

NORTH CAROLINA
DEPARTMENT OF STATE TREASURER



Dale R. Folwell, CPA
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DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION

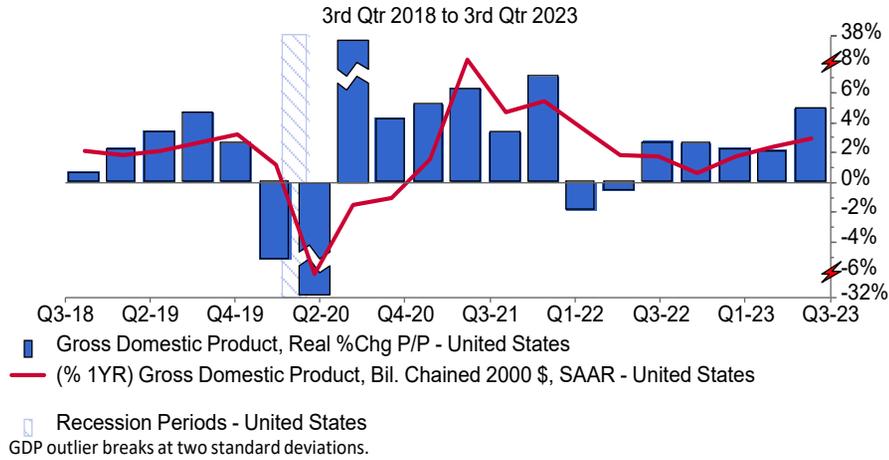
Performance Review

November 15, 2023



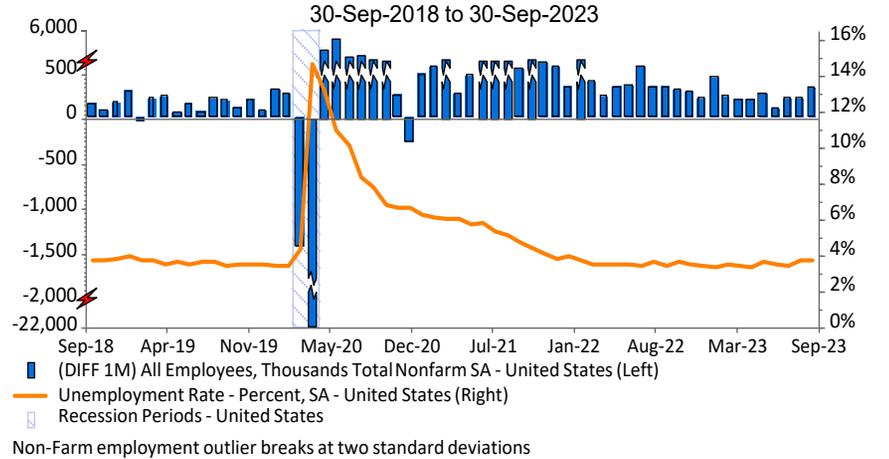
US Economic Environment

US Real GDP Growth



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US Change in NonFarm Employment & Unemployment Rate



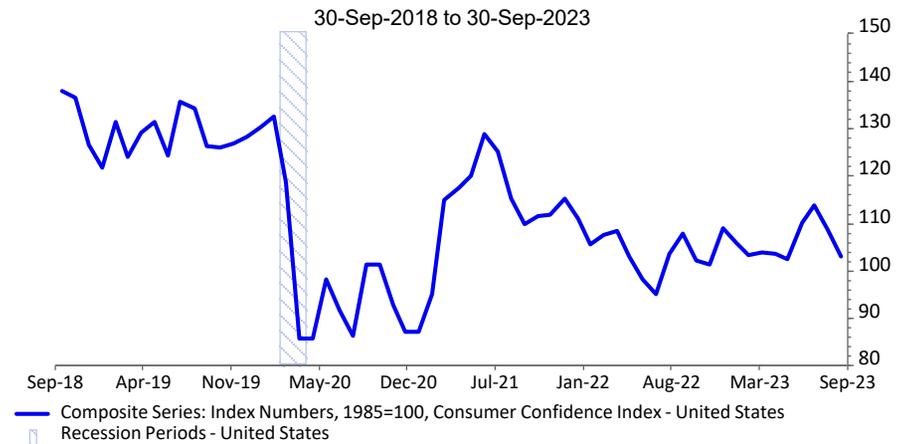
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US Retail Sales



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US Consumer Confidence

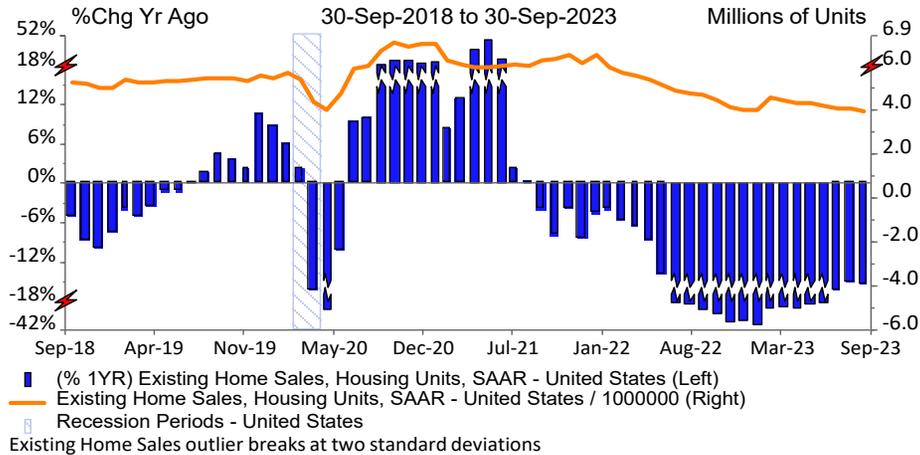


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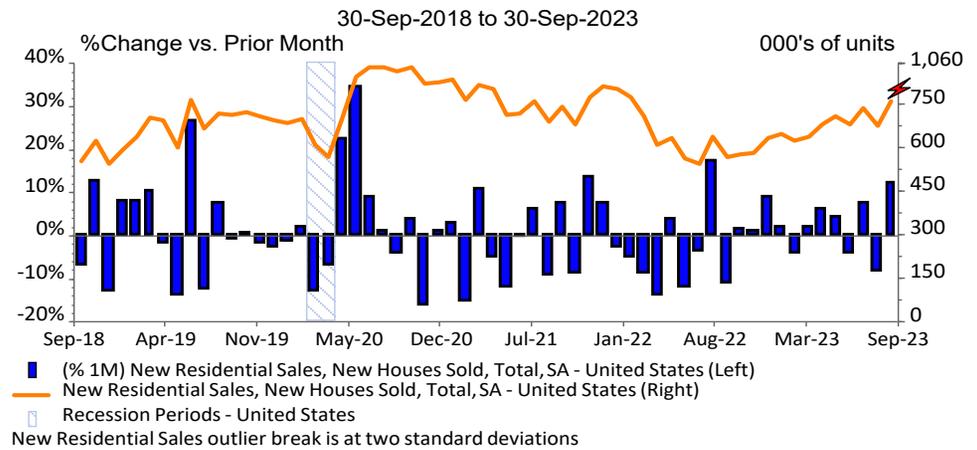
US Economic Environment

US Existing Home Sales



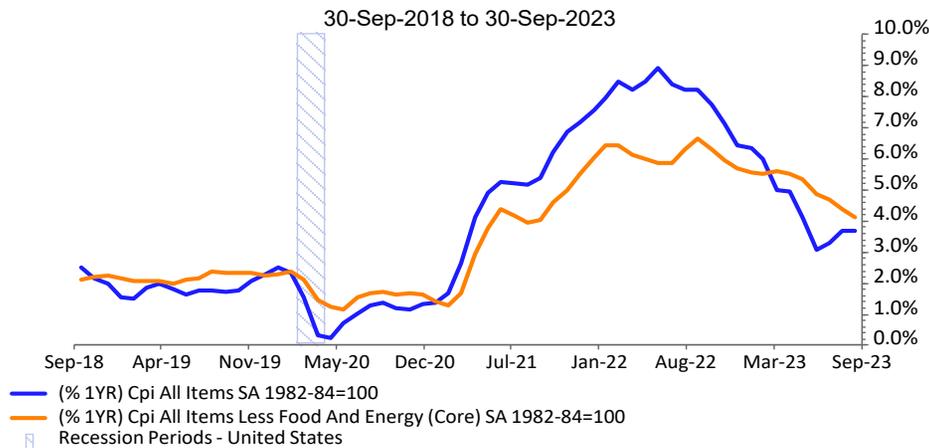
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US New Home Sales



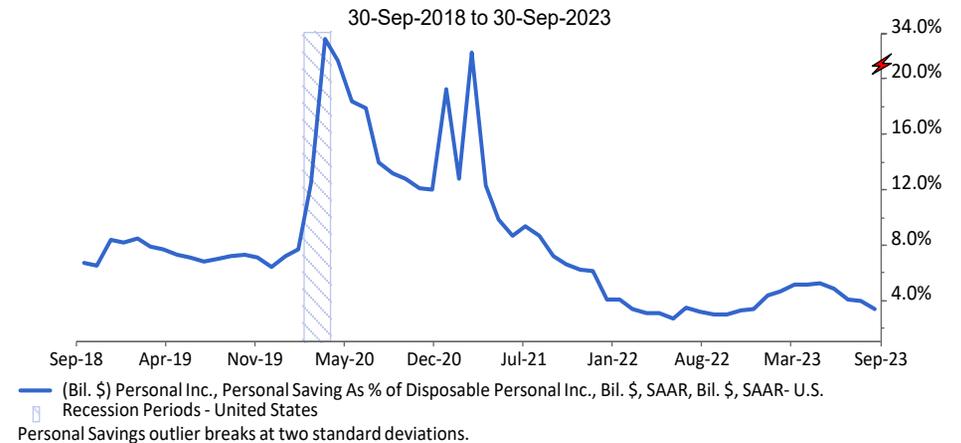
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US Consumer Price Inflation



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US Personal Savings Rate



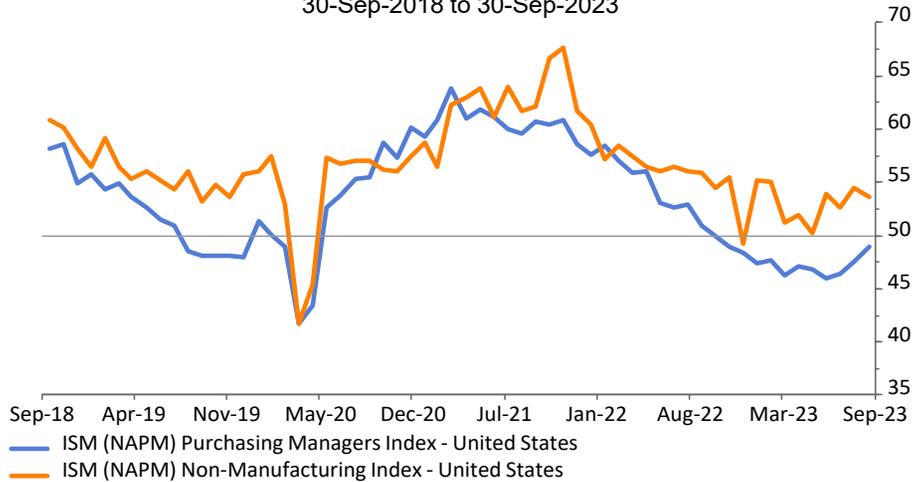
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US and Global Economic Environment

ISM Report on Business

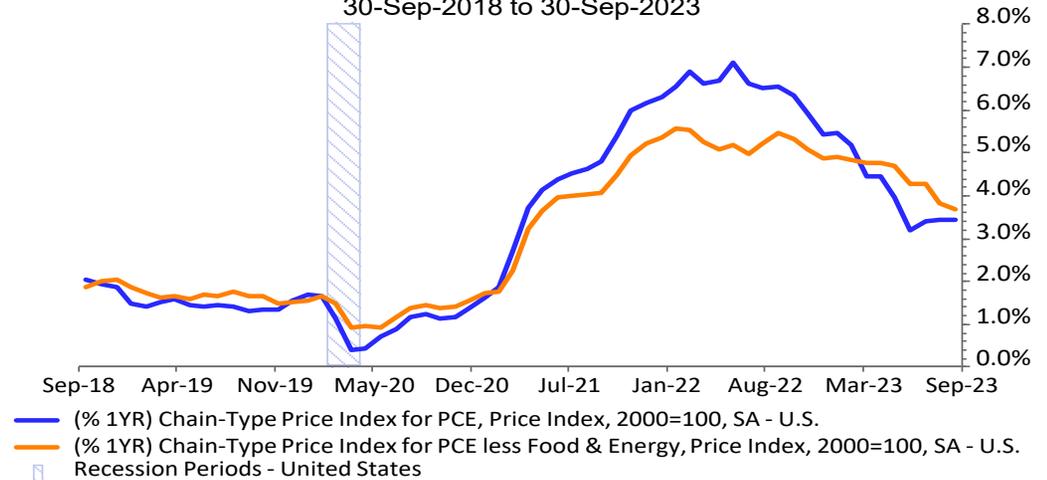
30-Sep-2018 to 30-Sep-2023



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US PCE Inflation

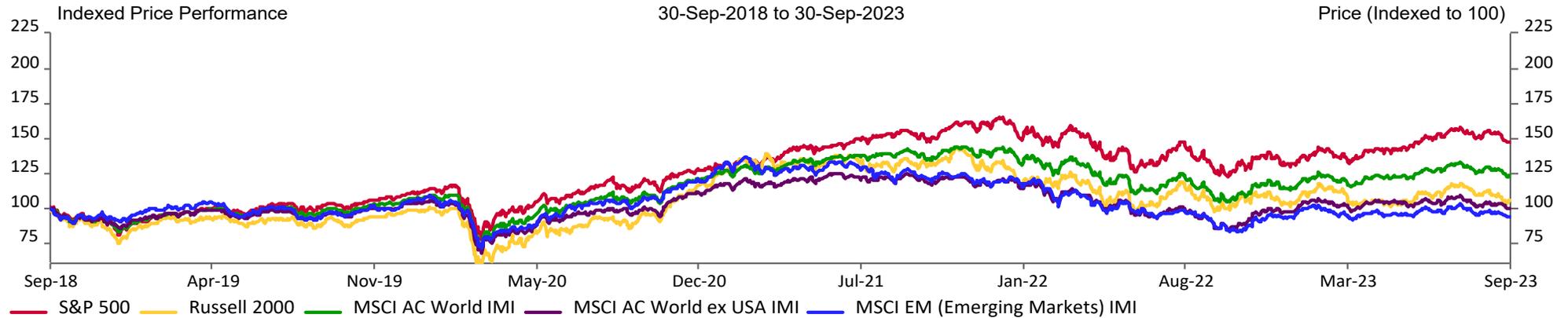
30-Sep-2018 to 30-Sep-2023



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S&P 500 vs. Peers

30-Sep-2018 to 30-Sep-2023

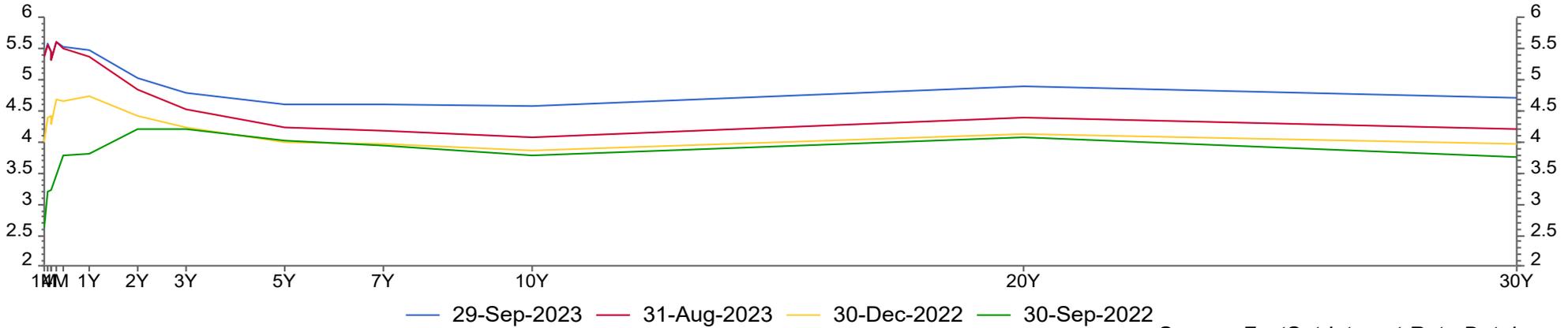


Source: FactSet Prices



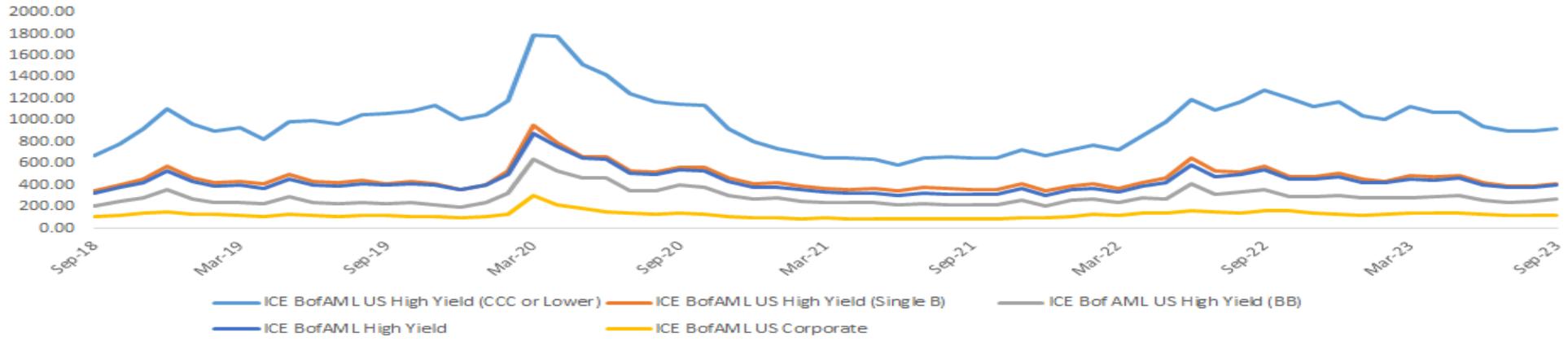
Market Environment

United States Treasury Yield Curve



Source: FactSet Interest Rate Database

Corporate Credit OAS (ICE BAML Indices)



Source: Bloomberg

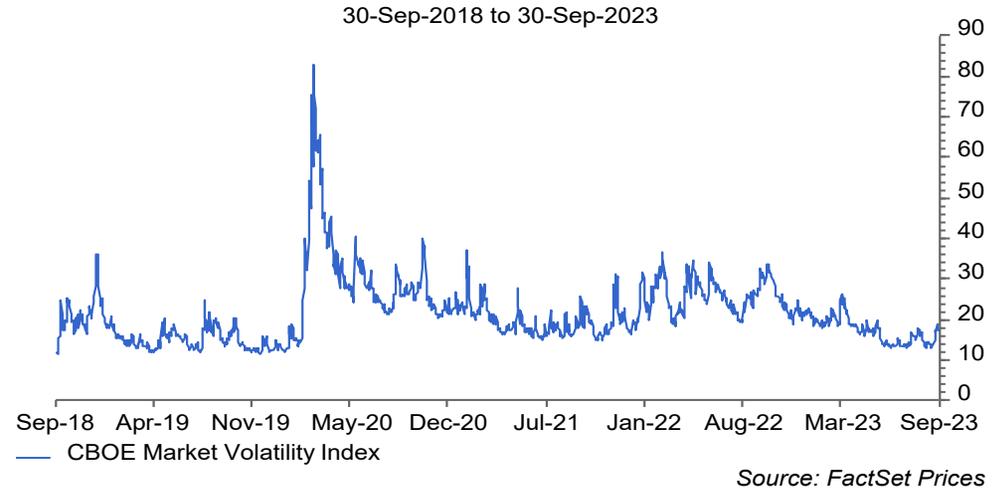


Market Environment

Closing Price Fed Nominal Broad Dollar Index



Closing Price CBOE VIX Index

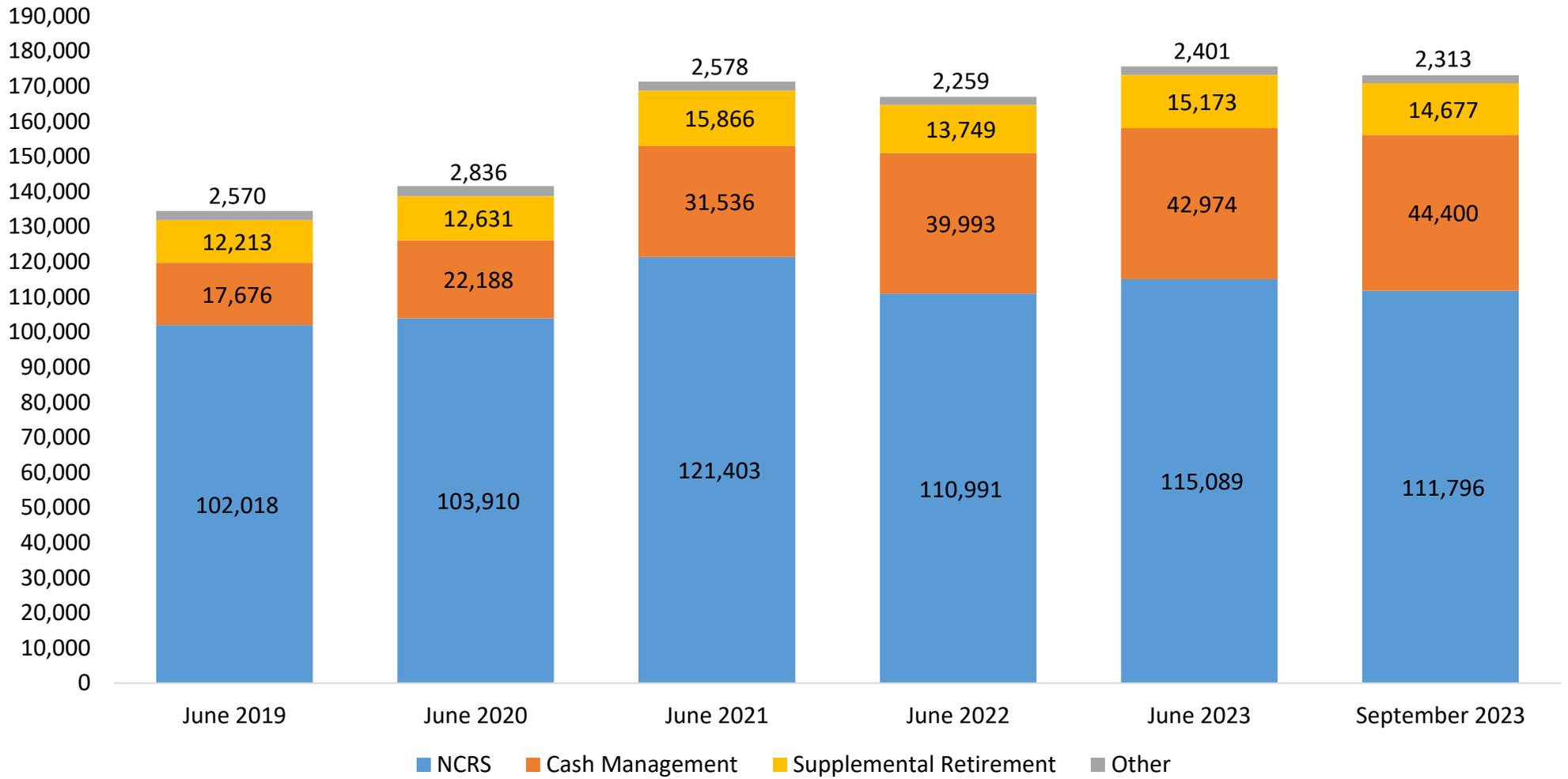


Countries	Real GDP YoY		Unemployment		CPI YoY		Countries	Real GDP YoY		Unemployment		CPI YoY	
	Date	Value	Date	Value	Date	Value		Date	Value	Date	Value	Date	Value
U.S.	09/23	2.9	09/23	3.8	09/23	3.7	Asia/Pacific/Latam						
Europe							China	09/23	4.9			09/23	0.0
Germany	09/23	-0.3	09/23	5.7	09/23	4.5	India	06/23	7.8			08/23	6.9
France	06/23	1.0	08/23	7.3	09/23	4.9	Japan	06/23	1.6	08/23	2.7	09/23	3.0
U.K.	06/23	0.6	07/23	4.3	09/23	6.7	Indonesia	06/23	5.2			09/23	2.3
Italy	06/23	0.3	08/23	7.3	09/23	5.3	Brazil	06/23	3.4			09/23	5.2
Spain	09/23	1.8	08/23	11.5	09/23	3.5	Australia	06/23	2.1	09/23	3.6	09/23	5.4

Source: Bloomberg

Assets Under Management (\$MM)

\$173.2 billion as of September 30, 2023



Note: The Cash Management Program does not include Assets with Fiscal Agent, which are reflected in the Bond Proceeds Fund. These funds, which may have been reported in the Cash Management Program previously, have now been removed for all years shown in this report to more accurately reflect the Cash Management Program balance.



NCRS Asset Allocation

As of September 30, 2023

	Market Value (\$MM)	%	Target	Range		Relative %	Relative \$ (\$MM)
				Minimum	Maximum		
Growth	55,949	50.05%	55.0%	37.0%	68.0%	-4.95%	(5,538)
Public Equity	40,232	35.99%	38.0%	33.0%	43.0%	-2.01%	(2,250)
Private Equity	6,234	5.58%	7.0%	0.0%	8.8%	-1.42%	(1,591)
Non Core Real Estate	2,213	1.98%	3.0%	0.0%	8.0%	-1.02%	(1,141)
Opportunistic Fixed Income	7,269	6.50%	7.0%	0.0%	7.5%	-0.50%	(556)
Rates & Liquidity	41,895	37.47%	33.0%	23.0%	48.0%	4.47%	5,002
IG Fixed Income & Cash	31,277	27.98%	28.0%	23.0%	33.0%	-0.02%	(26)
Pension Cash	10,618	9.50%	5.0%	0.0%	10.0%	4.50%	5,028
Inflation Sensitive & Diversifiers	11,595	10.37%	11.0%	4.0%	16.0%	-0.63%	(702)
Inflation Sensitive	5,542	4.96%	6.0%	2.0%	7.5%	-1.04%	(1,165)
Core Real Estate	6,053	5.41%	5.0%	2.0%	10.0%	0.41%	463
Multi-Strategy	2,356	2.11%	1.0%	0.0%	4.0%	1.11%	1,238
Grand Total	111,796	100.00%					



NCRS Asset Allocation (Preliminary)

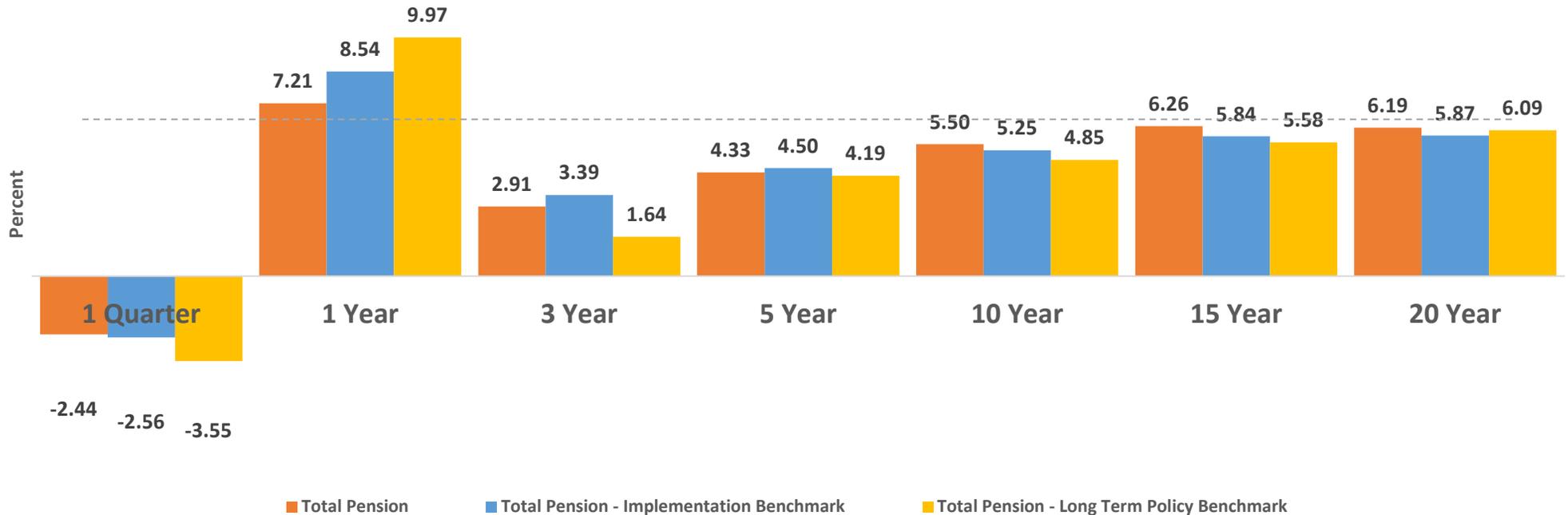
As of November 6, 2023

	Market Value (\$MM)	%	Target	Range		Relative %	Relative \$ (\$MM)
				Minimum	Maximum		
Growth	56,216	50.37%	55.0%	37.0%	68.0%	-4.63%	(5,173)
Public Equity	40,537	36.32%	38.0%	33.0%	43.0%	-1.68%	(1,877)
Private Equity	6,226	5.58%	7.0%	0.0%	8.8%	-1.42%	(1,587)
Non Core Real Estate	2,197	1.97%	3.0%	0.0%	8.0%	-1.03%	(1,152)
Opportunistic Fixed Income	7,255	6.50%	7.0%	0.0%	7.5%	-0.50%	(558)
Rates & Liquidity	41,408	37.10%	33.0%	23.0%	48.0%	4.10%	4,575
IG Fixed Income & Cash	31,460	28.19%	28.0%	23.0%	33.0%	0.19%	208
Pension Cash	9,948	8.91%	5.0%	0.0%	15.0%	3.91%	4,367
Inflation Sensitive & Diversifiers	11,632	10.42%	11.0%	4.0%	16.0%	-0.58%	(646)
Inflation Sensitive	5,476	4.91%	6.0%	2.0%	7.5%	-1.09%	(1,221)
Core Real Estate	6,156	5.52%	5.0%	2.0%	10.0%	0.52%	576
Multi-Strategy	2,360	2.11%	1.0%	0.0%	4.0%	1.11%	1,244
Grand Total	111,616	100.00%					

NCRS Total Net Portfolio Return vs. Benchmarks

As of September 30, 2023

Annualized Returns



Notes:

Actuarial Assumed Investment Return was lowered from 7.0% to 6.5% as of December 31, 2020

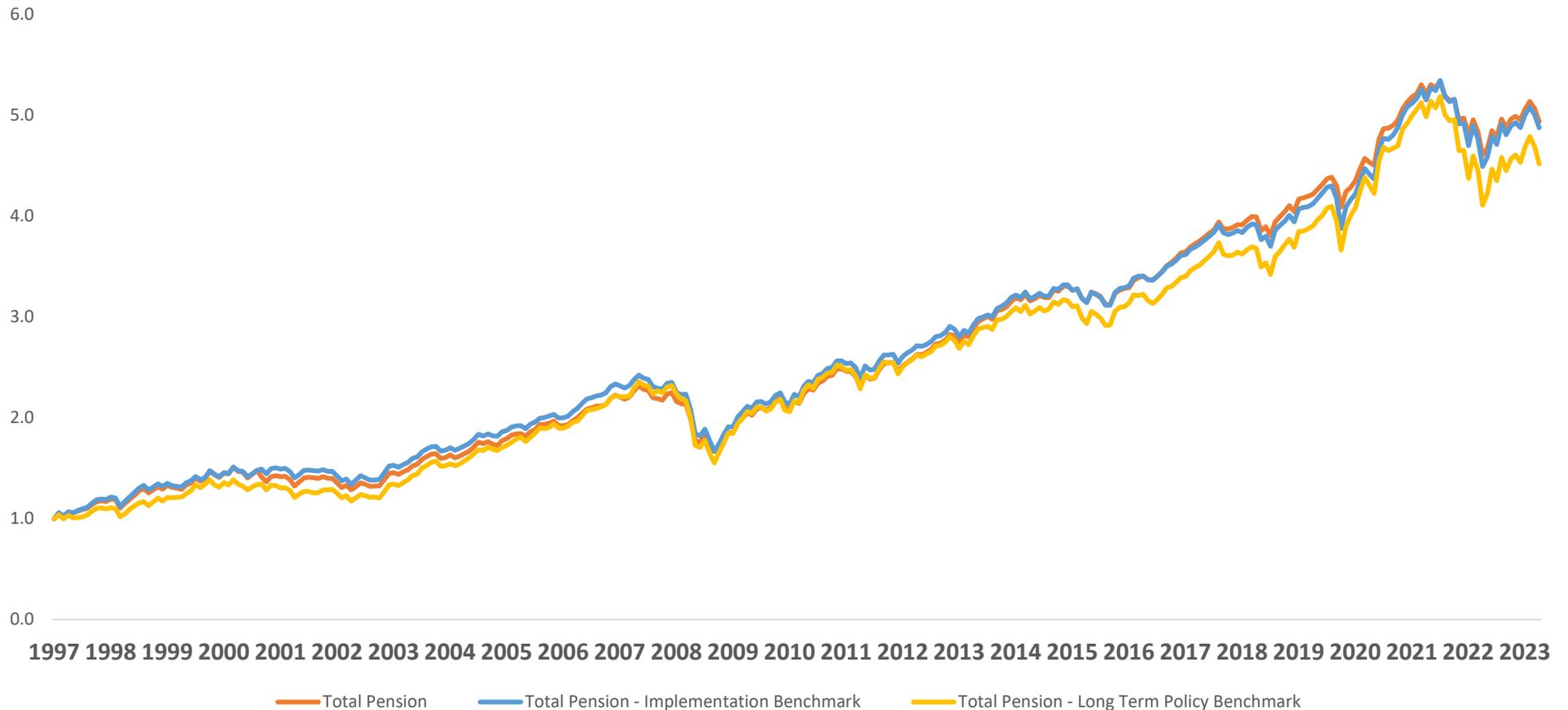
Returns for periods greater than one year are annualized.

Implementation Benchmark is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 55% Growth Benchmark; 33% Rates & Liquidity Benchmark; 11% Inflation Sensitive & Diversifiers Benchmark; and 1% Multi-Strategy Benchmark.

Long-Term Policy Benchmark is comprised of 56% MSCI ACWI IMI Net, 28% BOAML 5+ Years U.S. Treasury Index, 6.5% Bloomberg Commodity Index, 5% BOAML 3 Month Treasury Bill Index, and 4.5% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.



Growth of a Dollar Through September 30, 2023



Notes:

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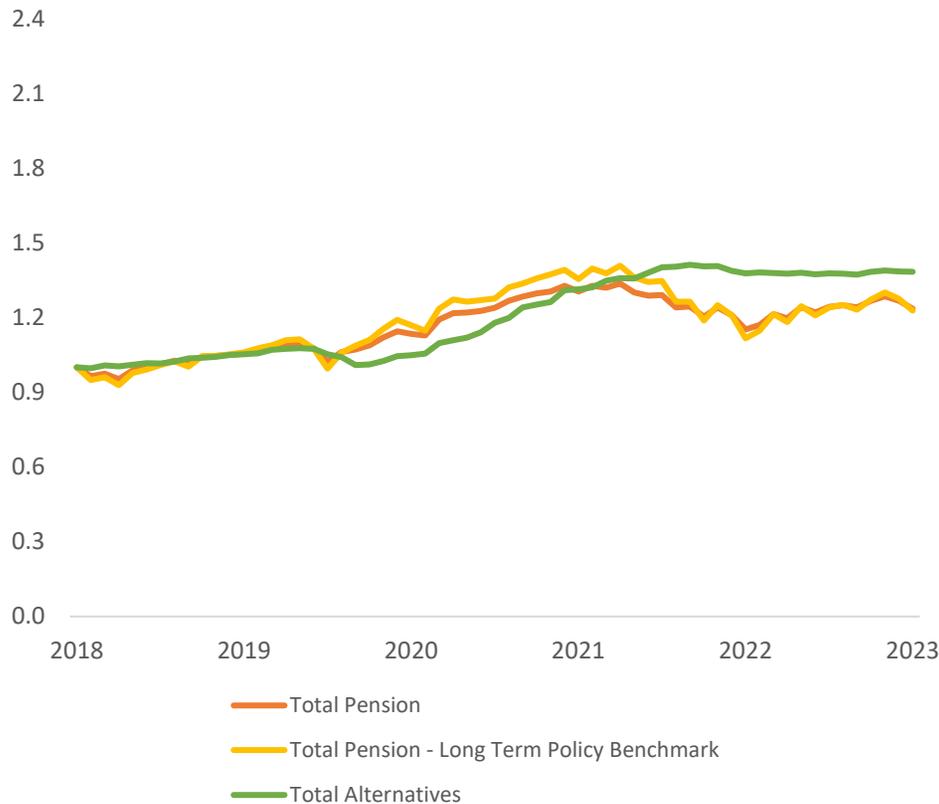
Implementation Benchmark is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 55% Growth Benchmark; 33% Rates & Liquidity Benchmark; 11% Inflation Sensitive & Diversifiers Benchmark; and 1% Multi-Strategy Benchmark.

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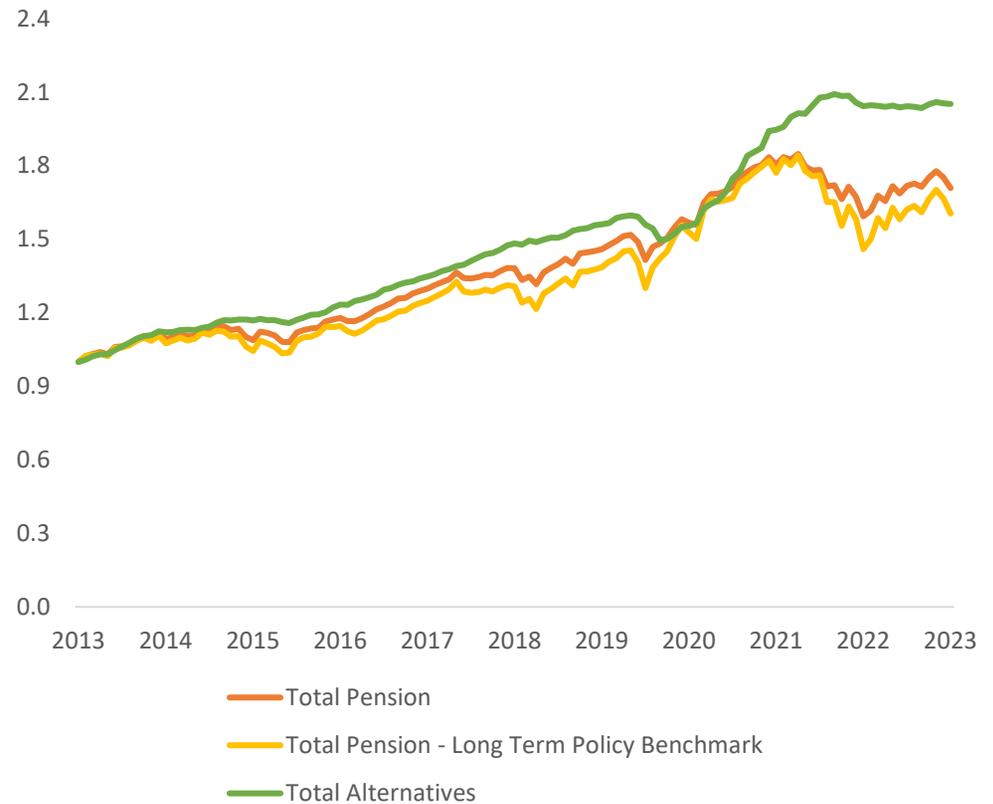
Growth of a Dollar

5 Years Ending September 30, 2023



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10 Years Ending September 30, 2023



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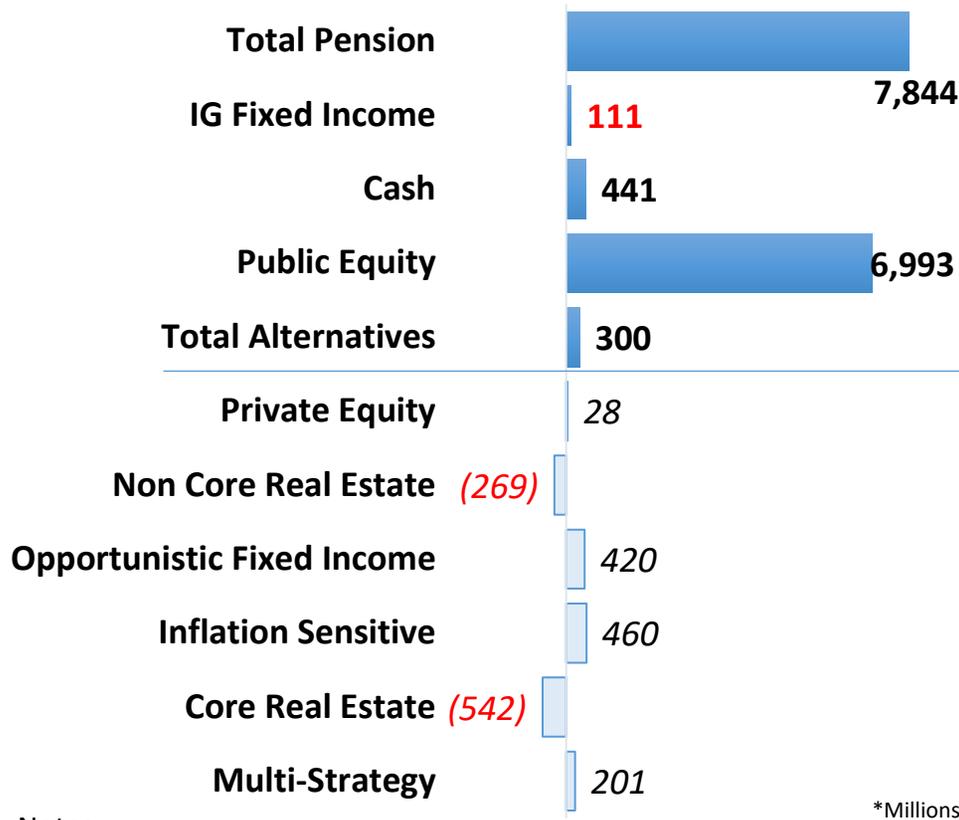
Note: NCRS Alternatives includes the following: Core Real Estate; Inflation Sensitive – Private Natural Resources; Inflation Sensitive – Real Assets and Other Diversifiers; Multi-Strategy Investments; Non-Core Real Estate; Opportunistic Fixed Income; Private Equity; Equity Hedge Strategies; and closed-end Public Natural Resource funds.



Estimated Contribution to Total Plan Return – 1 Year

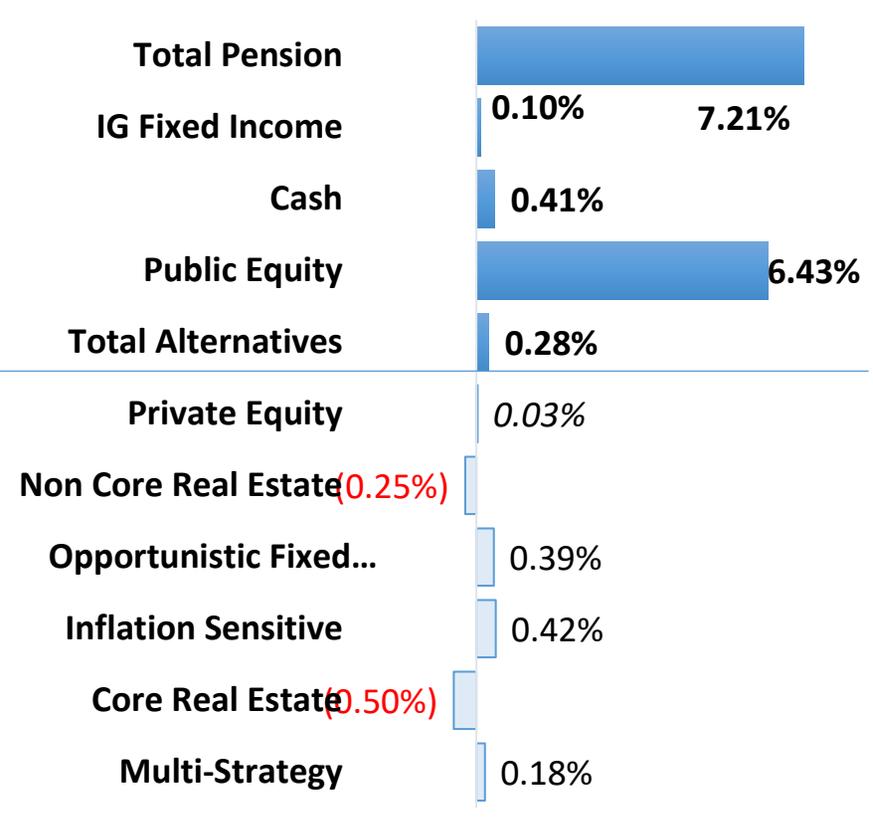
As of September 30, 2023

Contribution to Total Plan \$ Earnings



*Millions

Contribution to Total Plan % Returns



Notes:

1.) Estimated Contributions are based on average market value and the total return for the period.

Contribution to Total Plan \$ Earnings = Average \$ Market Value * % Total Return for each asset class

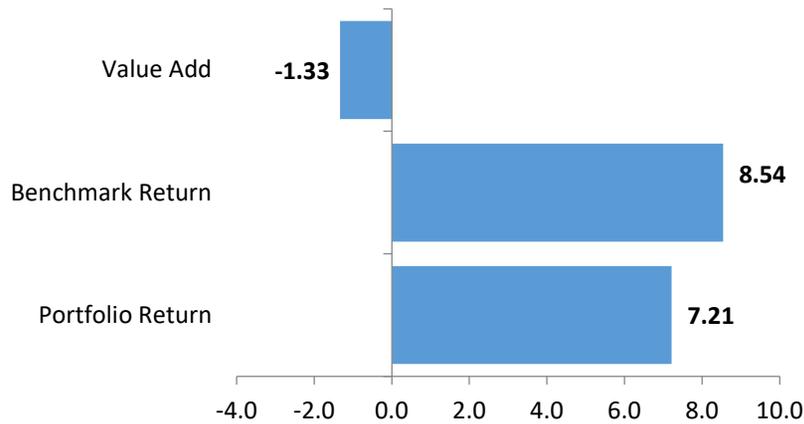
Contribution to Total Plan % Returns = Average Market Value % weight * % Total Return for each asset class

2.) Alternatives for this analysis include the following: Private Equity, Non-Core Real Estate, Opportunistic Fixed Income, Inflation Sensitive, Core Real Estate, and Multi-Strategy investments.

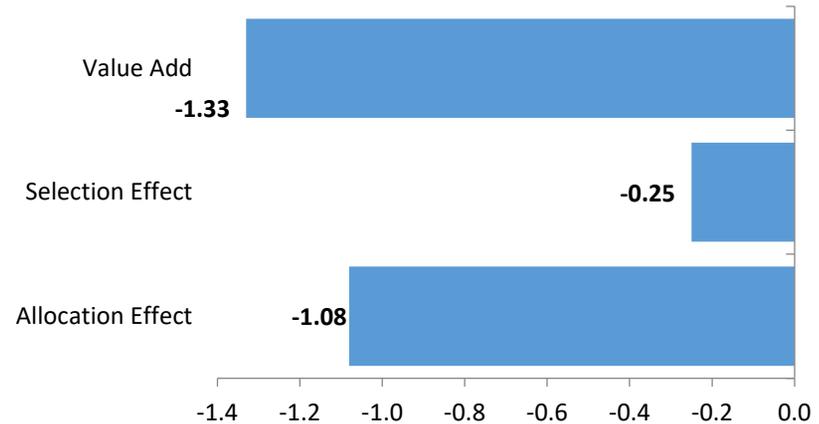
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 1 Year Ending September 30, 2023

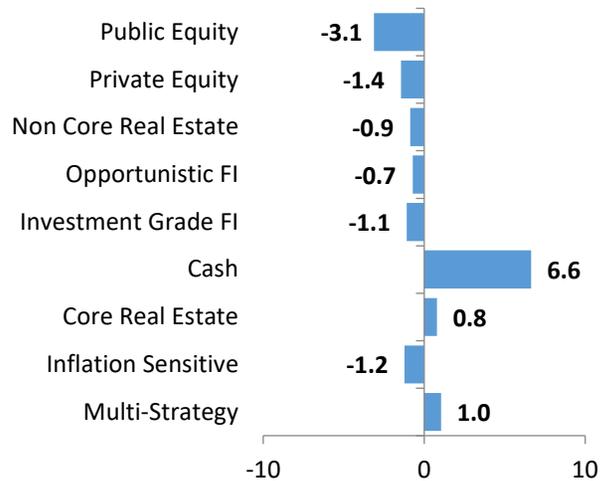
Total Fund Performance



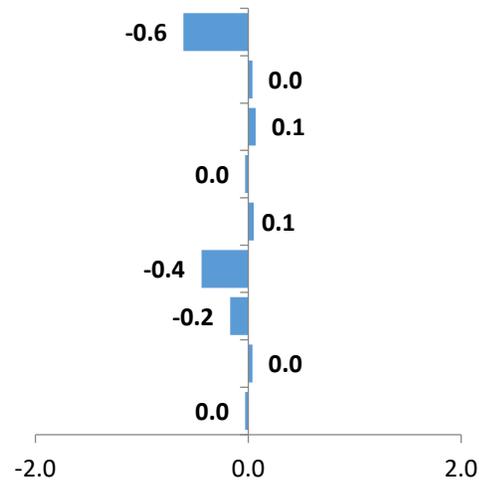
Attribution



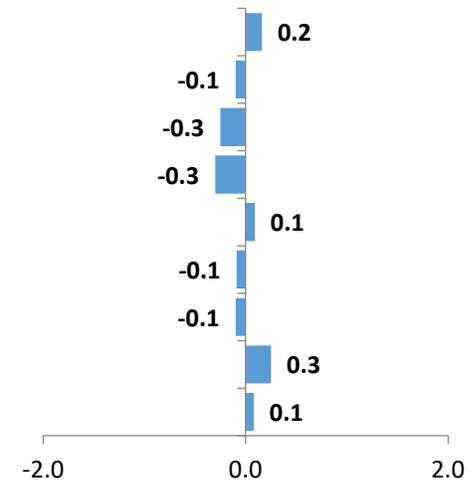
Avg Active Weight



Allocation Effect



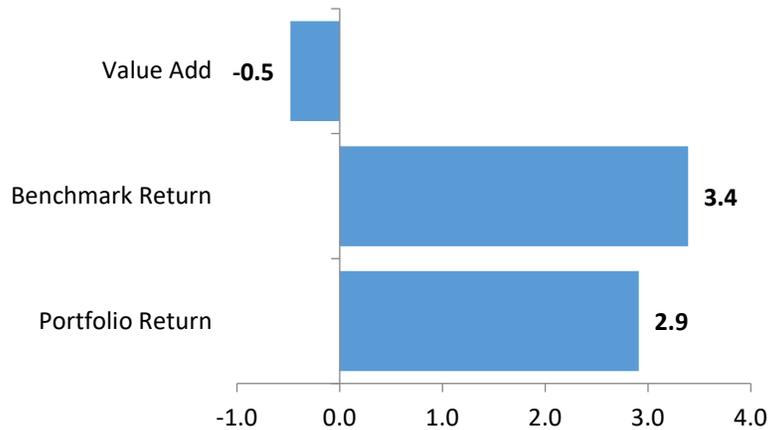
Selection Effect



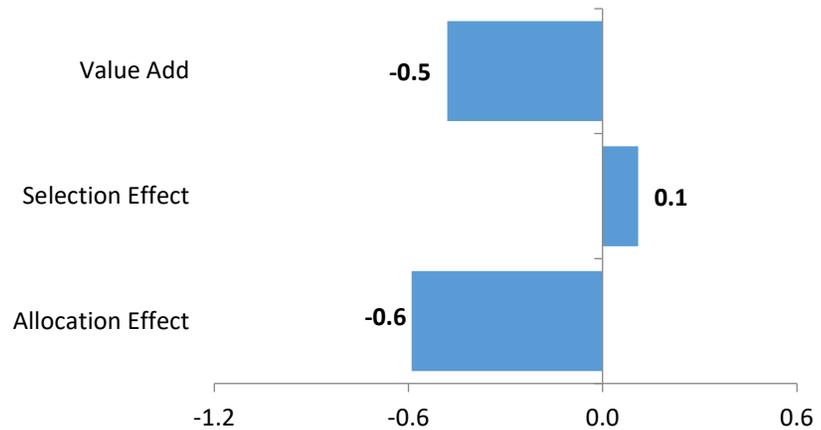
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 3 Years Ending September 30, 2023

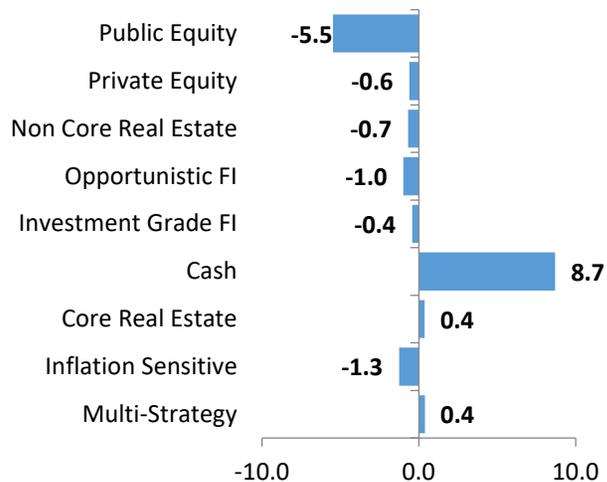
Total Fund Performance



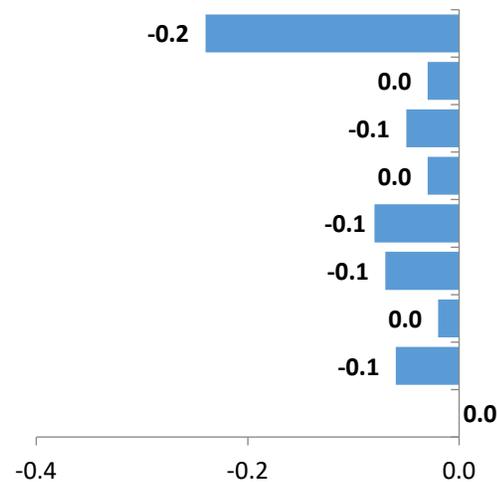
Attribution



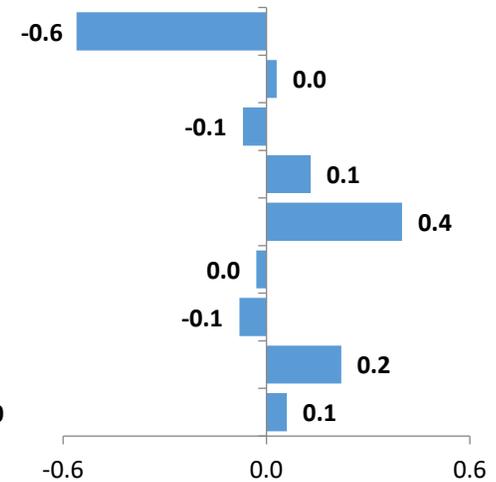
Avg Active Weight



Allocation Effect

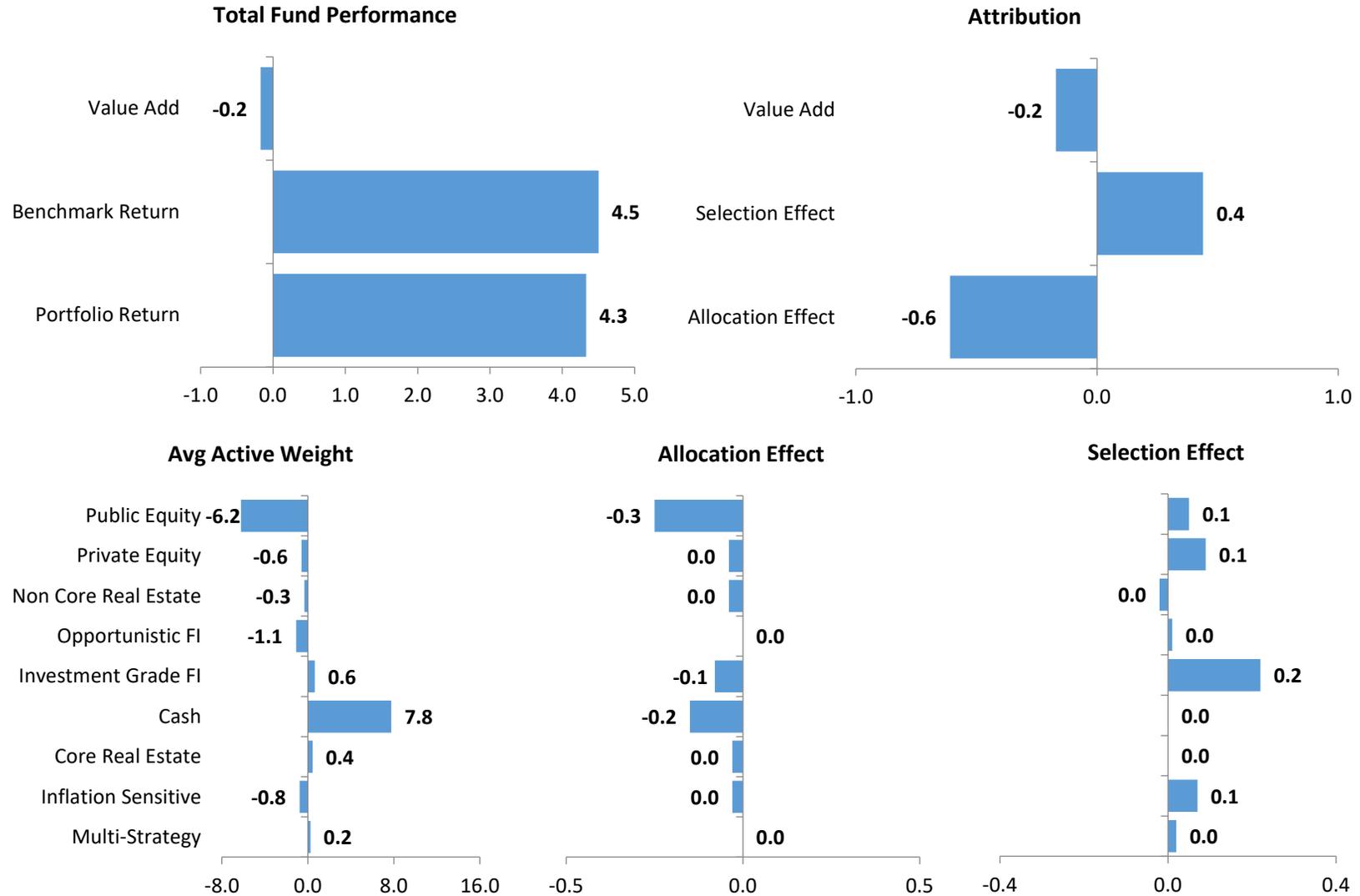


Selection Effect



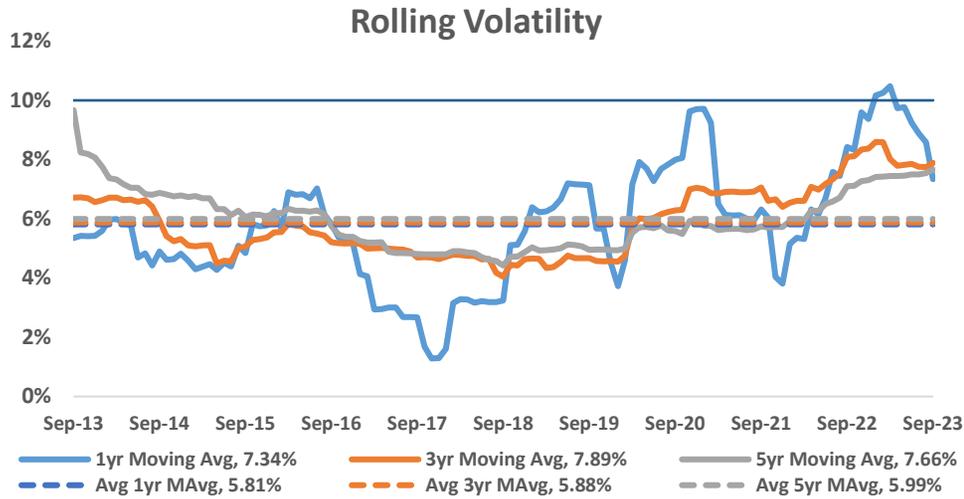
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 5 Years Ending September 30, 2023

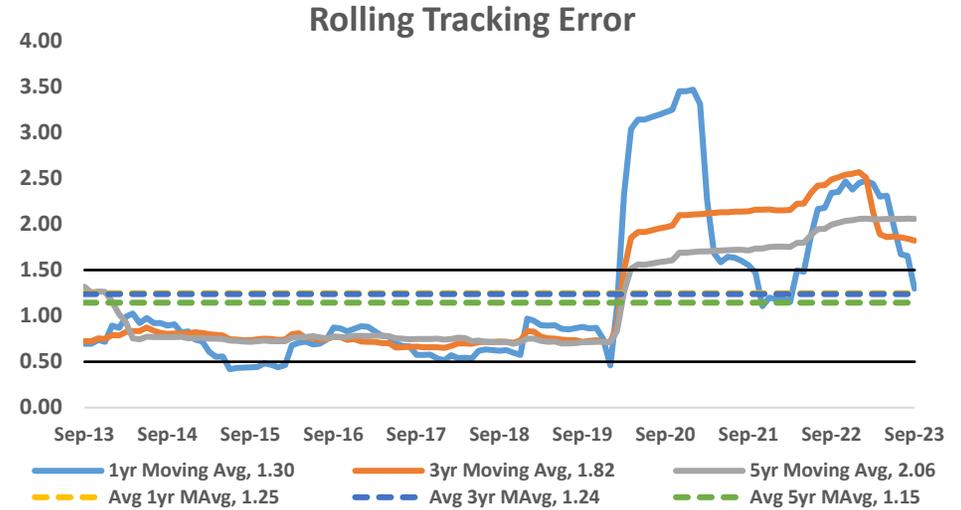


NCRS Net of Fees Risk Metrics

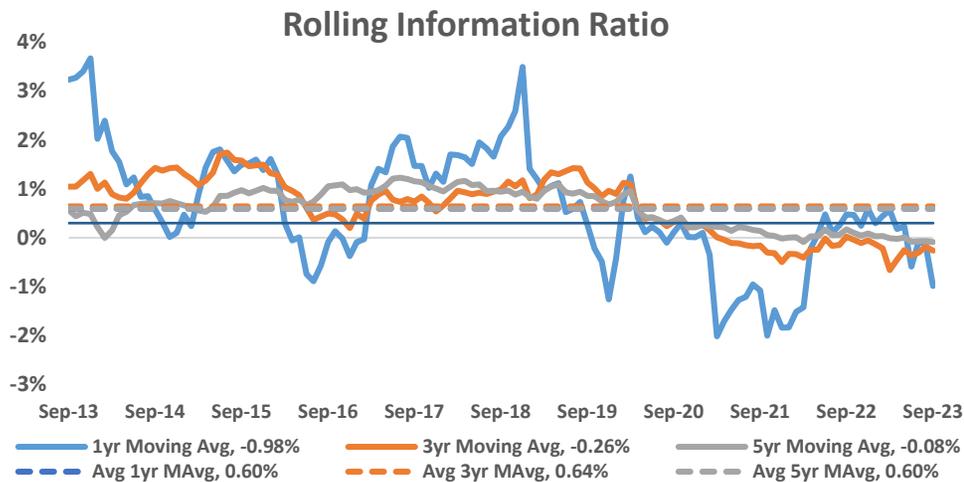
As of September 30, 2023



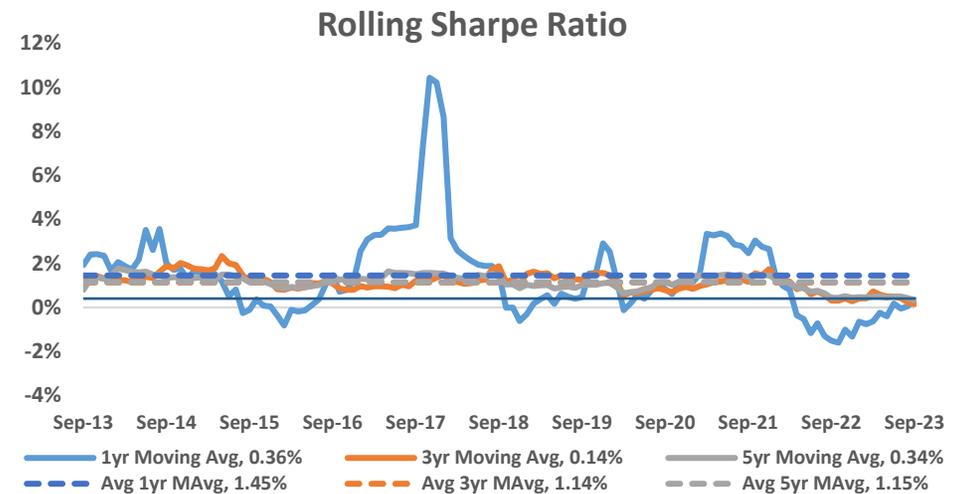
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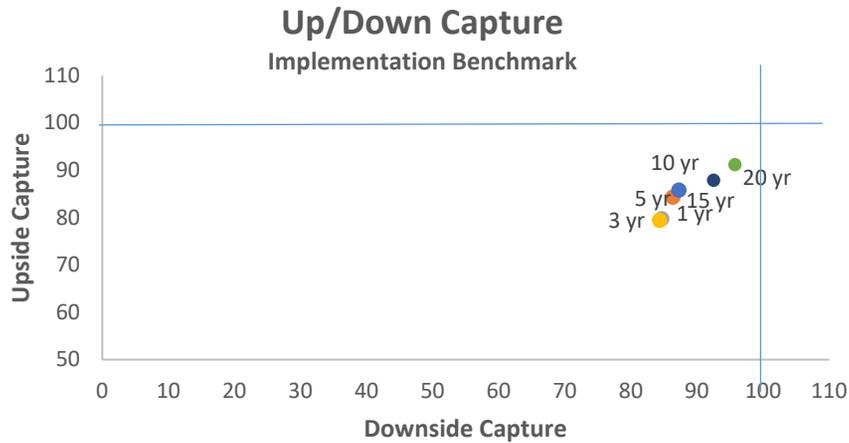
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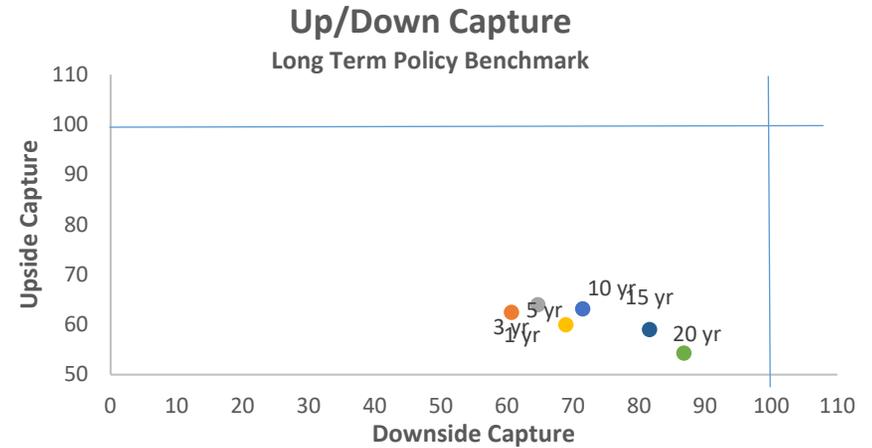
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NCRS Net of Fees Risk Metrics

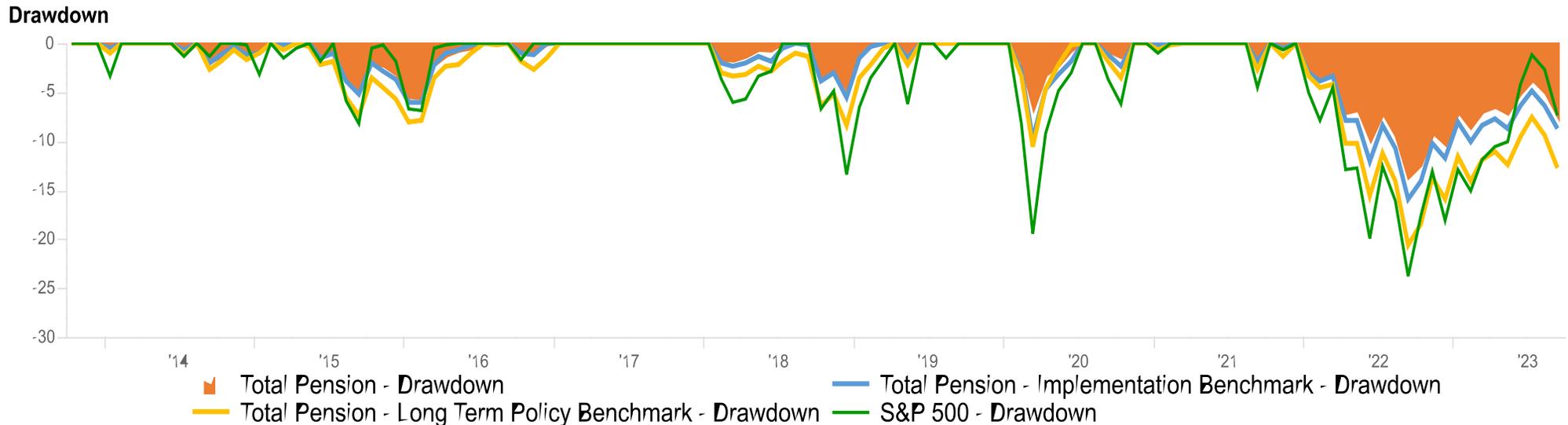
As of September 30, 2023



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NCRS Gross of Fees Return and Risk

BNY Mellon Universe: US Public Funds > \$20B; Data as of September 30, 2023

Returns	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	10.69	8.64	7.43	7.83	7.93	7.84
Median Percentile	9.31	6.97	6.78	7.57	7.57	7.56
75th Percentile	7.19	4.90	5.46	6.52	6.68	7.32
NCRS	7.50	3.22	4.68	5.98	6.72	6.59
Percentile Rank (1 = highest performance)	74	87	87	80	74	86

Risk	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	8.85	10.00	10.28	8.14	9.63	9.07
Median Percentile	7.52	8.65	8.93	7.12	8.70	8.50
75th Percentile	6.23	7.60	8.03	6.61	7.76	7.96
NCRS	7.02	7.78	7.58	6.19	7.51	7.27
Percentile Rank (1 = highest risk)	60	67	94	94	80	93

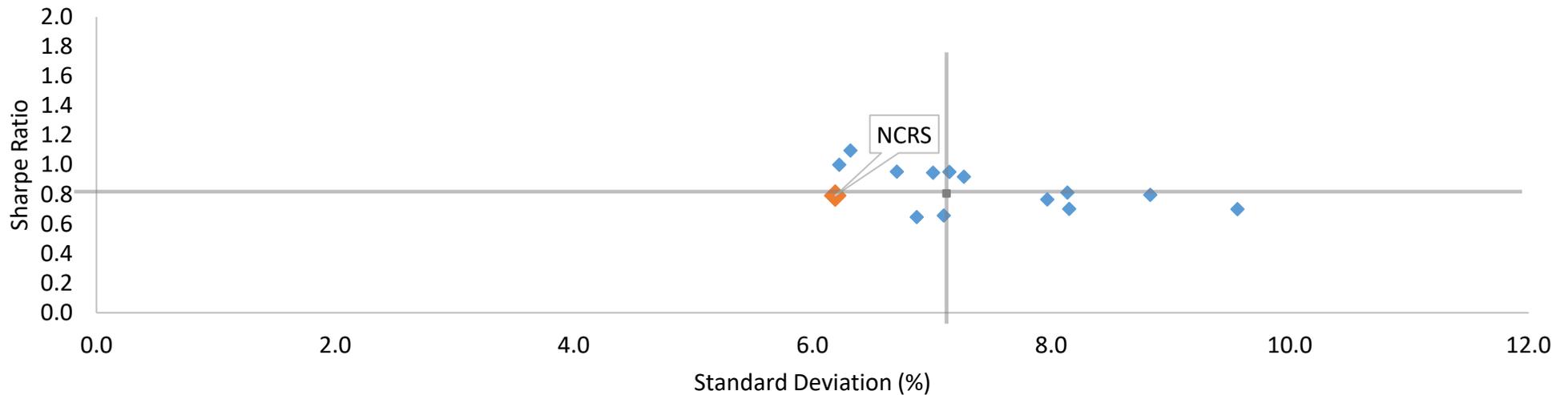
Note: Data shown is gross of fees with the exception of incentive payments, which have been deducted from NAV when applicable.

NCRS Gross of Fees Sharpe Ratio

BNY Mellon Universe: US Public Funds > \$20B; Data as of September 30, 2023

Sharpe	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	0.80	0.88	0.68	0.95	0.83	0.78
Median Percentile	0.71	0.57	0.55	0.80	0.78	0.73
75th Percentile	0.40	0.36	0.41	0.70	0.71	0.68
NCRS	0.44	0.23	0.42	0.79	0.80	0.72
Percentile Rank (1 = highest performance)	74	87	74	60	40	58

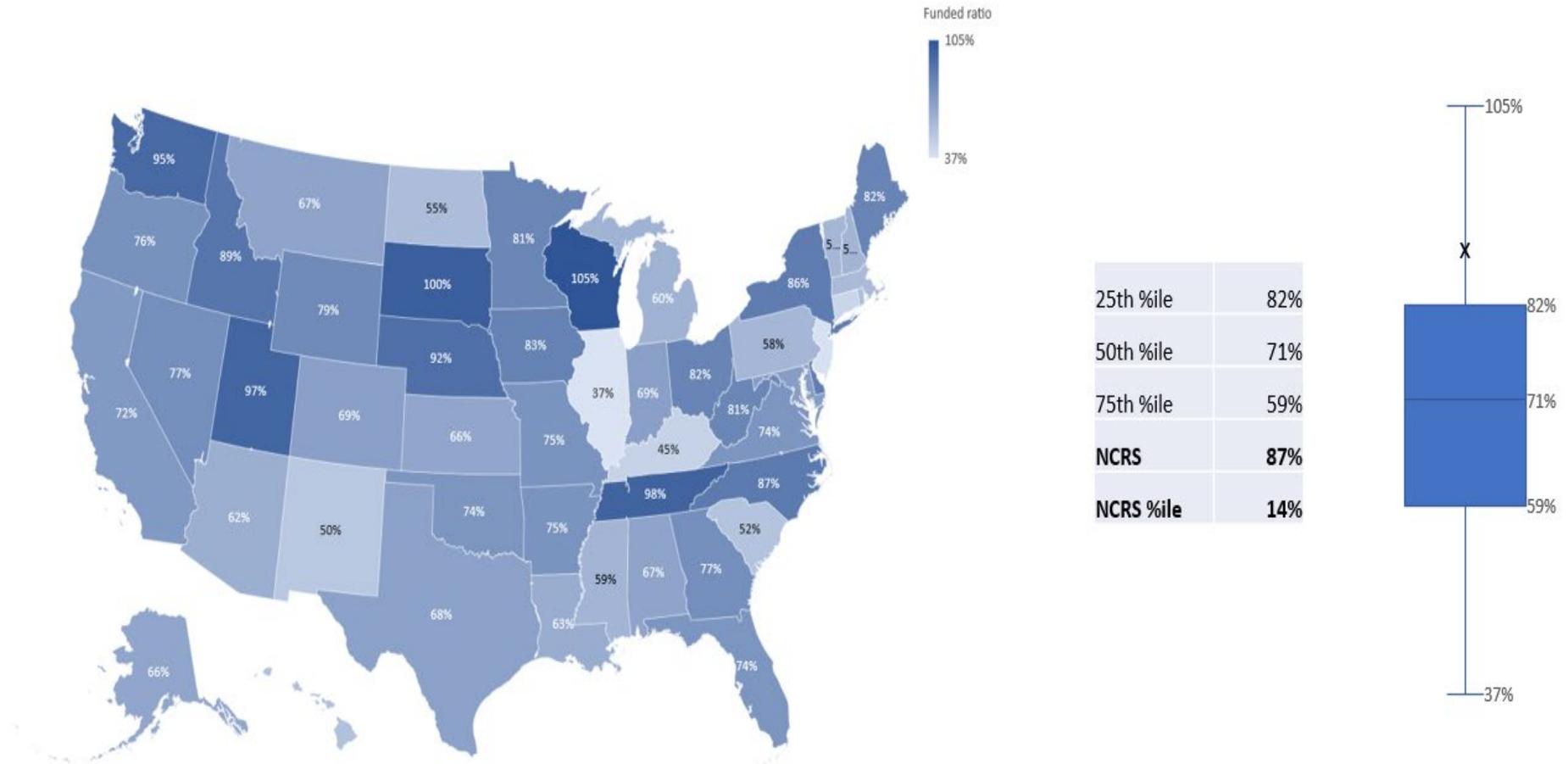
10 Year Plot: Sharpe Ratio vs. Volatility



Note: Data shown is gross of fees with the exception of incentive payments, which have been deducted from NAV when applicable.



Funded Status Universe Comparison U.S. Public Funds

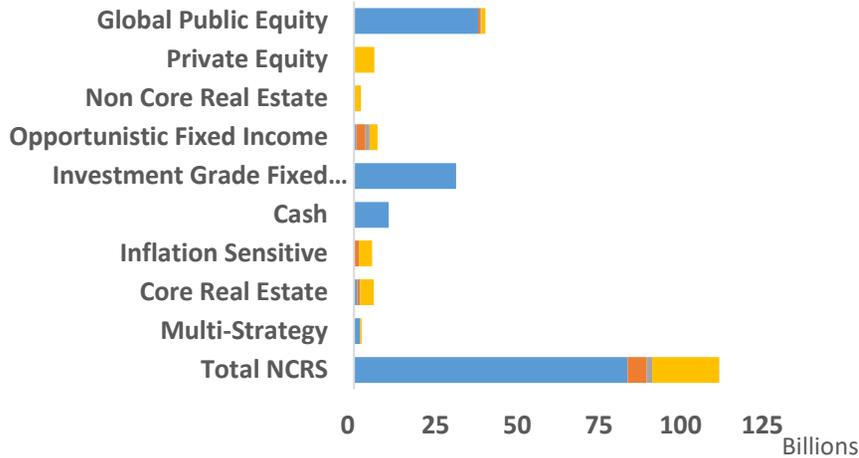


Source: Pew Charitable Trusts, Data as of 2020

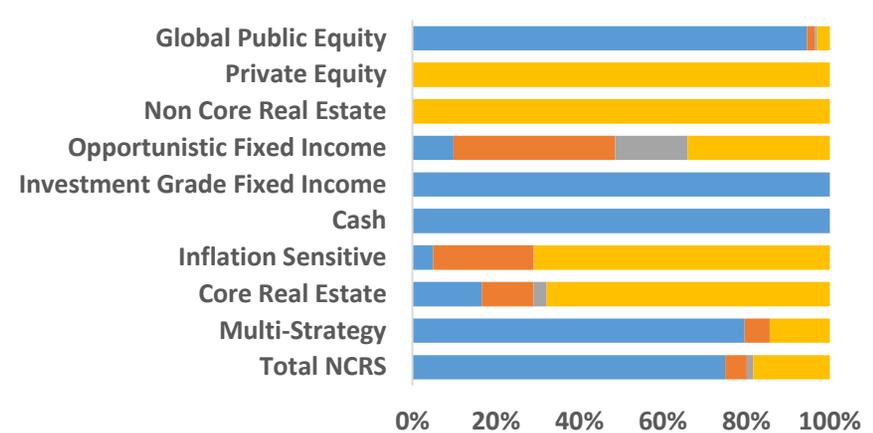
NCRS Liquidity Profile

As of September 30, 2023

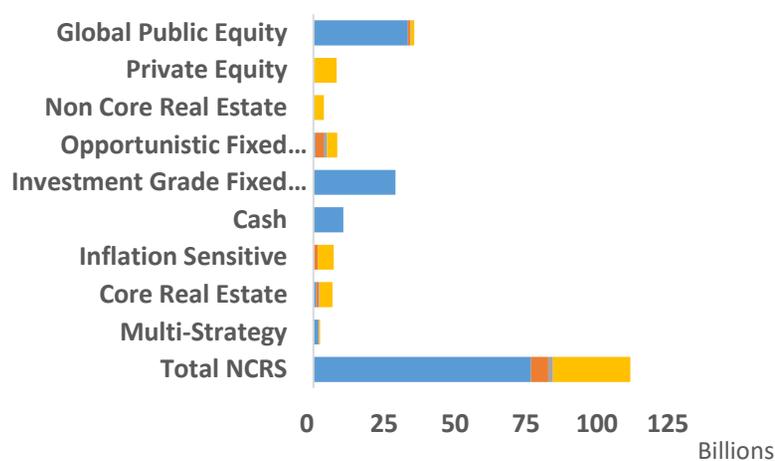
Liquidity Allocation (\$ Market Value)



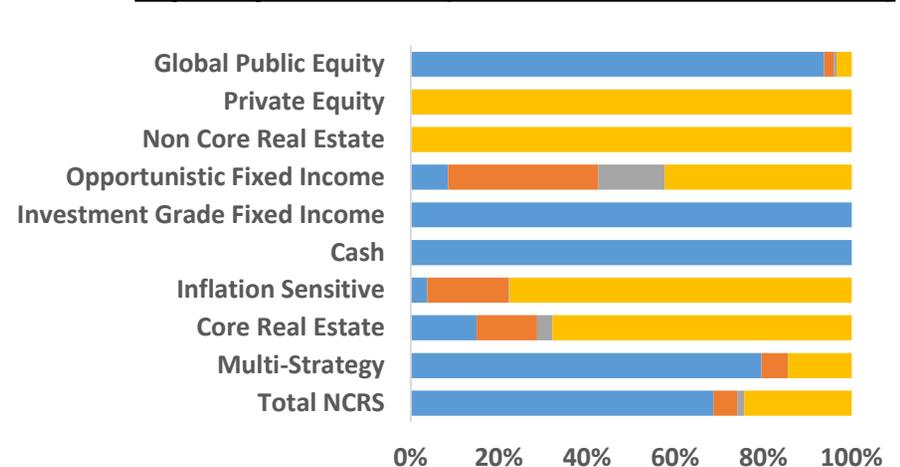
Liquidity Allocation (% Market Value)



Liquidity Allocation (\$ Market Value + Unfunded)



Liquidity Allocation (% Market Value + Unfunded)

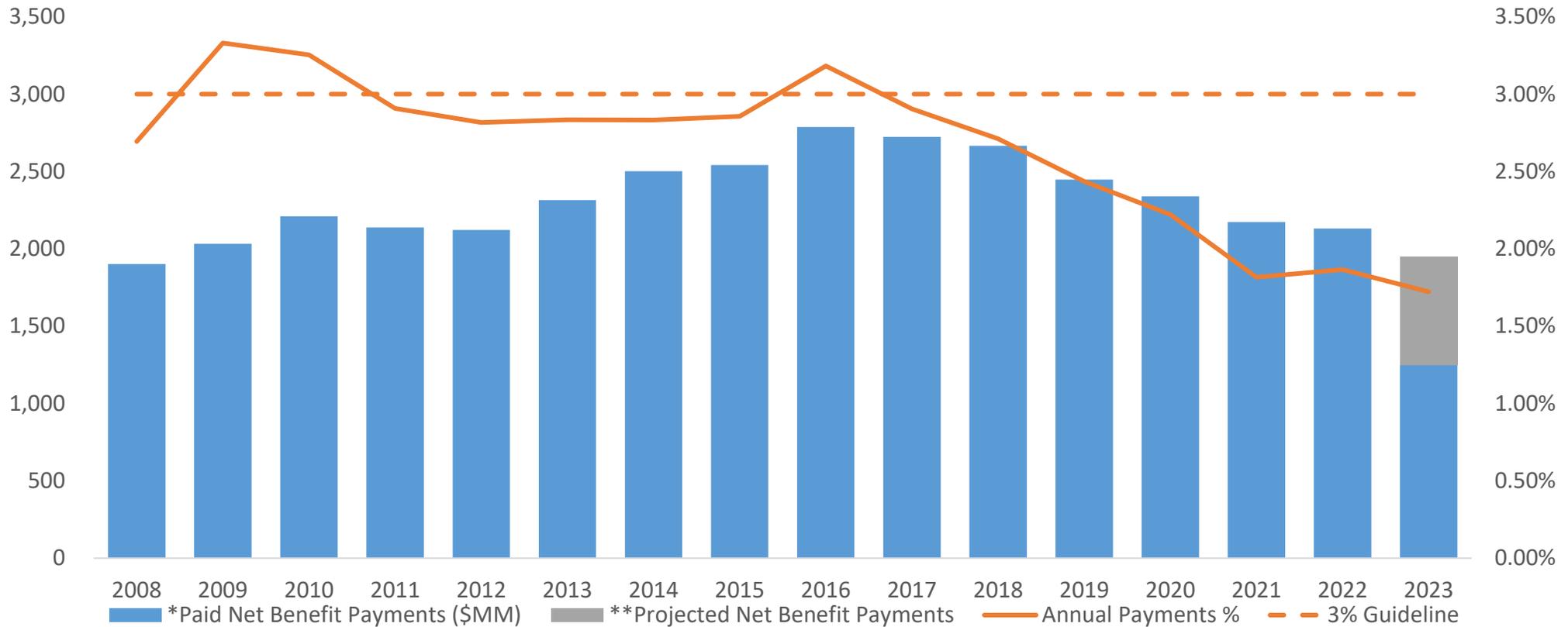


Note: ■ Level 1 Liquidity = T+3; ■ Level 2 = T+3 to 12 Months; ■ Level 3 = 12 to 24 Months; ■ Level 4 = Greater than 24 Months



NCRS Liquidity Profile

Net benefit payments by calendar year

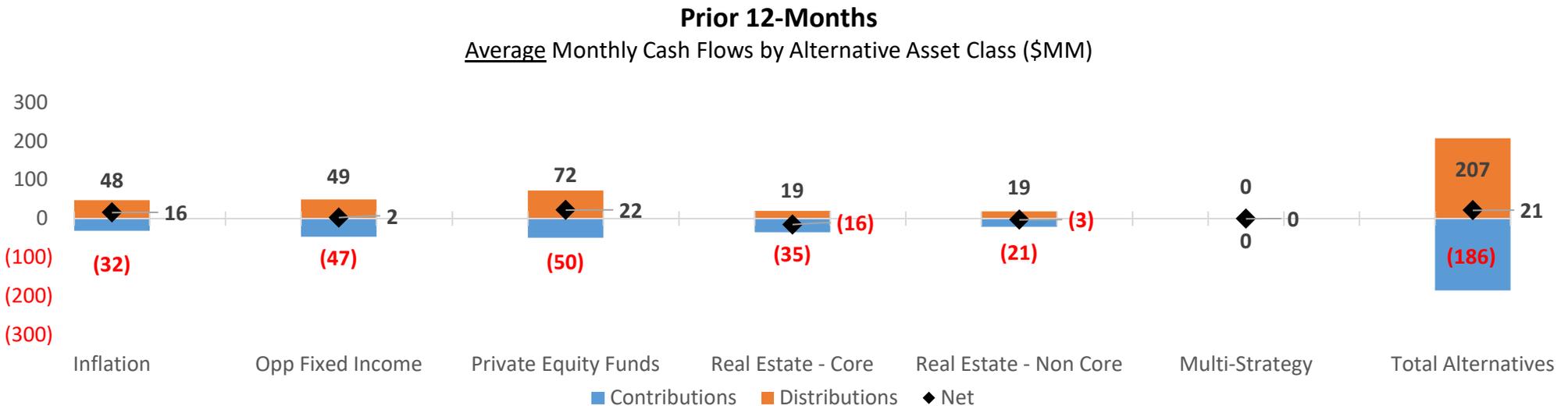
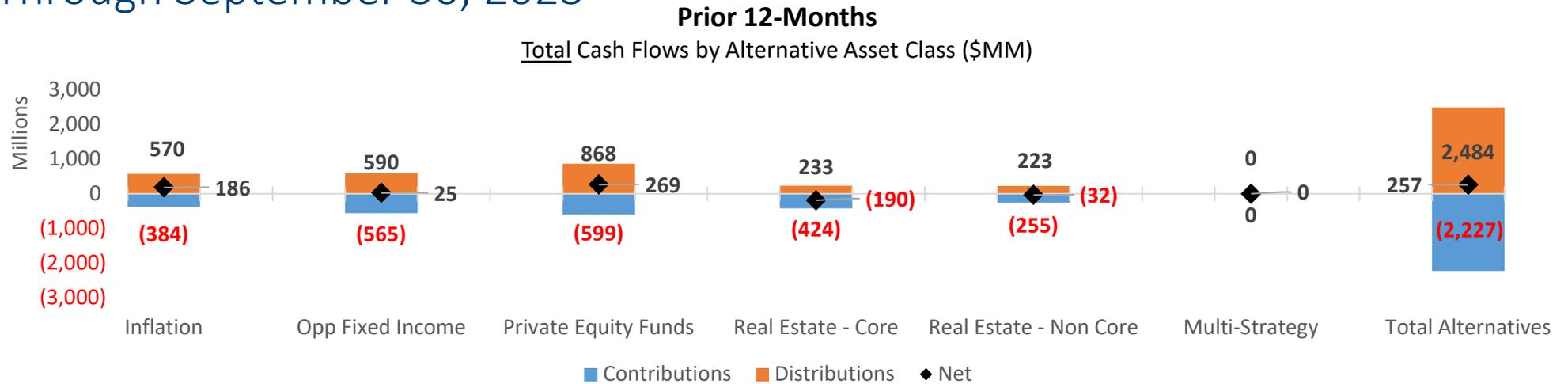


*Benefit payments exclude transfers from the Retiree Health Premium Fund as of January 1, 2022

**Projected Net Benefit Payments for remainder of calendar year

NCRS Alternatives Liquidity Profile

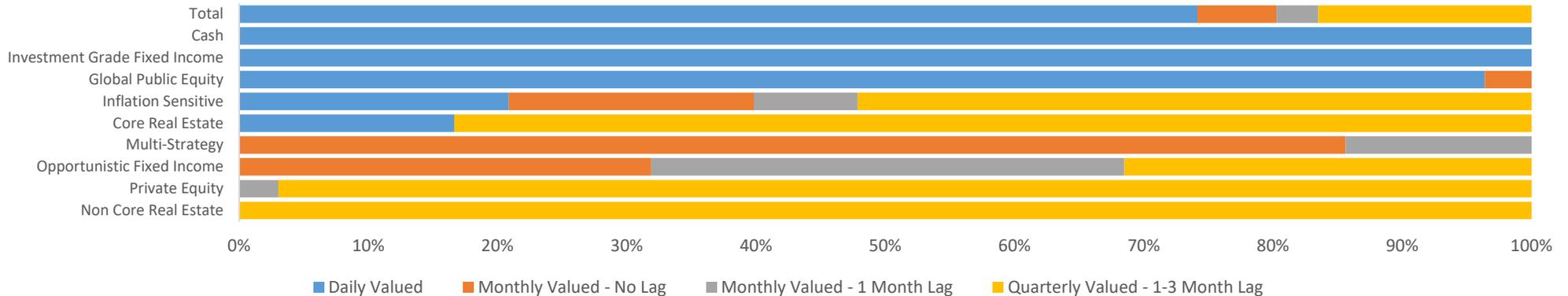
Through September 30, 2023



NCRS Valuation Lag Profile

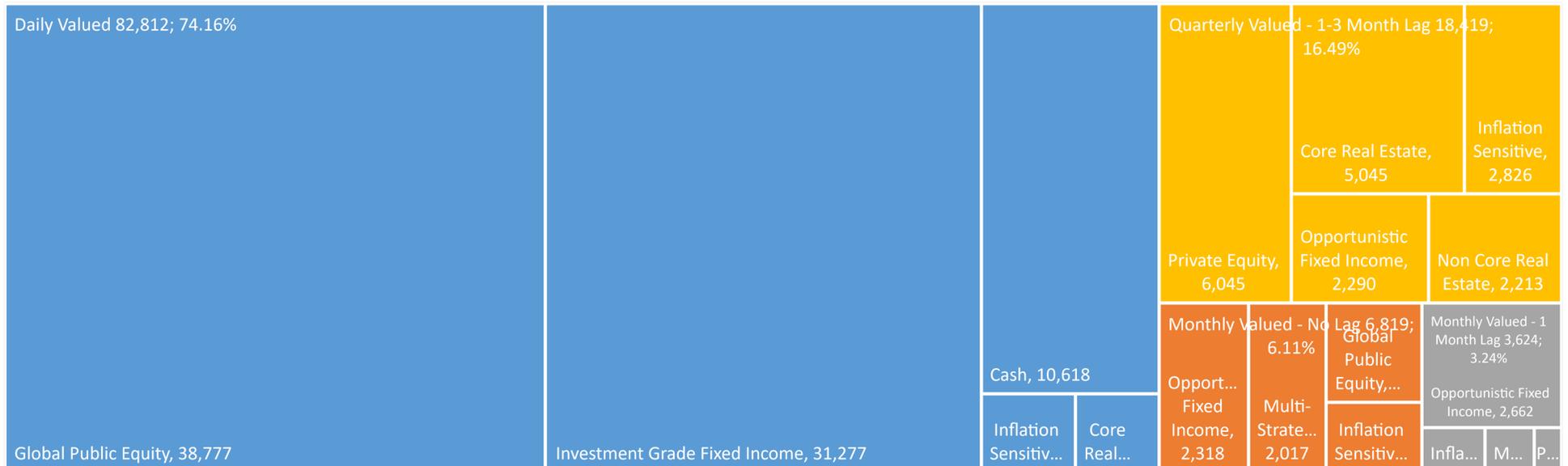
As of September 30, 2023

PORTFOLIO VALUATION LAG



VALUATION LAG BY PORTFOLIO

in Millions





NCRS Asset Class Net of Fees Performance

As of September 30, 2023

	Market Value (\$MM)	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
Growth	\$55,949	14.37	7.05	6.92	8.07	7.85	7.64
Benchmark ¹		15.50	7.96	6.78	7.35	7.17	7.16
Public Equity	\$40,232	20.72	5.15	6.24	7.61	8.02	7.55
Benchmark ²		20.16	6.82	6.05	7.21	7.39	7.02
Private Equity	\$6,234	0.48	16.07	13.59	12.78	9.58	9.82
Benchmark ³		2.17	15.38	11.78	11.10	9.33	11.95
Non-Core Real Estate	\$2,213	-12.40	5.26	4.60	9.46	3.85	6.74
Benchmark ⁴		-2.27	8.44	5.88	7.22	2.64	7.01
Opportunistic Fixed Income	\$7,269	6.47	9.54	5.41	5.24	6.34	-
Benchmark ⁵		11.21	7.08	5.06	3.55	2.62	-
Rates & Liquidity	\$41,895	1.11	-3.31	1.28	2.01	3.94	3.93
Benchmark ⁶		0.82	-5.94	0.15	1.53	3.38	3.48
IG Fixed Income	\$31,277	0.40	-5.31	0.58	1.68	3.72	3.76
Benchmark ⁷		0.10	-6.65	-0.19	1.37	3.28	3.40
Cash	\$10,618	3.83	1.53	1.68	1.29	-	-
Benchmark ⁸		4.60	1.74	1.67	1.09	-	-
Inflation Sensitive & Diversifiers	\$11,595	-1.31	7.10	4.58	4.55	2.44	4.22
Benchmark ⁹		-1.52	5.97	4.05	4.08	1.41	3.79
Inflation Sensitive	\$5,542	9.26	10.62	5.51	3.73	0.84	3.76
Benchmark ¹⁰		4.08	5.92	3.78	1.87	0.67	4.16
Core Real Estate	\$6,053	-9.38	4.29	4.12	6.09	5.08	5.96
Benchmark ¹¹		-7.96	5.92	4.29	6.72	4.86	6.42
Multi-Strategy	\$2,356	9.71	5.03	2.04	4.29	5.20	5.09
Benchmark ¹²		5.64	2.13	0.96	3.24	4.75	5.85
Total Pension Plan	\$111,796	7.21	2.91	4.33	5.50	6.26	6.19
Implementation Benchmark ¹³		8.54	3.39	4.50	5.25	5.84	5.87
Long-Term Policy Benchmark ¹⁴		9.97	1.64	4.19	4.85	5.58	6.09

See slide 43 for benchmark descriptions



NCRS Calendar Year Asset Class Return Diversification

As of September 30, 2023

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Public Equity 26.27%	Non-Core Real Estate 19.45%	Non-Core Real Estate 14.84%	Non-Core Real Estate 11.73%	Public Equity 24.44%	Private Equity 18.32%	Public Equity 27.91%	Public Equity 22.23%	Private Equity 48.03%	Inflation Sensitive 9.43%	Public Equity 9.65%
Multi-Strategy 22.61%	Private Equity 14.02%	Private Equity 9.20%	Public Equity 7.33%	Multi-Strategy 13.58%	Non-Core Real Estate 13.32%	Total Pension 14.88%	Private Equity 18.86%	Opportunistic Fixed Income 17.46%	Non-Core Real Estate 6.6%	Inflation Sensitive 7.59%
Opportunistic Fixed Income 16.56%	Core Real Estate 10.41%	Core Real Estate 8.28%	Inflation Sensitive 7.19%	Total Pension 13.53%	Inflation Sensitive 6.88%	Multi-Strategy 14.82%	Total Pension 11.30%	Non-Core Real Estate 16.75%	Core Real Estate 5.76%	Opportunistic Fixed Income 7.09%
Non-Core Real Estate 12.88%	IG Fixed Income & Cash 8.51%	Multi-Strategy 0.85%	Opportunistic Fixed Income 7.09%	Non-Core Real Estate 12.40%	Opportunistic Fixed Income 5.69%	Core Real Estate 10.71%	IG Fixed Income & Cash 9.34%	Public Equity 14.51%	Pension Cash 1.22%	Multi-Strategy 5.98%
Total Pension 12.28%	Total Pension 6.19%	Pension Cash 0.58%	Core Real Estate 6.68%	Private Equity 11.95%	Core Real Estate 5.67%	IG Fixed Income & Cash 10.33%	Opportunistic Fixed Income 2.85%	Core Real Estate 14.51%	Opportunistic Fixed Income (1.91%)	Total Pension 3.21%
Private Equity 11.72%	Public Equity 3.68%	Total Pension 0.29%	Total Pension 6.26%	Core Real Estate 10.12%	Pension Cash 1.88%	Non-Core Real Estate 9.93%	Pension Cash 1.06%	Inflation Sensitive 11.97%	Multi-Strategy (4.48%)	Pension Cash 3.13%
Core Real Estate 11.28%	Opportunistic Fixed Income 3.40%	IG Fixed Income & Cash 0.28%	Private Equity 6.05%	Inflation Sensitive 7.53%	IG Fixed Income & Cash (0.57%)	Private Equity 8.15%	Non-Core Real Estate 0.45%	Total Pension 9.71%	Private Equity (5.81%)	Private Equity 1.89%
Inflation Sensitive (1.32%)	Multi-Strategy 2.69%	Public Equity (1.26%)	Multi-Strategy 6.00%	Opportunistic Fixed Income 7.05%	Total Pension (1.47%)	Opportunistic Fixed Income 3.61%	Core Real Estate (0.13%)	Multi-Strategy 7.74%	Total Pension (10.39%)	IG Fixed Income & Cash (1.81%)
IG Fixed Income & Cash (3.49%)	Pension Cash 0.45%	Opportunistic Fixed Income (2.61%)	IG Fixed Income & Cash 3.24%	IG Fixed Income & Cash 4.42%	Multi-Strategy (4.79%)	Pension Cash 2.20%	Inflation Sensitive (3.50%)	Pension Cash 0.15%	IG Fixed Income & Cash (12.74%)	Core Real Estate (9.65%)
	Inflation Sensitive (0.65%)	Inflation Sensitive (9.05%)	Pension Cash 0.98%	Pension Cash 1.12%	Public Equity (9.32%)	Inflation Sensitive 2.09%	Multi-Strategy (4.13%)	IG Fixed Income & Cash (1.84%)	Public Equity (20.5%)	Non-Core Real Estate (10.48%)



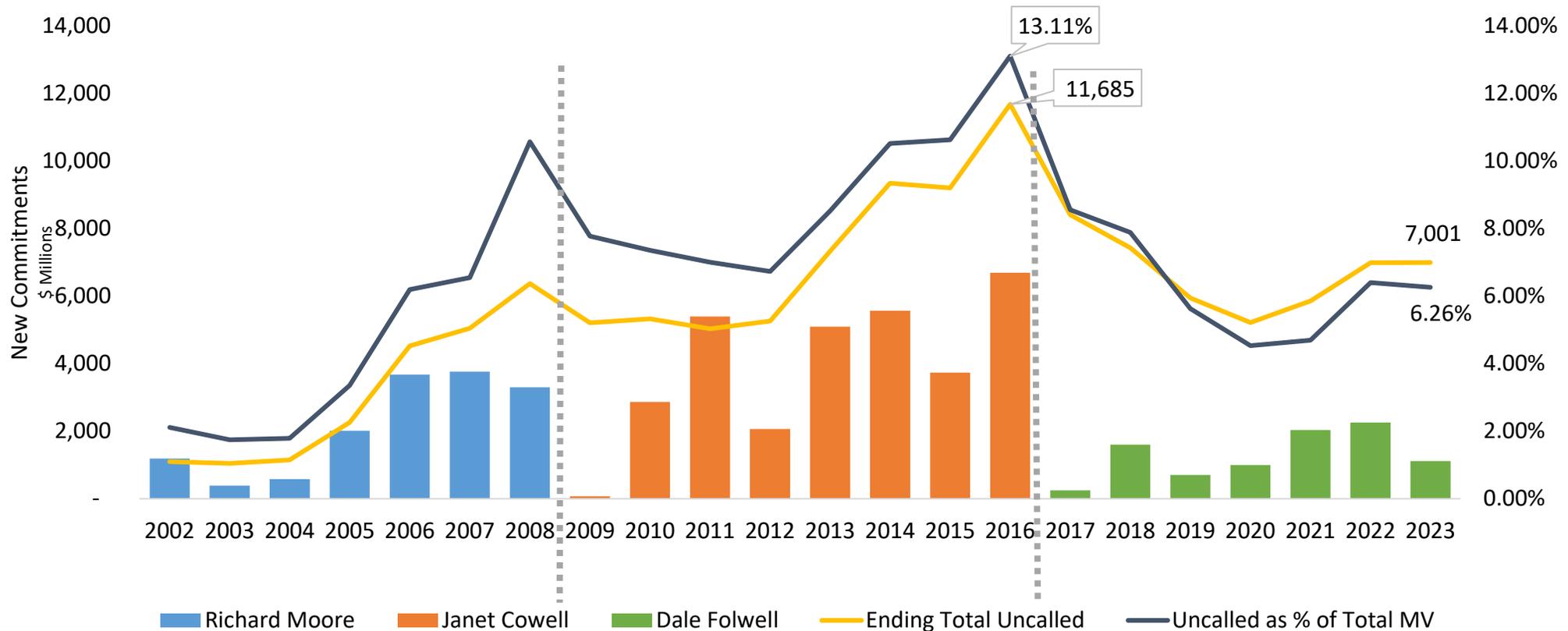
New, Incremental, & Unfunded Investment Commitments

Since August 23rd IAC Meeting As of September 30, 2023

<u>Fund Name</u>	<u>Firm Name</u>	<u>New or Incremental Commitment (\$MM)</u>	<u>Closing Date</u>
Public Equity			
Private Equity			
Non-Core Real Estate			
Opportunistic Fixed Income			
Inflation Sensitive			
Core Real Estate			
NorthRock Fund IV	Rockwood Capital	\$119	9/6/23
Multi-Strategy			

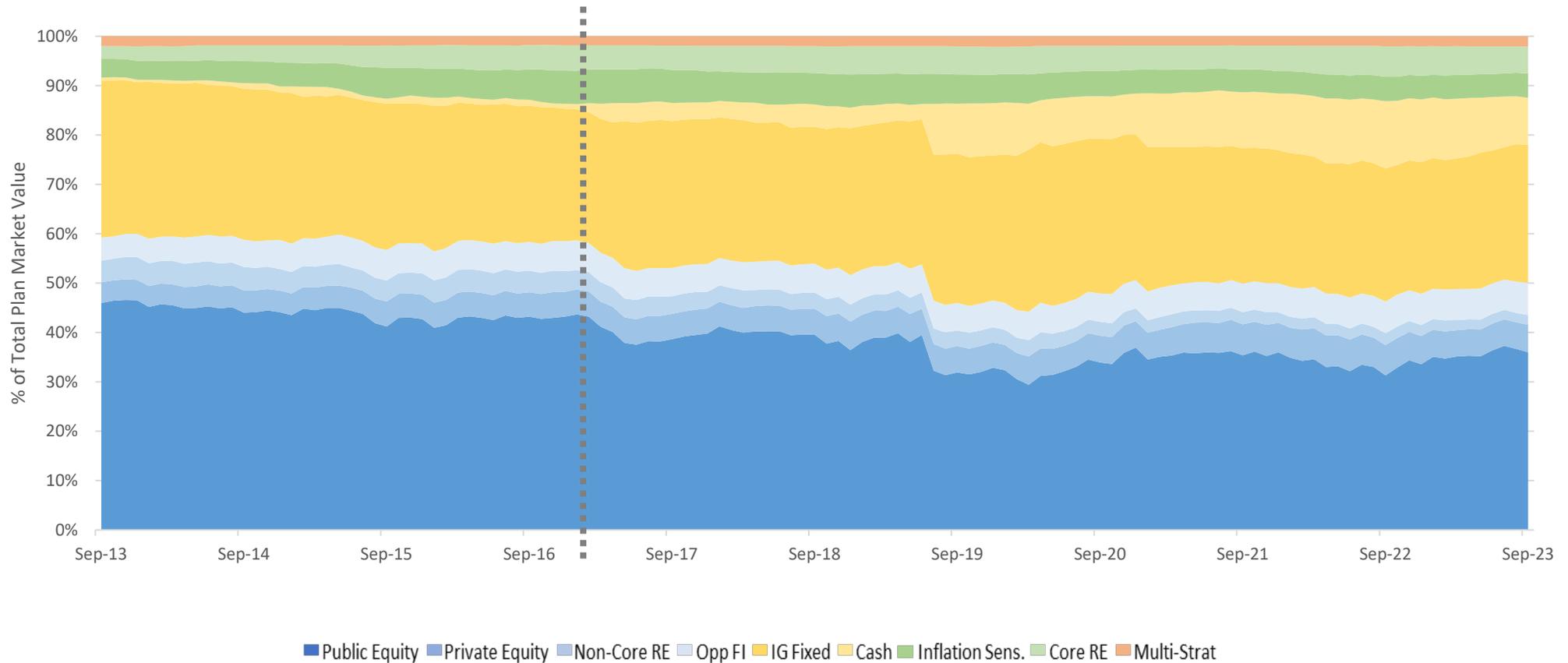
<u>Asset Class</u>	<u>Unfunded Commitments (\$MM)</u>
Public Equity	0
Private Equity	2,013
Non-Core Real Estate	1,483
Opportunistic Fixed Income	1,159
Inflation Sensitive	1,671
Core Real Estate	676
Multi Strategy	0
Total	7,001

New and Total Unfunded Private Asset Class Commitments By Calendar Year of Closing through September 30, 2023





Asset Allocation History as of September 30, 2023





Exited Investments

Since August 23rd IAC Meeting

<u>Fund Name</u>	<u>Redemption Amount (\$MM)</u>	<u>Redemption Effective</u>
Public Equity		
None		
Private Equity		
None		
Non-Core Real Estate		
None		
Opportunistic Fixed Income		
None		
Inflation Sensitive		
None		
Core Real Estate		
None		
Multi Strategy		
None		



Top 20 Investment Managers

As of September 30, 2023

	Manager	Market Value (\$)	Uncalled (\$)	% MV	% MV Cum.
1	Internal Fixed Income	41,894,731,936	-	37.5%	37.5%
2	Internal Equity	18,491,655,790	-	16.5%	54.0%
3	BlackRock, Inc.	8,922,174,049	-	8.0%	62.0%
4	Wellington Management	3,206,864,230	-	2.9%	64.9%
5	Baillie Gifford	2,951,662,411	-	2.6%	67.5%
6	Mondrian Investment Partners Limited	2,802,511,256	-	2.5%	70.0%
7	Blackstone Group	2,461,392,121	1,127,275,067	2.2%	72.2%
8	Rockwood Capital	2,433,186,713	251,600,595	2.2%	74.4%
9	Walter Scott & Partners	2,274,094,641	-	2.0%	76.4%
10	Ares Management	2,142,453,803	1,562,867,042	1.9%	78.3%
11	Gladius Capital Management LP	2,017,113,679	-	1.8%	80.1%
12	Angelo, Gordon & Co.	1,651,522,639	28,278,793	1.5%	81.6%
13	ValueAct Capital	1,453,373,934	-	1.3%	82.9%
14	HPS Investment Partners, LLC	1,241,808,287	95,287,626	1.1%	84.0%
15	LBA Realty	1,211,850,662	181,188,119	1.1%	85.1%
16	DoubleLine Capital LP	859,677,633	-	0.8%	85.9%
17	Campbell Group LLC, The	819,578,949	-	0.7%	86.6%
18	Earnest Partners	787,968,152	-	0.7%	87.3%
19	Monarch Alternative Capital	729,900,000	-	0.7%	88.0%
20	Marathon Asset Management	702,002,792	2,793,465	0.6%	88.6%
	78 Remaining Managers*	12,740,090,676	3,751,718,630	11.4%	100.0%
Total		111,795,614,354	7,001,009,337	100.0%	100.0%

*Manager count consists of all manager accounts with a market value greater than \$5.0 million and new, not yet funded, accounts.



Appendix



NCRS Public Equity Net of Fees Performance

As of September 30, 2023

	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	\$40,232	(3.98)	20.72	5.15	6.24	7.61
Benchmark ²		(3.40)	20.16	6.82	6.05	7.21
Domestic Portfolio	\$22,694	(3.29)	21.03	8.78	9.34	11.28
Russell 3000		(3.25)	20.46	9.38	9.14	11.28
Non-US Portfolio	\$17,536	(4.86)	20.31	1.13	2.88	4.17
Custom Benchmark		(3.49)	20.19	3.77	2.57	3.48

Russell 3000: Data is sourced from BNY Mellon

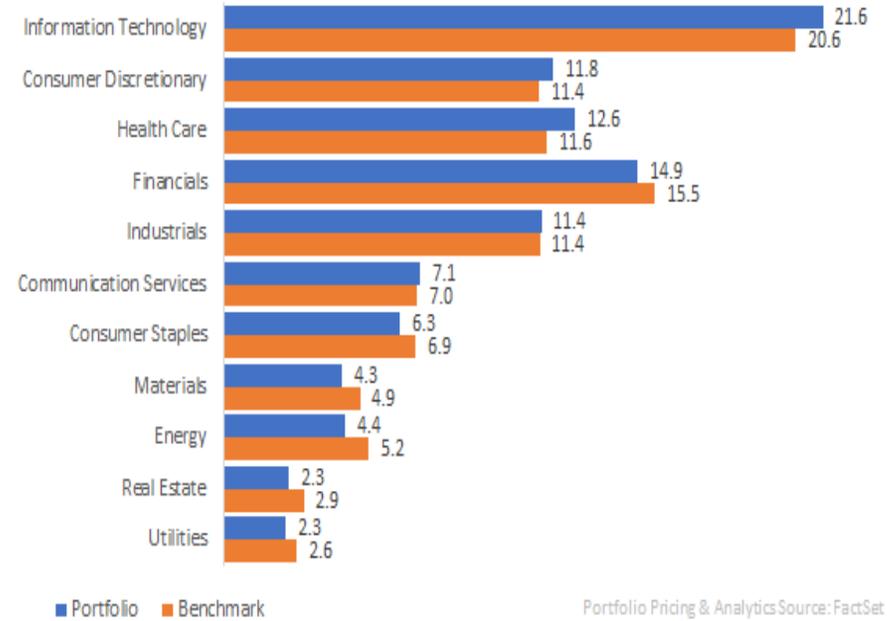
Non-US Custom Benchmark: As of October 2010, the Non U.S. Benchmark is the MSCI ACWI ex US IMI Net Index. Prior to October 2010, the Non-U.S. Benchmark was a blend of MSCI EAFE and MSCI Emerging Markets at policy weights. This data is also sourced from BNY Mellon

NCRS Public Equity Portfolio Characteristics

As of September 30, 2023

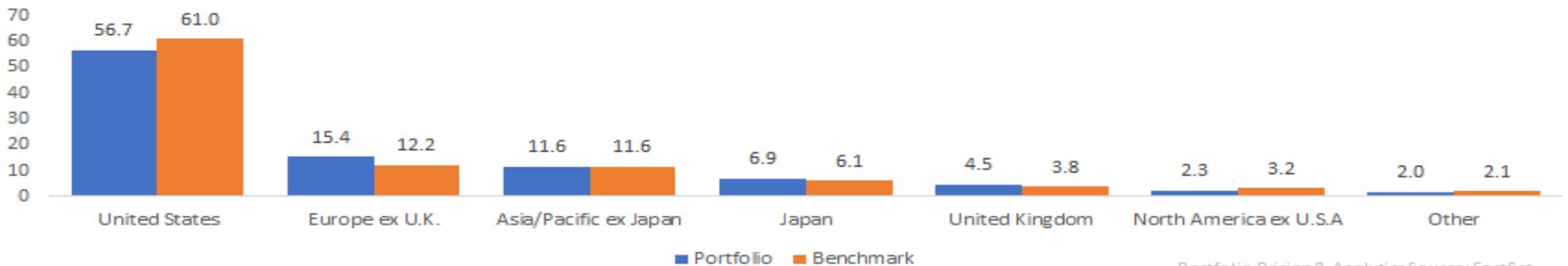
Portfolio Characteristics		
	Portfolio	MSCI ACWI IMI
Price/Earnings	18.0	16.5
Dividend Yield	2.0	2.2
Price/Book	2.7	2.4
Market Capitalization	361,166	362,482
Return On Equity	19.6	19.9

@FactSet Research Systems



Portfolio Pricing & Analytics Source: FactSet
Benchmark Pricing & Analytics Source: FactSet

Total Equity Regional Allocation



Portfolio Pricing & Analytics Source: FactSet
Benchmark Pricing & Analytics Source: FactSet



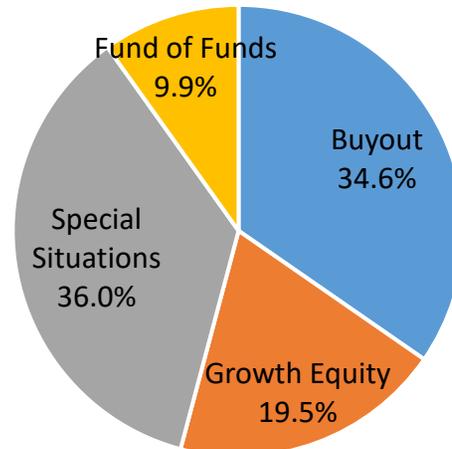
NCRS Private Equity Portfolio

As of September 30, 2023

Net of Fees Performance (%)						
	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Private Equity	\$6,234	1.17	0.48	16.07	13.59	12.78
Benchmark ³		1.17	2.17	15.38	11.78	11.10
Buyout	\$2,159	(0.70)	2.41	20.13	15.26	13.05
Growth	\$1,216	2.96	1.65	6.36	11.26	13.82
Special Situations	\$2,243	2.32	(0.95)	20.01	13.16	9.57
Fund of Funds	\$616	0.11	(4.06)	16.55	12.76	13.33

IRR by Vintage Year																						
	Pre-2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	12.03	6.82	5.11	3.42	9.36	10.15	8.84	19.74	8.63	13.69	12.32	14.59	18.49	22.13	19.26	17.28	N/A	-1.21	6.38	-1.96	-8.76	10.05
# of Funds	28	3	11	21	15	17	3	1	6	6	9	4	9	6	7	3	N/A	1	3	2	2	155

Strategy Allocation (Based on Valuation)



*Private Equity returns include a stock distribution account, in the amount of roughly \$2 million, which does not fall under any specific sub-section.



NCRS Non-Core Real Estate Portfolio

As of September 30, 2023

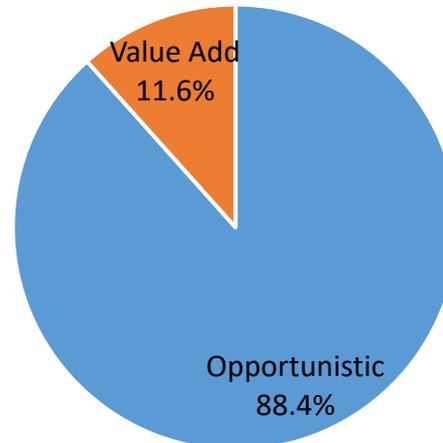
Net of Fees Performance (%)

	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Non-Core Real Estate	\$2,213	(2.70)	(12.40)	5.26	4.60	9.46
Benchmark ⁴		(0.58)	(2.27)	8.44	5.88	7.22
Opportunistic	\$1,956	(1.57)	(10.82)	6.16	5.49	9.68
Value Add	\$257	(10.67)	(22.84)	(0.55)	0.34	7.56

IRR by Vintage Year

	<u>Pre-2004</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Total</u>
NCRS	8.91	15.69	-1.47	2.76	2.03	15.31	N/A	15.90	17.22	14.27	11.64	2.54	7.91	9.40	N/A	13.62	21.83	N/A	N/A	-7.59	N/A	6.40
# of Funds	16	3	15	13	8	6	N/A	6	7	5	7	7	6	7	N/A	1	1	N/A	N/A	4	N/A	112

Strategy Allocation (Based on Valuation)





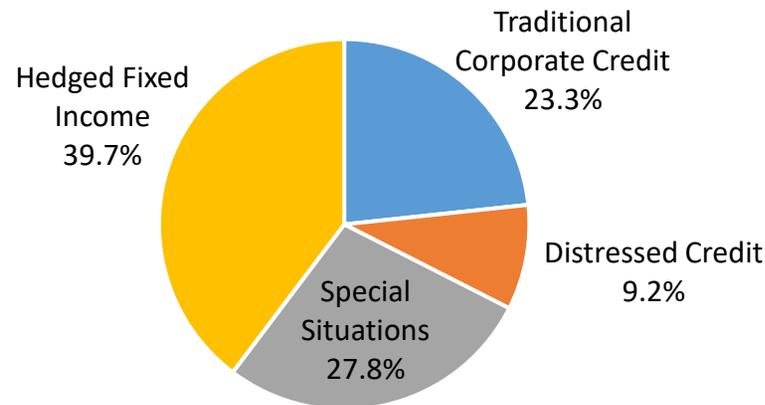
NCRS Opportunistic Fixed Income Portfolio

As of September 30, 2023

Net of Fees Performance (%)						
	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Opportunistic Fixed Income	\$7,269	3.44	6.47	9.54	5.41	5.24
Benchmark ⁵		1.00	11.21	7.08	5.06	3.55
Traditional Corporate Credit	\$1,694	5.26	8.68	6.77	5.14	5.50
Distressed Credit	\$667	3.35	6.10	13.47	8.36	8.33
Special Situations	\$2,022	2.53	6.92	11.60	6.65	7.86
Hedged Fixed Income	\$2,887	3.10	4.99	9.13	4.58	3.90

IRR by Vintage Year																				
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	2.87	N/A	16.91	7.49	22.42	4.97	4.94	3.58	5.08	3.64	8.30	7.39	11.41	N/A	7.80	14.22	9.02	5.22	8.40	6.11
# of Funds	1	N/A	1	3	1	4	9	2	7	3	1	8	2	N/A	1	2	1	2	1	49

Strategy Allocation (Based on Valuation)





NCRS Rates & Liquidity Portfolio

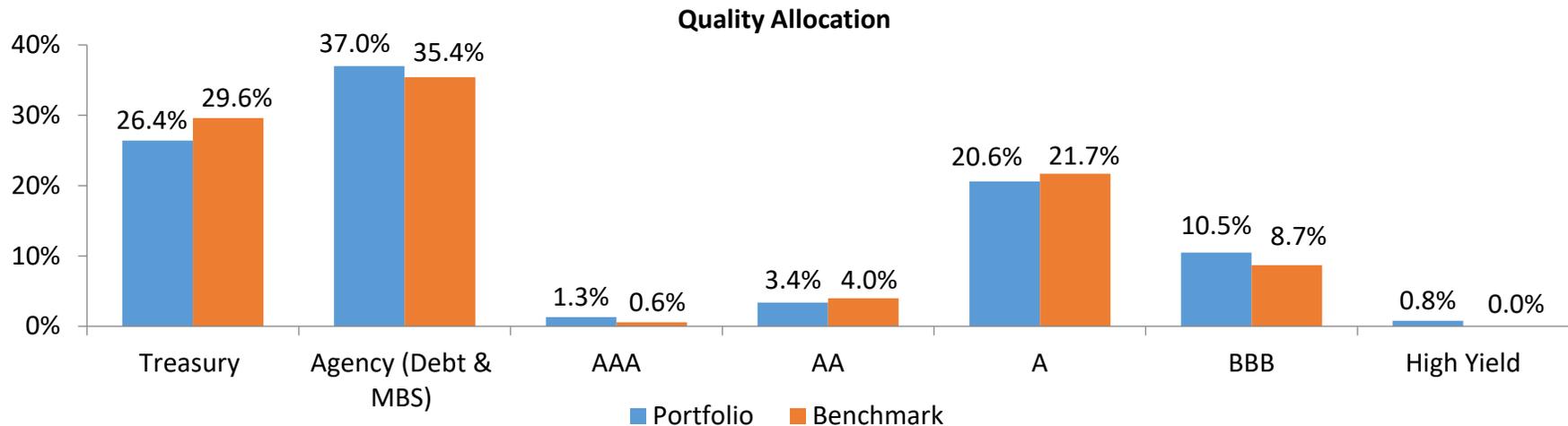
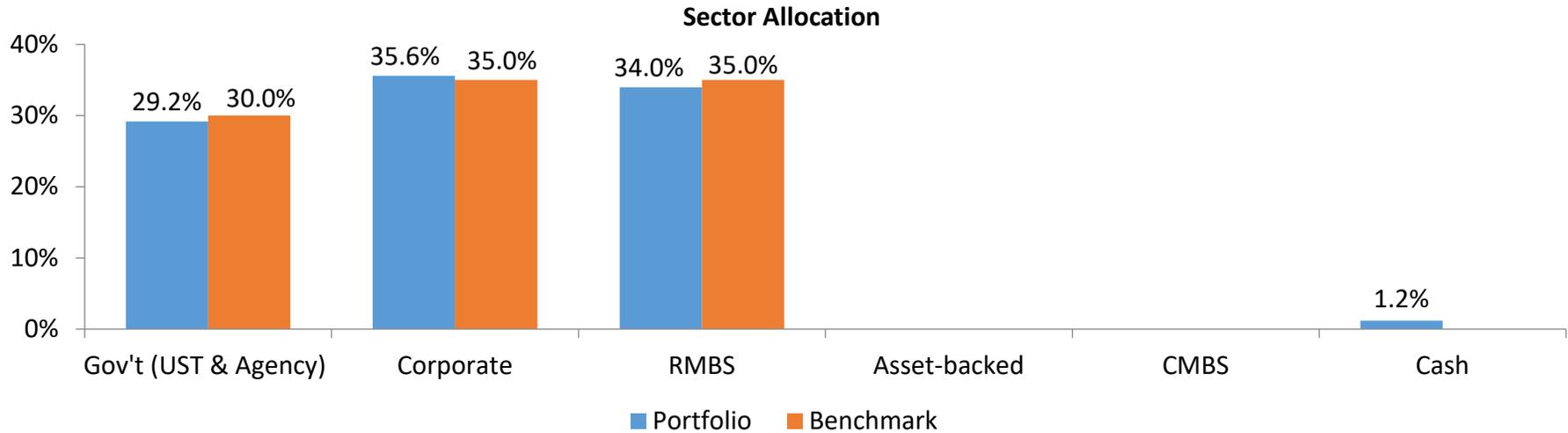
As of September 30, 2023

Net of Fees Performance (%)						
	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Rates & Liquidity	\$41,895	(2.74)	1.11	(3.31)	1.28	2.01
Benchmark ⁶		(3.85)	0.82	(5.94)	0.15	1.53
IG Fixed Income	\$31,277	(4.08)	0.40	(5.31)	0.58	1.68
Core Fixed Income	\$27,370	(4.77)	(0.05)	(6.17)	0.36	1.62
IG Fixed Income Cash	\$2,020	1.00	3.11	1.27	1.48	-
IG Short Credit	\$1,887	0.90	-	-	-	-
Pension Cash	\$10,618	1.18	3.83	1.53	1.68	1.29

Core Fixed Income Portfolio Characteristics			
	<u>Avg. Coupon</u>	<u>Yield to Worst</u>	<u>Effective Duration</u>
Government (Treasury & Agency)	3.6%	4.8%	10.5
Corporate	4.3%	5.9%	8.6
Mortgage	3.4%	5.5%	5.6
Total	3.8%	5.4%	8.1

NCRS Core Fixed Income Portfolio Characteristics

As of September 30, 2023



Benchmark: The Core Fixed Income Benchmark is a custom BOAML Core Investment Grade Index comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master



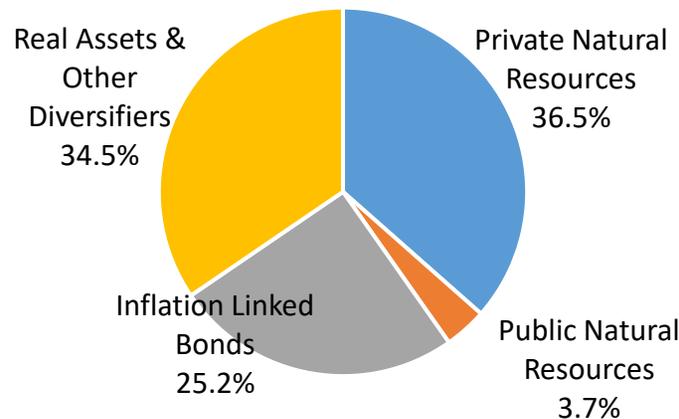
NCRS Inflation Sensitive Portfolio

As of September 30, 2023

Net of Fees Performance (%)						
	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Inflation Sensitive	\$5,542	1.74	9.26	10.62	5.51	3.73
Benchmark ¹⁰		0.26	4.08	5.92	3.78	1.87
Private Natural Resources	\$2,023	3.42	15.41	13.79	4.97	3.93
Public Natural Resources	\$207	4.54	(2.22)	16.43	5.45	(0.81)
Inflation Linked Bonds	\$1,399	2.22	6.30	2.84	2.91	-
Real Assets & Other Diversifiers	\$1,913	(0.69)	6.28	12.43	8.42	8.54

IRR by Vintage Year																			
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	1.68	-7.73	-5.67	N/A	-5.48	-5.73	5.81	7.08	7.46	8.44	3.11	10.01	23.51	31.61	N/A	39.05	N/A	-0.92	2.61
# of Funds	3	2	2	N/A	3	9	7	11	12	4	3	1	3	2	N/A	5	N/A	2	69

Strategy Allocation (Based on Valuation)





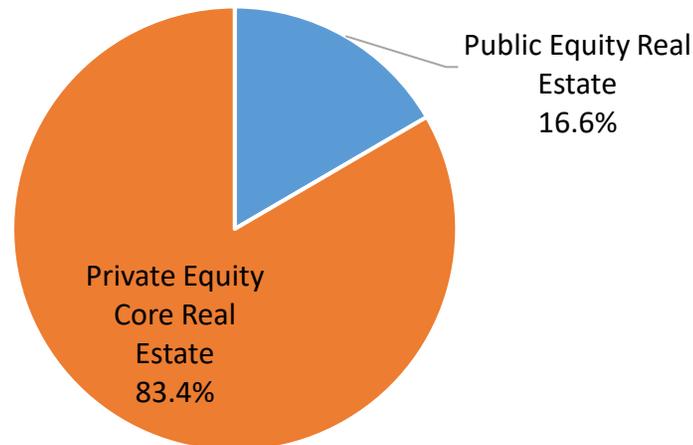
NCRS Core Real Estate Portfolio

As of September 30, 2023

Net of Fees Performance (%)						
	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Core Real Estate	\$6,053	(4.68)	(9.38)	4.29	4.12	6.09
Benchmark ¹¹		(3.33)	(7.96)	5.92	4.29	6.72
Public Equity Real Estate	\$1,005	(4.93)	3.63	(0.10)	0.20	3.71
Private Equity Core Real Estate	\$5,048	(4.62)	(11.10)	4.94	4.72	6.44

IRR by Vintage Year																						
	<u>Pre-2004</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Total</u>
NCRS	7.51	9.74	-8.33	4.22	1.39	6.89	N/A	23.62	N/A	N/A	4.87	4.69	3.64	5.80	N/A	15.77	N/A	N/A	8.19	N/A	N/A	6.38
# of Funds	5	1	1	2	3	1	N/A	1	N/A	N/A	2	6	2	9	N/A	1	N/A	N/A	3	N/A	N/A	37

Strategy Allocation (Based on Valuation)



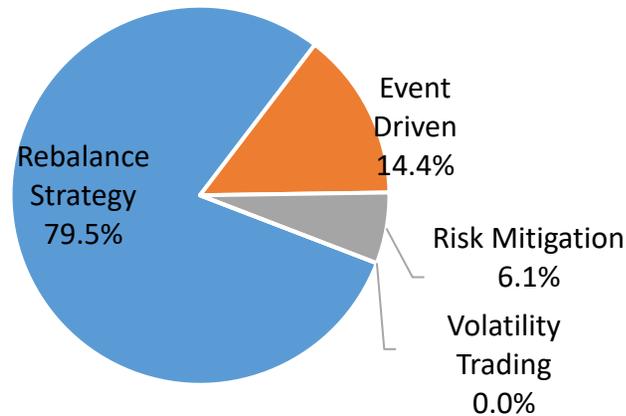


NCRS Multi-Strategy Portfolio

As of September 30, 2023

Net of Fees Performance (%)						
	(\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Multi-Strategy	\$2,356	0.12	9.71	5.03	2.04	4.29
Benchmark ¹²		(0.50)	5.64	2.13	0.96	3.24
Rebalance Strategy	\$1,874	(0.78)	10.99	4.31	2.90	5.34
Event Driven	\$339	4.42	5.94	11.46	4.36	-
Risk Mitigation	\$143	2.24	2.95	0.55	0.98	-
Volatility Trading	-	-	-	-	-	-

Strategy Allocation (Based on Valuation)



Notes:

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

1. The Growth Benchmark is a blend of the Public Equity Benchmark, Private Equity Benchmark, Non-Core Real Estate Benchmark, & Opportunistic FI Benchmark at policy weights.
2. The Public Equity Benchmark is a dynamically weighted combination of the MSCI ACWI IMI Net (Long-Only) and a beta adjusted MSCI ACWI IMI Net (Hedged Equity).
3. The Private Equity Benchmark is comprised of the following Burgiss Group Private iQ indices: Effective 7/1/2022 at 45% Buyout, 25% Venture Capital, and 30% Distressed.
4. The Non-Core Real Estate Benchmark is comprised of the following Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value-Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added).
5. The Opportunistic Fixed Income Benchmark is a comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML High Yield Index.
6. The Rates & Liquidity Benchmark is a blend of the IG Fixed Income & Cash Benchmark and the Pension Cash Benchmark at policy weights.
7. The IG Fixed Income & Cash Benchmark is comprised 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index. The custom BOAML core index comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master.
8. The Pension Cash Benchmark is the iMoneyNet First Tier Institutional Money Market Funds Net Index.
9. The Inflation Sensitive & Diversifiers Benchmark is a blend of the Inflation Sensitive Benchmark and the Core Real Estate Benchmark at policy weights.
10. The Inflation Sensitive Benchmark is the dynamically weighted combination of the Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index (TIPS), the Bloomberg Commodities Index (Commodities), and a combination of the benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers.
11. The Core Real Estate Benchmark is comprised of 80% Custom NCREIF ODCE Net Index and 20% FTSE EPRA NAREIT Global Index.
12. The Multi-Strategy Benchmark is comprised of a dynamically weighted combination of the HFRX ED: Multi-Strategy Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the Portfolio.
13. The Implementation Benchmark is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 55% Growth Benchmark, 33% Rates & Liquidity Benchmark, 11% Inflation Sensitive & Diversifiers Benchmark, and 1% Multi-Strategy Benchmark.
14. The Long-Term Policy Benchmark is comprised of 56% MSCI ACWI IMI Net, 28% BOAML 5+ Years U.S. Treasury Index, 6.5% Bloomberg Commodity Index, 5% BOAML 3 Month Treasury Bill Index, and 4.5% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.

*Source: BofA Merrill Lynch, used with permission. See disclaimer on next page.



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