NORTH CAROLINA
DEPARTMENT OF STATE TREASURER

STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION

Opportunistic Fixed Income Review

November 9, 2022

All Data as of September 30, 2022 Unless Otherwise Stated

Role in the Portfolio

Attractive Absolute Returns

- Long-term returns that are competitive with long-term public equities, after consideration of lower downside risk, due to opportunistic investments, longer duration private investments, restructurings, leverage, hedging, and trading skill

Competitive Relative Returns

- Achieve or exceed the return on the performance benchmark over a long period of time, within reasonable risk parameters

Diversification

- Enhance the diversification of the total fund relative to public equity and investment grade fixed income

Capital Preservation

- Protect capital through credit-oriented investments and trading strategies that are designed to minimize downside risk

Deflation Protection

- The structure of certain fixed income assets may provide protection against the detrimental effects of deflation

Portfolio Launched June 2009

- The asset class (N.C.G.S. § 147-69.2(b)(6c)) was approved for investment by the NC General Assembly in June 2009.

Source: Investment Policy Statement for North Carolina Retirement Systems, July 1, 2022

Portfolio Components

Components	Strategies / Types of Investments	
Traditional Corporate Credit	High Yield Bonds	Bank Loans
Distressed Credit	High Yield Bonds	Post-Reorg Equity
	Structured Credit	
Hedge Funds	Long/Short Credit	Relative Value
	Convertible Arbitrage	Distressed Credit
	Derivatives	Event-Driven
Special Situations	Structured Credit	Mezzanine Debt
	Whole Loans	Direct Lending
	Real Estate Loans	Dislocation

* Portfolio Components, Targets, and Maximums come from the Investment Policy Statement for North Carolina Retirement Systems, July 1, 2022

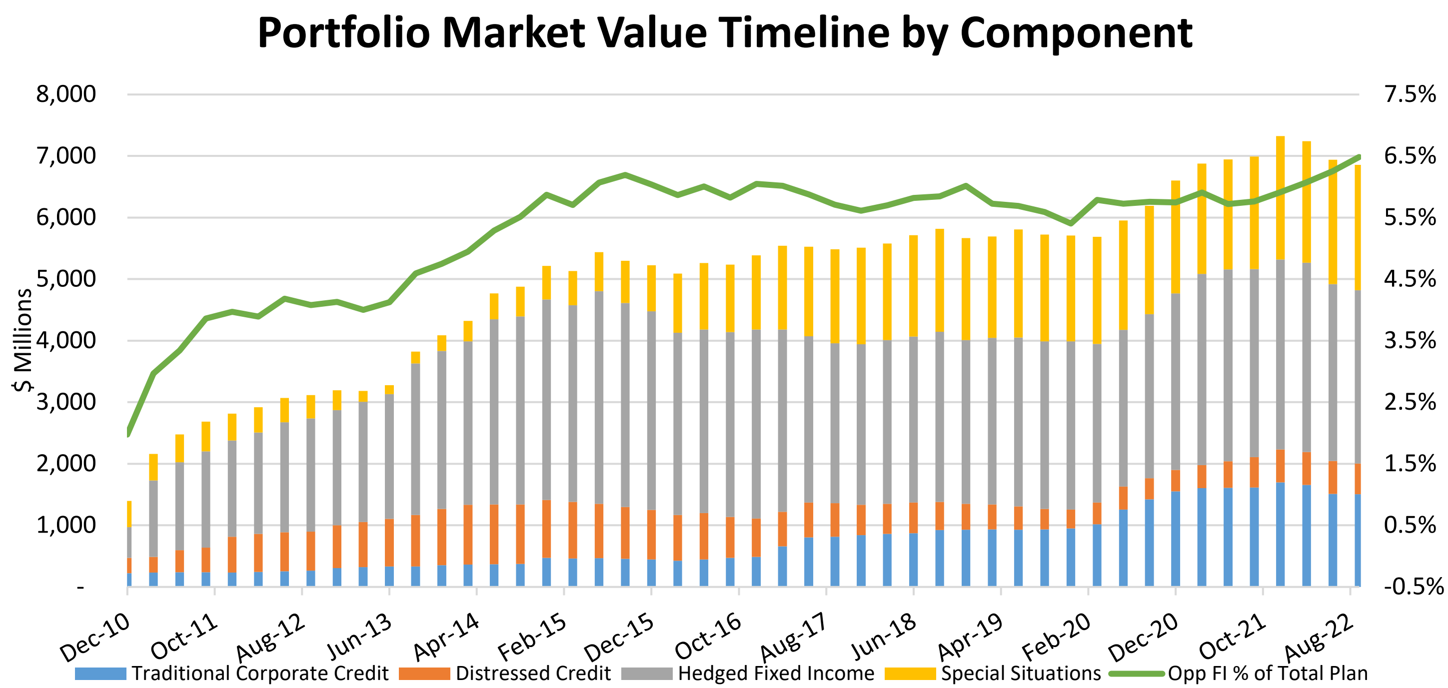
Opportunistic Fixed Income

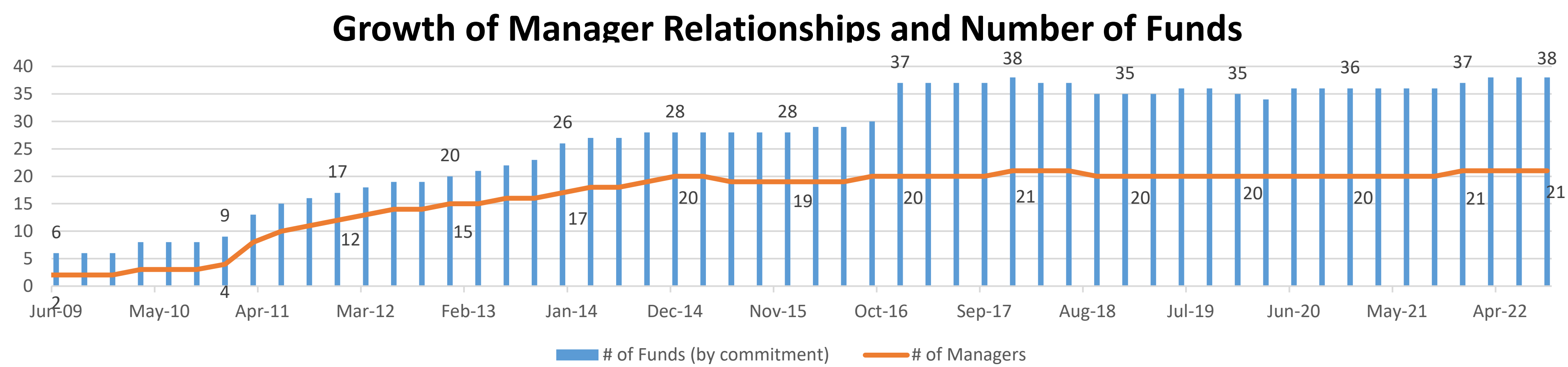
- Currently under-weight vs. target by .53%
- Additional capacity for more than $500MM to achieve target weight
- Current environment provides an attractive risk/reward to go beyond the target

	Market Value ($MM)	%	Target	Range Minimum	Range Maximum	Relative %	Relative $ (MM)
Growth	**$49,390**	**46.46%**	**55.0%**	**37.0%**	**68.0%**	**-8.54%**	**($9,076)**
Public Equity	33,507	31.52%	38.0%	33.0%	43.0%	-6.48%	($6,888)
Private Equity	6,531	6.14%	7.0%	0.0%	8.8%	-0.86%	($910)
Non Core Real Estate	2,479	2.33%	3.0%	0.0%	8.0%	-0.67%	($710)
Opportunistic Fixed Income	6,873	6.47%	7.0%	0.0%	7.50%	-0.53%	($568)
Rates & Liquidity	**42,972**	**40.42%**	**33.0%**	**23.0%**	**48.0%**	**7.42%**	**7,893**
IG Fixed Income & Cash	28,566	26.87%	28.0%	23.0%	33.0%	-1.13%	($1,199)
Pension Cash	14,407	13.55%	5.0%	0.0%	15.0%	8.55%	9,092
Inflation Sensitive & Diversifiers	**11,745**	**11.05%**	**11.0%**	**4.0%**	**16.0%**	**0.05%**	**52**
Inflation Sensitive	5,271	4.96%	6.0%	2.0%	7.5%	-1.04%	($1,107)
Core Real Estate	6,474	6.09%	5.0%	2.0%	10.0%	1.09%	1,159
Multi-Strategy	**2,195**	**2.06%**	**1.0%**	**0.0%**	**4.0%**	**1.06%**	**1,132**
Grand Total	**$106,302**	**100.00%**					

As of 9/30/22

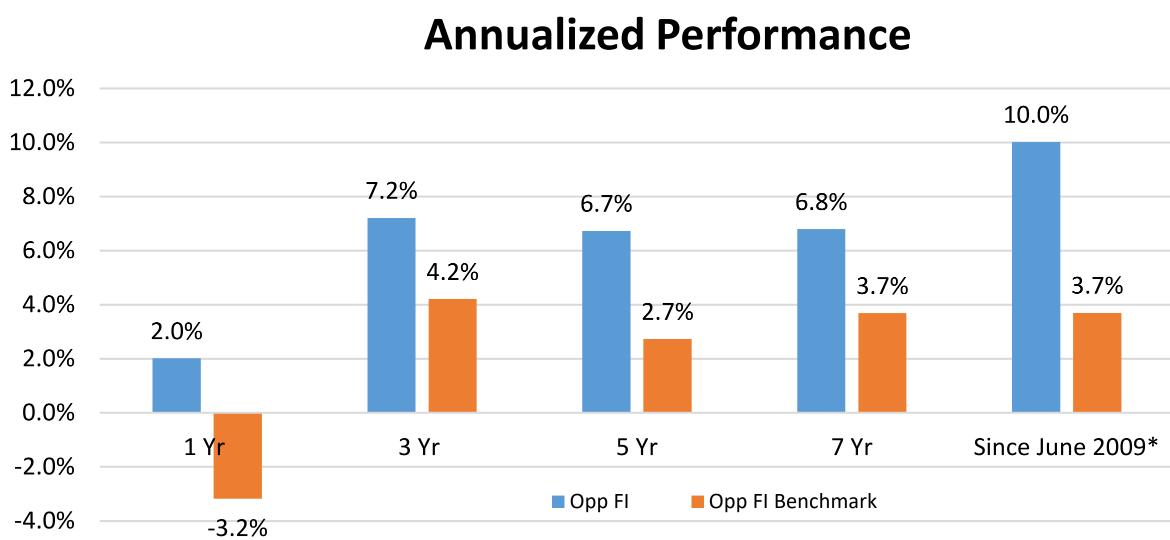
Portfolio History

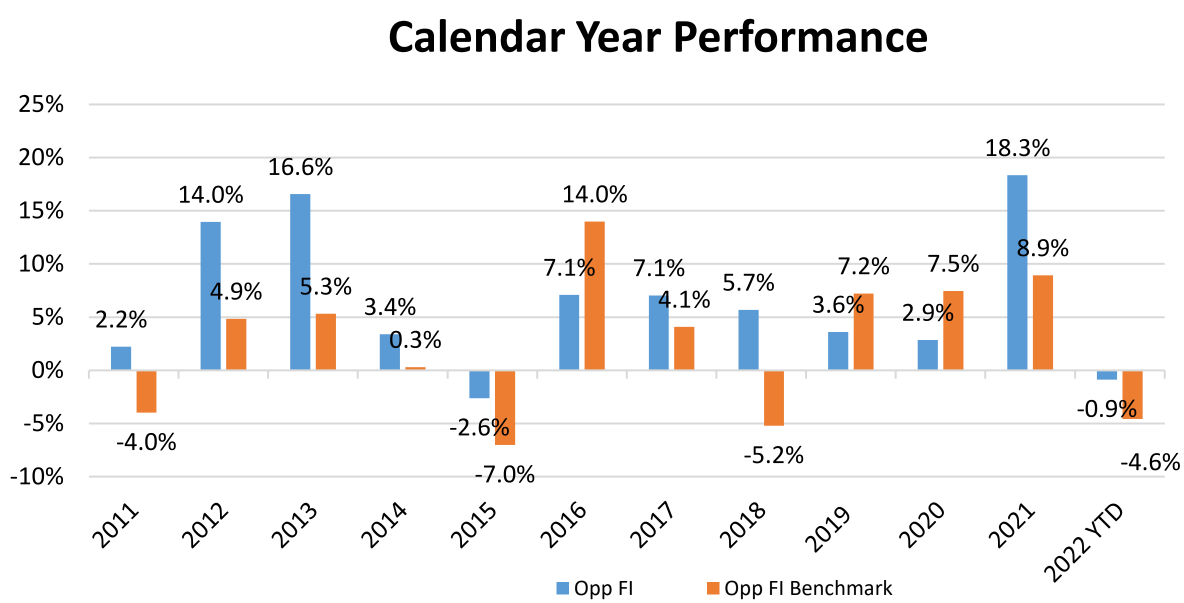




Note: Fund count excludes liquidated investments.

Portfolio Performance

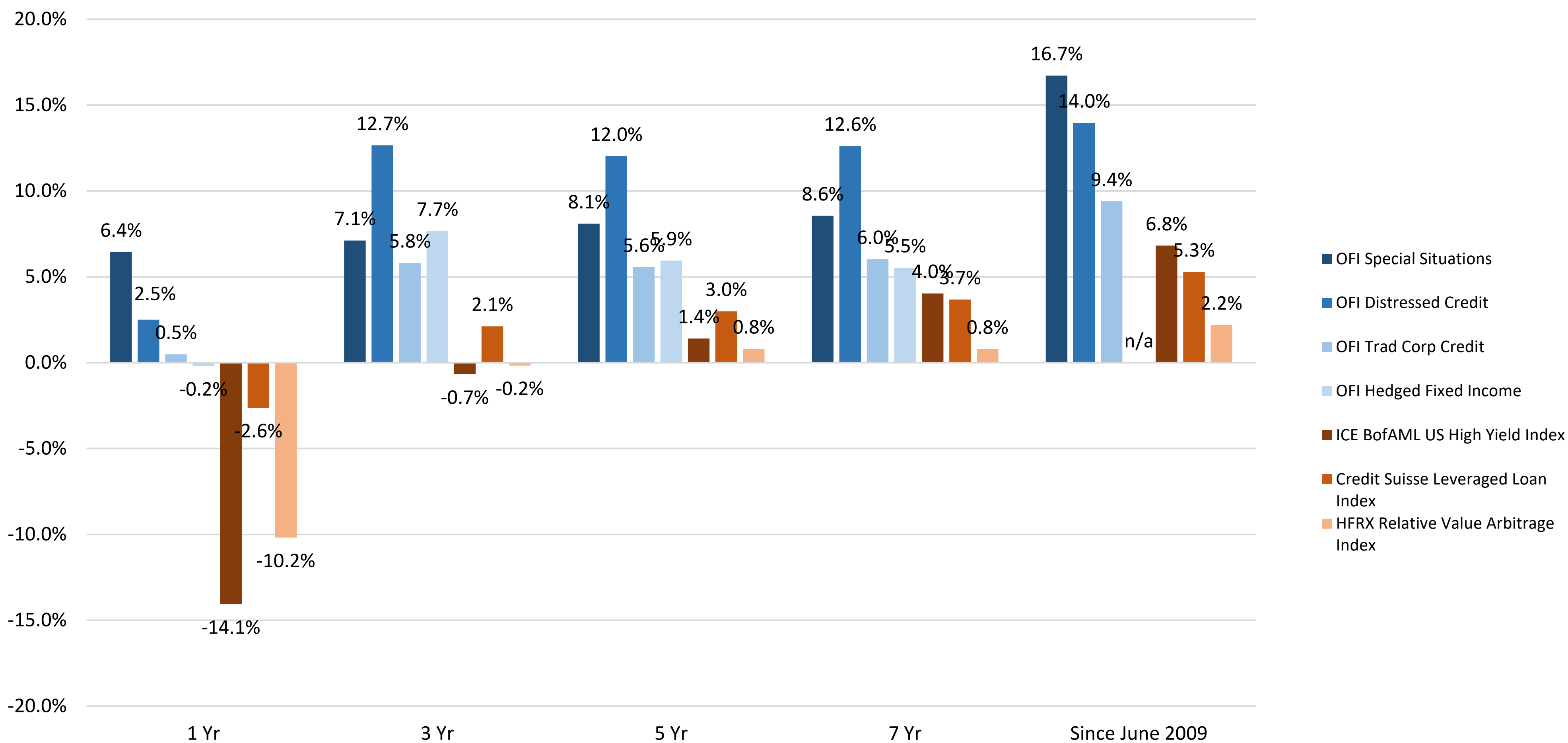




Note: Performance through Sept 30, 2022; See slide 25 for details on the composition of the Opportunistic Fixed Income Benchmark.

Portfolio Performance

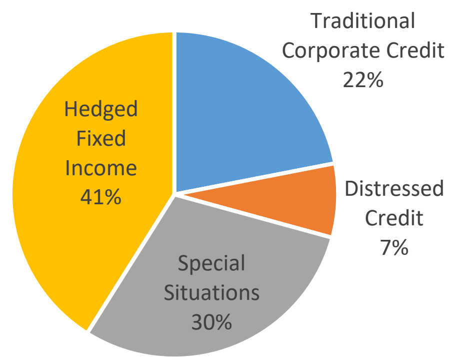
Portfolio Component Annualized Performance vs. Market Benchmarks



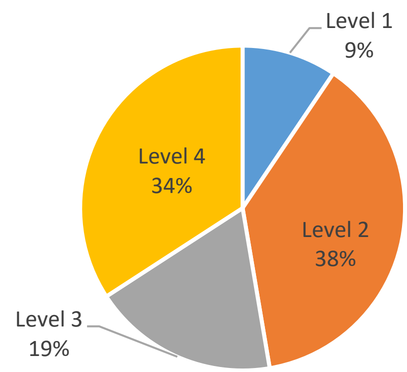
Note: Performance through Sept 30, 2022; See slide 25 for details on the composition of the Opportunistic Fixed Income Benchmark.

Portfolio Characteristics

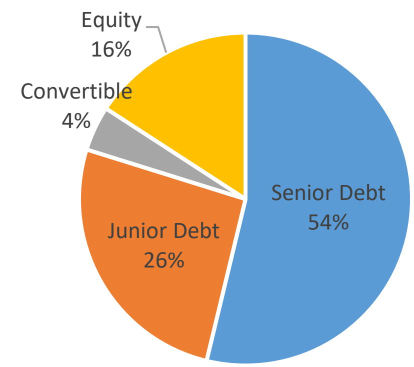
Allocation by Strategy



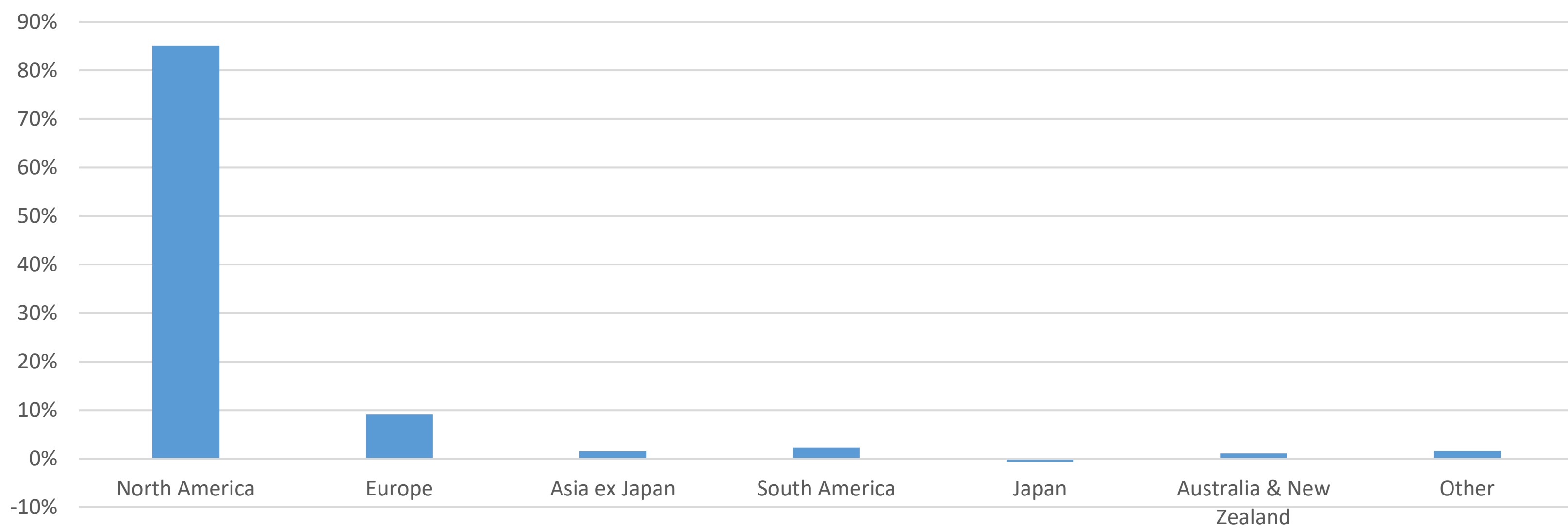
Liquidity by Level*



Capital Structure

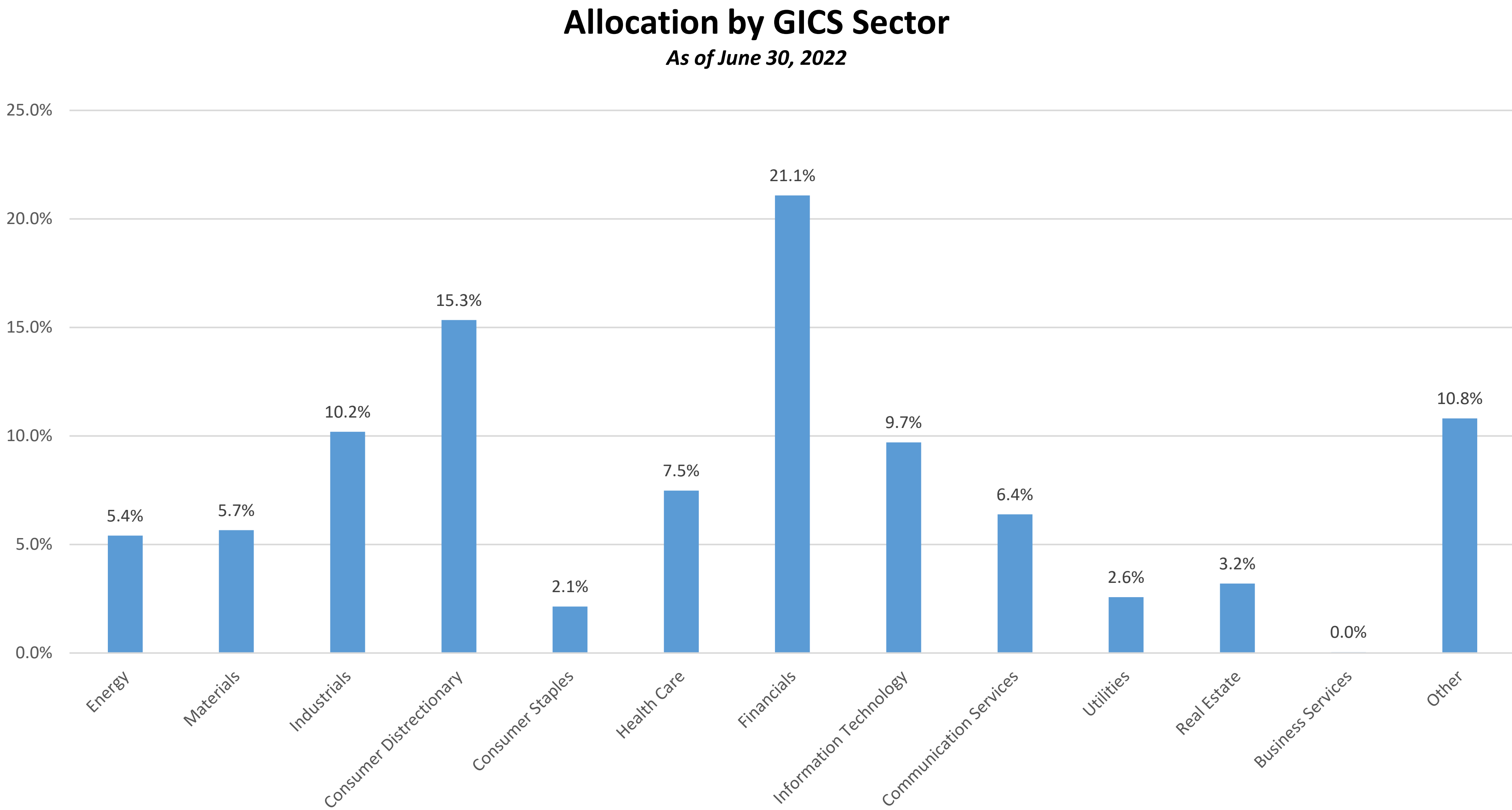


Allocation by Geography



Note: Capital Structure and Allocation by Geography Information is based on market values as of June 30, 2022
*Level 1 Liquidity = T+3; Level 2 = T+3 to 12 Months; Level 3 = 12 to 24 Months; Level 4 = Greater than 24 Months

Portfolio Characteristics



*Holdings that cannot be classified into any one particular sector, as self-reported by the investment manager, may include CMBS, RMBS, ABS, or CLOs

Credit Market Update

Private Credit

- Allocations to senior, secured private loans provided steady, increasing cash yields
- Managers effectively navigated Covid-19 impact on underlying businesses and provided flexible financing terms
- Will be able to drive financing terms as banks and traditional lenders retreat

Structured Credit

- RMBS, CMBS, and ABS rebounded from COVID lows
- Higher volatility is expected for CLOs as the quality of loans they back has deteriorated steadily since 2017

Bonds

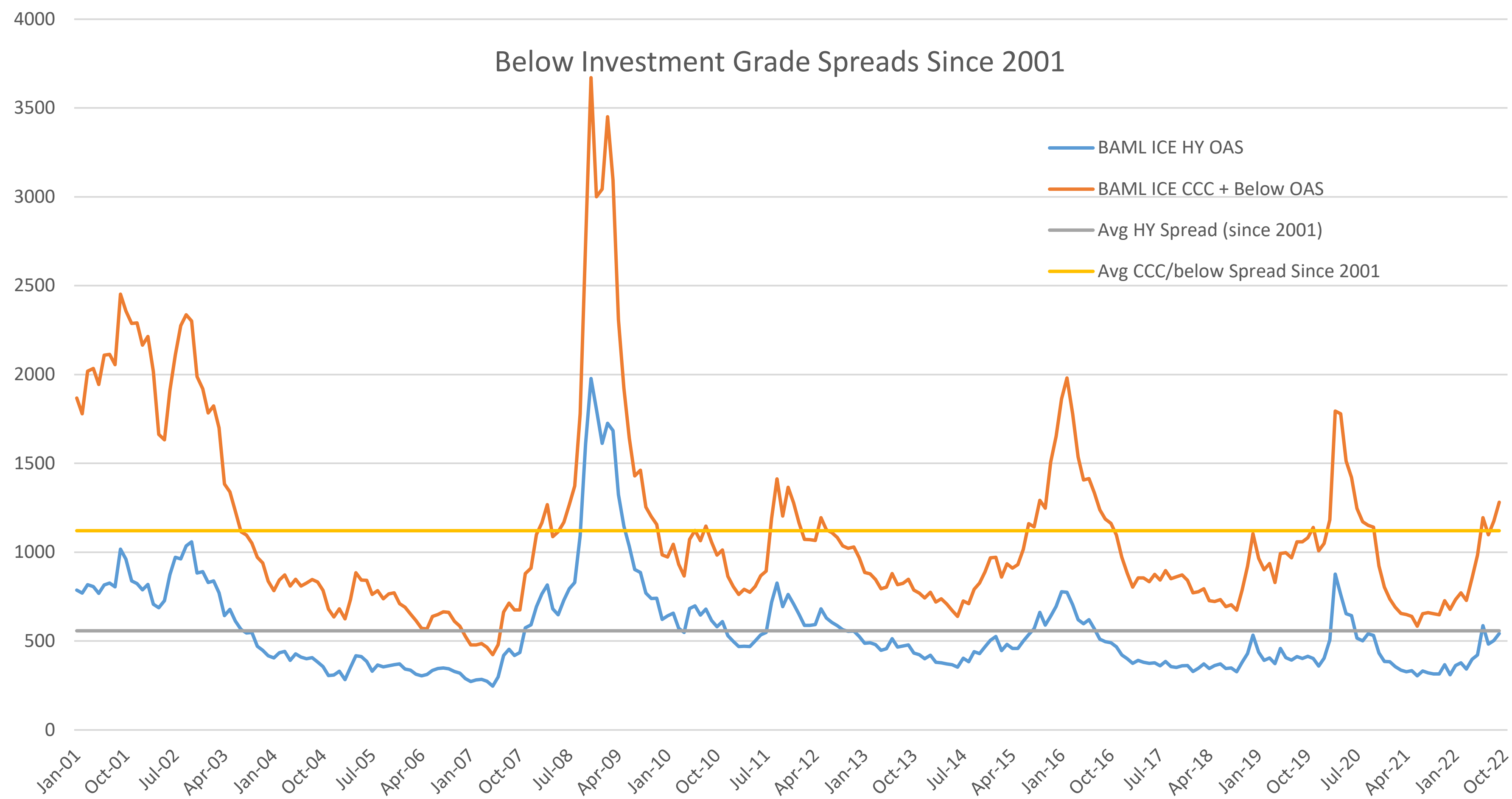
- All qualities are offering elevated spreads and yields not seen in the last decade, except for Covid-19
- We expect default rates to increase, but reasonable debt/EV levels provide cushion vs. lofty yet decreasing valuations and potential weaker economic cycle

Loans

- Floating rate features provide natural hedge against higher rate environment
- 2nd Quarter volatility provided access to new issue, bank originated deals at deep discounts to par

High Yield Credit

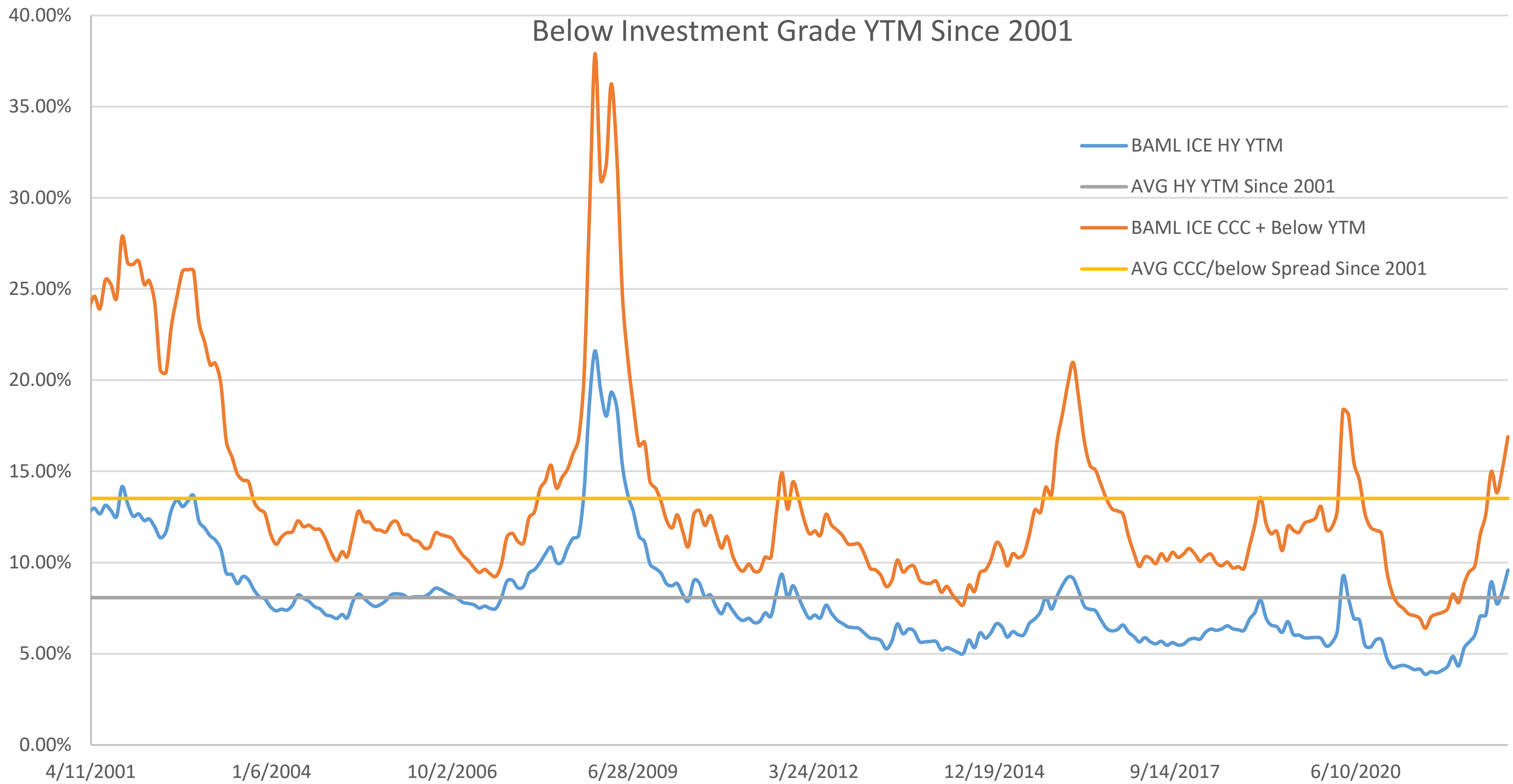
- High and low quality HY spreads are back above long-term average



Source: BofA Merrill Lynch (accessed via Bloomberg).

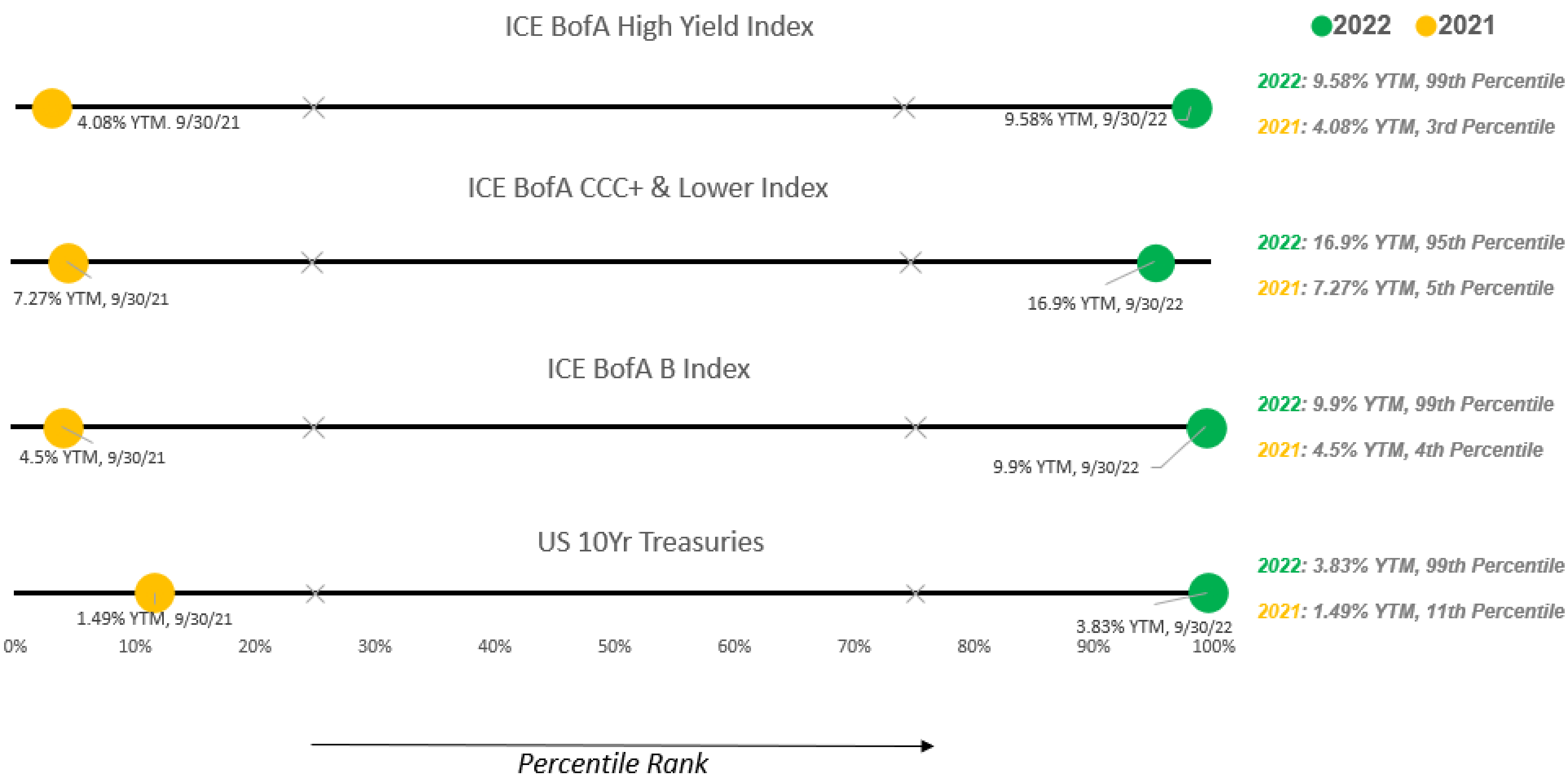
High Yield Credit

- High and low-quality Yield to Maturities are back above the long-term average



Source: BofA Merrill Lynch (accessed via Bloomberg).

What a difference a year makes?



Timeframe (January 2010 – September 2022)

Source: BofA Merrill Lynch (accessed via Bloomberg).

Headwinds

1. Deteriorating economic environment creates volatility
2. Rising interest rate environment
3. Repricing of risk premiums across various asset classes
4. Inflation
5. Impact of misallocated institutional investors (i.e., European LDI Investors, banks)
6. Continued impact of supply chain disruptions

Tailwinds

1. Ability to originate loans with higher interest rates
2. Ability to originate loans with improved financial covenants
3. Ability to move up the capital structure (i.e., lower risk) without a material trade-off in return expectations
4. Strong manager lineup that can pivot as market conditions change

Portfolio Priorities

1. Opportunistically take advantage of elevated spread and yield environment with best-in-class managers that can pivot as conditions change

2. Maintain meaningful exposure to senior, secured, floating rate direct loans

3. Continue to focus on SMAs and Special Opportunities with co-investments

4. Re-visit dislocation mandate and thoughtfully increase exposure to the asset class

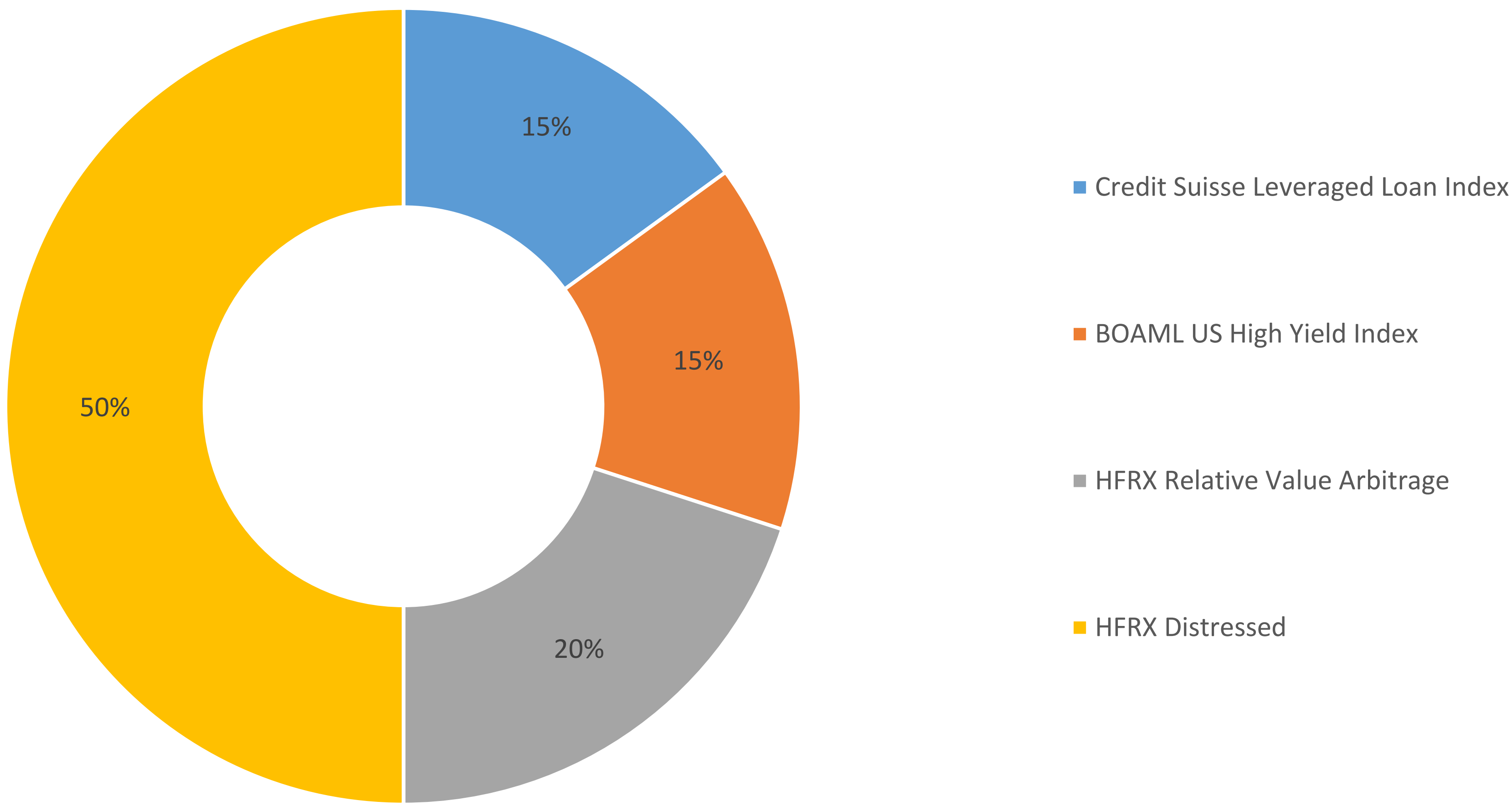
Appendix

Portfolio Components

Portfolio Component*	Target*	9/30/22	+/-	Maximum*
Traditional Corporate Credit	15%	22%	+8%	50%
Distressed Credit	25%	7%	-18%	50%
Hedged Fixed Income	45%	41%	-4%	75%
Special Situations	15%	30%	+15%	75%

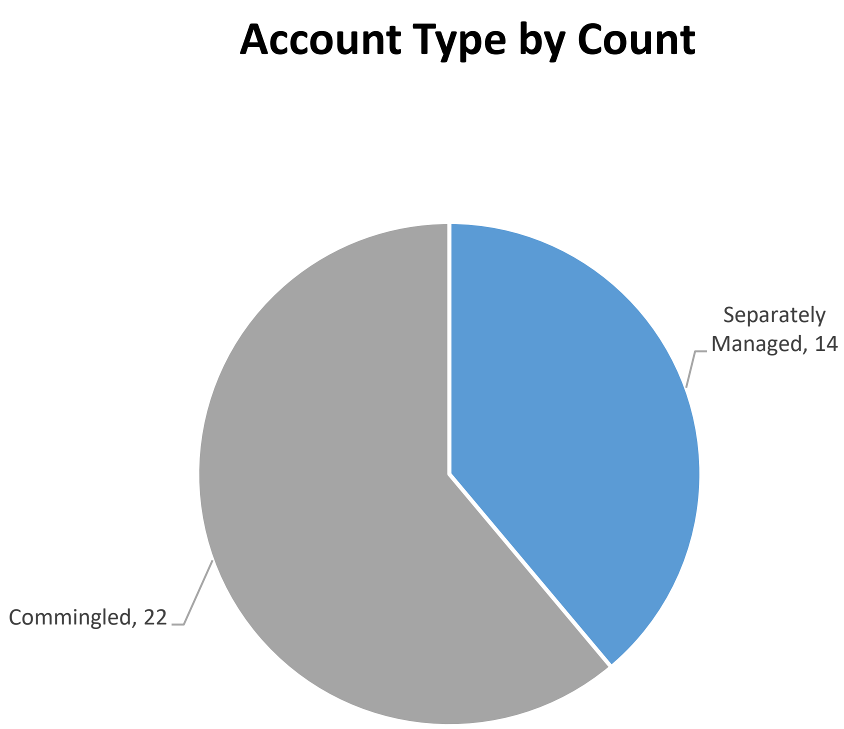
Note: See slide 19 & 25 for details on the composition of the Opportunistic Fixed Income Benchmark.

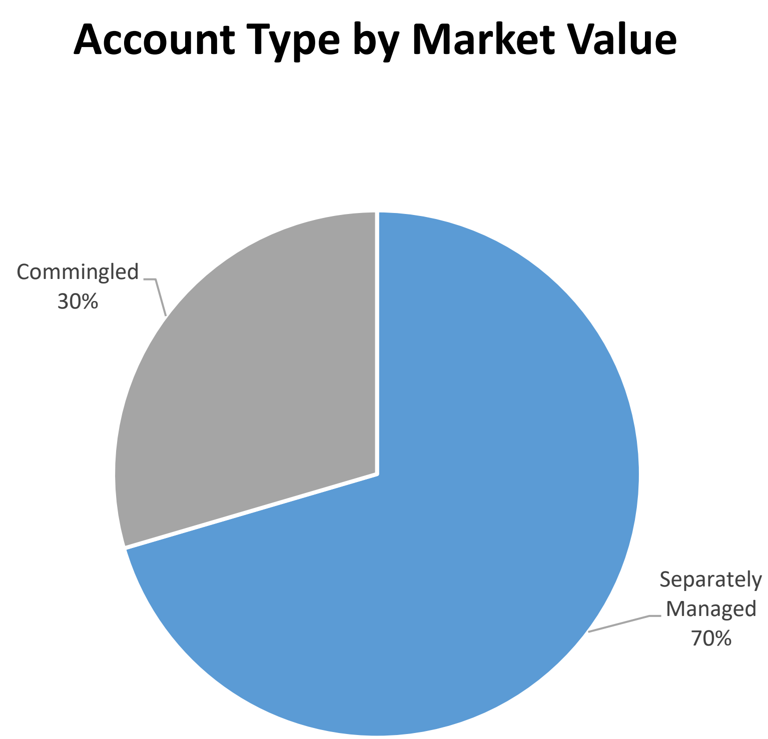
Portfolio Benchmark



Note: The BOAML US High Yield Index is from BofA Merrill Lynch and is used with permission. See disclaimer on slide 26.

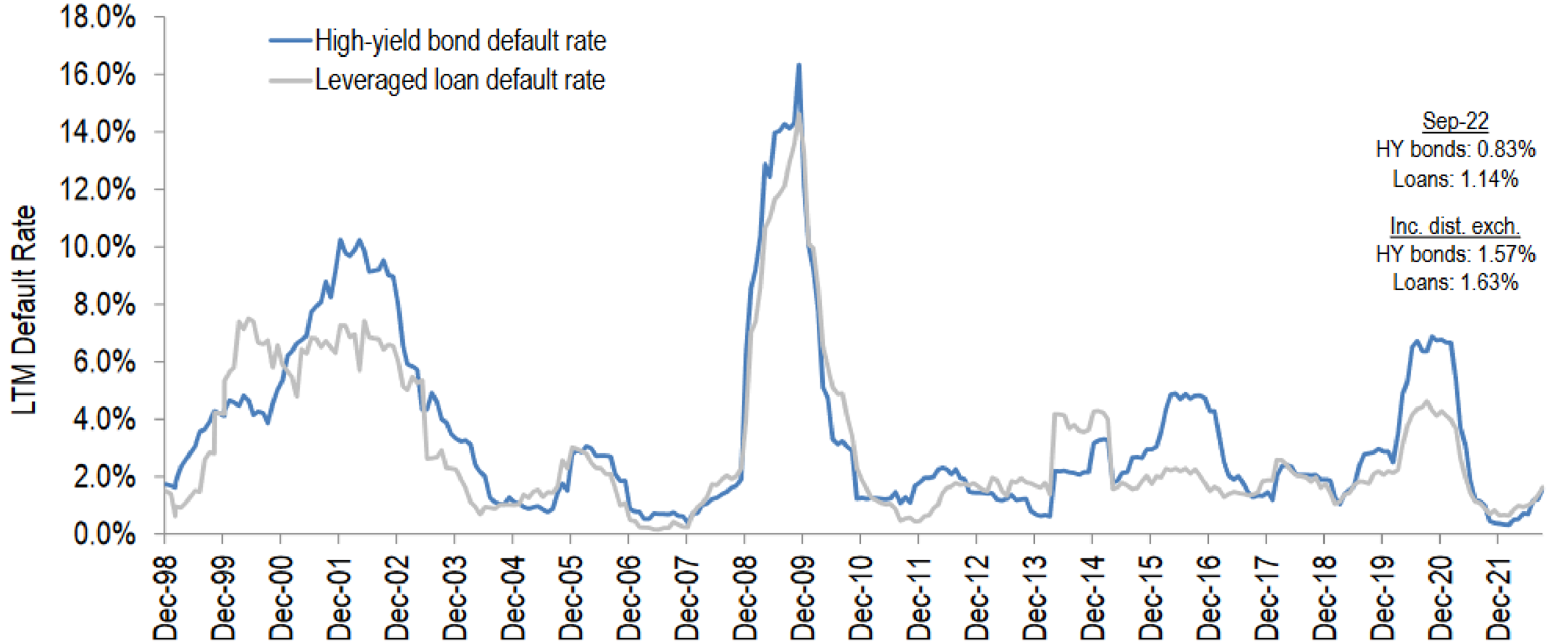
Portfolio Characteristics





High Yield Bond and Loan Default Rates

Figure 4: High yield bond and loan par-weighted default rates

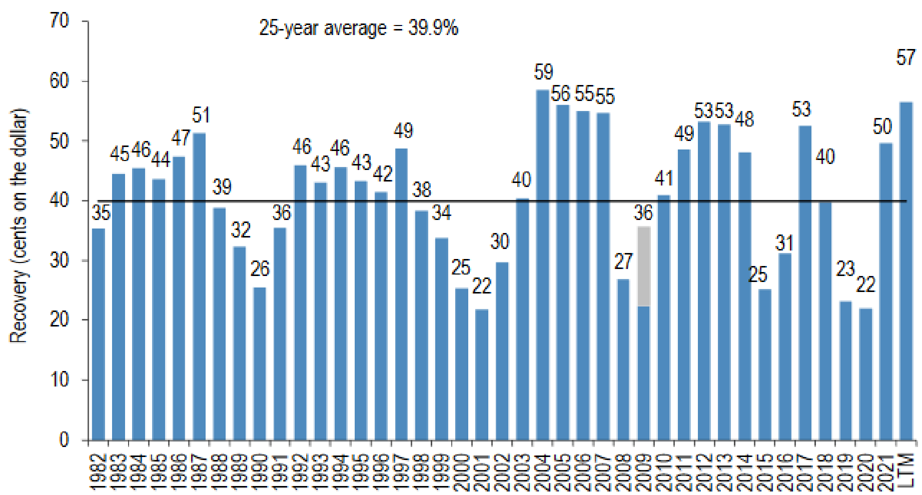


Source: J.P. Morgan.

Note: Data as of 9/30/2022.

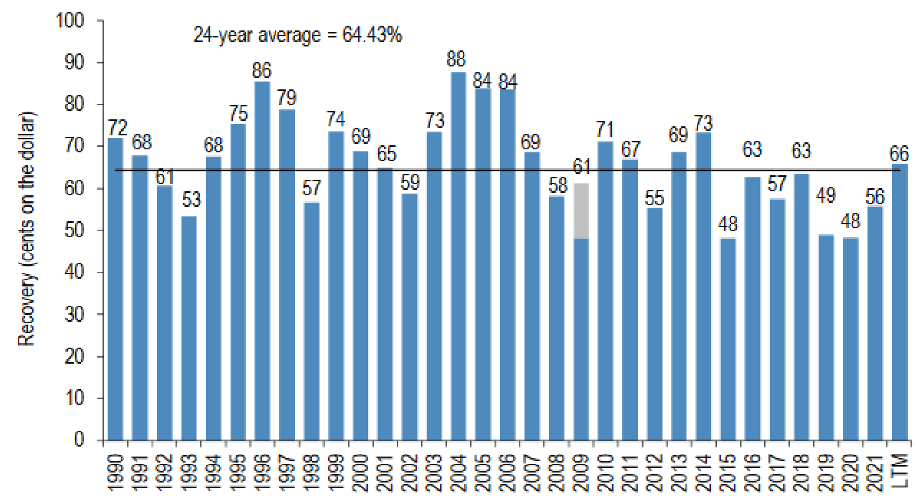
High Yield Bond and Loan Recovery Rates

Bond issuer-weighted recovery rates



Note: Recoveries in 2009 were 22.4 based on prices 30-days post default and were 35.7 based on year-end prices.
Source: Moody's Investors Services; J.P. Morgan

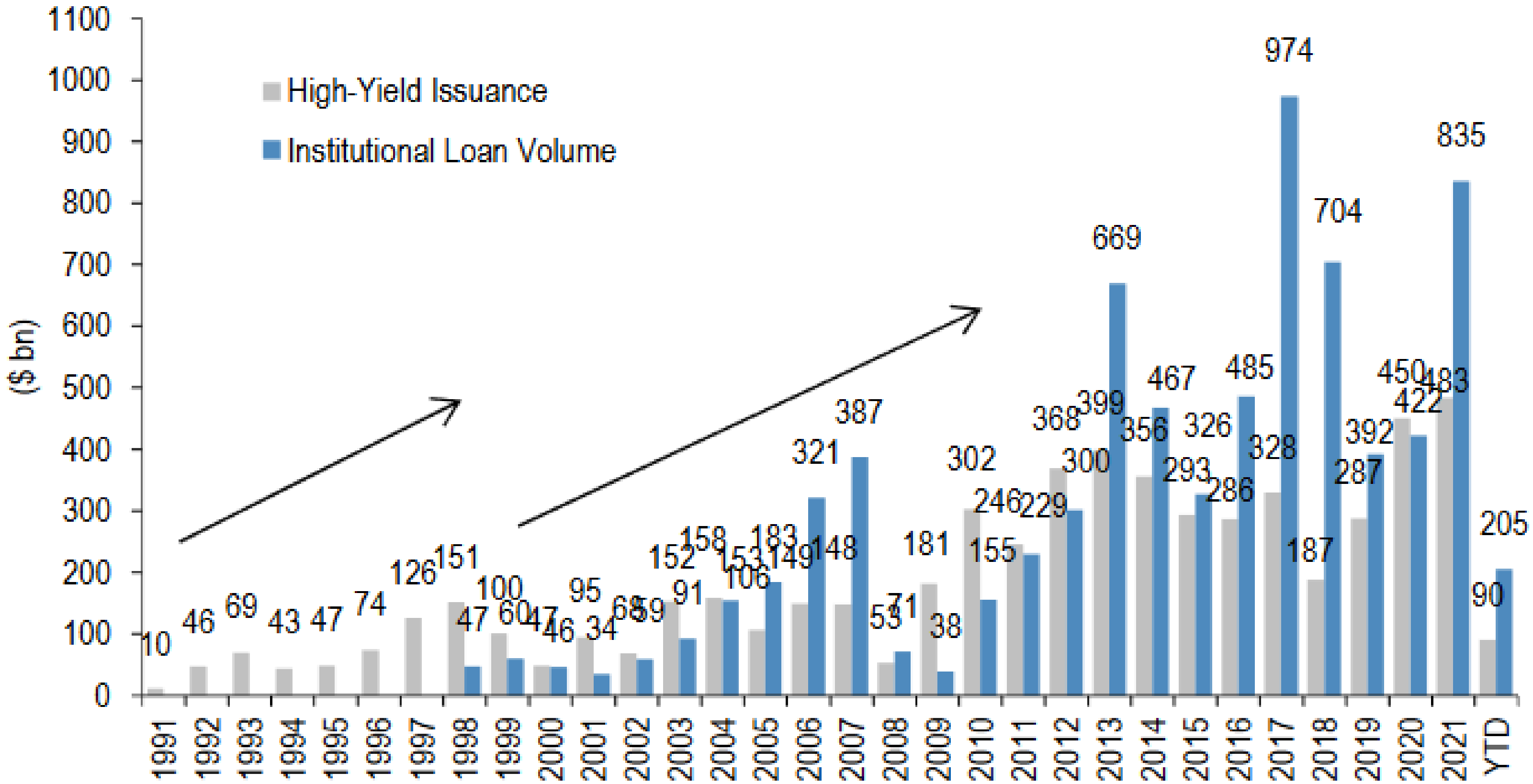
First-lien leveraged loan issuer-weighted recovery rates



Note: Recoveries in 2009 were 48.3 based on prices 30-days post default and were 61.4 based on year-end prices.
Sources: Moody's Investors Service; J.P. Morgan; Markit

Note: Data as of 9/30/2022.

High Yield Bond and Loan Issuance



Source: J.P. Morgan; S&P LCD

Note: Data as of 9/30/2022.

Libor vs. SOFR

LIBOR	SOFR
Forward-looking rate	Backward-looking Rate
Published for multiple terms (1 mos., 3 mos.)	One term, overnight
Unsecured Rate	Secured Rate, collateralized using US treasuries
Based on a very small number of transactions between banks	Based on several hundred billion dollars of transactions daily

Timeline of Transition Events

- **2017**: ARRC selected SOFR as the alternative to LIBOR and transition plan was adopted
- **2018**: NY Fed began publishing SOFR
- **2019**: ARRC releases recommended fallback language
- **2020**: BSP analyzes fallback language across the portoflio
- **2021**: ARRC recommends a forward-looking SOFR term rate
- **2021**: The first SOFR deal launches in the BSL market
- **2022**
- **2023**: Publication of 3-month US dollar LIBOR to cease

Source: Benefit Street Partners

Notes:

All data presented are based on currently available information at time of publication and may be revised subsequently.

The Opportunistic Fixed Income Benchmark is comprised of 50% HFRX Distressed Securities Index; 20% HFRX Relative Value Index; 15% Credit Suisse Leveraged Loan Index; and 15% BOAML US High Yield Index. The BOAML US High Yield Index is from BofA Merrill Lynch and is used with permission. See disclaimer on slide 26.

The Opportunistic Fixed Income asset class (N.C.G.S. § 147-69.2(b)(6c)) was created by the General Assembly in June 2009. It included some investments that were previously authorized under other provisions of G.S. § 147-69.2.

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