yield-To-Three-Year-Takeout	The equivalent of yield-to-maturity for a loan, reflecting that middle market corporate loans are typically refinanced within about 3 years, rather than their 5-year stated maturity.
Yield-To-Maturity	The estimated rate of return based on the assumption that it will be held until its maturity date and not prepaid or called.

Source: Cliffwater

General Disclosures

The views expressed in this presentation are the views of Cliffwater. The material contained herein is confidential. This presentation is not intended for public use or distribution. It may not be copied, transmitted, given, or disclosed to any person other than your authorized representatives. This presentation 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 and opinions presented in this presentation should not be construed as any advice from Cliffwater as to any legal, tax, investment or other matter. This presentation is not meant to be, nor shall it be construed as, an attempt to define all information that may be material to an investor. The information herein does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon.

The information in this presentation is not intended as a recommendation to invest in any particular asset class or strategy or as a promise of future performance. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve.

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 presentation and is subject to change without notice. Unless otherwise indicated, dates indicated by the name of a month and a year are end of month.

All third party information has been obtained from sources believed to be reliable but its accuracy is not guaranteed. The information herein 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. No representation, warranty, or undertaking, express or implied, is given as to the accuracy or completeness of the information or opinions contained in this presentation. Cliffwater shall not be responsible for investment decisions, damages, or other losses resulting from the use of the information herein.

There can be no assurance that any expected rate of return, risk, or yield will be achieved. Rate of return, risk, and yield expectations 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 rate of return, risk, and yield may be based upon assumptions regarding future events and conditions that prove to be inaccurate. Expected rate of return, risk, and yield 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 rate of return, risk, or yield will be achieved.

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

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.

Cliffwater Direct Lending Index Disclosures

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.

Index Disclosures

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.

- Hedge Fund Research, Inc. (“HFR”) is the source and owner of the HFR data contained or reflected in this report and all trademarks related thereto.
- Frank Russell Company (“FRC”) is the source and owner of the Russell Index data contained or reflected in this material and all trademarks and copyrights related thereto. The Russell Index data may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited.
- Thomson Financial Inc. is the owner and/or licensor of the Cambridge Associates LLC data contained or reflected in this material.
- The MSCI information is the exclusive property of MSCI Inc. (“MSCI”) and may not be reproduced or re-disseminated in any form or used to create any financial products or indices without MSCI’s express prior written permission. This information is provided “as is” without any express or implied warranties. In no event shall MSCI or any of its affiliates or information providers have any liability of any kind to any person or entity arising from or related to this information.
- U.S. Stocks: The Russell 3000 Index is a capitalization-weighted stock market index that seeks to track the entire U.S. stock market. It measures the performance of the 3,000 largest publicly held companies incorporated in the United States based on market capitalization.
- The MSCI All Country World Index (MSCI ACWI) captures large and mid cap representation across 23 developed markets and 23 emerging markets countries. With over 2,400 constituents, the index covers approximately 85% of the global investable equity opportunity set.
- The Bloomberg U.S. Aggregate Bond Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities.
- The Bloomberg 5-10y U.S. TIPS Index is a universe of 5-10-Year U.S. Treasury Inflation Protected Securities (“TIPS”).
- Cliffwater LLC is not sponsored, endorsed, sold or promoted by Morningstar, Inc. or any of its affiliates (all such entities, collectively, “Morningstar Entities”) or the Loan Syndications and Trading Association (“LSTA”). The Morningstar Entities and LSTA make no representation or warranty, express or implied, to the owners of Cliffwater LLC or any member of the public regarding the advisability of investing in leveraged loans generally or in Cliffwater LLC in particular or the ability of Morningstar LSTA Leveraged Loan Index to track general leveraged loan market performance.
- The Alerian MLP Index is a float-adjusted, capitalization-weighted index, whose constituents represent approximately 85% of total float-adjusted market capitalization of publicly traded Master Limited Partnerships.
- The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in U.S. Dollars and have a minimum of \$50 million under management or a 12-month track record of active performance. The index does not include funds of hedge funds.