INVESTMENT COMMITTEE CALENDAR SHEET
Investment Committee Meeting of July 20, 2022

To: The Investment Committee

Through: Alison Romano
CEO and CIO

From: Kurt Braitberg, CFA, CAIA
Managing Director, Public Markets

Eunice McHugh
Director, Private Credit

Brady Jewett, CFA
Associate Portfolio Manager, Private Credit

Date: July 20, 2022

Agenda Item:
Private Credit Update

Background:
As of December 31, 2021, the Private Credit Portfolio had $2.1 billion in NAV (or 5.5% of total Plan assets) and total exposure (NAV + unfunded) of $4.0 billion (or 10.8% of total Plan assets). Since inception, the Private Credit Portfolio has generated a net IRR of 10.7% and a TVPI of 1.2x, outperforming its custom benchmark and the Cambridge Associates Private Credit Benchmark.

Staff and Cambridge Associates will present an update including an overview of the Portfolio's strategy, performance, and composition. Additionally, Staff and Cambridge Associates will discuss the market environment along with resulting opportunities and initiatives.

Recommendation:
This item is for discussion only.

Attachments:
Staff Presentation
Consultant Presentation – Cambridge Associates

Private Credit Update

Kurt Braitberg, CFA, CAIA, *Managing Director – Public Markets*

Eunice McHugh, *Director, Private Credit*

Brady Jewett, CFA, *Associate Portfolio Manager, Private Credit*

July 20, 2022

SFERS

San Francisco Employees' Retirement System

Agenda

- Program Overview
- Performance Review
- Portfolio Review
- Recent Activity
- Opportunities & Initiatives
- Market Update & Pacing Models (Cambridge Associates)

Program Overview

SFERS
San Francisco Employees' Retirement System

- SFERS began investing in Private Credit in 2008[1] out of its Fixed Income allocation
- In September 2017, SFERS' Retirement Board approved a 10% target allocation to Private Credit
- To achieve a 10% allocation, the current pacing models suggest committing approximately $1 billion annually
- As of December 31, 2021, the portfolio:
  - Comprised approximately $2.1 billion in NAV (or 5.5% of total Plan assets); total exposure (NAV + unfunded) of $4.0 billion (or 10.8% of total Plan assets[2])
  - Generated a since inception net IRR of 10.7% and a net TVPI of 1.2x, outperforming its custom policy benchmark and the CA Private Credit Benchmark

[1] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

[2] NAV + unfunded amounts are as of December 31, 2021, and as reported by Aksia. SFERS Total Plan assets as of December 31, 2021, and as reported by NEPC.

Investment Objective:

- Generate long-term returns that are superior (3%-4%) to Liquid Credit while also providing downside protection and diversifying Plan-wide risk
- Seek to achieve long-term returns of 8%-10%, with an emphasis on returns driven by current income and to a lesser extent by capital appreciation
- Benchmark: 50% Credit Suisse Leveraged Loan Index + 50% ICE Bank of America Merrill Lynch U.S. High Yield BB-B Constrained + 150bps

Observations and Beliefs:

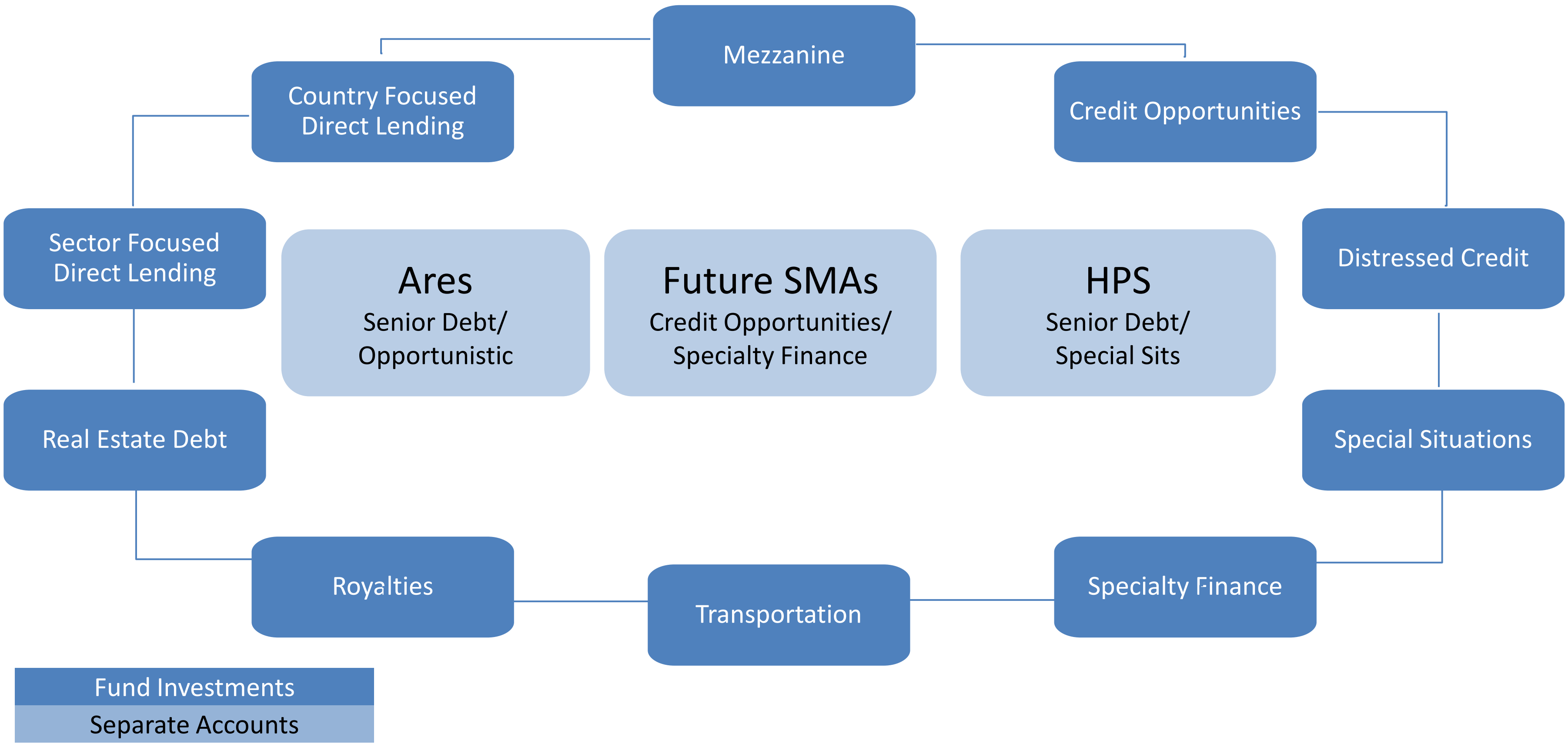
- The private credit markets continue to represent a large and new investment opportunity
- Managers that are skilled at sourcing opportunities and underwriting credit will earn meaningful excess returns
- Manager selection and diversification are particularly important

- Emphasize bottom-up manager selection while considering top-down factors to achieve excess returns
- Construct a well-diversified portfolio across strategy, sub-strategy, geography, vintage year, and GP-relationship
- Opportunistically manage with broad allocation ranges to three main strategies: Capital Preservation, Opportunistic, and Return Maximization

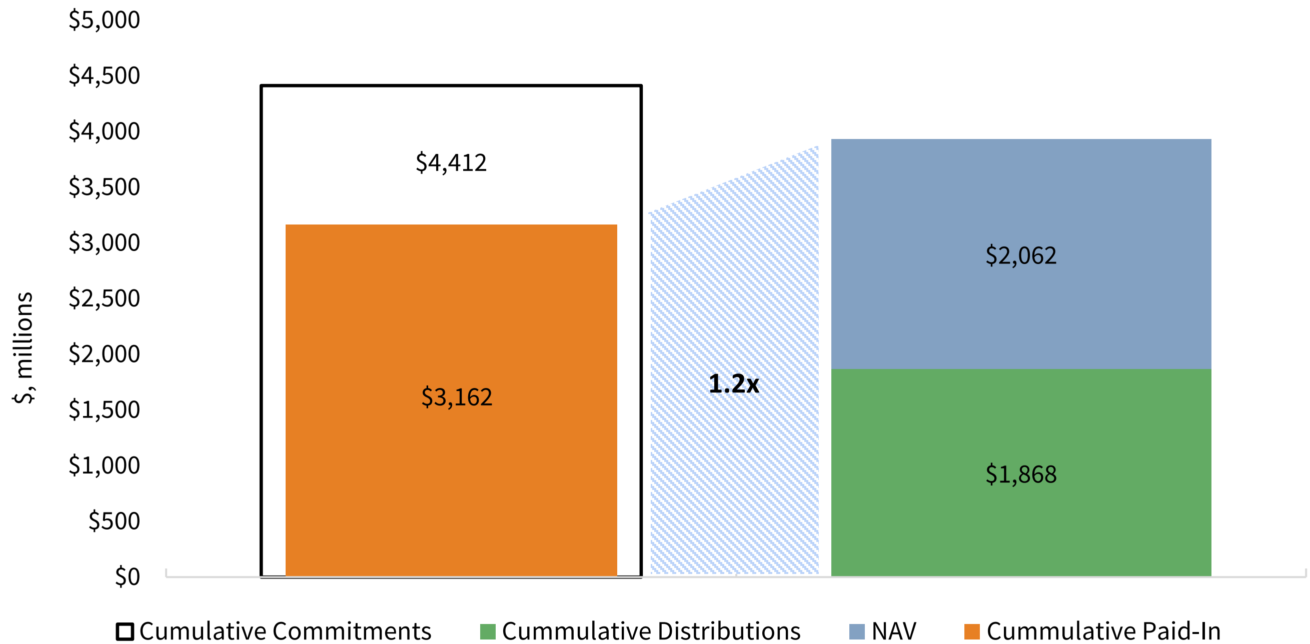
Strategy	Sub-Strategy	Allocation Ranges	12/31/21 Allocation[3]	Target IRR
Capital Preservation	• Senior Debt • Mezzanine	30%-80%	50%	7%-10%
Opportunistic	• Credit Opportunities • Specialty Finance • Real Estate Debt	20%-70%	35%	8%-12%
Return Maximization	• Distressed Credit • Special Situations • Capital Appreciation	0%-50%	15%	12%-15%
Total		**100%**	**100%**	**8%-10%**

[3] Exposure (NAV + unfunded) as of December 31, 2021, and as reported by Aksia.

- 15-25 active GP relationships and 3-5 separately managed account ("SMA") relationships
- SMAs can take roughly 3-4x the time (~12 months+) to research and establish than for a typical commingled fund
- Given the intensity and time commitment associated with executing SMAs, only 3-5 are anticipated for the overall Private Credit portfolio



- Since inception[4], SFERS has committed approximately $4.4 billion to 84 funds with 37 managers
- SFERS' investment managers have called roughly $3.2 billion in capital commitments, or 72% of total commitments
- The portfolio has a total value to paid-in multiple of 1.2x, having generated $767 million in total value creation (net of fees and carried interest[5])



Sources: Cambridge Associates. Performance data provided by Aksia.

[4] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

[5] As of December 31, 2021, and as reported by Aksia. Does not account for recallable distributions and commitments made subsequent to December 31, 2021, are not included.

Performance Review

SFERS
San Francisco Employees' Retirement System

- Relative to its benchmark, the portfolio has outperformed over all periods

As of December 31, 2021

	Net IRRs					Multiples	
	1 Year	3 Year	5 Year	10 Year	ITD[6]	DPI	TVPI
Program Totals	**13.1%**	**11.1%**	**11.4%**	**11.3%**	**10.7%**	**0.6x**	**1.2x**
Policy Benchmark[7]	6.7%	8.5%	6.7%	7.2%	7.2%	NA	NA

- The largest five managers (56.3% of total exposure[8]) contributed to portfolio returns with an aggregate 1-year net IRR of 13.3% and an ITD net IRR of 12.6%
- Of the 66 investments with a vintage year of 2019 or older, 64 are valued at 1.0x of invested capital or greater; 35 are valued at 1.3x or greater

Source: Aksia.

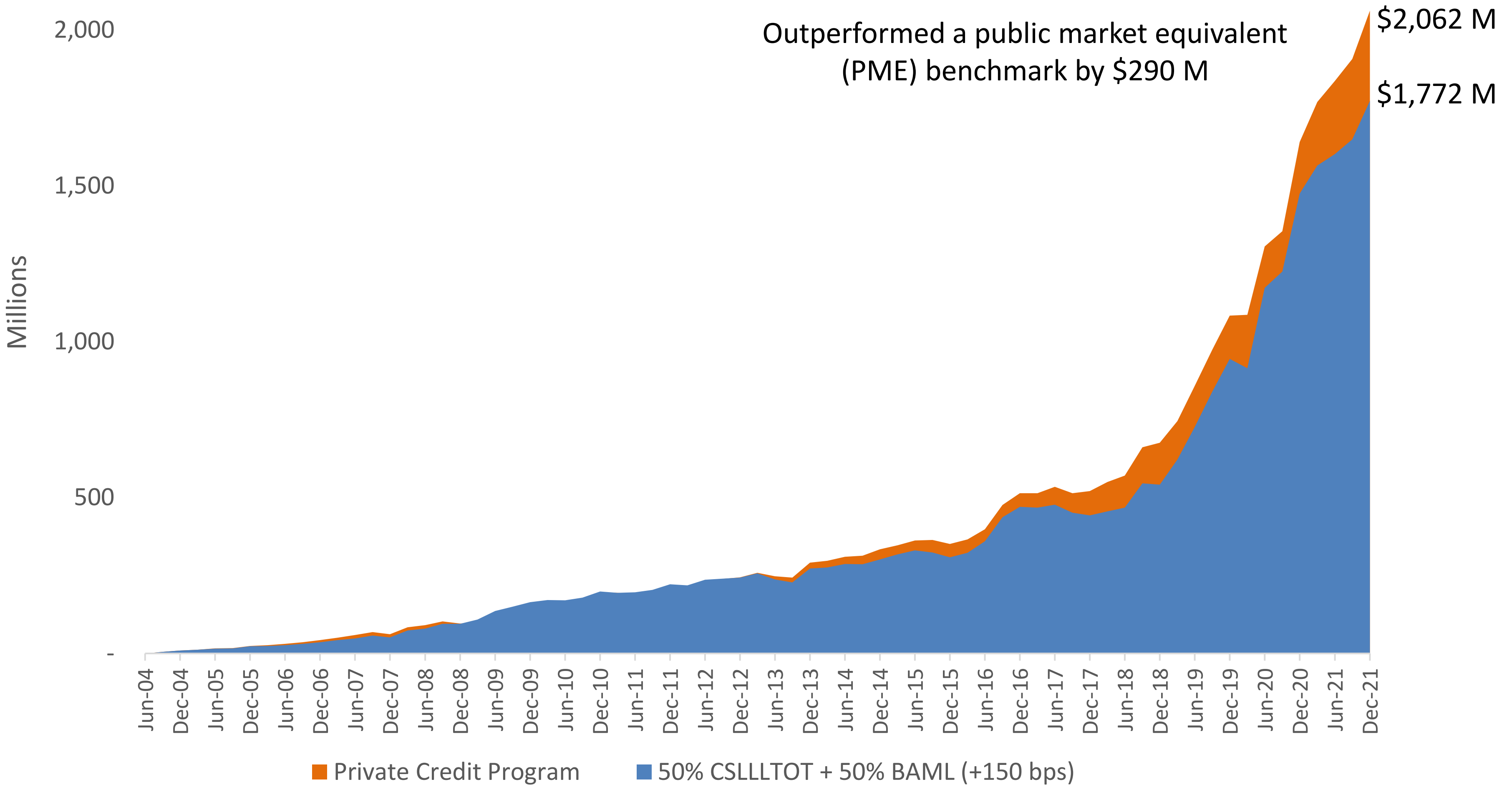
[6] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

[7] Policy benchmark is comprised of 50% Credit Suisse Leveraged Loan Index + 50% ICE BAML U.S. High Yield BB-B Constrained + 150bps and are time weighted rates of returns.

[8] NAV + unfunded amounts are as of December 31, 2021, and as reported by Aksia.

SFERS Private Credit Portfolio vs 50% Credit Suisse + 50% ICE BAML + 150 bps[9]

As of December 31, 2021



Source: Aksia.

[9] The portfolio PME is a dollar-weighted Long-Nickels calculation of monthly changes in the 50% Credit Suisse (CSLLLTOT) + 50% ICE BofA (HUC4) + 150 basis points.

- SFERS' Private Credit portfolio has also added significant value over Cambridge Associates' benchmarks over various trailing periods[10]
- Over a longer time horizon, SFERS' allocations Capital Preservation and Opportunistic have meaningfully outperformed respective CA benchmarks

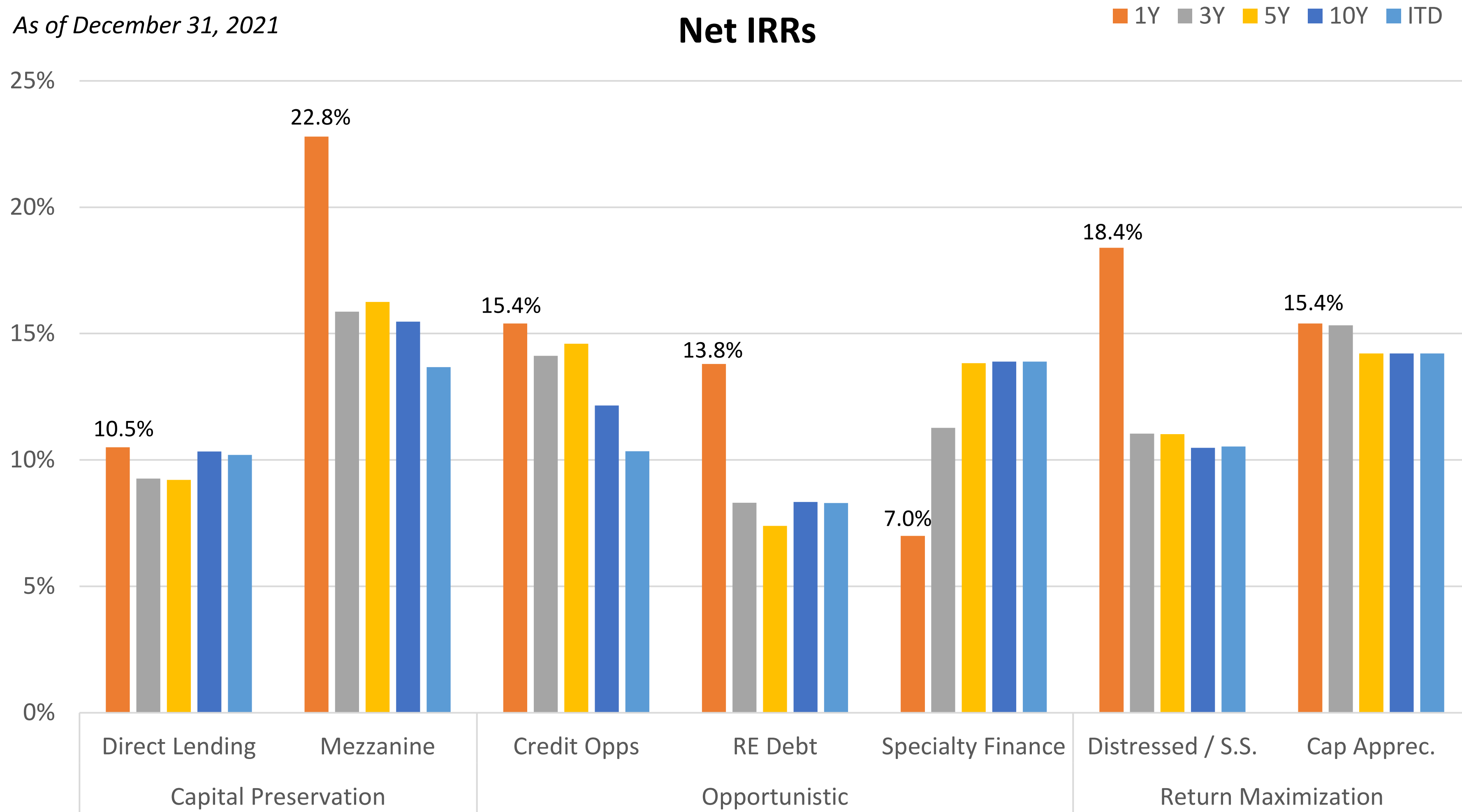
	Net IRRs				
As of December 31, 2021	**Trailing 1-Year**	**Trailing 3-Year**	**Trailing 5-Year**	**Trailing 10-Year**	**Since Inception[10]**
SFERS Total Private Credit Portfolio	**13.1%**	**11.1%**	**11.4%**	**11.3%**	**10.7%**
Capital Preservation	12.1%	10.2%	10.5%	11.7%	11.3%
Opportunistic	12.0%	12.0%	12.6%	11.2%	10.2%
Return Maximization	18.0%	11.6%	11.3%	10.7%	10.7%
CA Private Credit Benchmark	14.8%	9.2%	9.2%	9.8%	10.1%
CA Senior Debt Benchmark	6.0%	7.0%	7.9%	7.3%	7.4%
CA Credit Opportunities Benchmark	16.2%	8.5%	8.2%	9.6%	8.9%
CA Subordinated Capital Benchmark	19.8%	12.8%	12.6%	11.9%	11.6%
Credit Suisse Leveraged Loan Index	5.4%	5.4%	4.3%	4.8%	4.6%
BAML U.S. High Yield BB-B Constrained	4.6%	8.6%	6.0%	6.5%	6.8%
50 / 50 Custom Blend +150 bps	6.7%	8.5%	6.7%	7.2%	7.2%

Sources: Cambridge Associates. Performance data provided by Aksia. Index returns are time weighted rates of returns.

[10] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

- All sub-strategies appreciated over the year, led by Mezzanine and Distressed/Special Situations[11]

As of December 31, 2021



Source: Aksia.

[11] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

- SFERS' Private Credit portfolio continues to contribute towards overall Plan returns, having achieved attractive absolute and relative performance across trailing longer term horizons[12]
- The Private Credit portfolio further enhances the overall Plan when factoring in greater downside protection and lower volatility

As of December 31, 2021

Time Weighted Rates of Returns

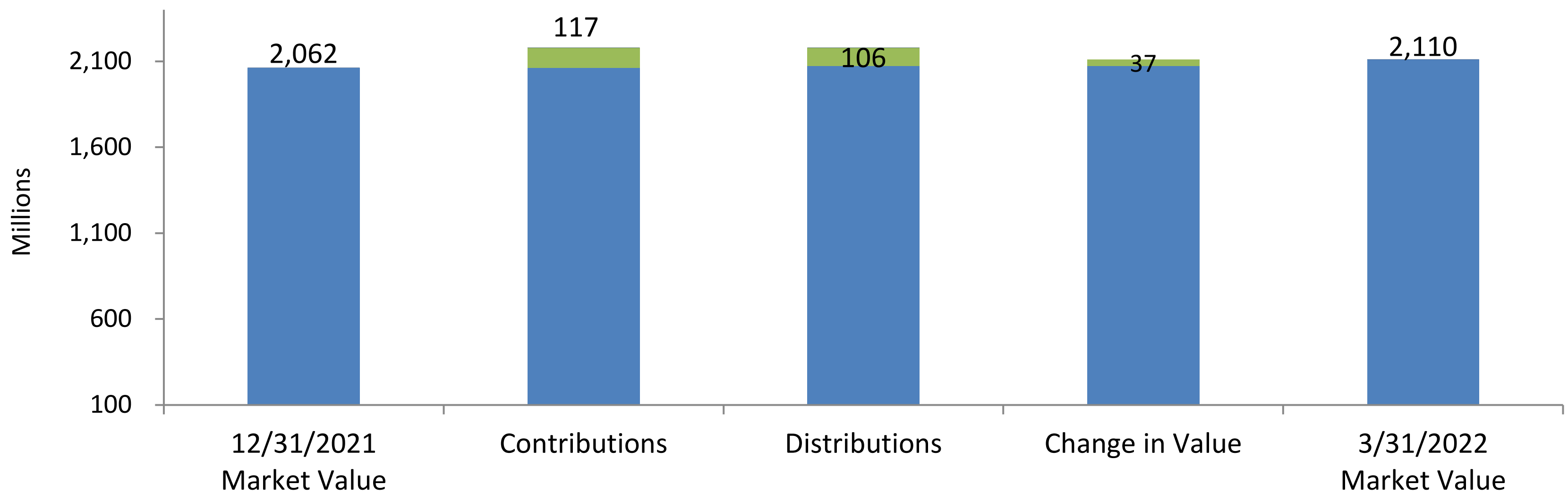
Sources: SFERS, Aksia, and NEPC.

[12] Both Total Plan and Private Credit Portfolio returns are time weighted rates of returns.

- The portfolio has outperformed its benchmark over 1-year, 3-year, 5-year, 10-year and since inception, and generated positive returns through the volatile Q1 2022

As of March 31, 2022

	Net IRRs						Multiples	
	QTD	1 Year	3 Year	5 Year	10 Year	ITD[13]	DPI	TVPI
Program Totals	**1.7%**	**10.9%**	**10.6%**	**11.1%**	**10.8%**	**10.6%**	**0.6x**	**1.2x**
Policy Benchmark[14]	-2.0%	2.9%	5.7%	5.8%	6.5%	7.0%	NA	NA

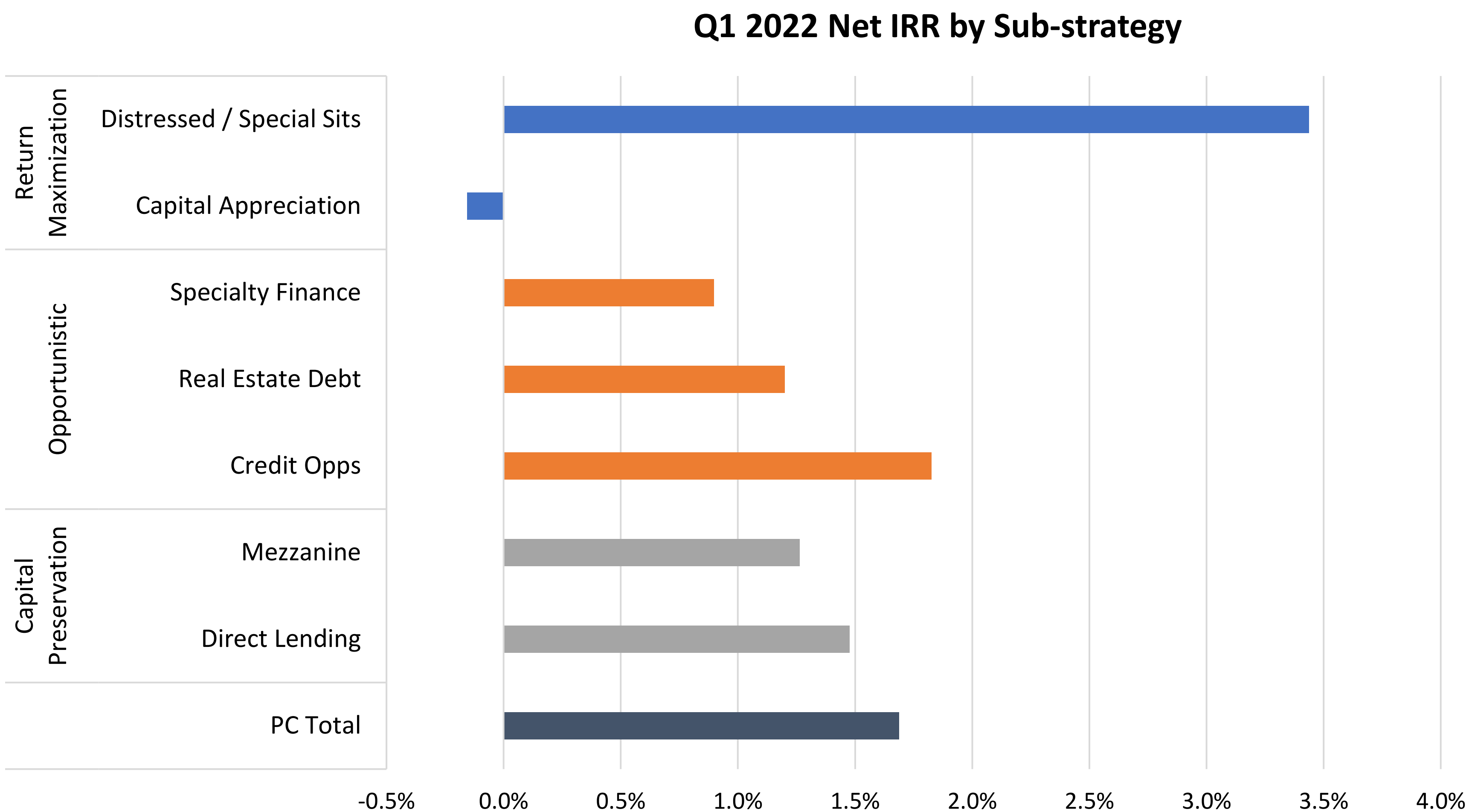


Source: Aksia. 100% of funds have reported, but figures are under review and considered preliminary.

[13] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

[14] Policy benchmark is comprised of 50% Credit Suisse Leveraged Loan Index + 50% ICE BAML U.S. High Yield BB-B Constrained + 150bps and are time weighted rates of returns.

- Apart of Capital Appreciation, all sub-strategies generated positive returns during the quarter

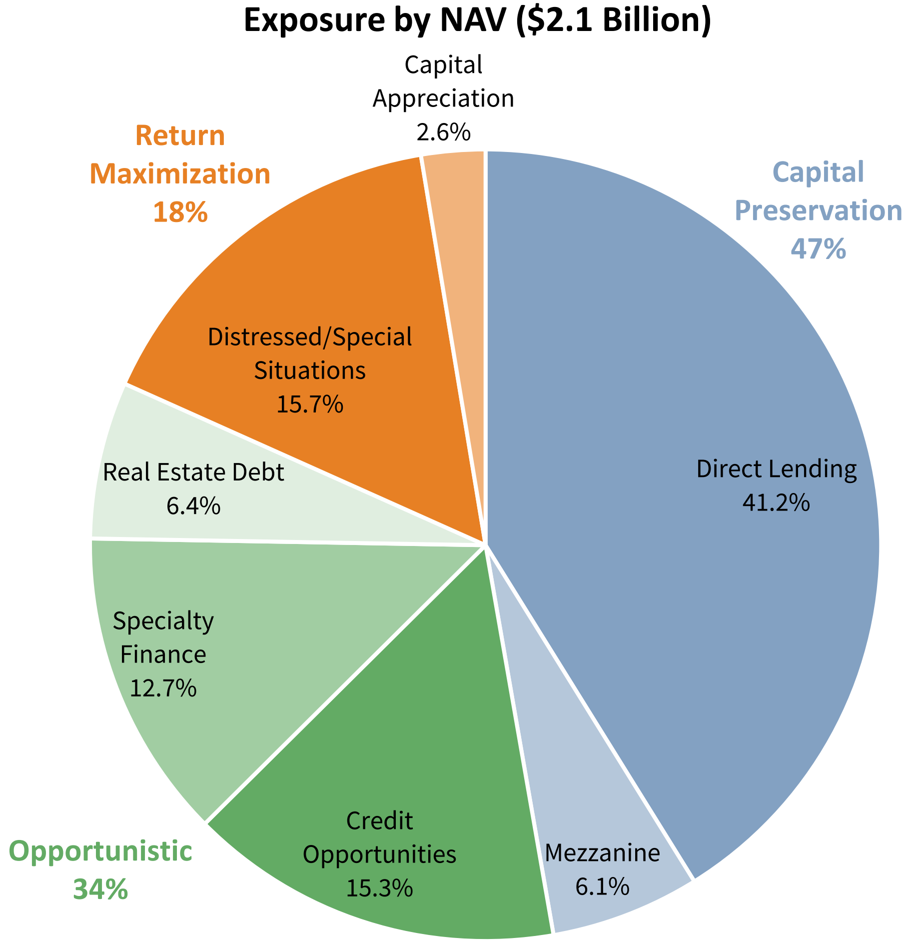


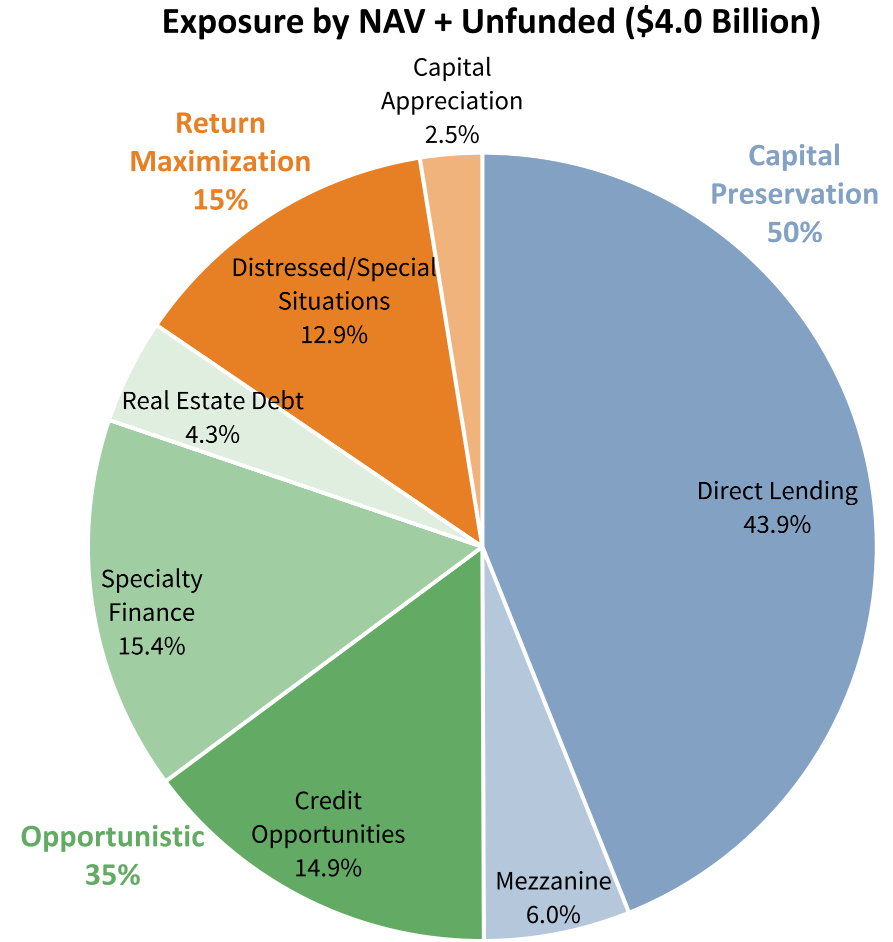
Source: Aksia. 100% of funds have reported, but figures are under review and considered preliminary.

Portfolio Review

SFERS
San Francisco Employees' Retirement System

As of December 31, 2021[15]



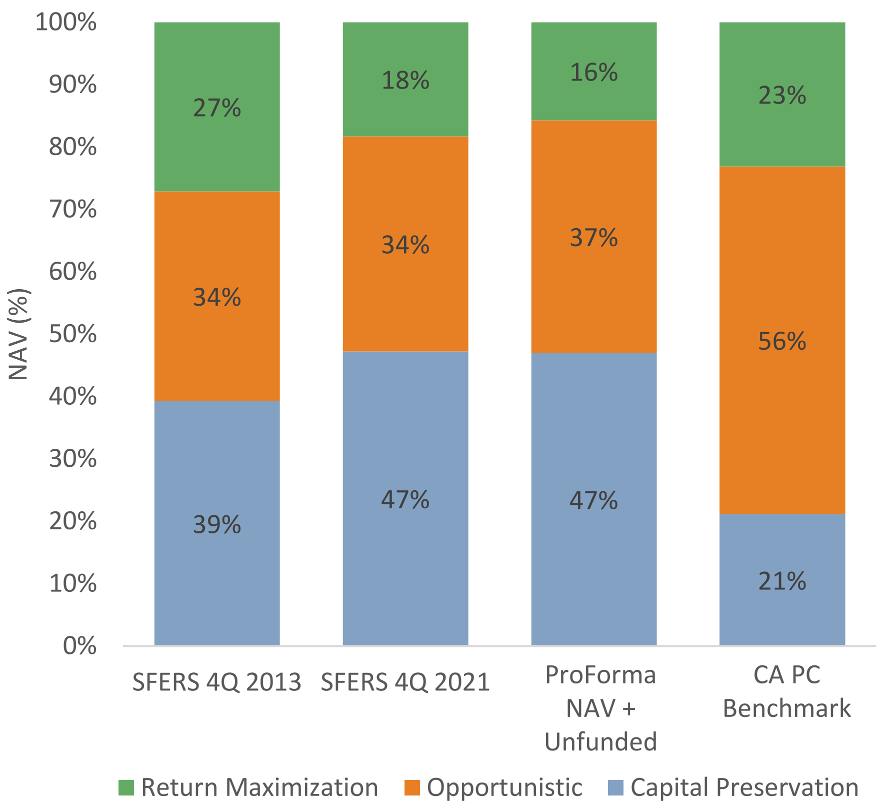


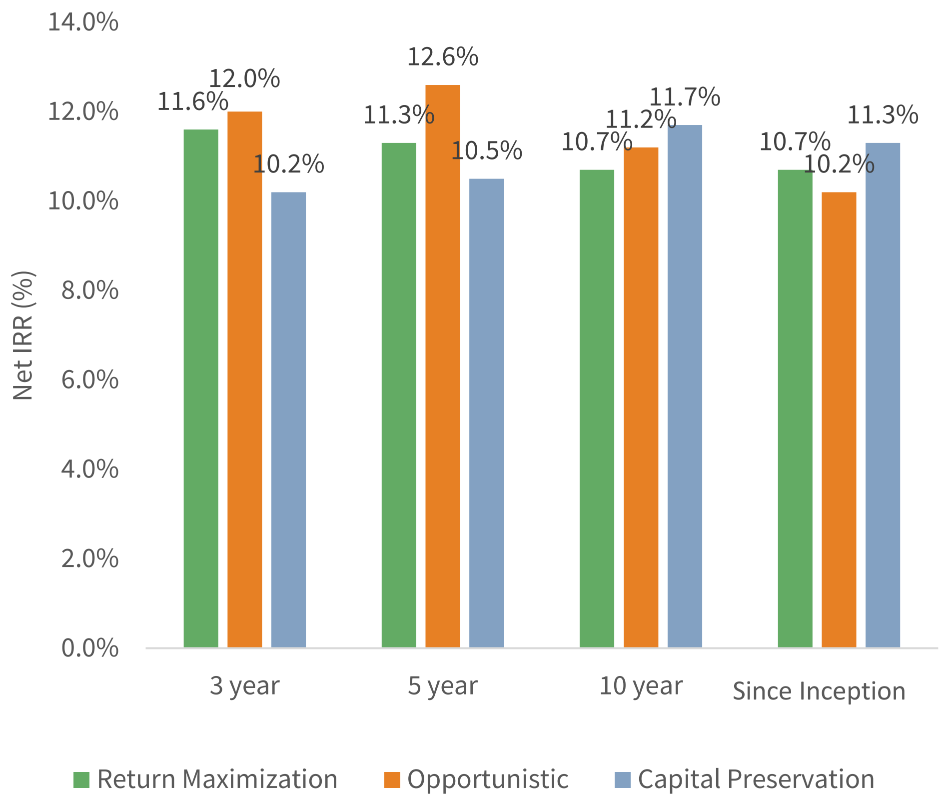
Sources: Cambridge Associates. Performance data provided by Aksia.

[15] Totals may not sum due to rounding. Exposure by NAV + Unfunded includes commitments approved through June 30, 2022.

- Opportunistic and Return Maximization strategies have recently been the most additive to performance while Capital Preservation strategies have been the strongest driver of returns over the longer time period

Portfolio Exposure & Performance by Sub-Strategy[16]



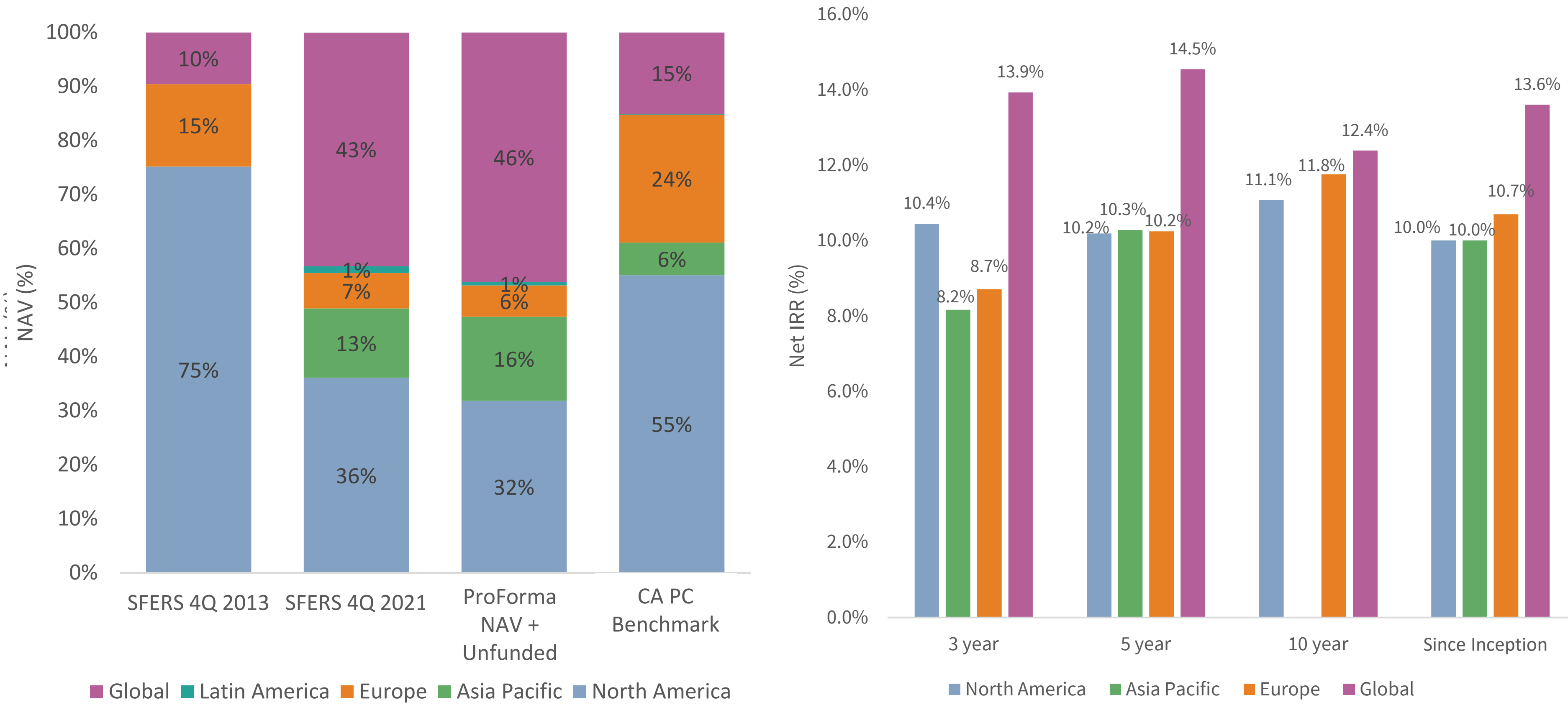


Sources: Cambridge Associates. Performance data provided by Aksia.

[16] Analysis based on fund-level NAV data as of December 31, 2013, and December 31, 2021, and Cambridge Associates Private Credit (PC) Benchmark fund-level NAV data as of December 31, 2021. Pro-Forma NAV + Unfunded amounts as of December 31, 2021, and incorporates commitments made through June 30, 2022 in the unfunded amounts. For the CA PC Benchmark, Capital Preservation includes Senior Debt, Opportunistic includes Credit Opportunities, and Return Maximization includes Subordinated Capital. Since inception performance reflects inception date for each respective sub-strategy: Capital Preservation (3Q 2006); Opportunistic (1Q 2007); Return Maximization (3Q 2004).

- The portfolio has benefited from intentional geographic diversification implemented in recent years, with global strategies outperforming across all periods

Portfolio Exposure & Performance by Geography[17]

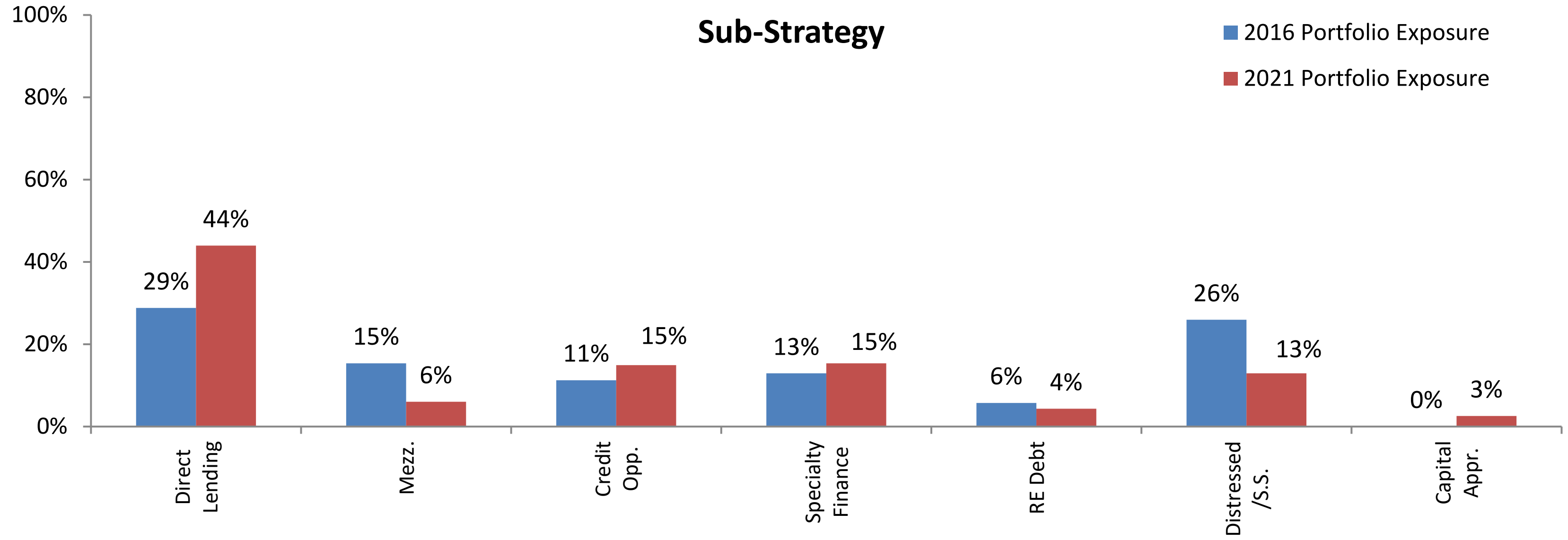


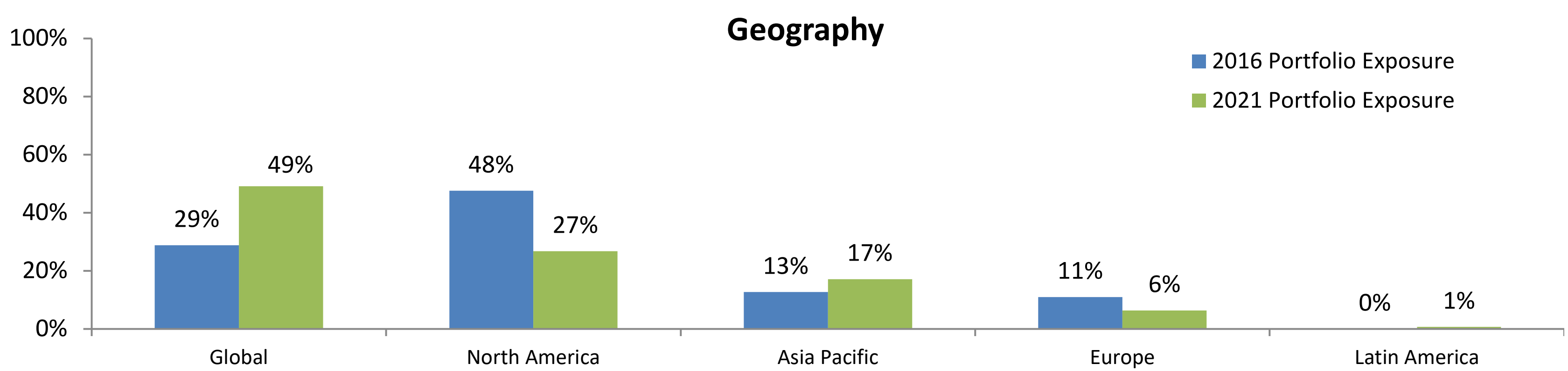
Sources: Cambridge Associates. Performance data provided by Aksia.

[17] Analysis based on fund-level NAV data as of December 31, 2013, and December 31, 2021, and Cambridge Associates Private Credit (PC) Benchmark fund-level NAV data as of December 31, 2021. Pro-Forma NAV + Unfunded amounts as of December 31, 2021, and incorporates commitments made through June 30, 2022 in the unfunded amounts. Latin America does not have a 3-year return and is not included in the graph. CA PC Benchmark includes exposure to Latin America (0.2%) and other unclassified investments (0.2%). Since inception performance reflects inception date for each respective geography: North America (3Q 2004); Europe (1Q 2009); Asia Pacific (2Q 2014); Global (3Q 2011).

- The allocation to Direct Lending has increased while the allocation to Distressed/ Special Situations has decreased during the build-out of the program[18]

As of December 31, 2021[19]



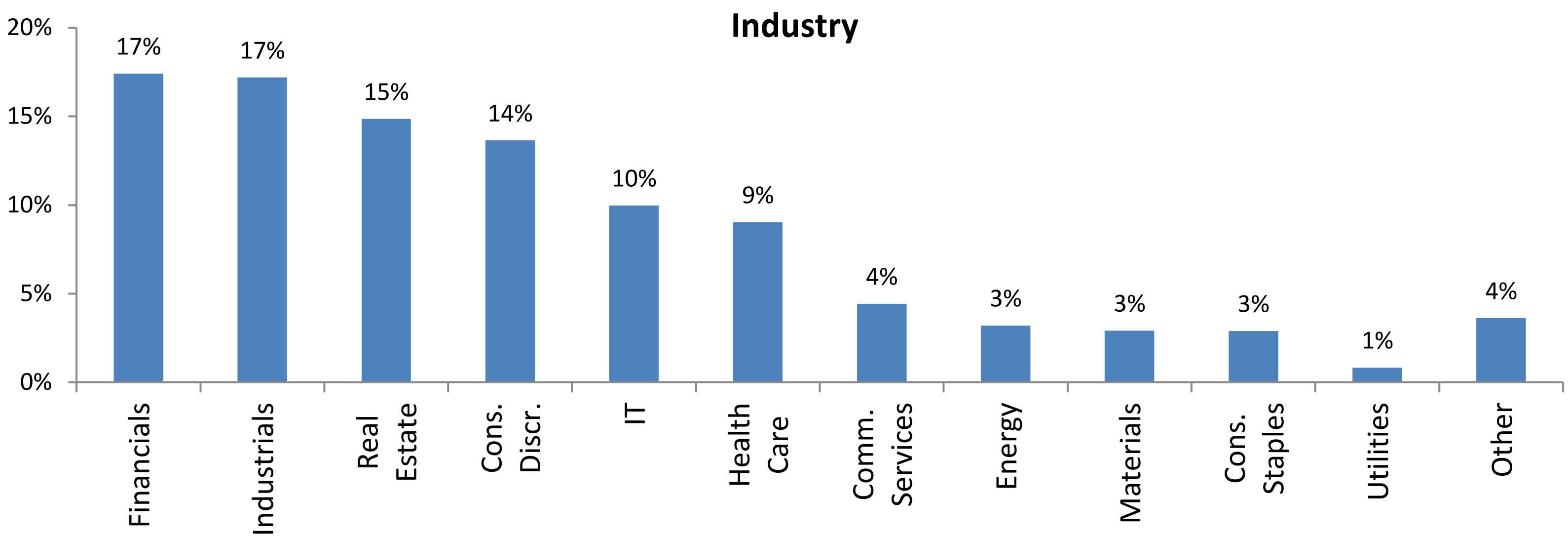


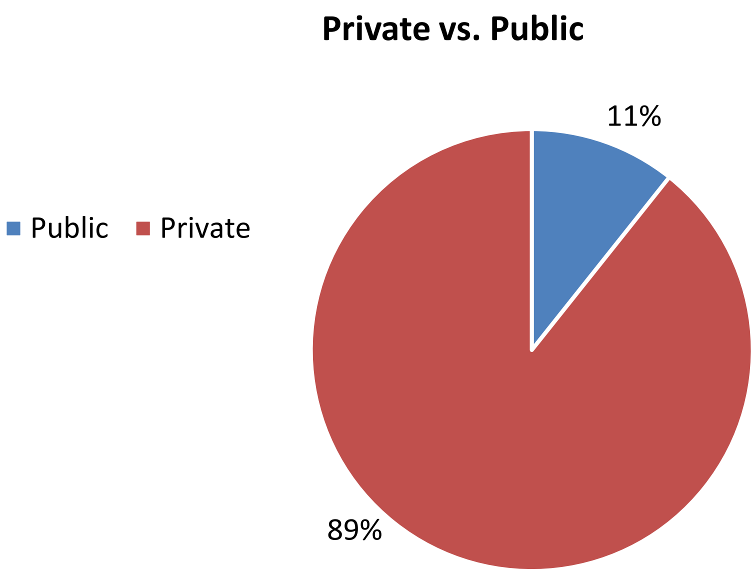
Source: Aksia.

[18] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

[19] Exposure (NAV + unfunded) as of December 31, 2021.

As of December 31, 2021[20]



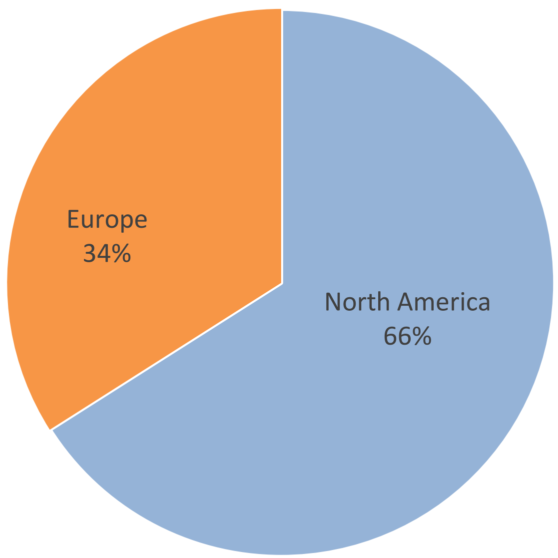


Source: Aksia.

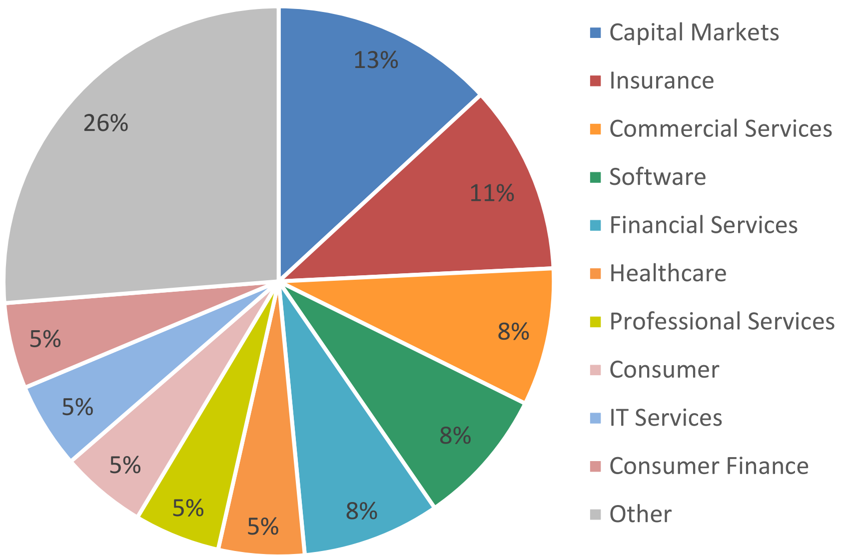
[20] Exposure (NAV + unfunded) as of December 31, 2021.

- The Ares SMA ($250 million in 2018 and $300 million in 2021) primarily consists of first lien senior secured loans (at least 75%) and opportunistic loans (up to 25%) in North America and Europe
  - Ares has invested $363 million (66% of commitments) as of December 31, 2021. While distributions have just begun, the SMA reports a 1.2 net TVPI and 11.4% net IRR. Of $356 million of funded direct lending investments, the portfolio had the following attributes:
    - 96% deployed in first lien senior secured loans with the remainder in subordinated loans and equity
    - 3.2x weighted average interest coverage
    - Covenants on 93% of borrowers
    - 4.7x weighted average leverage ratio (and 38% weighted average LTV)

GEOGRAPHIC EXPOSURE



SECTOR EXPOSURE

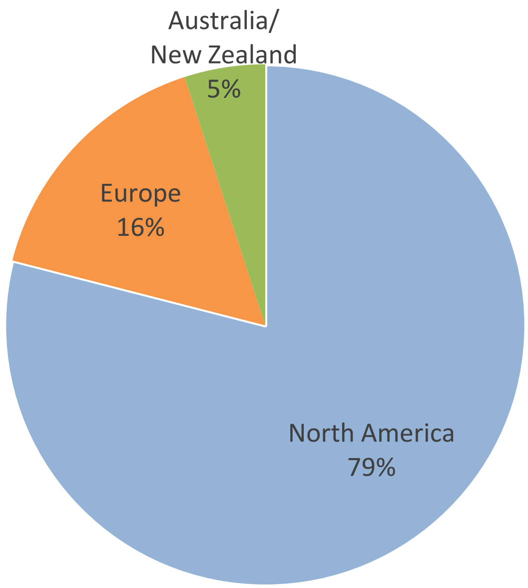


Sources: Ares Management, Cambridge Associates, and SFERS.

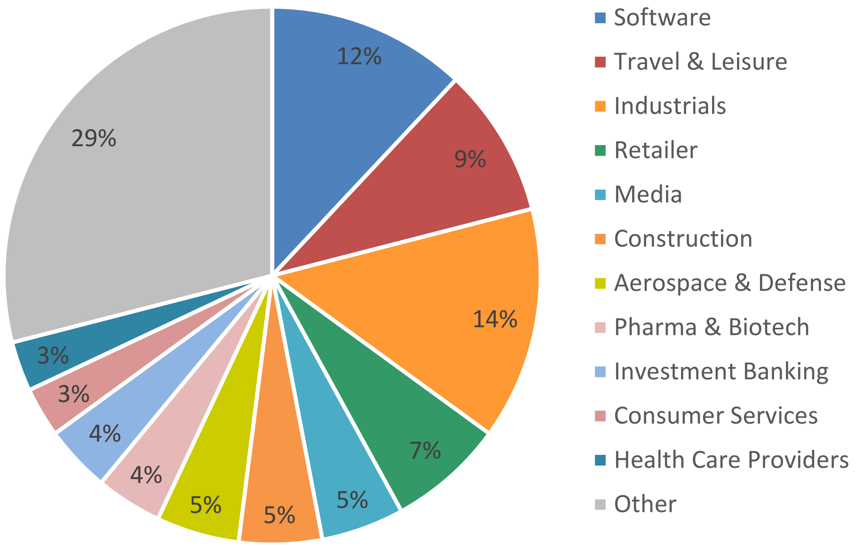
[21] Data provided by Ares Management and as of December 31, 2021. Portfolio statistics are specific to the SMA's direct lending investments and do not include co-investments. Investment type allocations are based on total invested capital. Exposures exclude unfunded commitments and are based on funded par values.

- The HPS SMA ($275 million, 2019) was designed to be allocated predominantly (~90%) to first lien senior secured loans and distressed private and public credit opportunities (~10%) in North America and Europe
  - HPS has drawn $100 million (36% of commitments) as of December 31, 2021 and is 89.4% committed on a pro forma basis as of April 2022. As of December 31, 2021, the first lien portion of the SMA is marked at a 25% net IRR. Portfolio composition appears attractive with the following characteristics:
    - 2.3% upfront fees/ OID
    - 3.1x weighted average interest coverage
    - Weighted average floor of 0.9% and spread of L+690 bps
    - 4.6x weighted average leverage ratio (and 36% weighted average LTV)

GEOGRAPHIC EXPOSURE



SECTOR EXPOSURE



Sources: HPS Investment Partners, Cambridge Associates, and SFERS.

[22] Data provided by HPS and Aksia and as of December 31, 2021. Portfolio statistics, including net IRR, are specific to the SMA's direct lending investments and do not include SSOF investments and co-investments. Exposures are based on total face value committed.

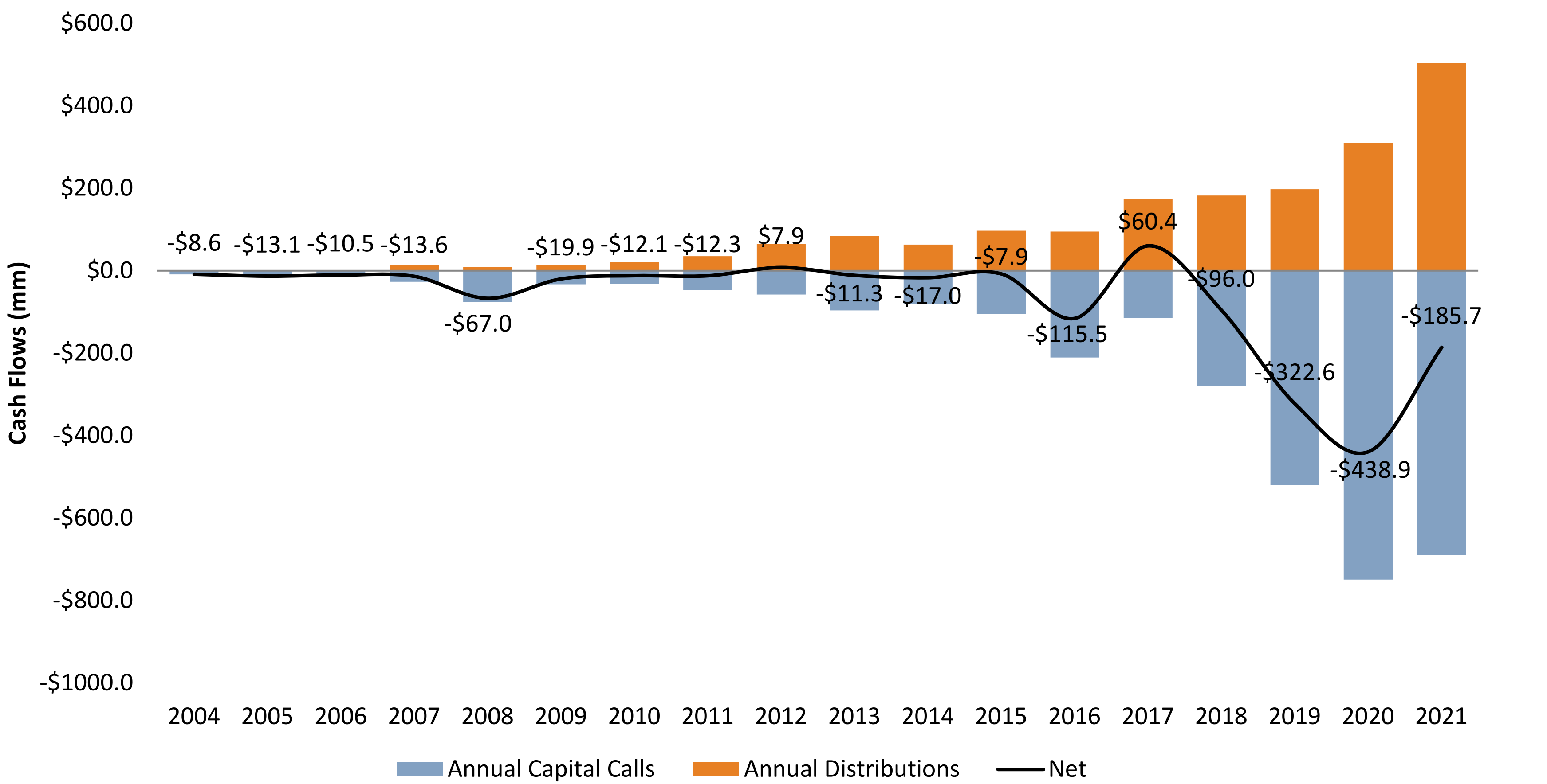
Recent Activity

SFERS
San Francisco Employees' Retirement System

- As commitments have increased, capital call activity has accelerated
- Average annual commitments of approximately $1 billion required to meet the 10% target allocation

As of December 31, 2021

Annual Cash flows



Sources: Cambridge Associates. Performance data provided by Aksia.

- In 2021, the portfolio received approval for $740 million of commitments to eight funds[23]
- Of the $740 million, commitments to Direct Lending represented 57.4% while commitments in Global focused funds accounted for 76% of new commitments

Firm	Fund	Sub-Strategy	Commitment ($millions)
Ares	Ares Pathfinder (via Ares SMA)	Credit Opportunities	$25
PAG	PAG Loan Fund V	Direct Lending	$125
Tiverton	Tiverton AgriFinance II	Specialty Finance	$50
Crayhill	Crayhill Principal Strategies Fund II	Specialty Finance	$70
Ares	Ares SMA + Overflow/Co-Invest	Direct Lending	$300
Ares	Ares Special Opportunities Fund II (via Ares SMA)	Credit Opportunities	$25
HPS	HPS Strategic Investment Partners V	Mezzanine	$75
Kennedy Lewis	Kennedy Lewis Credit Opportunities III + Sidecar	Credit Opportunities	$120
			$740.0

[23] Managers in bold represent new Private Credit relationships. Total commitment amounts excludes investments made within existing Ares SMA.

Private Credit ESG Initiatives Completed in 2021

- New Manager ESG Due Diligence – Collaborated with ESG Team on ESG due diligence for new private credit relationships.
- Partnered with ESG team to incorporate SFERS' investment restrictions into separately managed accounts (SMA), where appropriate.
- ESG Platform support – Supported ESG in PRI reporting and other initiatives.

Private Credit ESG Diligence Process

- **Search** – Private Credit Team and ESG Team collaborate to include ESG due diligence section in RFI/RFP/DDQ
- **Pre-Review** – Private Credit Team shares DDQ along with any additional ESG materials with the ESG Team for initial review.
- **Diligence** – The ESG Team drafts an agenda, and the Private Credit Team sets up a due diligence meeting with the manager.

  Meeting conducted with in-person or via video conferencing.
- **Memo** – ESG Team drafts the Board memo ESG Section.

  Private Credit Team reviews and discusses section with ESG Team as needed.
- **Scorecard** – ESG Team develops ESG Scorecard based on memo section. Added to Diligend platform, accessible to Private Credit and ESG Teams.

Opportunities and Initiatives

San Francisco Employees' Retirement System

Opportunities:

- Continue emphasis on Credit Opportunities and Specialty Finance strategies given market uncertainty
  - Credit Opportunities strategies provide flexibility for managers to pivot in and out of opportunities across performing and nonperforming assets and distressed credit
  - Specialty Finance strategies can provide high current income and lower correlation to the broader credit markets
    - Asset-based lending opportunities are typically shorter duration and can provide strong downside protection, making them more relatively attractive in a rising rate environment
- Evaluate Distressed and Special Situation opportunities given increasing market volatility
- Consider opportunities in Europe given current portfolio underweight
- Look to diversify manager exposure in Asia
- Supplement fund exposures with diversified co-investment vehicles, which can provide lower blended fees

Initiatives:

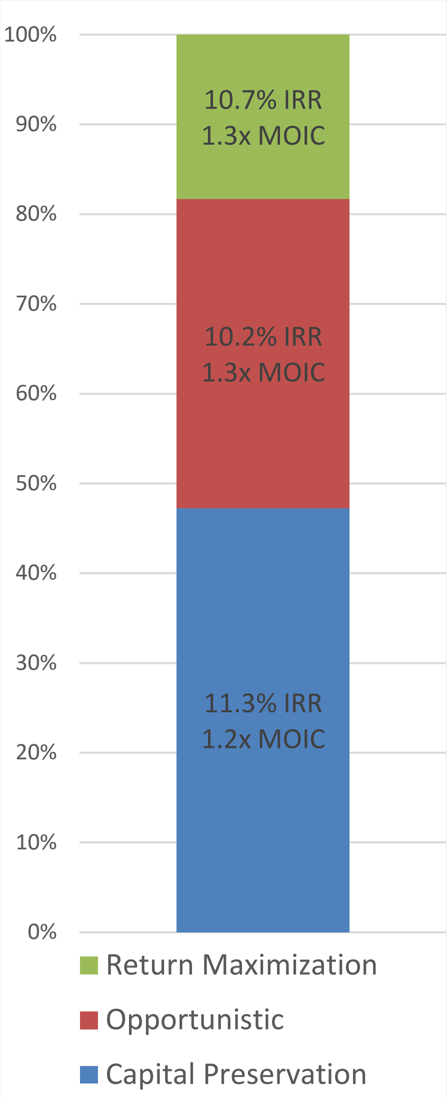
- Execute on remaining investment pipeline
  - Expected total of roughly $1 billion of commitments in 2022
  - Received approval for seven investments totaling $710 million to date[24]
- Evaluate managers and begin preliminary diligence for potential third SMA
- Add additional resources to the Private Credit Team

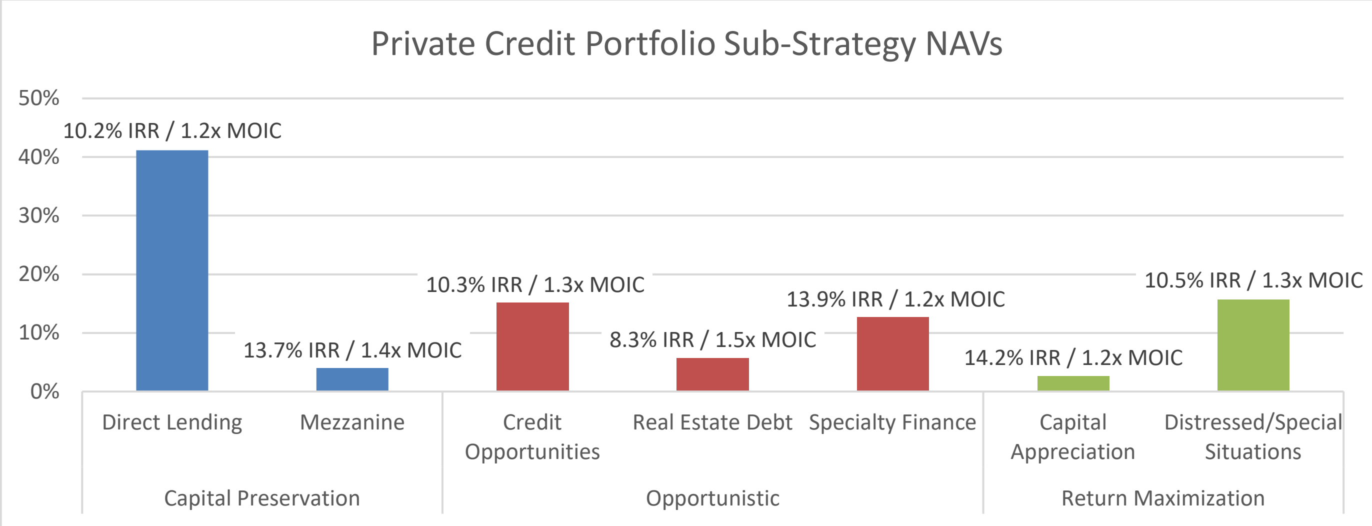
[24] As of June 30, 2022.

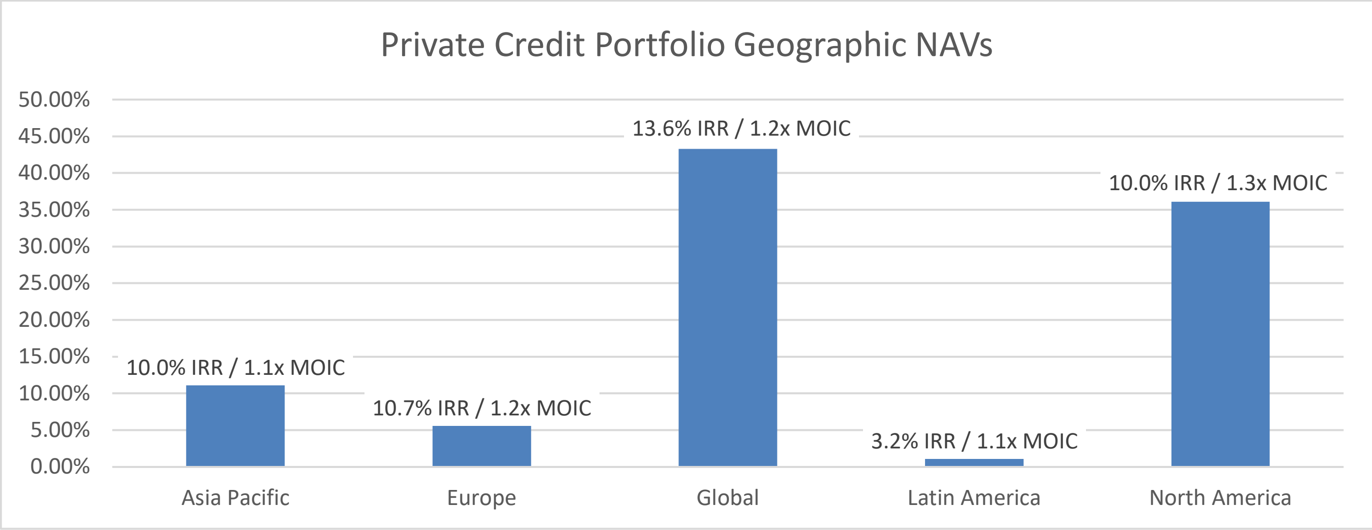
Appendix

San Francisco Employees' Retirement System

- ITD PC Portfolio NAV Attribution by Strategy, Sub-strategy and Geography[25]







Source: SFERS. Performance data provided by Aksia. As of December 31, 2021.

[25] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

- All sub-strategies appreciated over the year, led by Mezzanine and Distressed/ Special Situations

As of December 31, 2021

	Net IRRs						Multiples	
Sub-Strategy	1 Year	3 Year	5 Year	7 Year	10 Year	ITD[26]	DPI	TVPI
Direct Lending	10.5%	9.3%	9.2%	9.5%	10.3%	10.2%	0.5x	1.2x
Mezzanine	22.8%	15.9%	16.2%	15.2%	15.5%	13.7%	0.9x	1.4x
Credit Opportunities	15.4%	14.1%	14.6%	13.1%	12.2%	10.3%	0.6x	1.3x
Specialty Finance	7.0%	11.3%	13.8%	13.9%	13.9%	13.9%	0.5x	1.2x
Real Estate Debt	13.8%	8.3%	7.4%	6.7%	8.3%	8.3%	0.4x	1.5x
Distressed/ Special Situations	18.4%	11.0%	11.0%	9.2%	10.5%	10.5%	0.8x	1.3x
Capital Appreciation	15.4%	15.3%	14.2%	14.2%	14.2%	14.2%	0.3x	1.2x

Source: Aksia.

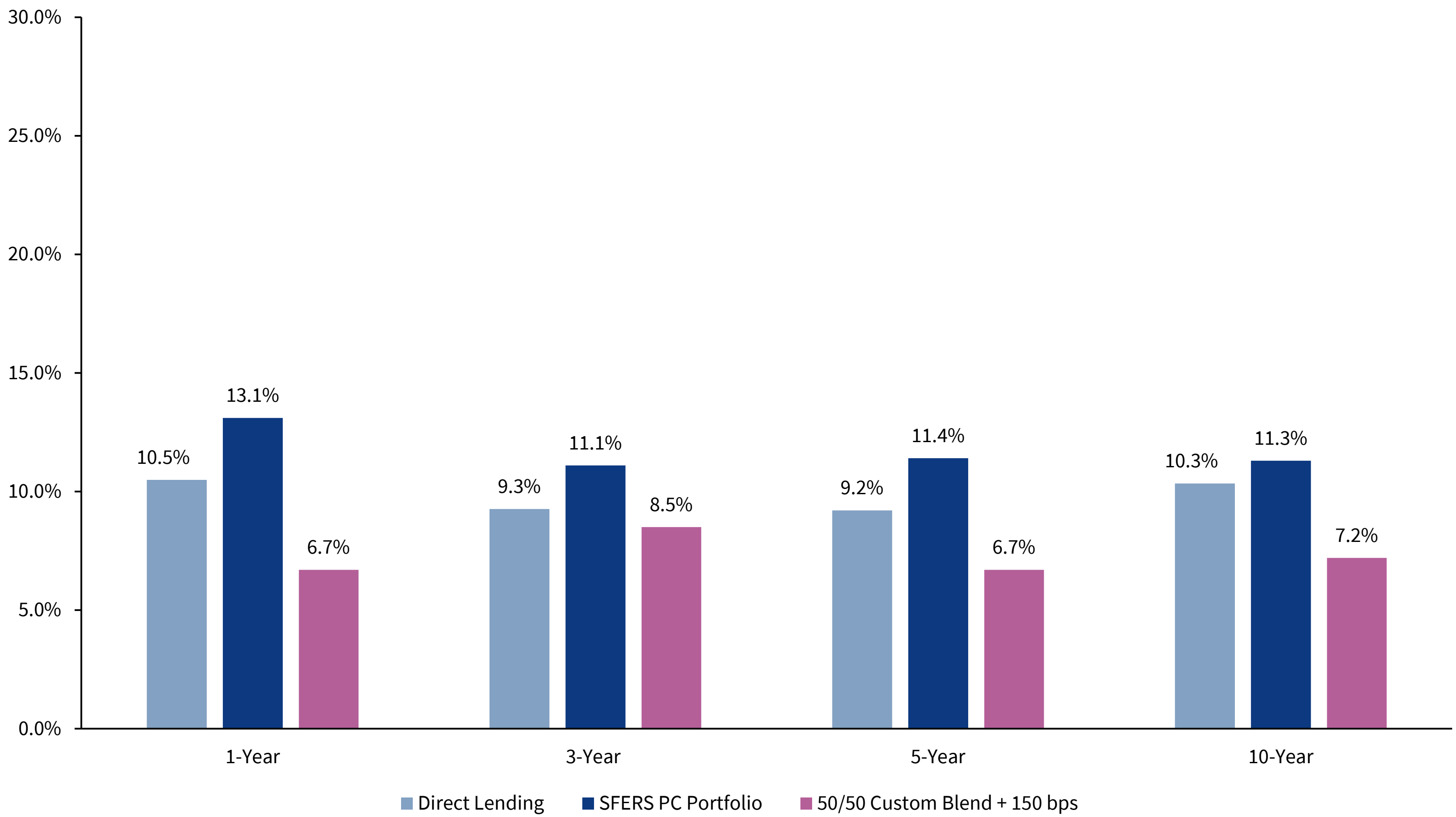
[26] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

- Direct Lending

Periodic Rates of Return

% of Total Exposure: 43.9% / % of Total NAV: 41.2%

SFERS' Direct Lending managers have outperformed the custom benchmark over all trailing time periods



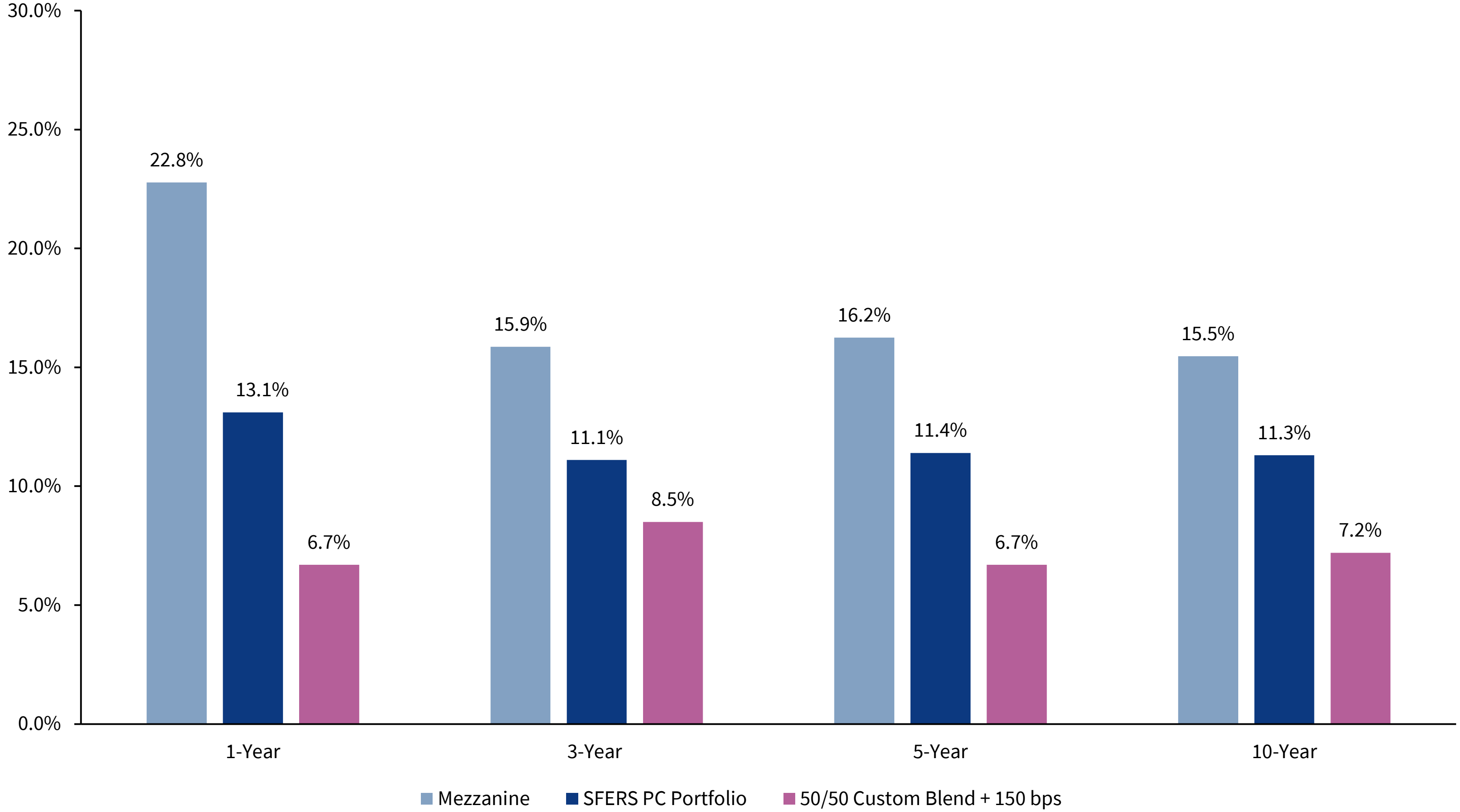
Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

- # Mezzanine

Periodic Rates of Return

% of Total Exposure: 6.0% / % of Total NAV: 6.1%

SFERS's Mezzanine managers have historically outperformed public benchmarks by a significant margin in near- and long-term horizons



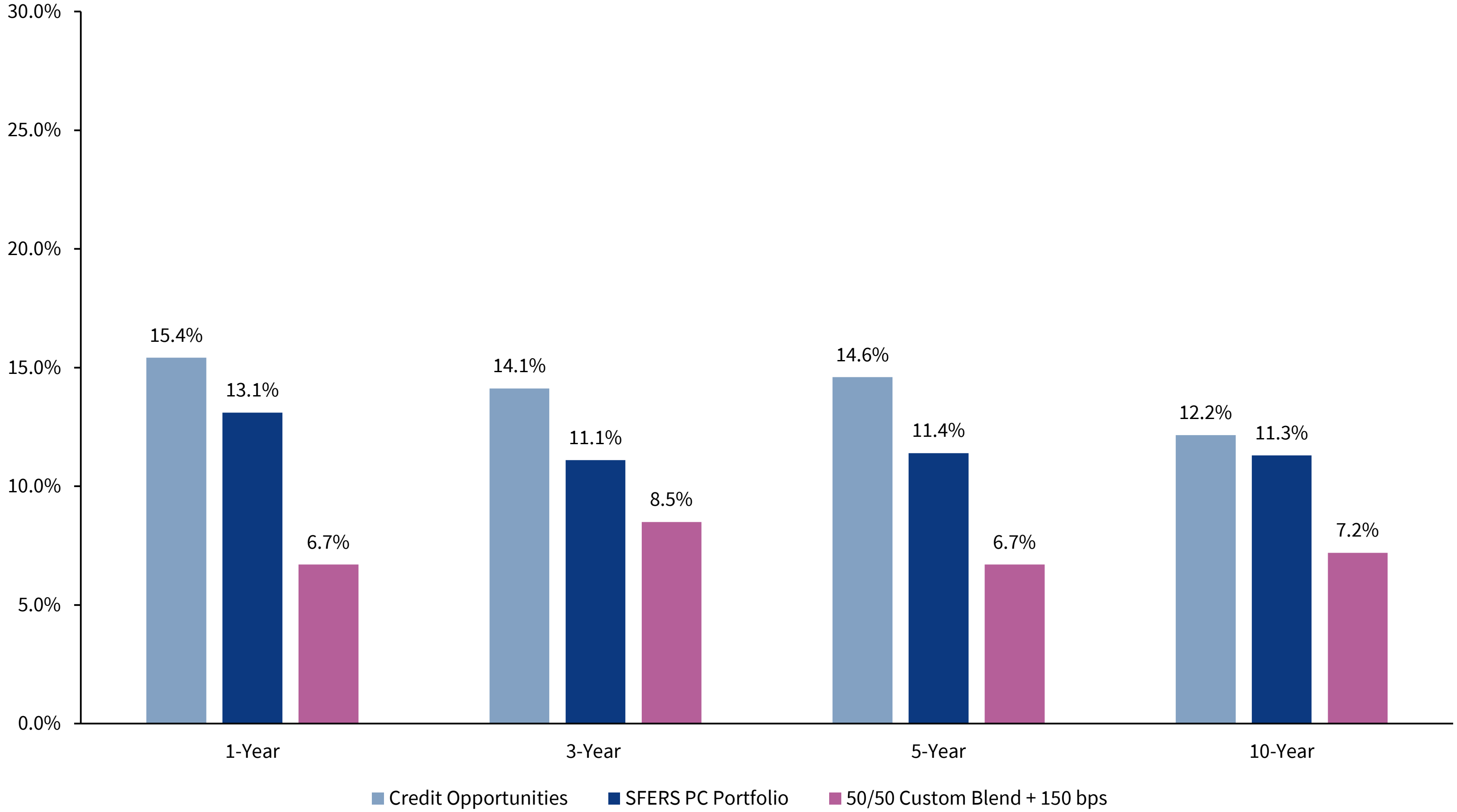
Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

- Credit Opportunities

Periodic Rates of Return

% of Total Exposure: 14.9% / % of Total NAV: 15.3%

SFERS's Credit Opportunities managers have historically outperformed the SFERS PC portfolio over all trailing periods



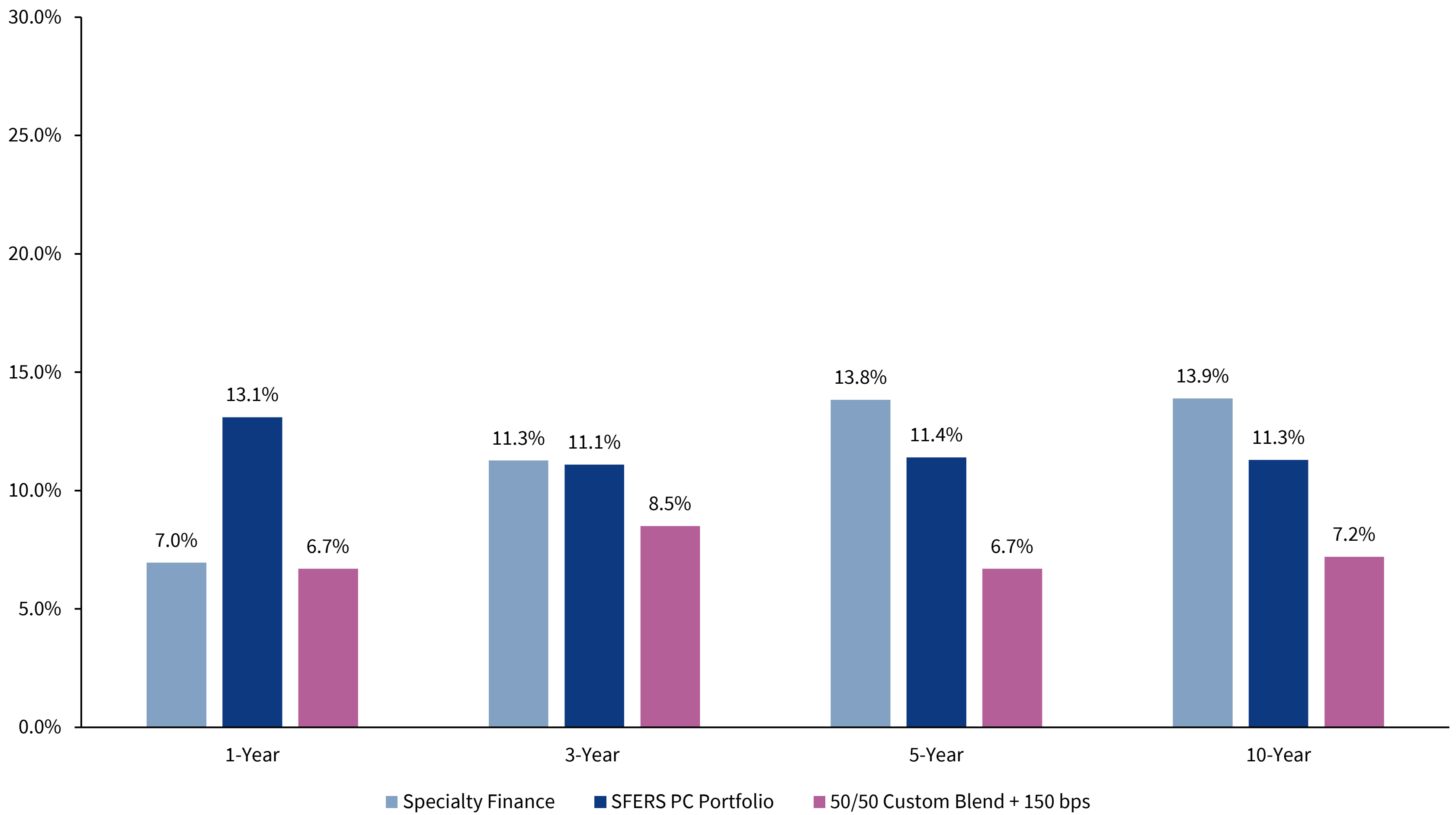
Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

- Specialty Finance

Periodic Rates of Return

% of Total Exposure: 15.4% / % of Total NAV: 12.7%

SFERS' Specialty Finance managers have outperformed the Blended Benchmark in all time periods, but have underperformed the SFERS' PC portfolio in over the past year



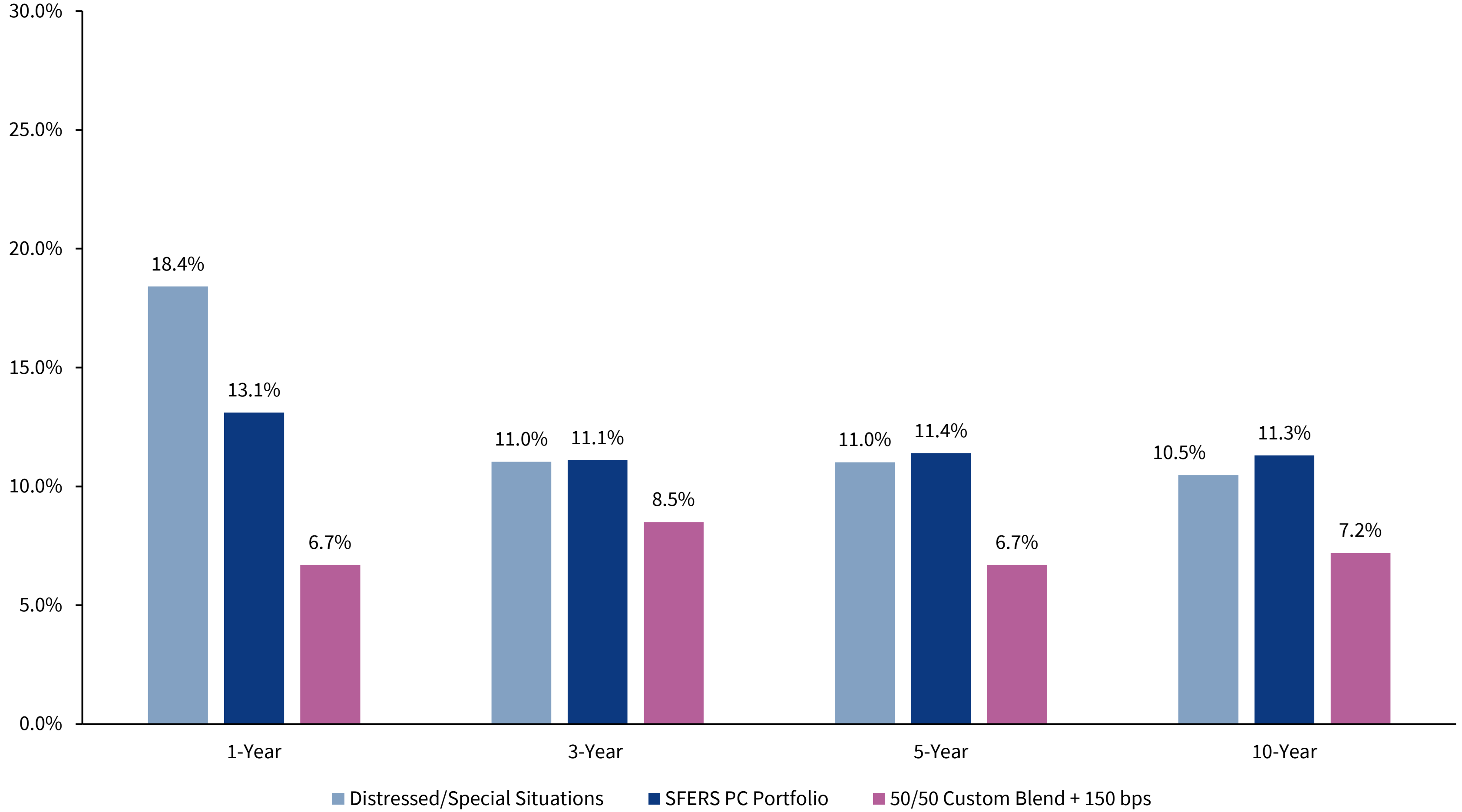
Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

Distressed/Special Situations

Periodic Rates of Return

% of Total Exposure: 12.9% / % of Total NAV: 15.7%

SFERS's Distressed/Special Situations managers have historically outperformed public benchmarks by a significant margin in near- and long-term horizons



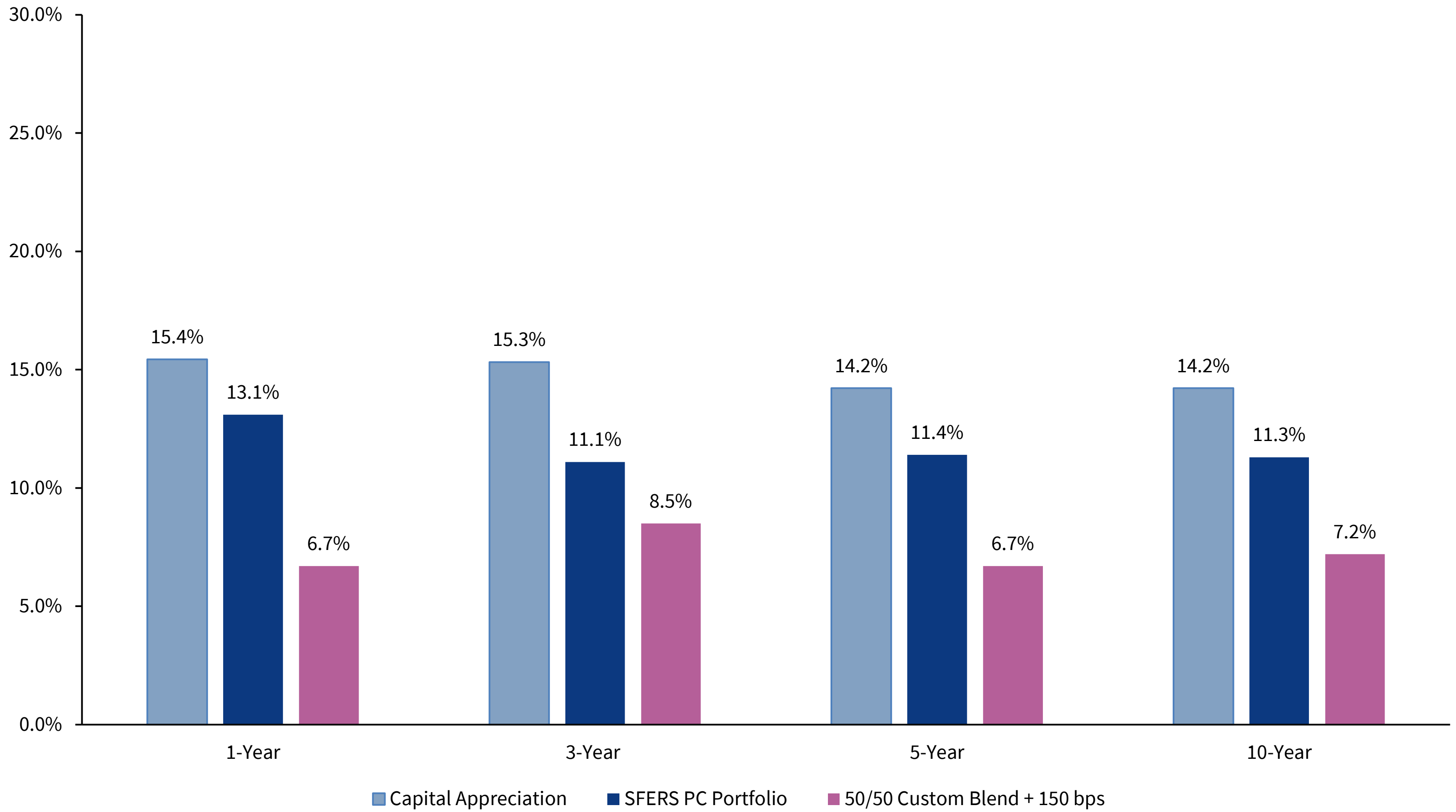
Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

- Capital Appreciation

Periodic Rates of Return

% of Total Exposure: 2.5% / % of Total NAV: 2.6%

SFERS' Capital Appreciation managers have outperformed the Blended Benchmark in all time periods, as well as the SFERS PC portfolio



Source: Cambridge Associates. Utilizing CA's qualitative asset class reclassifications and performance data as of December 31, 2021. Data in USD utilizing the individual funds' cashflows and comparing these with SFERS' custom blended benchmark. Index returns are time weighted rates of returns.

- All sub-strategies appreciated over the year, and all but Capital Appreciation appreciated over Q1 2022

As of March 31, 2022

	Net IRRs							Multiples	
Sub-Strategy	QTD	1 Year	3 Year	5 Year	7 Year	10 Year	ITD[27]	DPI	TVPI
Direct Lending	1.5%	8.7%	8.7%	9.0%	9.1%	9.6%	9.9%	0.5x	1.2x
Mezzanine	1.3%	17.2%	14.9%	15.9%	15.0%	15.3%	13.5%	0.9x	1.4x
Credit Opportunities	1.8%	13.9%	14.0%	14.0%	13.2%	11.8%	10.2%	0.6x	1.3x
Specialty Finance	0.9%	6.4%	9.9%	13.0%	13.0%	13.0%	13.0%	0.5x	1.2x
Real Estate Debt	1.2%	10.1%	7.9%	7.2%	6.5%	7.9%	8.2%	0.4x	1.5x
Distressed/ Special Situations	3.4%	15.8%	11.5%	11.3%	9.7%	10.3%	10.6%	0.8x	1.3x
Capital Appreciation	-0.2%	8.0%	13.3%	12.7%	12.7%	12.7%	12.7%	0.3x	1.2x

Source: Aksia. As of March 31, 2022. 100% of funds have reported, but figures are under review and considered preliminary.

[27] On June 30, 2019, 17 Distressed/Special Situations funds totaling $105.2 Million in NAV were transferred from SFERS' Private Equity portfolio to the Private Credit portfolio. The track record for this group of funds begins in 2004. Accordingly, the inception date of SFERS private credit track record has been extended to include these funds.

SAN FRANCISCO EMPLOYEES' RETIREMENT SYSTEM

PRIVATE CREDIT PORTFOLIO UPDATE

PRESENTED BY ANITA NG, INVESTMENT MANAGING DIRECTOR, AND RICHARD GRIMM, INVESTMENT MANAGING DIRECTOR

CAMBRIDGE ASSOCIATES

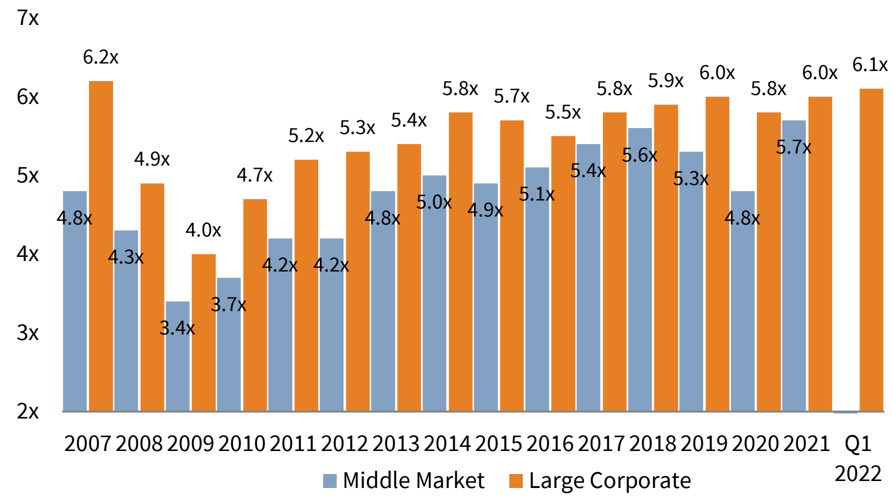
JULY 2022

North America Credit Market Update

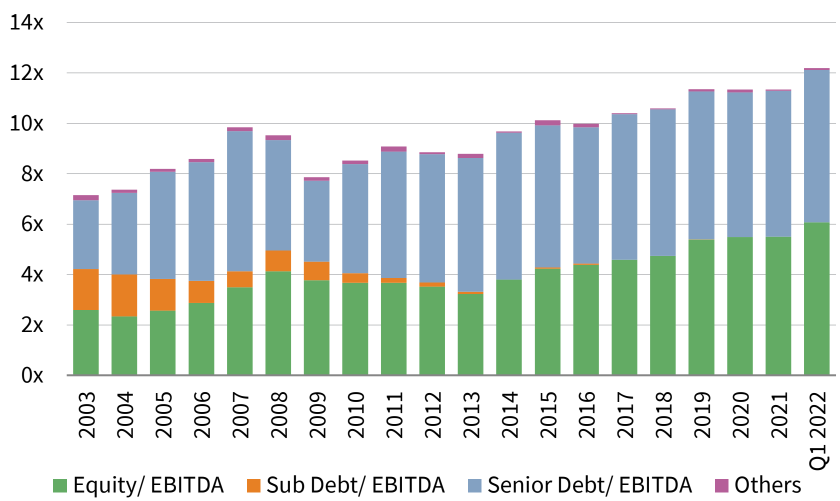
Sponsor Backed Transactions

- Debt /EBITDA multiples back to pre-pandemic highs
- LBO purchase prices broadly unchanged as sponsors continue to transact competitively through Covid
- Use of sub debt decreasing in LBOs, replaced by unitranche
- Sponsor equity contributions have come down in Q1 2022, coupled with slightly higher purchase prices and debt/EBITDA ratios

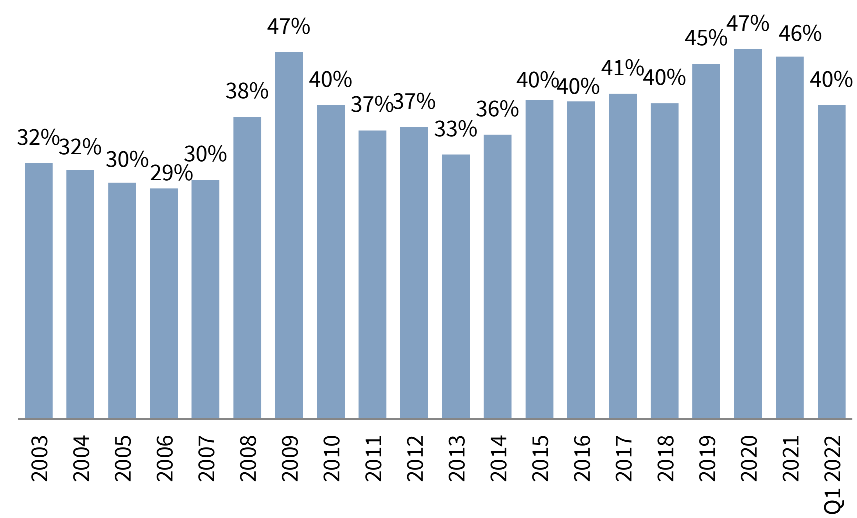
AVERAGE DEBT/EBITDA MULTIPLES OF ALL LBO LOANS



PURCHASE PRICE MULTIPLES, ALL LBOS



EQUITY CONTRIBUTION: ALL LBOS

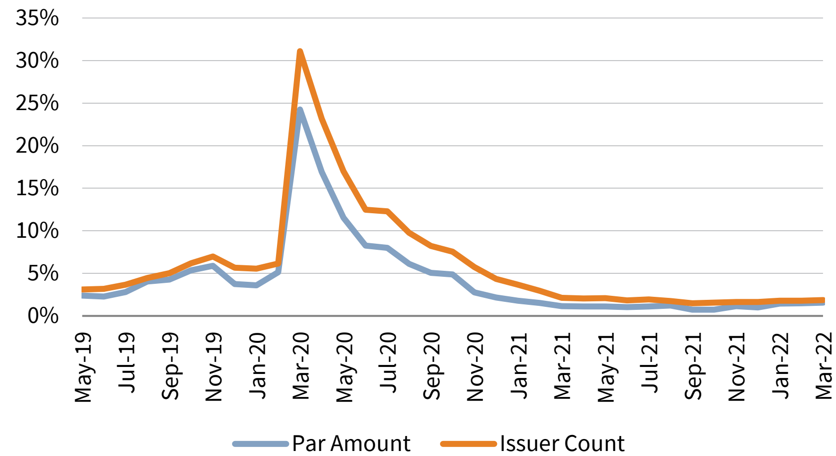


Source: S&P LCD
Middle Market is defined as borrowers with less than $50 million in EBITDA. Large Corporates defined as borrowers with greater than $50 million in EBITDA.
Top Right: Represents trailing sixth month average

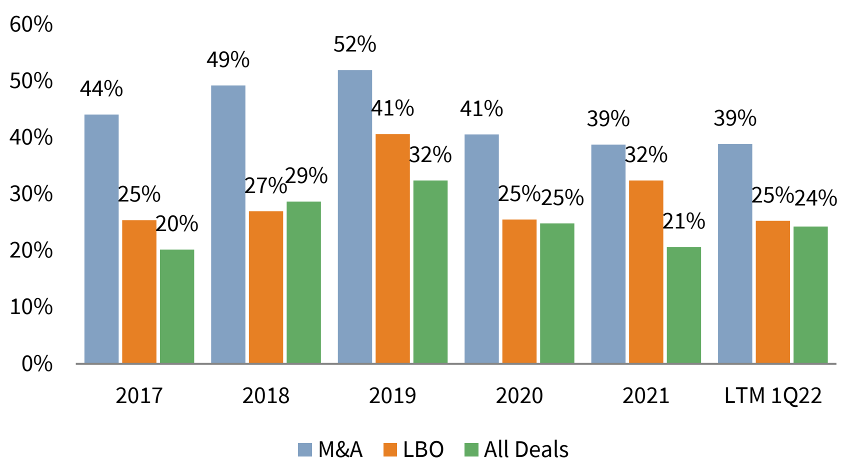
Fewer EBITDA Adjustments Through COVID, Cov-Lite Unmoved

- High yield distress ratios exceeded leveraged loan (BSL) distress ratios since the extreme spike during the height of COVID-19 dislocation; high yield's greater exposure to energy was a primary driver
- EBITDA adjustments reduced significantly since pre-COVID era, from 32% of all deals in 2019 to 24% in LTM 1Q 2022; however, anecdotally this trend may be reversing
- Prevalence of Cov-Lite unimpeded by COVID

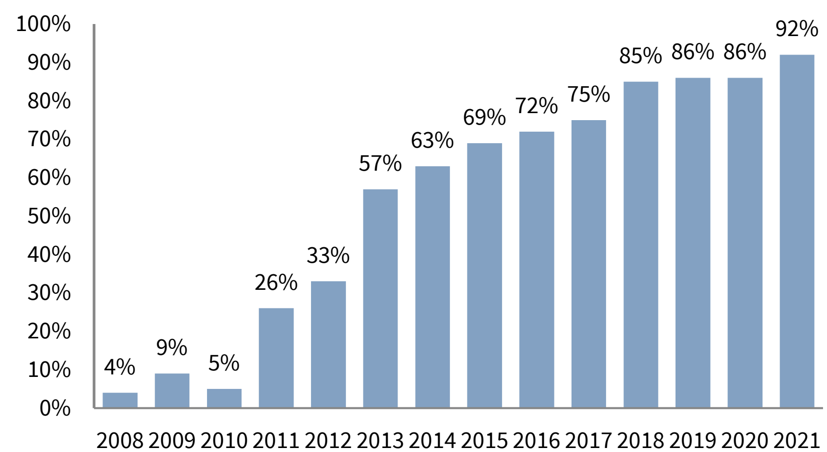
US DISTRESSED RATIO: S&P/LSTA LL INDEX



TRANSACTIONS WITH EBITDA ADJUSTMENTS



PERCENT OF US INSTITUTIONAL NEW-ISSUE COV-LITE LOANS**



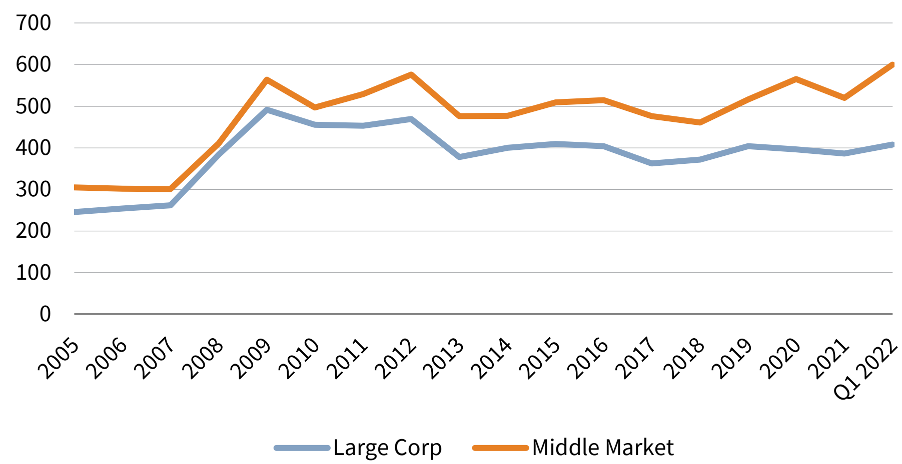
C|A

Source: S&P LCD
*Default rate is LTM total default amount over par outstanding at the beginning of the 12-month period. Includes all loans including those not included in the LSTA/TRLPC mark-to-market service. Primarily institutional tranches.
** Excludes DIPs, second-liens and unsecured transactions

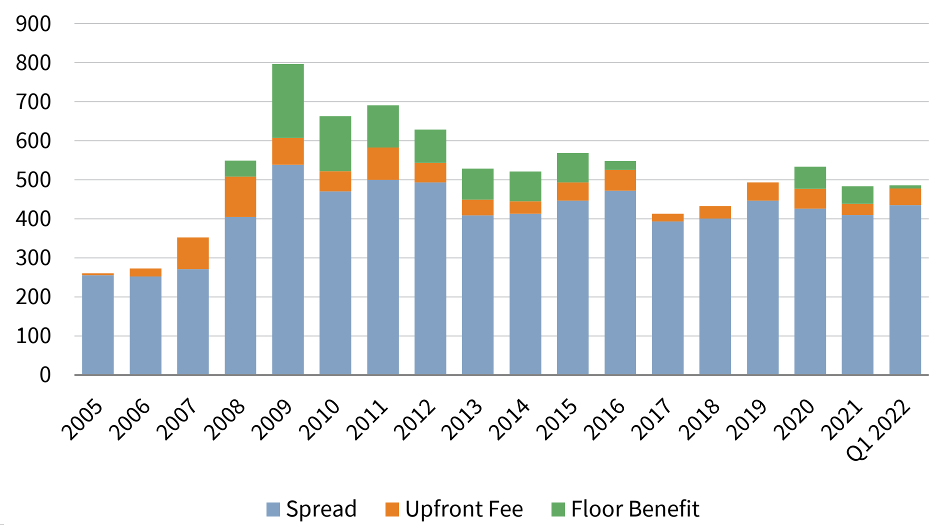
Spreads of Middle Market and Large Corporate Loans

- Middle market spreads widening over large corp loans in Q1 2022
- Demand for leveraged loans outstripping supply in 8 of last 12 months
- All-in spreads of LBO loans tightening by 48 bps since YE 2020 to 4.86%. Rising rates approaching Libor floors

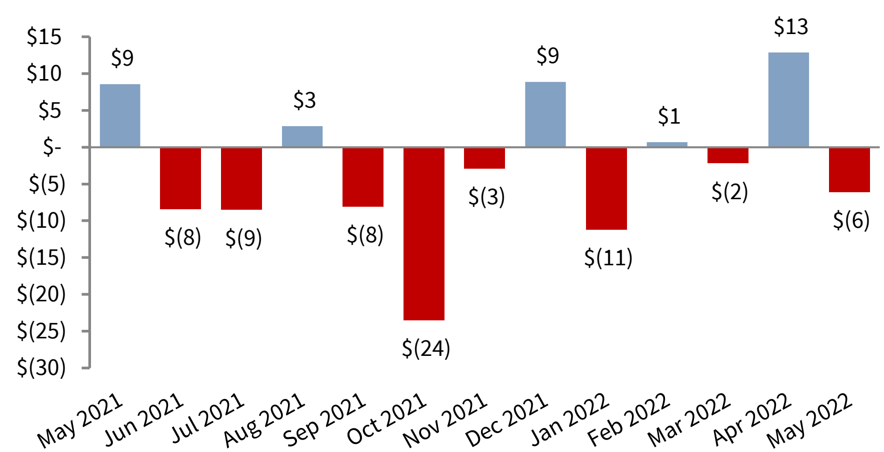
INSTITUTIONAL LOAN SPREADS



ALL-IN SPREADS OF TL-B LOANS BACKING LARGE CORP LBOS



US INSTITUTIONAL MARKET SUPPLY/DEMAND BALANCE FOR LEVERAGED LOANS (IN USD $BNS)



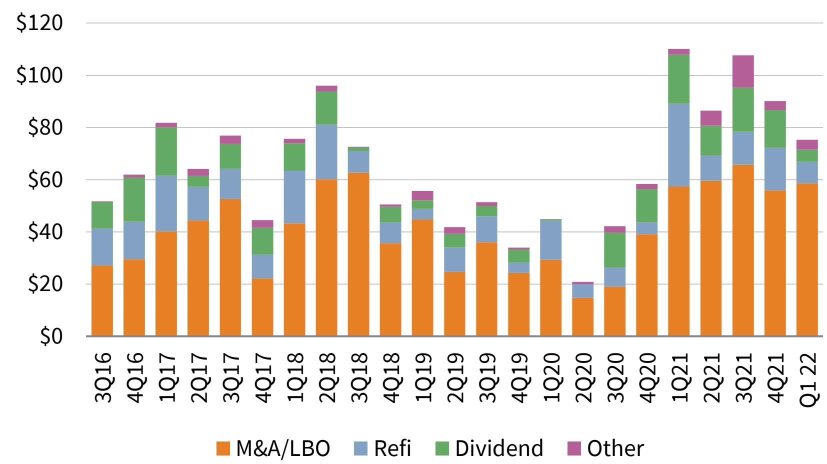
Source: S&P LCD.
Bottom Left: Assumes upfront fee is amortized over a 3-year life.
Bottom Right: Calculated by new issuance minus repayments minus CLO issuance minus inflows into prime funds

North America Credit Market Update

US Institutional Loan Volume

- 2021 was a blow-out year in terms of volume, posting new records in a swath of categories.
  - 30%+ YoY increases over prior records in B-rated issuance, sponsor backed loan activity, and dividend recaps.
- 2022 is off to a slower start, implying a slow-down in activity spurred by Covid-related fiscal/monetary policy, pent up demand
- That said, LBO/M&A activity remains elevated. Reduction in activity is largely Refi, dividend related

US INSTITUTIONAL LOAN VOLUME BACKING PE TRANSACTIONS



Annual institutional new-issue loan volume			
	2021	**Historical comparison**	**Full year record pre-2021**
'B' rated	$444B	New full-year record	$334B in 2017
Refinancing	$179B	Four-year high	$213B in 2013
Dividend recap	$82B	New full-year record	$61B in 2013
Sponsored M&A	$240B	New full-year record	$202B in 2018
Sponsored	$393B	New full-year record	$295B in 2018
LBO	$146B	Second highest on record	$160B in 2007
M&A	$331B	New full-year record	$275B in 2018
Total	$615B	New full-year record	$503B in 2017

Data through Dec. 31, 2021.

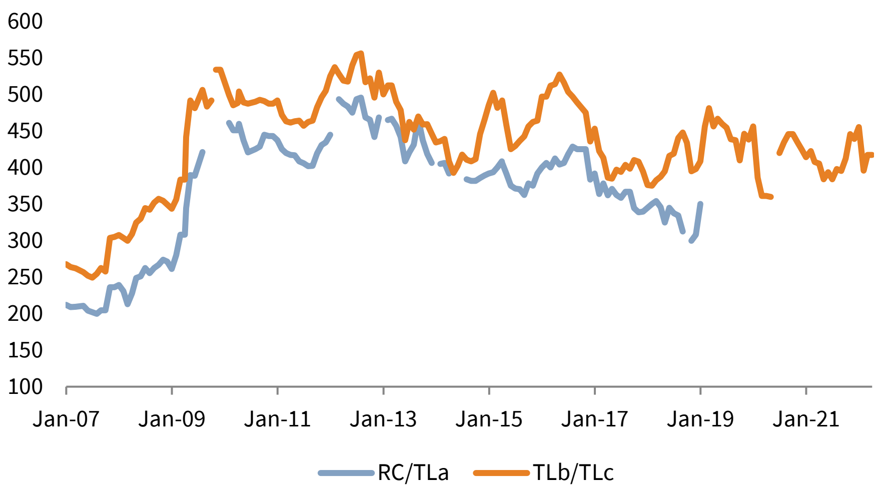
C|A

Source: S&P LCD.

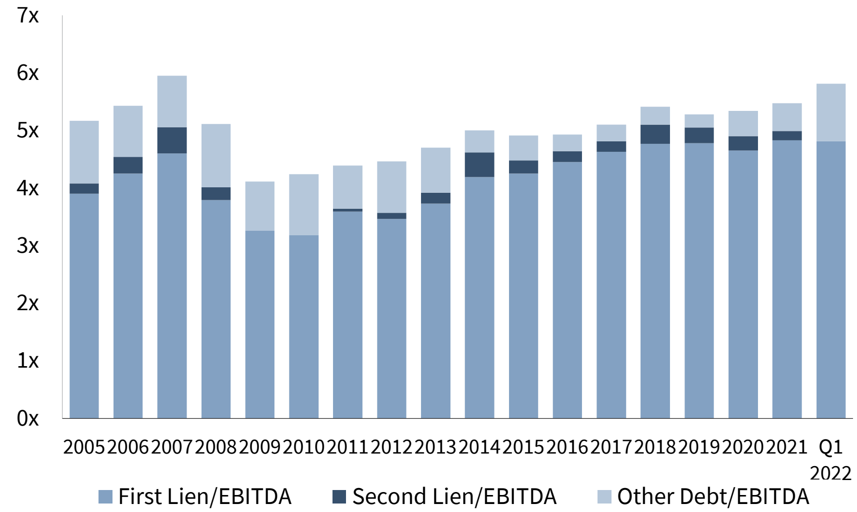
European Credit Market Update

Improvements in sponsor finance pricing and terms in the Covid-19 aftermath were short-lived; cap markets seizing vs private credit dry powder

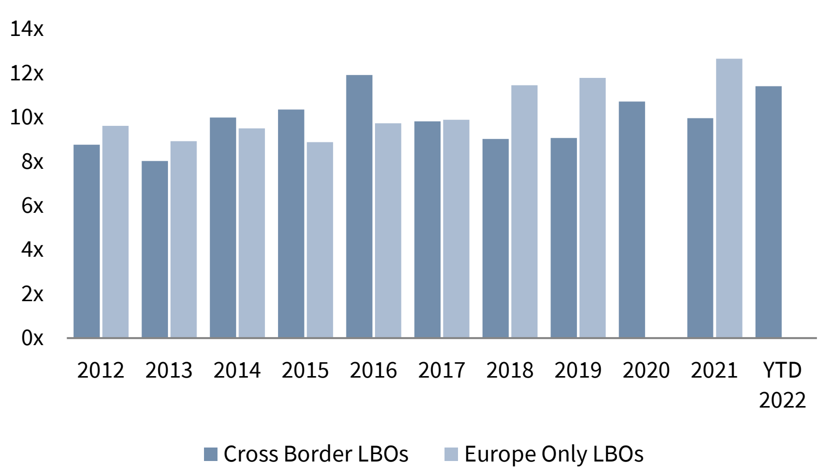
ROLLING 3 MONTH AVG. OF NEW-ISSUE SPREADS FOR BUYOUTS



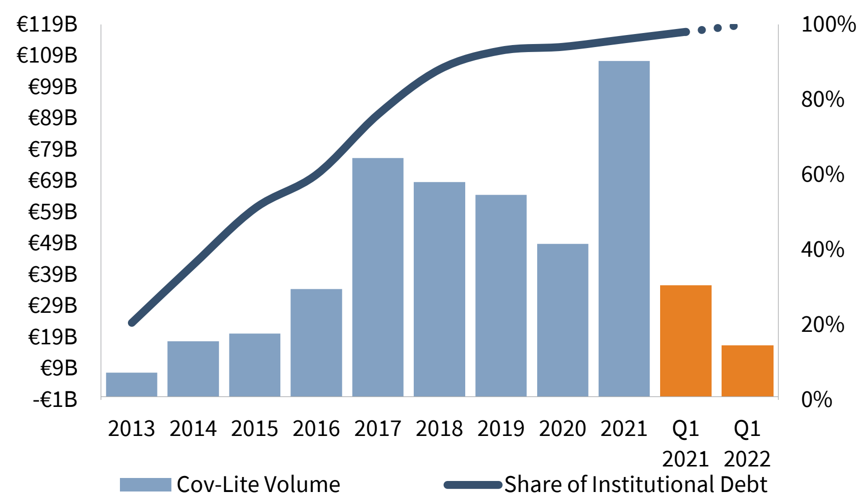
ANNUAL DEBT/PRO FORMA EBITDA RATIOS



AVERAGE PURCHASE PRICE MULTIPLE FOR LBOS



COV-LITE INSTITUTIONAL VOLUME: ANNUAL



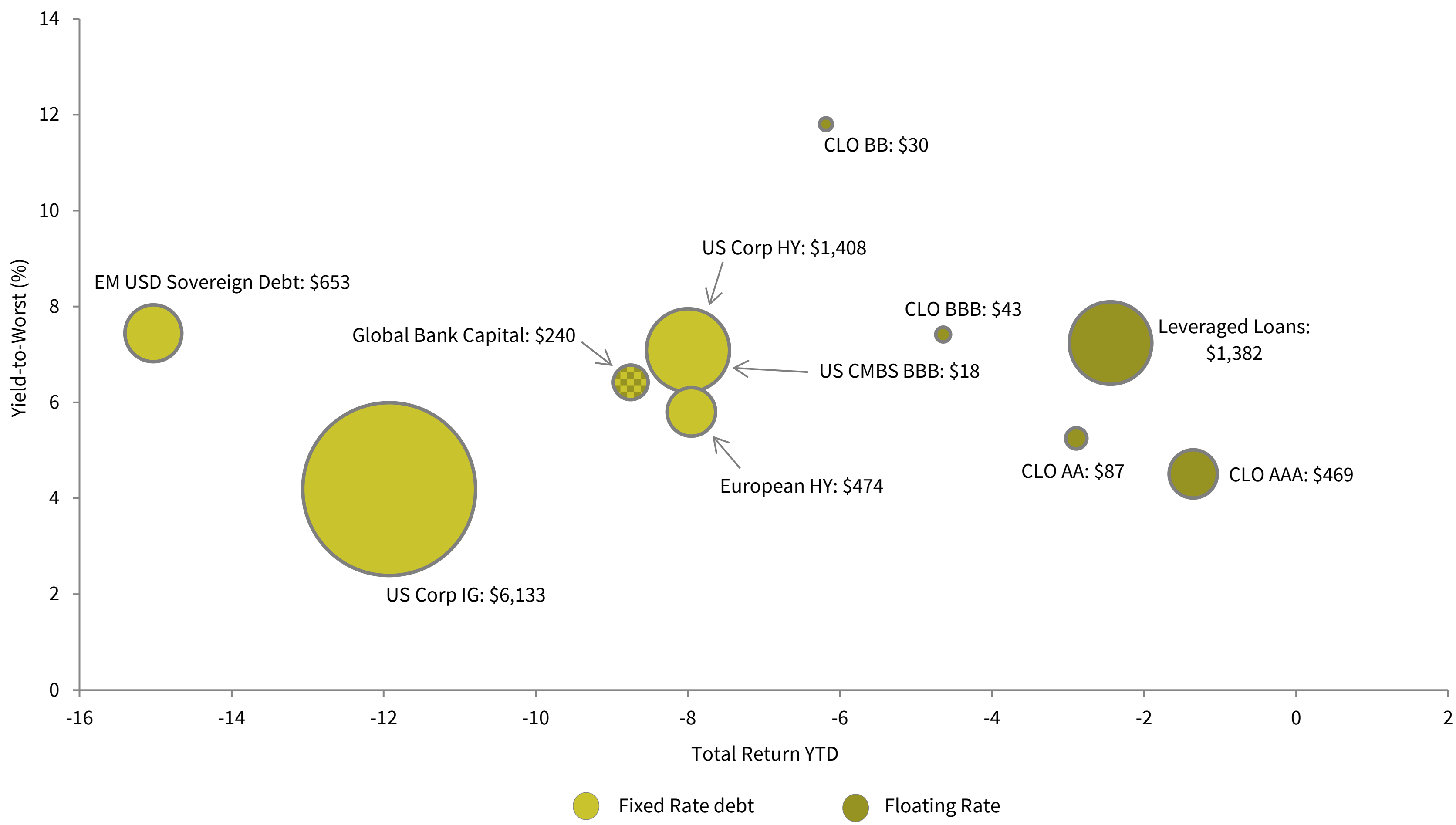
Source(s): S&P LCD as of Q4 2021.
Note(s): *Top left;* Wtd. Avg. ProRata spread is the average RC/TLA spread weighted by sizes of the RC and TLA tranches. Wtd. Avg. Institutional Spread is the average TLB/TLC spread weighted by the sizes of the TLB and TLC tranches. * Buyout refers to initial or secondary buyout. Chart reflects the cost of bank debt for M&A related transactions. *Top right*; Excludes Broadcasting, Cable & Telecom loans prior to 2002.

Liquid Credit Markets

Most Liquid Credit Still Expected to Produce Lackluster Returns Albeit Improving from end of 2021 by 100 – 200bps

DEBT MARKETS BY YIELD, PERFORMANCE, AND MARKET VALUE

As of May 31, 2022 • US Dollar



Source(s): Bloomberg Index Services Limited, Credit Suisse, and J.P. Morgan Securities, Inc.

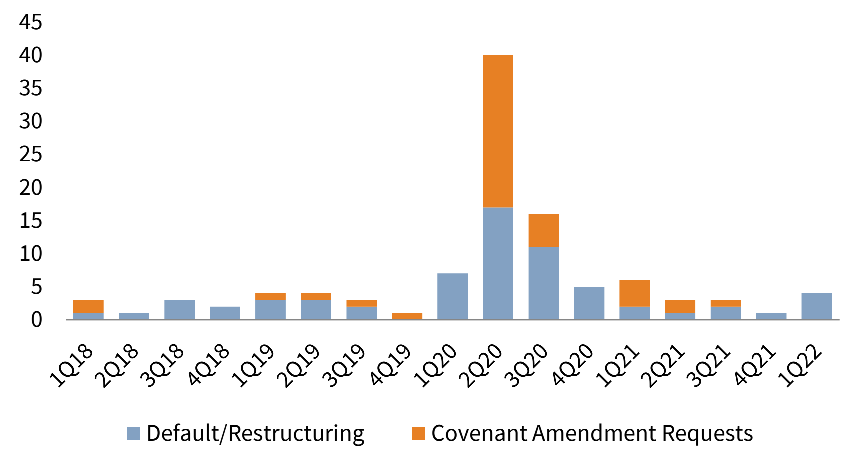
Note(s): The area of each bubble represents the current market value of each index, shown in USD billions. CLO BBB bubble is covered by US Corp HY and Leveraged Loans. Global Bank Capital is represented by the Bloomberg Global Contingent Capital Index, CLO BBB by the J.P. Morgan CLO BBB Index, CLO BB by the J.P. Morgan CLO BB Index, US CMBS BBB by the Bloomberg US CMBS Investment Grade Baa Index, US Corp IG by the Bloomberg US Corporate Investment Grade Index, EM LC Sov Debt by the J.P. Morgan GBI-EM Global Diversified Index, EM USD Sovereign Debt by the J.P. Morgan EMBI Global Diversified Index, European HY by the Bloomberg Pan European High Yield Index, Leveraged Loans by the Credit Suisse Leveraged Loan Index, US Corp HY by the Bloomberg US Corporate High Yield Index, and US Treasuries by the Bloomberg US Intermediate Treasury Index. Total returns data for EM LC Sovereign Debt are in USD terms. Yield for the Credit Suisse Leveraged Loan Index is calculated as the three-month LIBOR plus three-year discount rate.

Leveraged Finance Distress Ratios

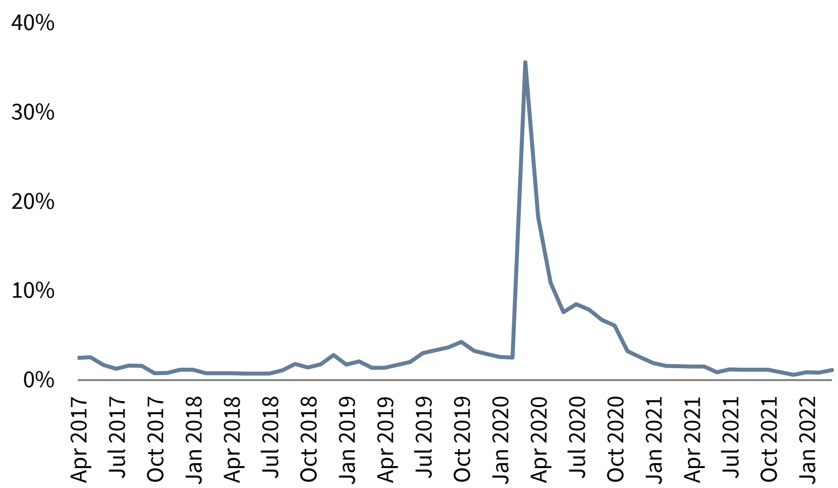
Distress Ratios Back to Lows

- Distress ratios back near all-time lows driven largely by indiscriminate fiscal and monetary stimulus
- Combination of highly levered structures, size of credit markets, loose creditor protections, and mismatch in duration/liquidity likely to cause periodic volatility and material dislocations
- Combination of rising rates and potential margin squeeze related to inflationary pressures could lead to a dramatically different environment in coming quarters.

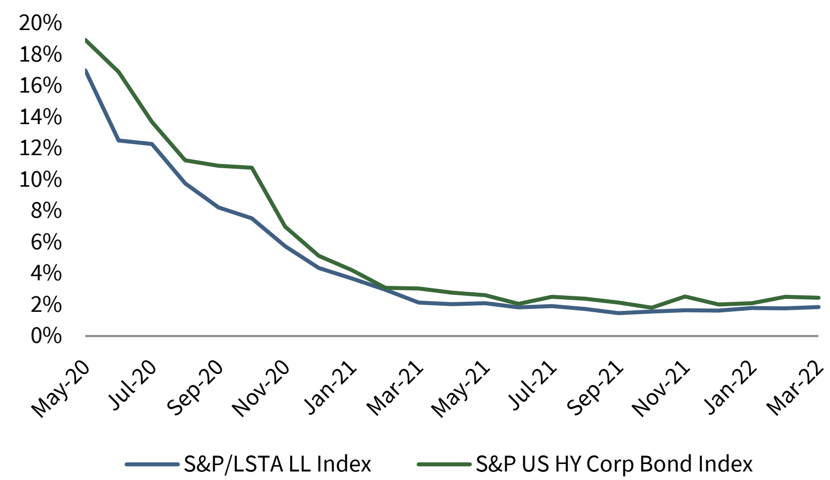
COUNT OF EUROPEAN FINANCIAL COVENANT AMENDMENTS VS. DISTRESSED DEALS



EUROPEAN DISTRESS RATIO (BASED ON NUMBER OF ISSUERS)



US DISTRESS RATIO BY COUNT

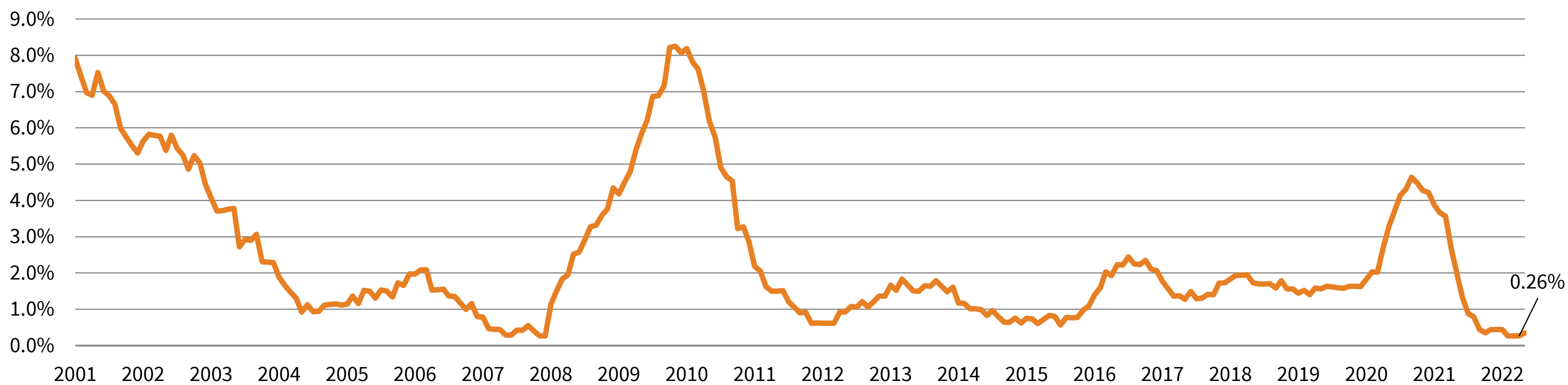


Source: S&P LCD
*Default rate is LTM total default amount over par outstanding at the beginning of the 12-month period. Includes all loans including those not included in the LSTA/TRLPC mark-to-market service. Primarily institutional tranches.
** Excludes DIPs, second-liens and unsecured transactions

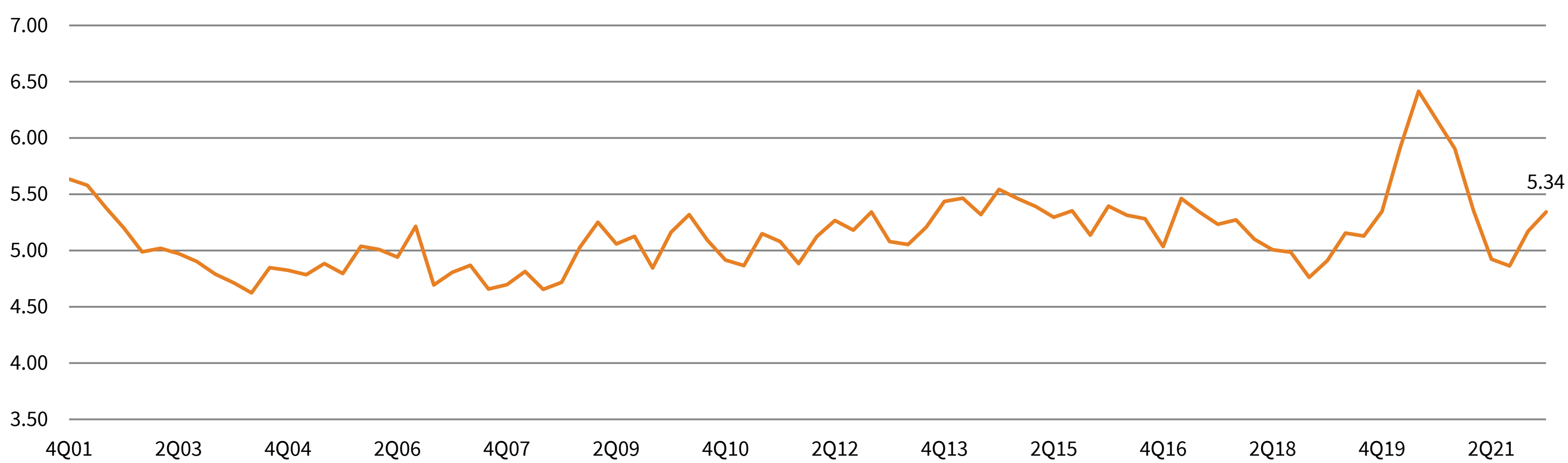
North America Credit Market

Leveraged Spike from Covid-19-related Recession since Abated

U.S. LEVERAGED LOAN DEFAULT RATES



AVERAGE LEVERAGE OF OUSTANDING U.S. LOANS



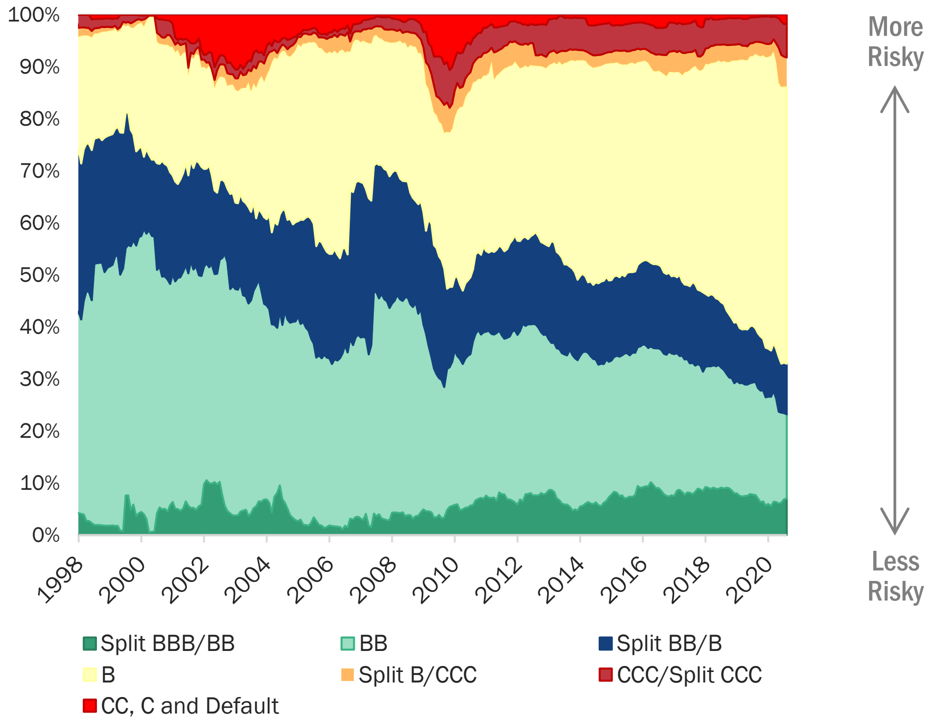
Source: S&P LCD
Note(s): Default rate data are monthly calculated as last twelve months # of defaults/total Issuers. Data based on S&P US Leveraged Loan Index

Higher Leverage and Lower Ratings Imbedded in Liquid Credit Markets

Ahead of the last Default Cycle (in 2007) 26% of the Leveraged Loan market was rated B or lower; whereas the current market has >65% rated B or lower[1]

Historically, annual Default Rates on B rated debt are almost 5x higher than on BB rated debt[2]

HISTORICAL EVOLUTION OF RATINGS MIX[1]



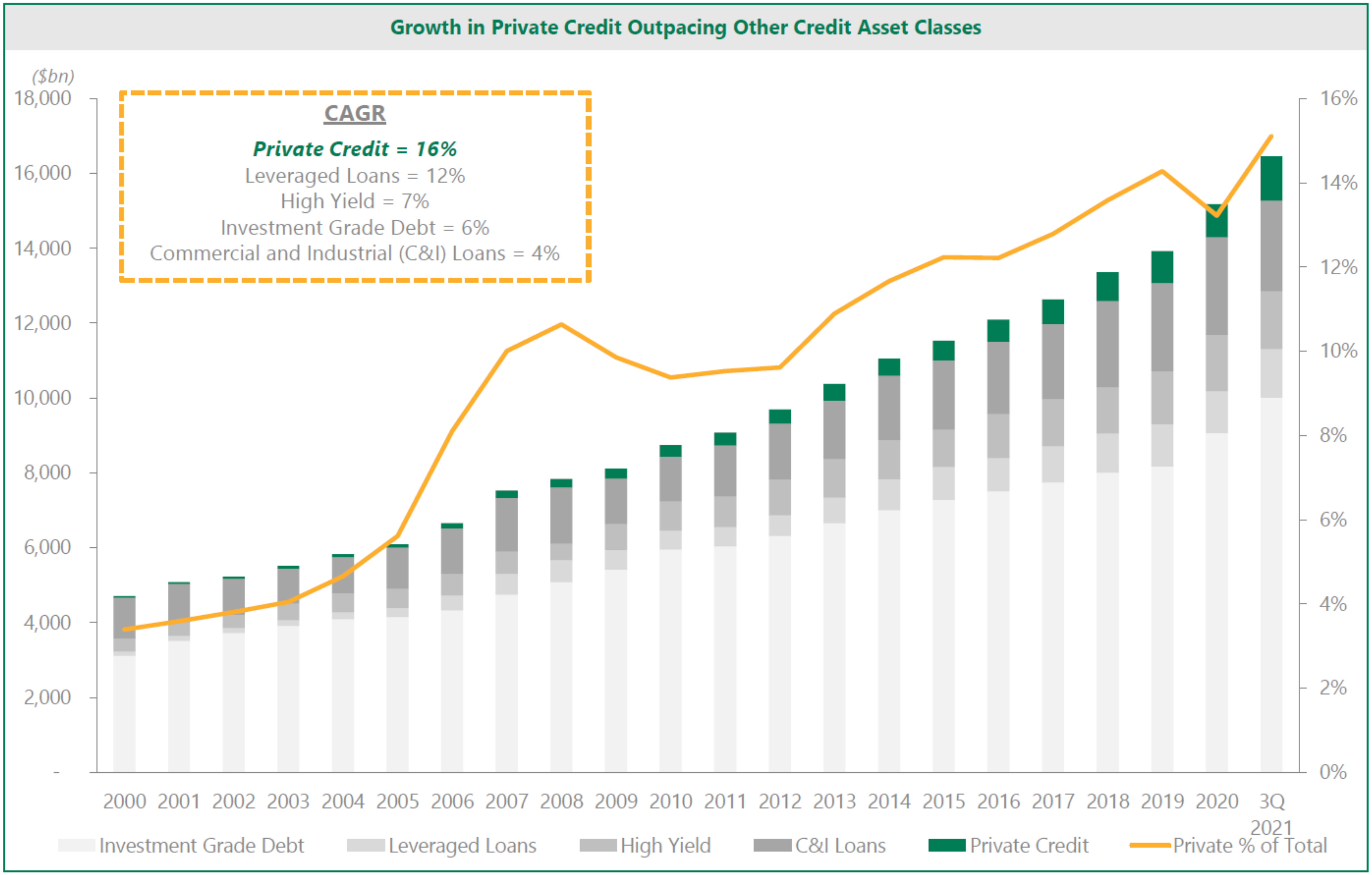
THE MOST LEVERED ISSUERS ARE VULNERABLE TO DEFAULTS

AVERAGE 1 YEAR DEFAULT RATE[2]	
BBB	0.21%
BB	0.73%
B	3.52%
CCC/C	29.14%

Source: S&P LCD
1. Credit Suisse Leveraged Loan and High Yield Bond Research. Uses Credit Suisse blended ratings. Ratings mix is as of 08/31/20; 2007 ratings mix is as of 12/31/07. 2. Source: S&P Global Ratings 2019 Annual Global Corporate Default Study And Rating Transitions - Average 1 Year Default Rates for U.S. Corporate Issuers (1981 – 2017), April 2020.

North America: Private Credit

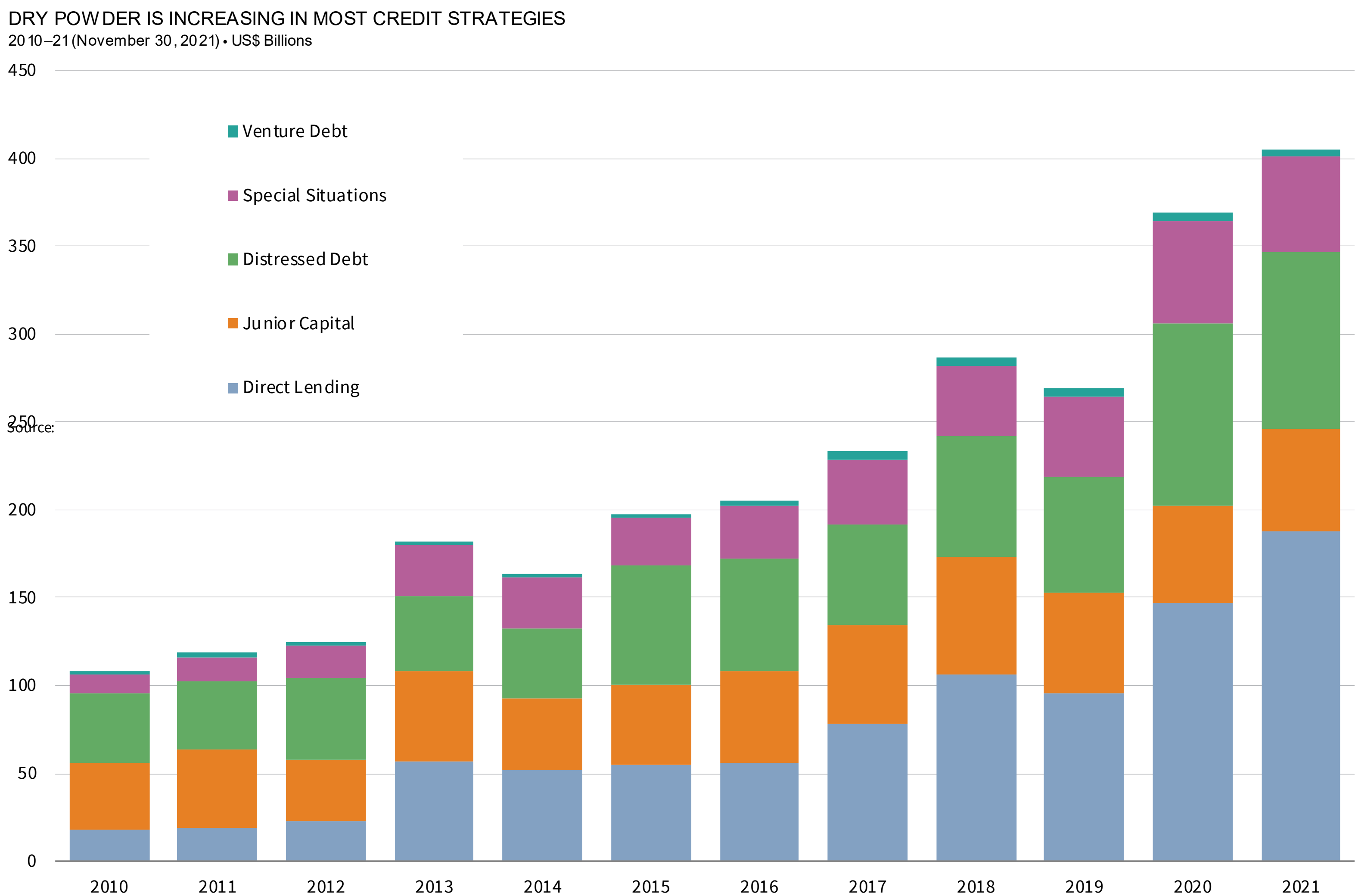
Private Credit Market Growth Relative to Broader Credit Markets



Source(s): SIFMA, Preqin, S&P LCD, BofA Merrill Lynch Global Research as of September 2021.
Note: percentage includes leveraged loans.

North America: Private Credit AUM

Private Credit Dry Powder in Multiple Strategies Increased Meaningfully

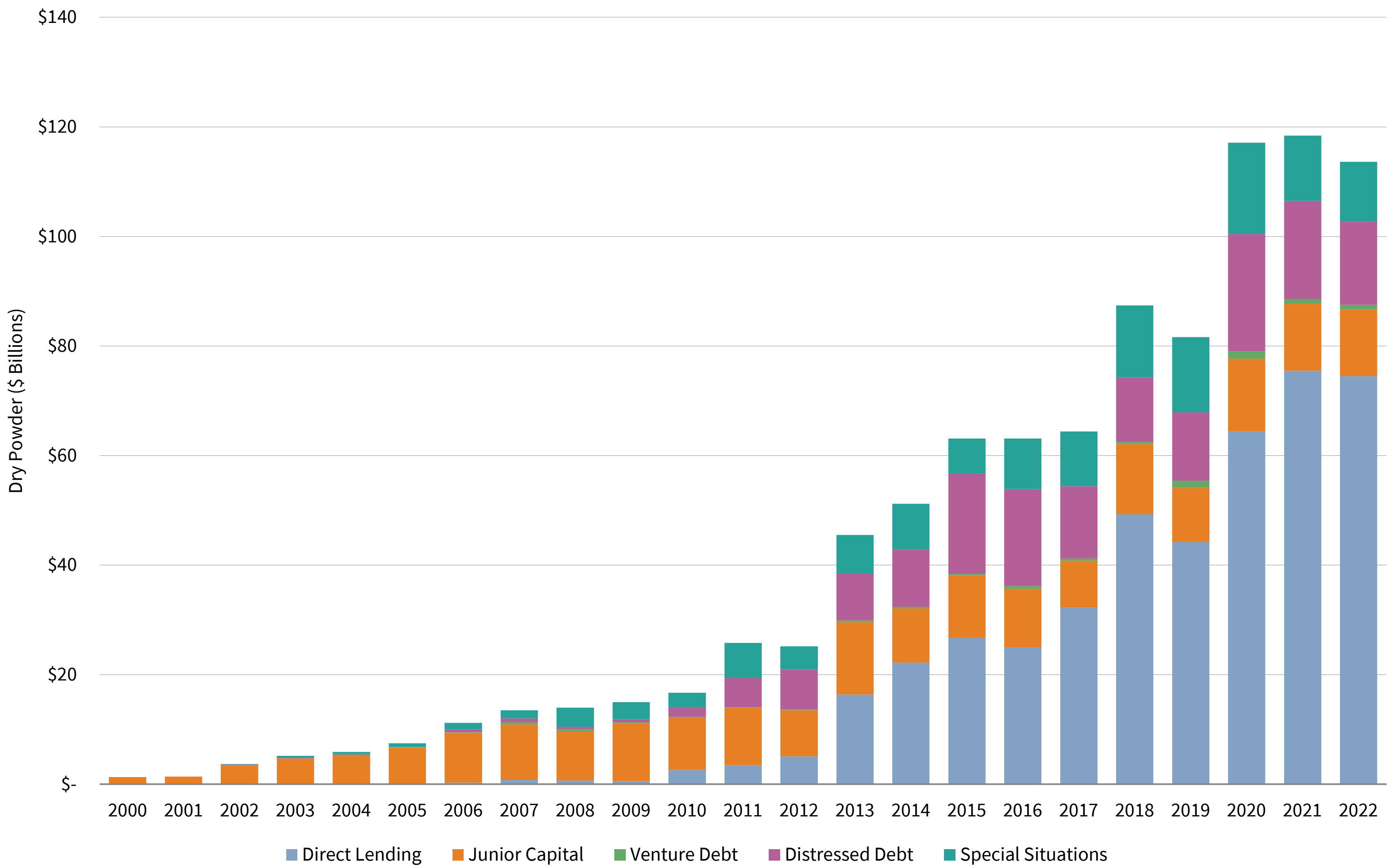


Source: Prequin.

European Credit: Private Credit AUM

Direct Lending Dry Powder Flat Despite Investment Spike since Q2 2020

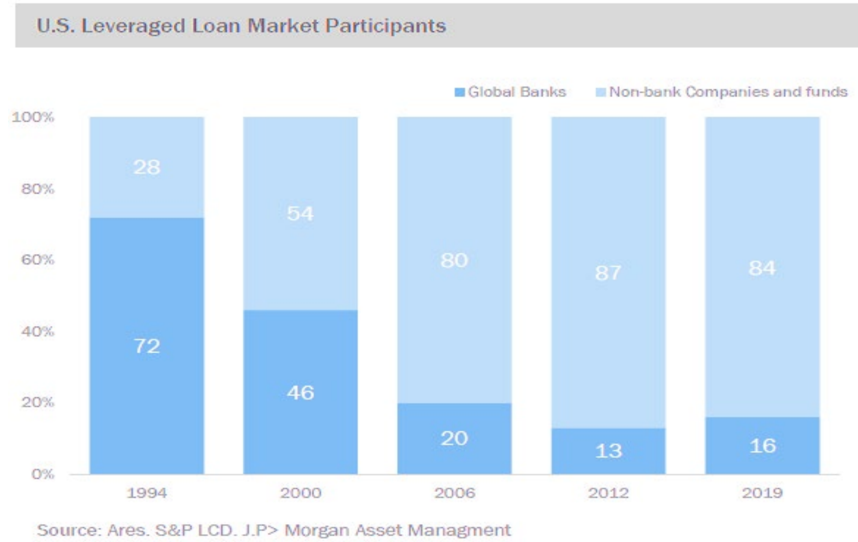
EU PRIVATE CREDIT DRY POWDER BY STRATEGY



Source: Preqin as of 1/13/2022.

Capital Markets Targeting the Largest Issuers – Core Mid-market Vacated

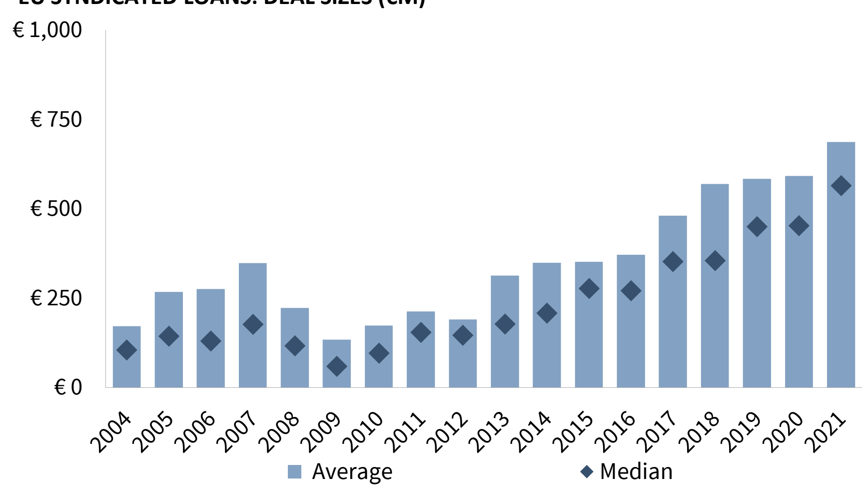
- Average deal sizes in debt capital market have increased dramatically since pre-GFC
- The average size of traditional first-lien and unitranche transactions originated by some of the larger direct lending funds have also increased based on our diligence work
  - This trend has accelerated in ‘20-’21



US LOAN AND BOND MARKETS: TRANCHES AT <=$300M

	US Loans	US High Yield
Year End 2006	22%	29%
Year End 2021	5%	1%

EU SYNDICATED LOANS: DEAL SIZES (€M)

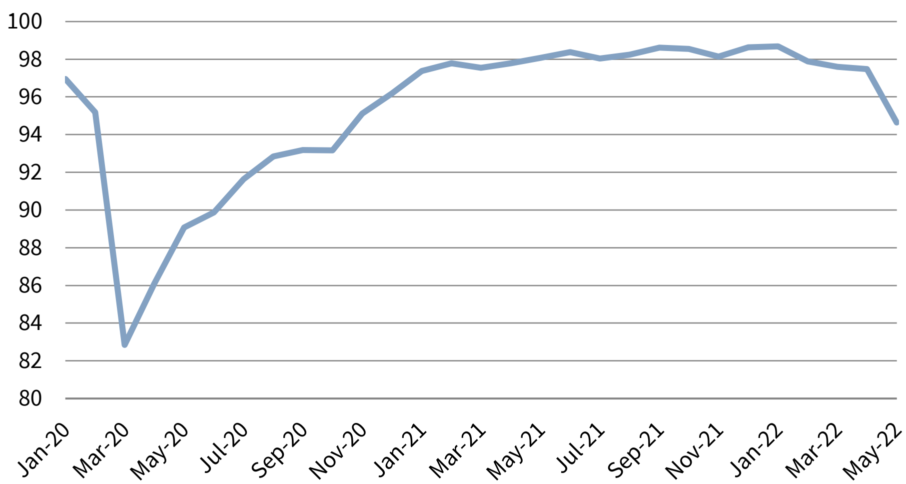


Source(s): S&P LCD as of Q4 2021. CS Leveraged Loan Index (US Loans), BAML HCNF Index (US HY) as of Q4 2021.

The Interplay in Syndicated Loan Markets and Private Credit Markets

- In the U.S. Loan prices recovered to 98.6 in December '21, 129 bps > 2020 pre-COVID highs of February '20 (97.4).
- Secondary BSL markets translated to an improved (lender friendly) private credit market; although, it was a short-lived reprieve from the march to more borrower-friendly terms that started anew in 2021
- Due to uncertainty in the market, the weighted average bid price of U.S. leveraged loans dropped from $97.5 in April '22 to $94.6 in May '22

WEIGHTED AVERAGE BID OF US LEVERAGED LOANS



Senior Debt			
	Pre-COVID / March 2020	March 2020 – June 2020	Dec-20
Pricing	L + 550	L+650	L+600
Upfront	210 bps	370 bps	300 bps
LIBOR Floor	1.00%	1.00%	1.00%
Yield	7.20%	8.73%	8.00%
Leverage	5.0x	3.6x	4.0x-4.5x
Subordinated Debt			
Pricing	L+750 - 850	L+900 - 1000	L+800 - 900
Upfront	200-300 bps	300-400 bps	250-350 bps
LIBOR Floor	0.0%-1.00%	1%-1.50%	0.50%-1.00%
Yield	8.16%-10.5%	11% -12.83%	9.3%-11.16%
Leverage	6.0x – 7.0x	5.0x – 6.5x	5.5x – 7.0x

Source: S&P LCD as of May 2022.

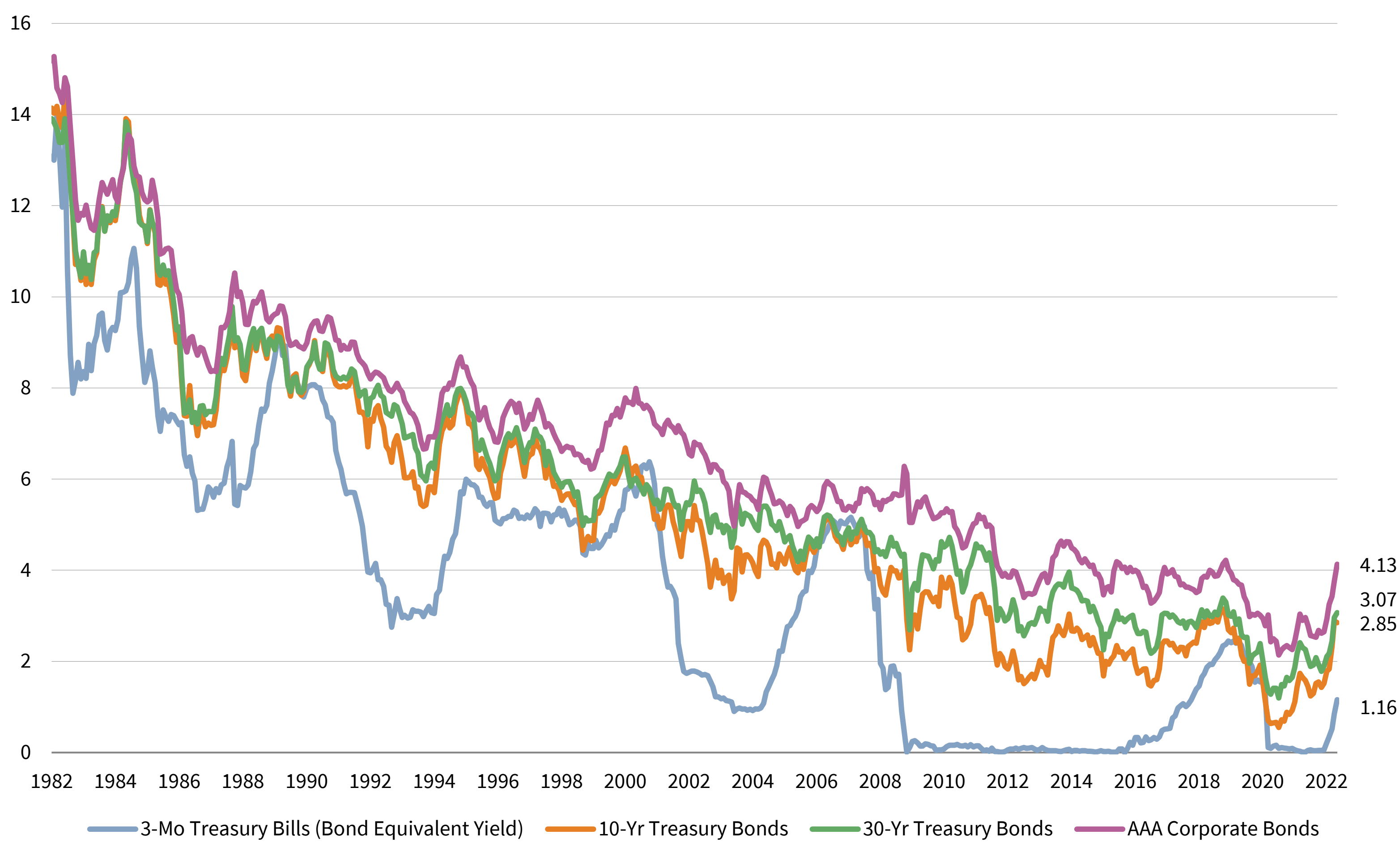
Private Credit Rising Rate Environment

Impact of Rising Rates on Private Credit: Lack of Precedence

- We lack precedence of a meaningful and sustained rise in interest rates affecting private credit – and in fact affecting broadly syndicated leveraged loans and high yield bonds

US FIXED INCOME YIELDS

January 31, 1982 – May 31, 2022 • Percent (%)



Source(s): Federal Reserve Bank of St. Louis, Moody's, and Thomson Reuters Datastream.
Note(s): The Federal Reserve ceased publication of the 30-year constant maturity series on February 18, 2002, and reintroduced it on February 9, 2006. During that period, the 30-year Treasury yield is an extrapolation of the Long-Term Average Rate series.

Private Credit: Positive Attributes in a Rising Rate Environment

- Rather than empirical evidence, we rely on attributes of performing private credit strategies to underline its relative attractiveness in a rising rate environment.

1

Floating Rate Loans

- LIBOR / SOFR floating rate protects asset (loan) value

2

Shorter Duration

- Direct lending maturities (5 years) versus high yield (typically 7 - 10 years)

3

LTV Protection from Multiple Compression

- Placement in capital structure with LTVs commonly at 50% +/- creates compression buffer

4

Robust Interest Coverage and Fixed Charge Coverage

- Robust interest coverage ratios; borrowers can absorb meaningful interest rate increases

5

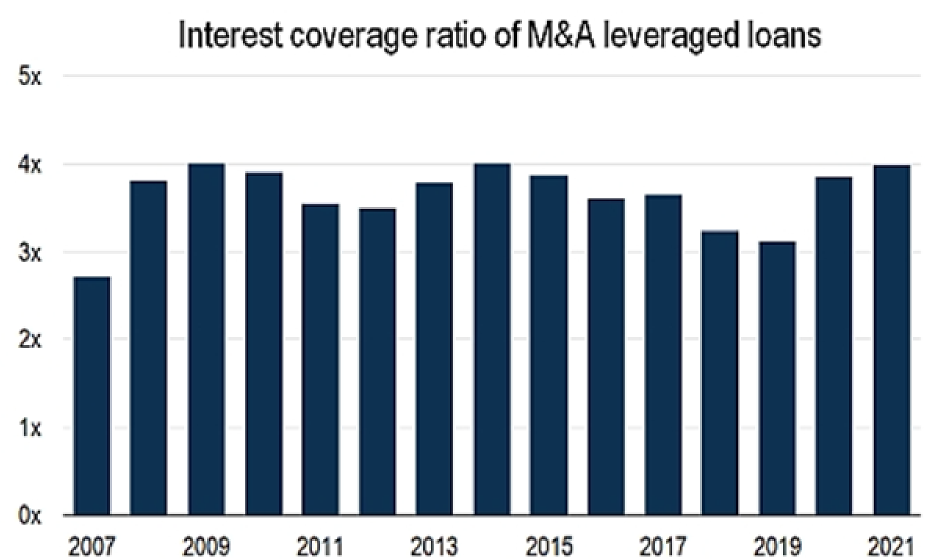
LIBOR Floors Cushion Initial Rate Increases for Borrowers

- The prevalence of LIBOR floors in private credit limit impact of rising rates initially

Private Credit Rising Rate Environment

Interest Coverage Ratios Key to "Riding the Wave"

- Interest Coverage Ratio (EBITDA/Interest Expense) provides a good indication of a borrower's ability to service its debt through a rising rate environment.
  - As EBITDA is in the numerator, it is worth noting that Interest Coverage Ratios would be inflated by EBITDA Add-backs; regardless at nearly 4x for leveraged loans – it serves as a strong proxy for payment resilience.
- U.S. private lending strategies typically include a LIBOR floor of ~1.00%; as LIBOR increased from ~0.20% in Q1 2021 to ~0.70% in Q2 2022, many borrowers experienced no rate increase thus far
- Private lenders have indicated comfort in a rising rate environment in the 2.50% - 3.00%+ range; however, should rates continue to rise meaningfully above this level, interest affordability (especially if coupled with margin compression) would become an increasing concern.



Source: S&P LCD
Data through December 31, 2021.
Based on issuers with EBITDA of $50 million or greater.

Key Takeaways

- Due to the floating rate nature of performing private credit, the relatively low LTV, the high current interest rate coverage and fixed charge coverage ratios within the borrower universe, and the near-term insulation from LIBOR floor mechanics, private credit is well-positioned to perform well through a rising interest rate environment.
- While private credit provides advantages in a rising rate environment, if this is coupled with excessively high, persistent inflation, the fixed payment component from principal repayment does not help protect against inflation.
- Should rates rise significantly (e.g. 4.00%+) and stay at a higher sustained level for a long period of time, interest and debt service affordability could become a meaningful concern.
  - However, in this environment, performing private credit would be positioned favorably to private equity, liquid fixed income, and public equities.
- Corporate direct lending and senior secured specialty finance would provide the strongest insulation to a significant rise in interest rates.
  - Some specialty finance strategies, with its asset-backed nature, are well-positioned to protect from sustained inflation.
- Higher LTV subordinated debt, "debt-like" structured preferred, and distressed strategies would be most vulnerable to corporate valuation compression, resulting from lower enterprise value multiples in a rising rate environment (as well as potential margin compression).
- A potential valuation reset and market dislocation amongst significantly increased leveraged finance markets should create compelling risk-reward opportunities for targeted opportunistic credit and distressed strategies.

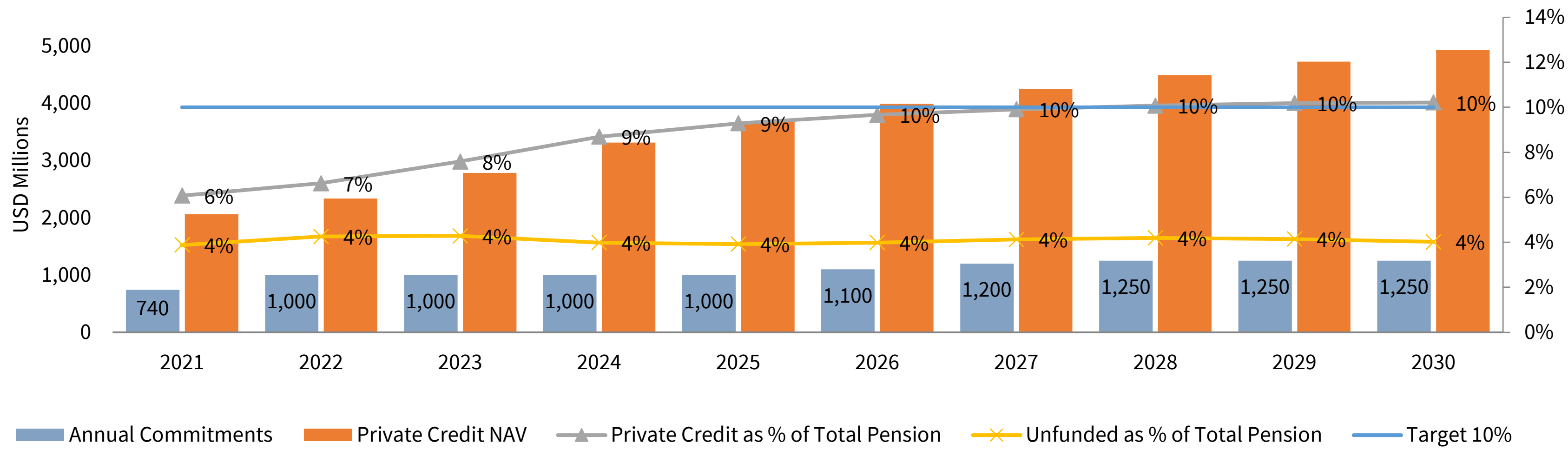
APPENDIX

CAMBRIDGE
ASSOCIATES

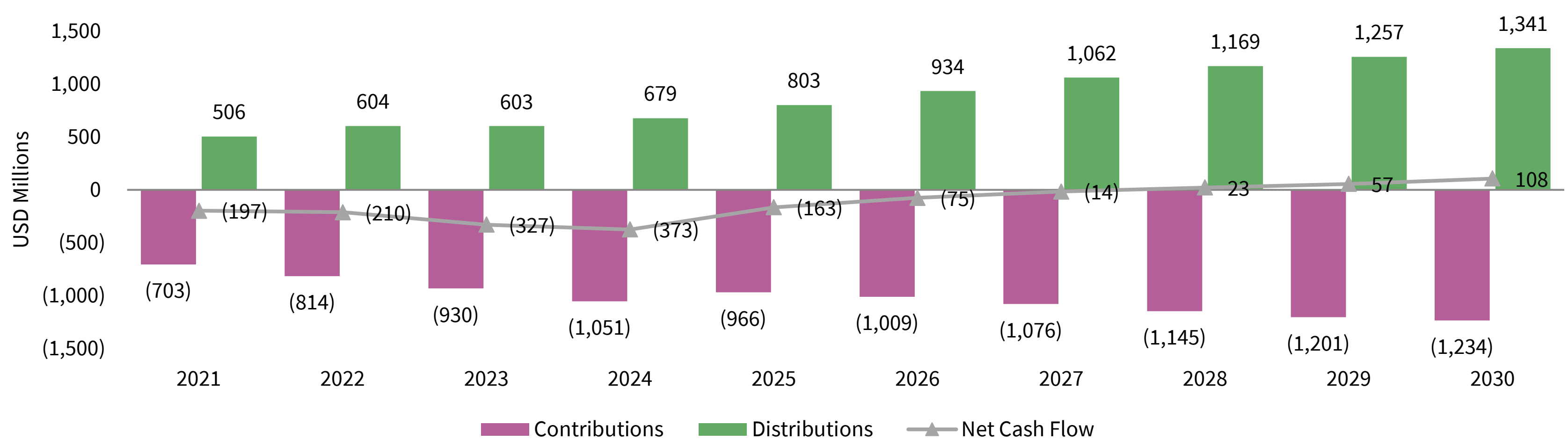
Private Credit
Base Case (4% Pool Growth)

Starting Pool Value: $33.9 billion (as at 4/30/2022)

COMMITMENT PACE
As of December 31, 2021



ESTIMATED ANNUAL CASH FLOWS
As of December 31, 2021

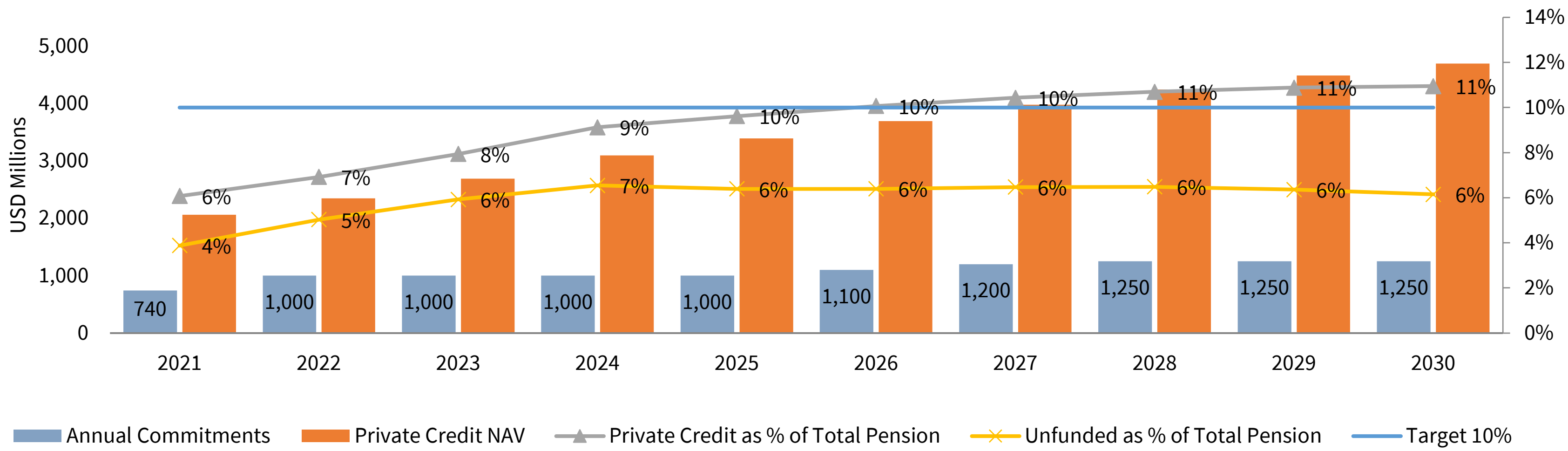


Note: Model populated with historical portfolio data as of December 31, 2021. Private Credit portfolio includes 17 funds transferred from Private Equity portfolio. Projected cash flows and allocations based on CA modeling and proprietary assumptions. Modeling is intended to be used as a guideline; actual capital calls, distributions, and exposure may differ materially from projections, depending on macroeconomic and fund-specific variables.

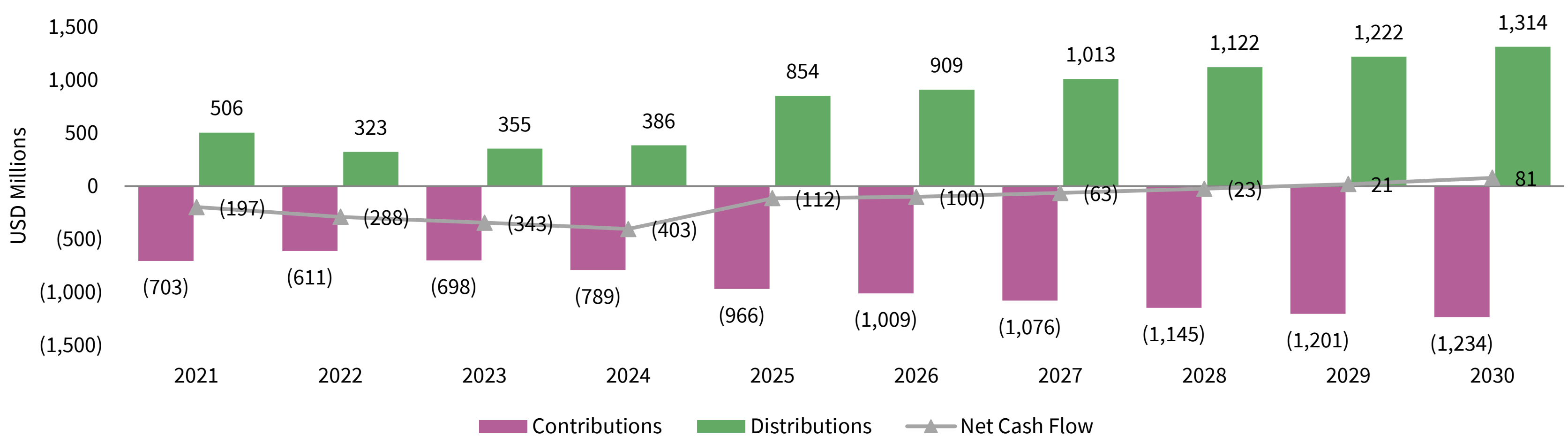
Private Credit
No Growth Stress Case (0% Pool Growth, 2022-2024)

Starting Pool Value: $33.9 billion (as at 4/30/2022)

COMMITMENT PACE
As of December 31, 2021



ESTIMATED ANNUAL CASH FLOWS
As of December 31, 2021



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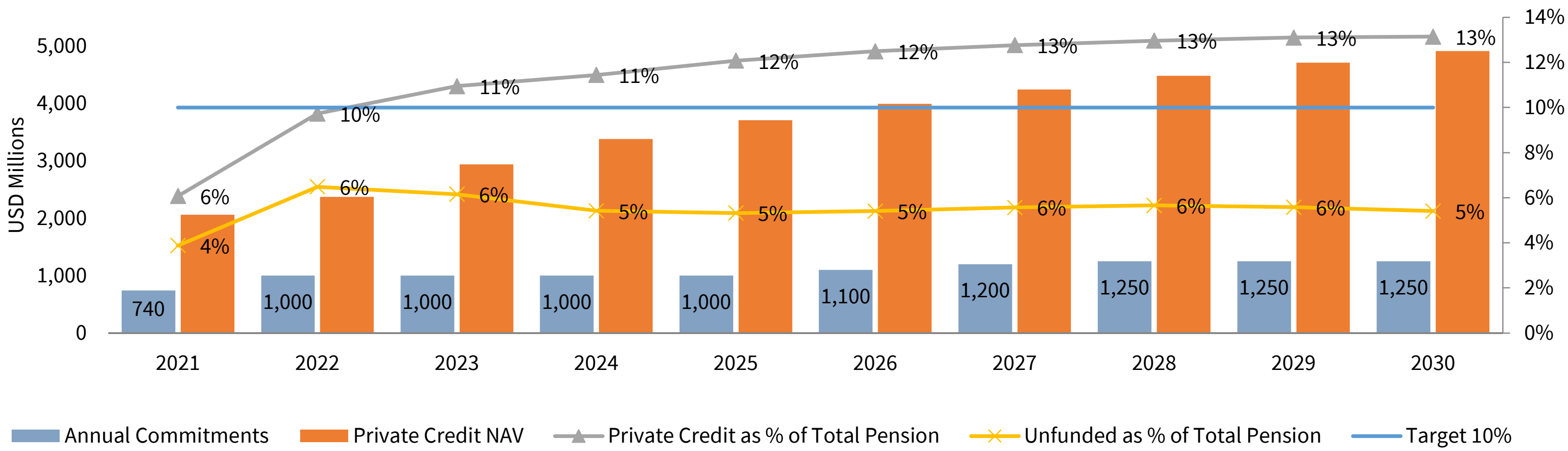
Private Credit

GFC Stress Case using Base Case Pacing

Starting Pool Value: $33.9 billion (as at 4/30/2022)

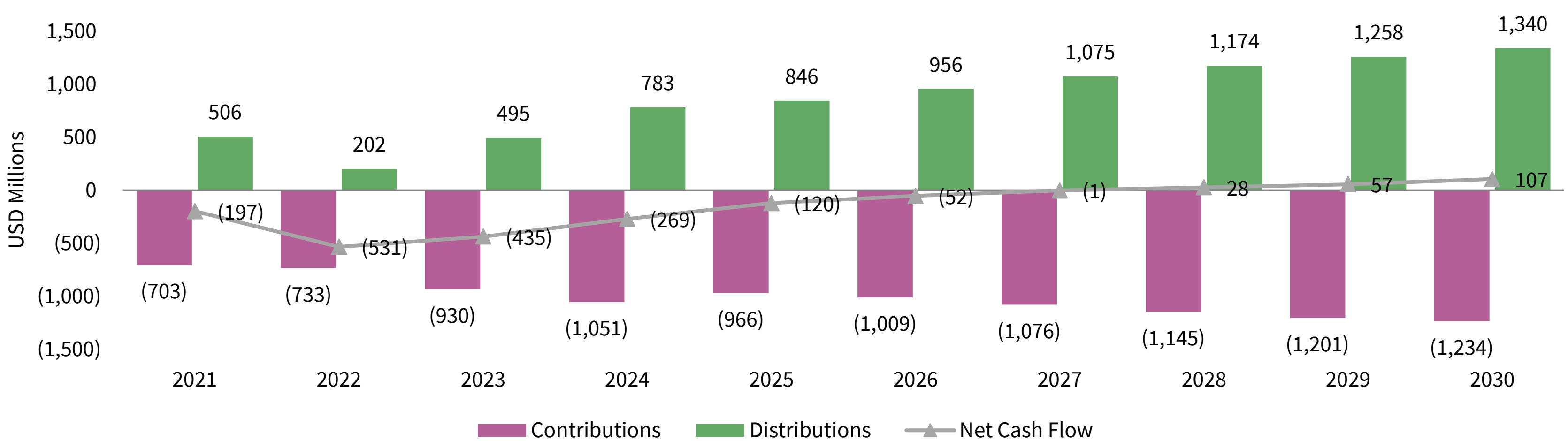
COMMITMENT PACE

As of December 31, 2021



ESTIMATED ANNUAL CASH FLOWS

As of December 31, 2021



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- Across Portfolios
  - Total pool value of $33.9 billion as of April 30, 2022

- Private Credit
  - Target Private Credit allocation of 10%
  - SMA of $300 million in 2022 (HPS)
  - Return assumptions: 9% net IRR for PC, 8% net IRR for SMAs

- Base Case
  - Assumes (nominal) pool growth of 4%
  - Assumes "normal" market environment assumptions for contributions, distributions, and NAV growth

- No Growth Stress Case
  - Assumes (nominal) pool growth of 0% from 2022-2024, and 4% thereafter
  - NAV experiences no growth from 2022-2024 and then returns to normal growth in 2025+
  - Distributions are cut by 50% in 2022-2024, before returning to normal in 2025+
  - Contributions are cut by 25% in 2022-2024, before returning to normal in 2025+

C|A

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- GFC Stress Case
  - Applies GFC-like changes to pool value for 2022-24 (~28% drop in 2022, followed by two years of ~10% gains)
  - NAV declines 10% in 2022, before returning to normal growth in 2023+
  - Distributions are cut by two-thirds in 2022 and one-third in 2023, before returning to normal in 2024+
  - Contributions are cut by 10% in 2022, before returning to normal levels in 2023+

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