NORTH CAROLINA
DEPARTMENT OF STATE TREASURER

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STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

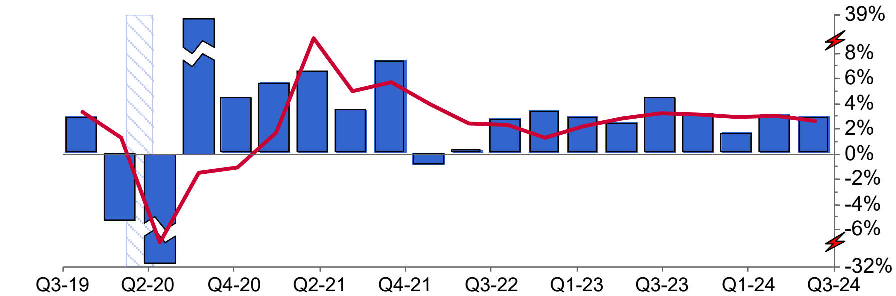
INVESTMENT MANAGEMENT DIVISION

Performance Review

November 20, 2024

US Economic Environment

US Real GDP Growth



Gross Domestic Product, Real %Chg P/P - United States
(% 1YR) Gross Domestic Product, Bil. Chained 2000 $, SAAR - United States

Recession Periods - United States
GDP outlier breaks at two standard deviations.

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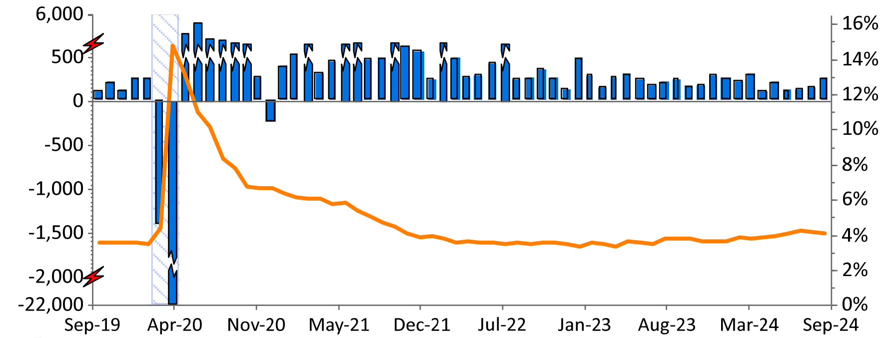
US Change in NonFarm Employment & Unemployment Rate



(DIFF 1M) All Employees, Thousands Total Nonfarm SA - United States (Left)
Unemployment Rate - Percent, SA - United States (Right)
Recession Periods - United States

Non-Farm employment outlier breaks at two standard deviations

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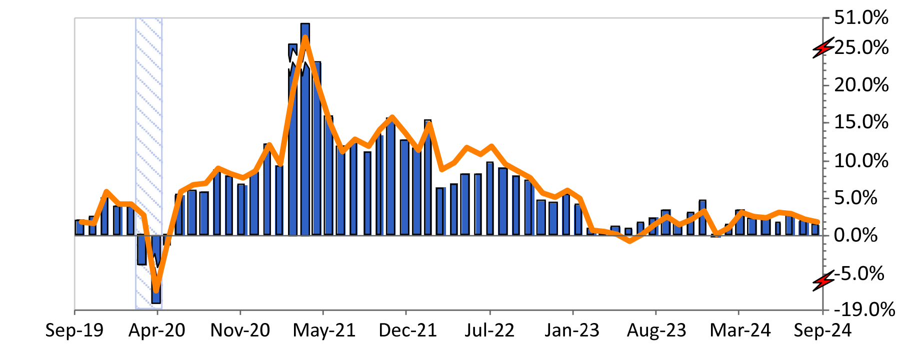
US Retail Sales



(% 1YR) Retail Sales, Total, SA
(% 1YR) Retail Sales, Ex. Motor Vehicle & Parts Dealers, SA
Recession Periods - United States
Retail Sales Total outlier breaks at two standard deviations.

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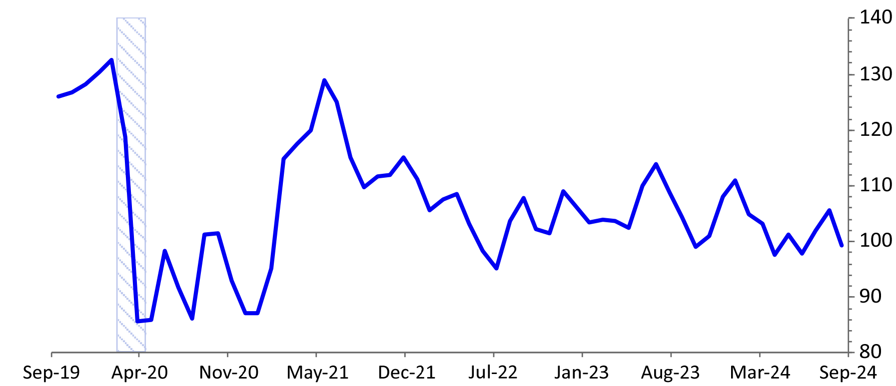
US Consumer Confidence



Composite Series: Index Numbers, 1985=100, Consumer Confidence Index - United States
Recession Periods - United States

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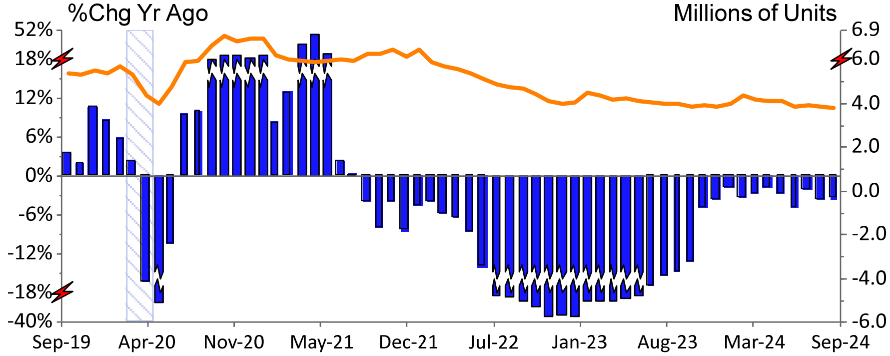
US Economic Environment

US Existing Home Sales



(% 1YR) Existing Home Sales, Housing Units, SAAR - United States (Left)
Existing Home Sales, Housing Units, SAAR - United States / 1000000 (Right)
Recession Periods - United States
Existing Home Sales outlier breaks at two standard deviations

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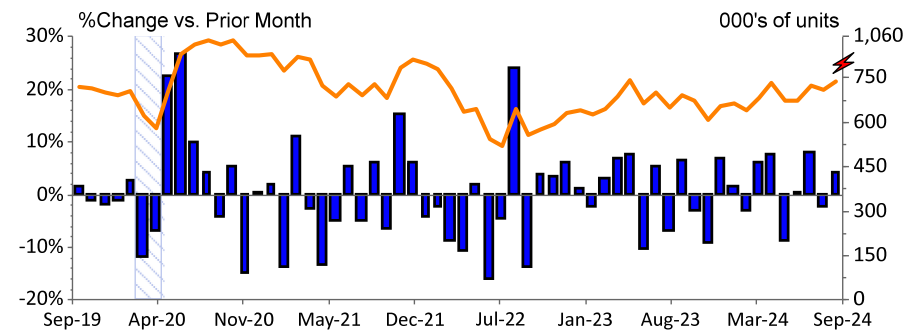
US New Home Sales



(% 1M) New Residential Sales, New Houses Sold, Total, SA - United States (Left)
New Residential Sales, New Houses Sold, Total, SA - United States (Right)
Recession Periods - United States
New Residential Sales outlier break is at two standard deviations

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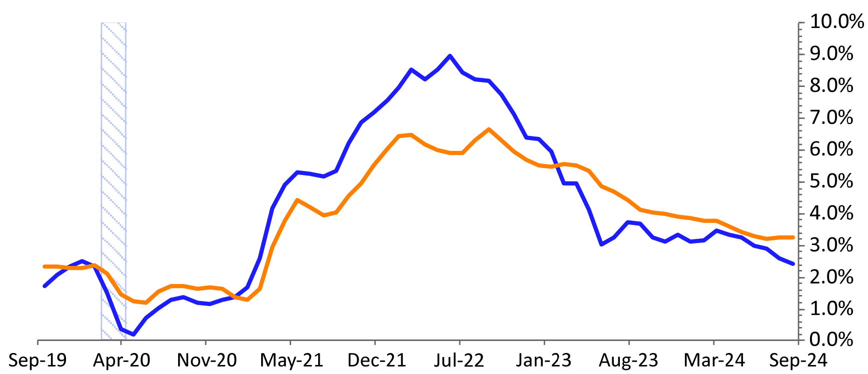
US Consumer Price Inflation



(% 1YR) Cpi All Items SA 1982-84=100
(% 1YR) Cpi All Items Less Food And Energy (Core) SA 1982-84=100
Recession Periods - United States

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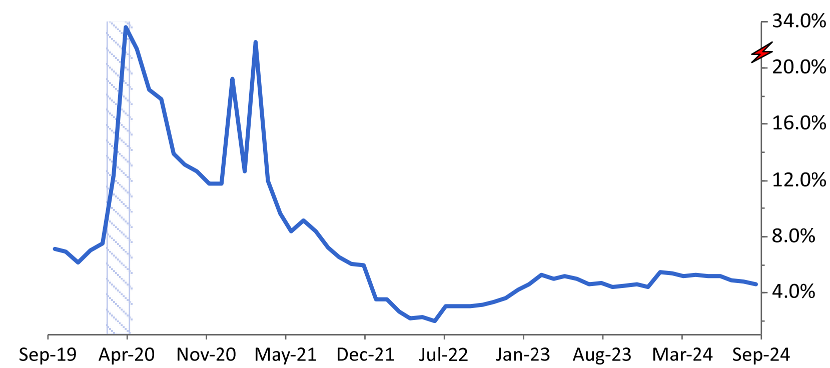
US Personal Savings Rate



(Bil. $) Personal Inc., Personal Saving As % of Disposable Personal Inc., Bil. $, SAAR, Bil. $, SAAR- U.
Recession Periods - United States
Personal Savings outlier breaks at two standard deviations.

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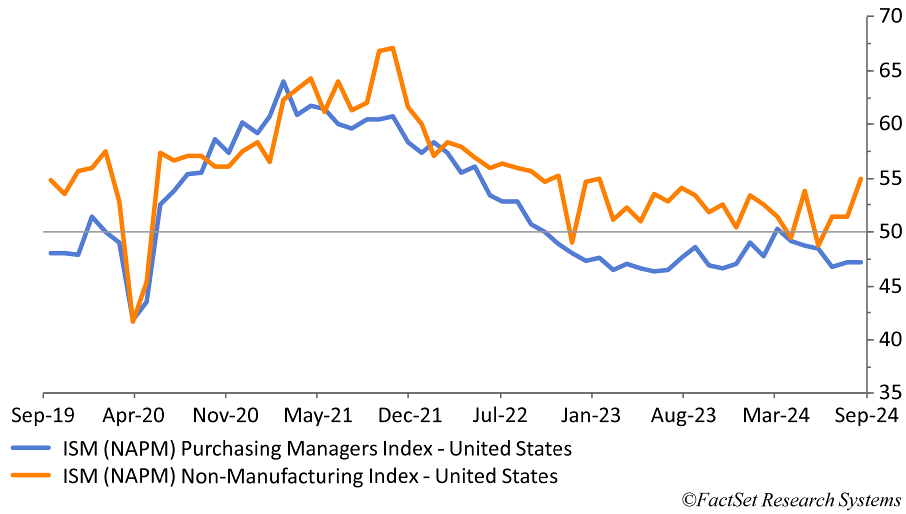
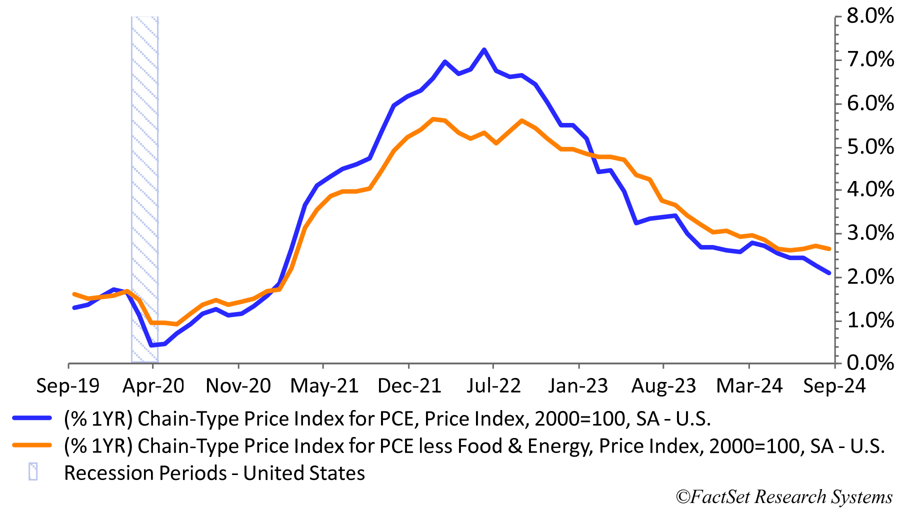
US and Global Economic Environment

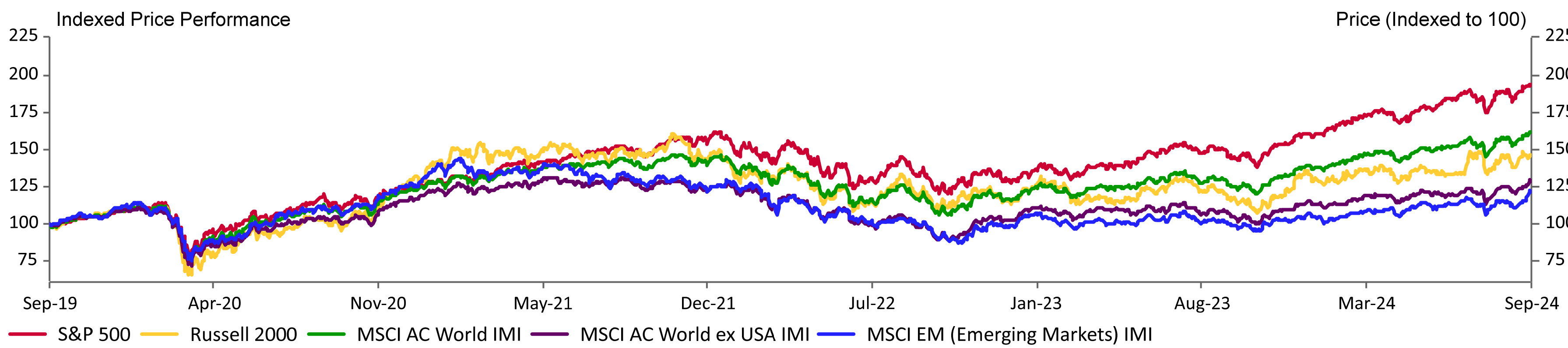
ISM Report on Business



US PCE Inflation



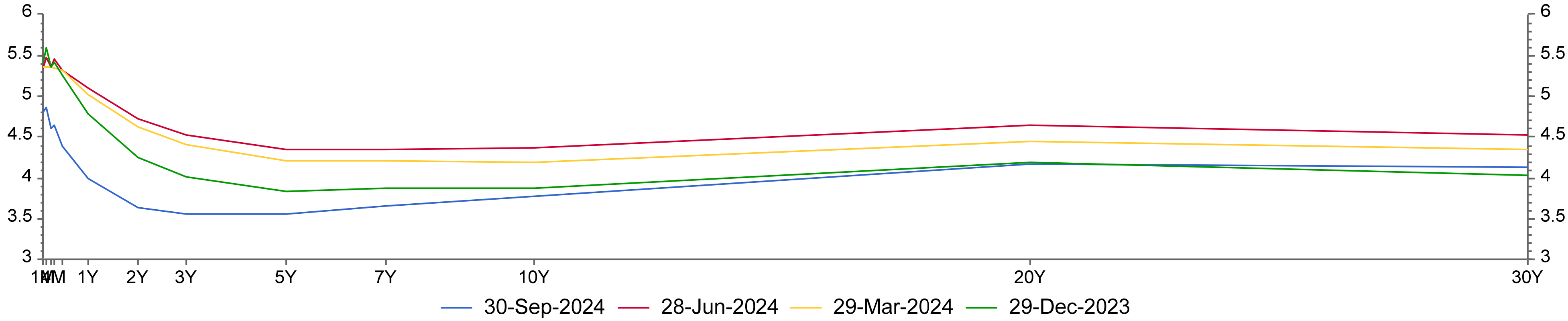
S&P 500 vs. Peers



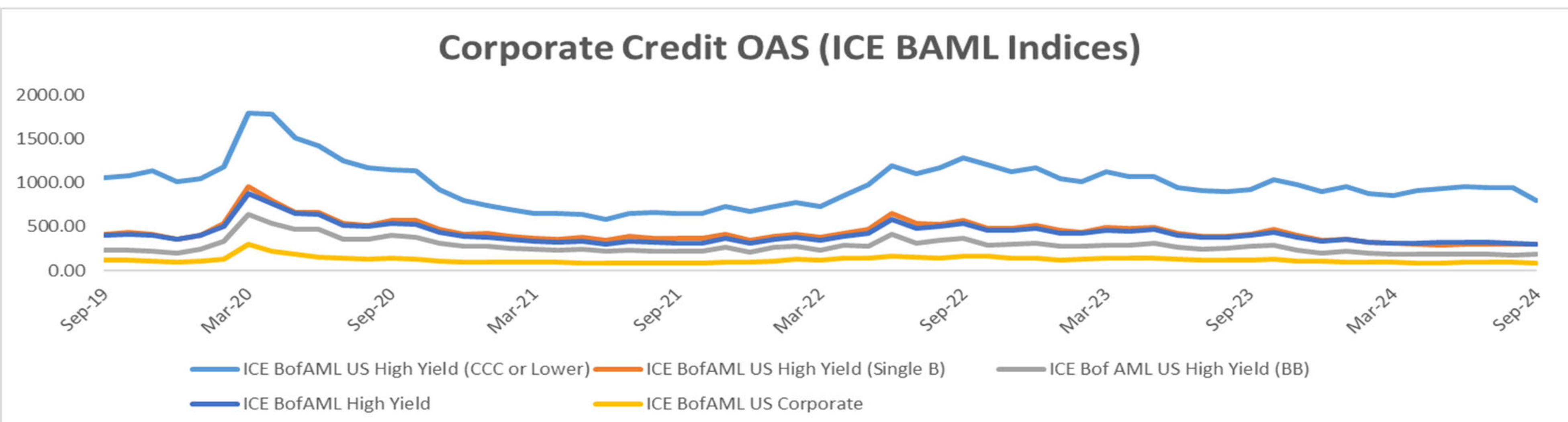
Source: FactSet Prices

Market Environment

United States Treasury Yield Curve



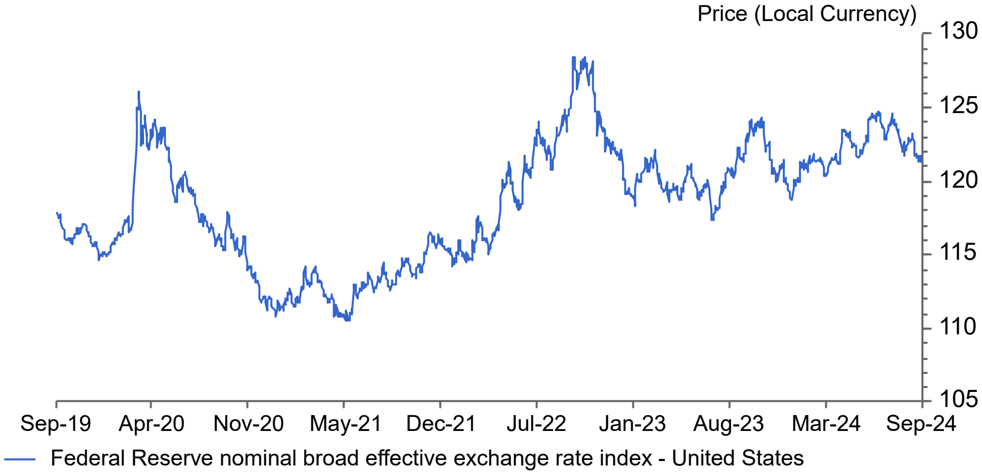
Source: FactSet Interest Rate Database



Source: Bloomberg

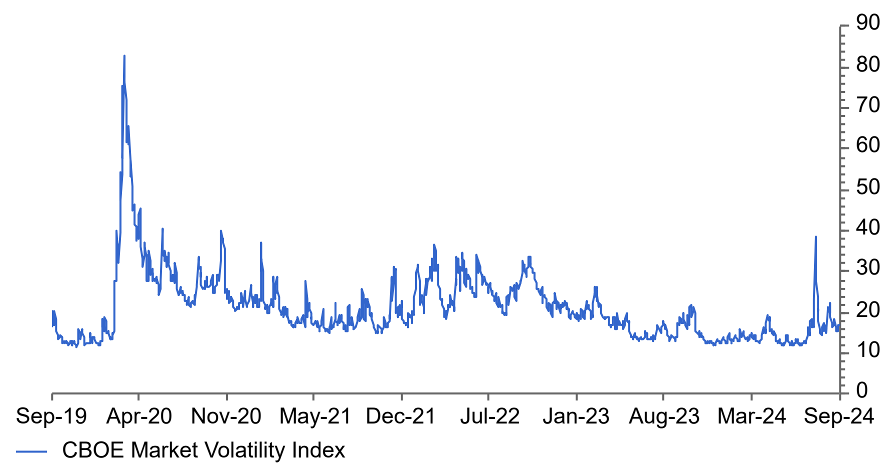
Market Environment

Closing Price Fed Nominal Broad Dollar Index



Source: FactSet Prices

Closing Price CBOE VIX Index



Source: FactSet Prices

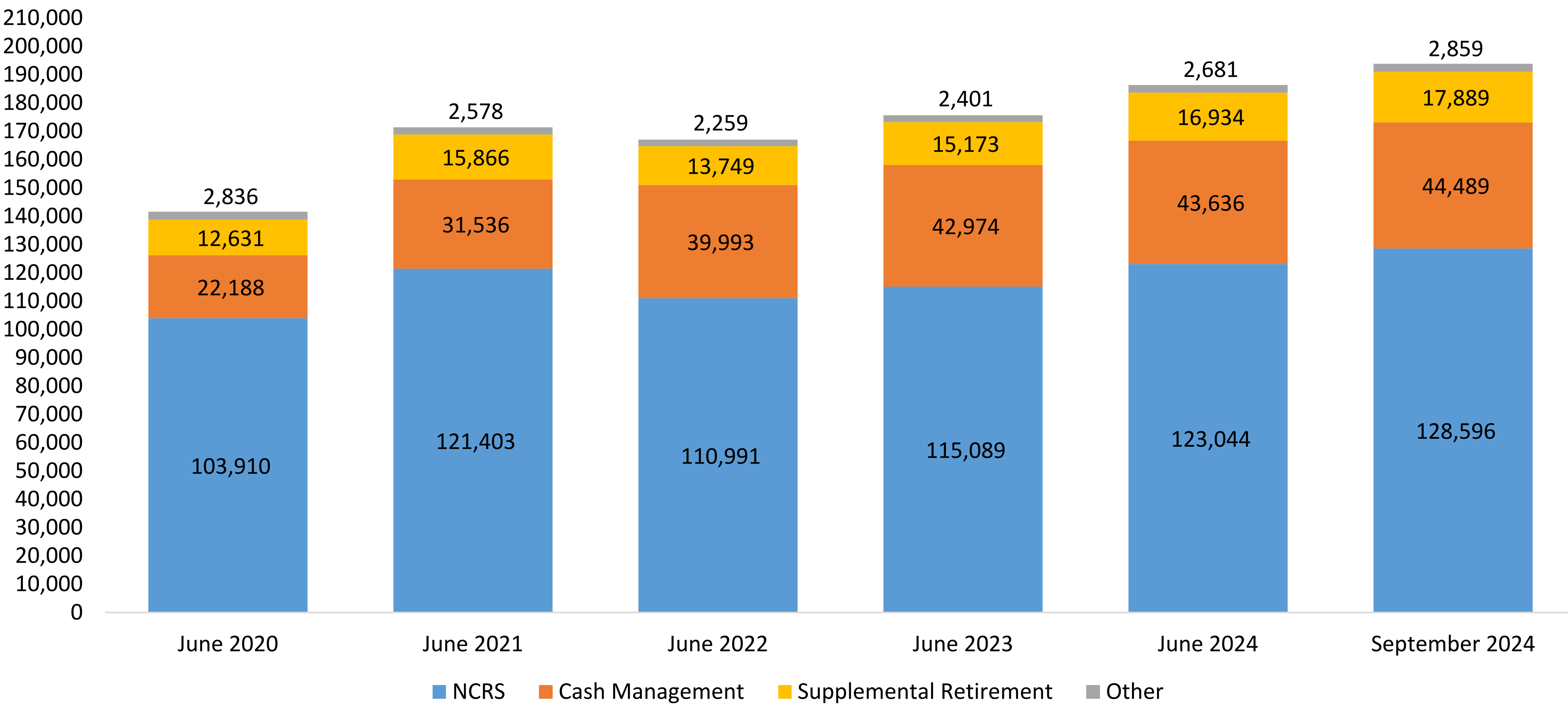
	Real GDP YoY		Unemployment		CPI YoY	
Countries	Date	Value	Date	Value	Date	Value
U.S.	09/24	2.7	09/24	4.1	09/24	2.4
Europe						
Germany	09/24	-0.2	09/24	6.1	09/24	1.6
France	09/24	1.3	08/24	7.5	09/24	1.1
U.K.	06/24	0.7	08/24	4.0	09/24	1.7
Italy	09/24	0.4	08/24	6.2	09/24	0.7
Spain	09/24	3.4	08/24	11.3	09/24	1.5

	Real GDP YoY		Unemployment		CPI YoY	
Countries	Date	Value	Date	Value	Date	Value
Asia/Pacific/Latam						
China	09/24	4.6			09/24	0.4
India	06/24	6.7			08/24	2.4
Japan	06/24	-1.0	09/24	2.4	09/24	2.5
Indonesia	06/24	5.1			09/24	1.8
Brazil	06/24	3.3			09/24	4.4
Australia	06/24	1.0	09/24	4.1	09/24	2.8

Source: Bloomberg

Assets Under Management ($MM)

$193.8 billion as of September 30, 2024



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, 2024

	Market Value ($000)	%	Target	Range Minimum	Range Maximum	Relative %	Relative $ ($000)
Growth	**68,922,566**	**53.60%**	**55.0%**	**33.0%**	**68.0%**	**-1.40%**	**($1,805,294)**
Public Equity	52,892,479	41.13%	38.0%	33.0%	43.0%	3.13%	4,025,958
Private Equity	6,091,073	4.74%	7.0%	0.0%	8.75%	-2.26%	(2,910,655)
Non Core Real Estate	2,106,858	1.64%	3.0%	0.0%	8.0%	-1.36%	(1,751,025)
Opportunistic Fixed Income	7,832,155	6.09%	7.0%	0.0%	7.5%	-0.91%	(1,169,572)
Rates & Liquidity	**44,775,034**	**34.82%**	**33.0%**	**23.0%**	**48.0%**	**1.82%**	**2,338,318**
IG Fixed Income & Cash	35,406,511	27.53%	28.0%	23.0%	33.0%	-0.47%	(600,400)
Pension Cash	9,368,524	7.29%	5.0%	0.0%	15.0%	2.29%	2,938,718
Inflation Sensitive & Diversifiers	**12,247,627**	**9.52%**	**11.0%**	**4.0%**	**16.0%**	**-1.48%**	**(1,897,945)**
Inflation Sensitive	5,811,294	4.52%	6.0%	2.0%	7.5%	-1.48%	(1,904,473)
Core Real Estate	6,436,334	5.01%	5.0%	2.0%	10.0%	0.01%	6,528
Multi-Strategy	**2,650,881**	**2.06%**	**1.0%**	**0.0%**	**4.0%**	**1.06%**	**1,364,920**
Grand Total	**128,596,109**	**100.00%**					

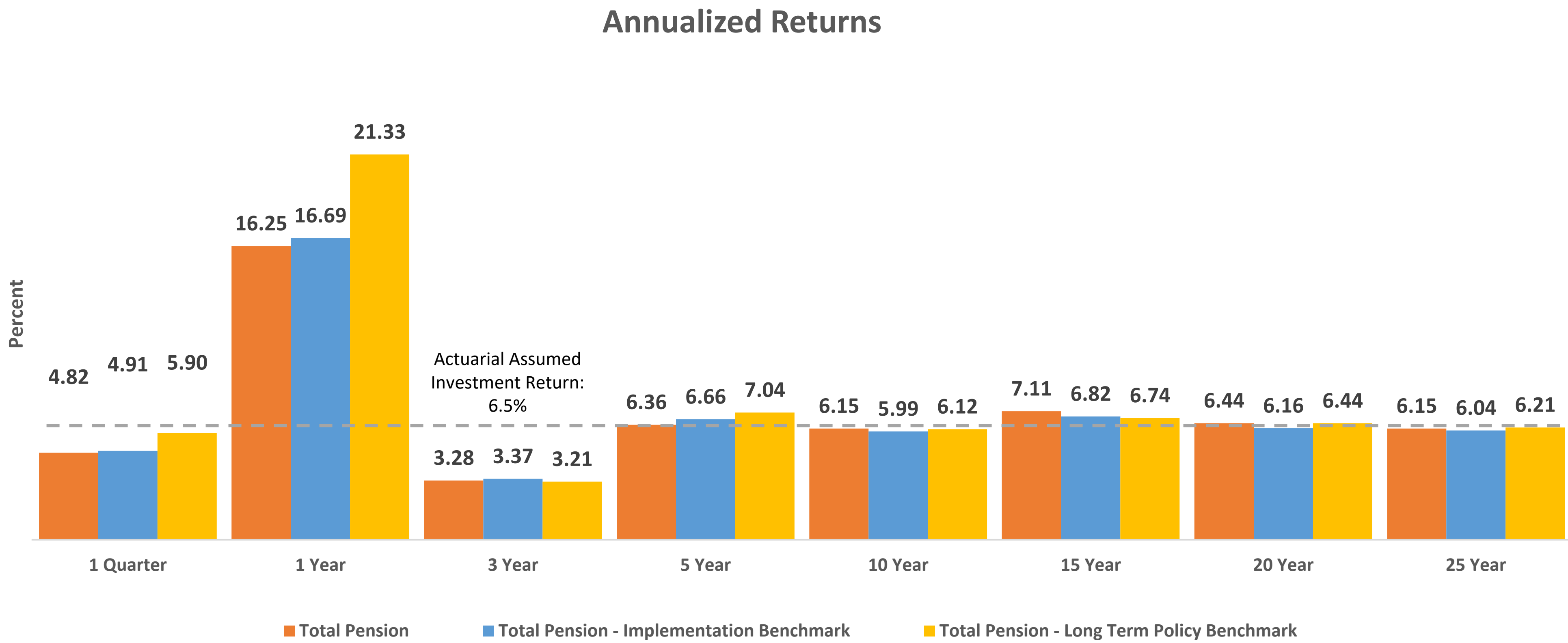
NCRS Asset Allocation (Preliminary)

As of November 13, 2024

	Market Value ($000)	%	Target	Range Minimum	Range Maximum	Relative %	Relative $ ($000)
Growth	**68,848,839**	**54.12%**	**55.0%**	**33.0%**	**68.0%**	**-0.88%**	**(1,120,893)**
Public Equity	52,886,309	41.57%	38.0%	33.0%	43.0%	3.57%	4,543,585
Private Equity	6,030,487	4.74%	7.0%	0.0%	8.75%	-2.26%	(2,874,752)
Non Core Real Estate	2,091,017	1.64%	3.0%	0.0%	8.0%	-1.36%	(1,725,514)
Opportunistic Fixed Income	7,841,026	6.16%	7.0%	0.0%	7.5%	-0.84%	(1,064,212)
Rates & Liquidity	**43,566,471**	**34.25%**	**33.0%**	**23.0%**	**48.0%**	**1.25%**	**1,584,631**
IG Fixed Income & Cash	34,235,795	26.91%	28.0%	23.0%	33.0%	-1.09%	(1,385,160)
Pension Cash	9,330,676	7.33%	5.0%	0.0%	15.0%	2.33%	2,969,791
Inflation Sensitive & Diversifiers	**12,160,572**	**9.56%**	**11.0%**	**4.0%**	**16.0%**	**-1.44%**	**(1,833,375)**
Inflation Sensitive	5,799,104	4.56%	6.0%	2.0%	7.5%	-1.44%	(1,833,958)
Core Real Estate	6,361,468	5.00%	5.0%	2.0%	10.0%	0.00%	584
Multi-Strategy	**2,641,813**	**2.08%**	**1.0%**	**0.0%**	**4.0%**	**1.08%**	**1,369,637**
Grand Total	**127,217,696**	**100.00%**					

NCRS Total Net Portfolio Return vs. Benchmarks

As of September 30, 2024



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% ICE BofA 5+ Years U.S. Treasury Index, 6.5% Bloomberg Commodity Index, 5% ICE BofA 3 Month Treasury Bill Index, and 4.5% ICE BofA 1-3 Years U.S. Inflation-Linked Treasury Index.

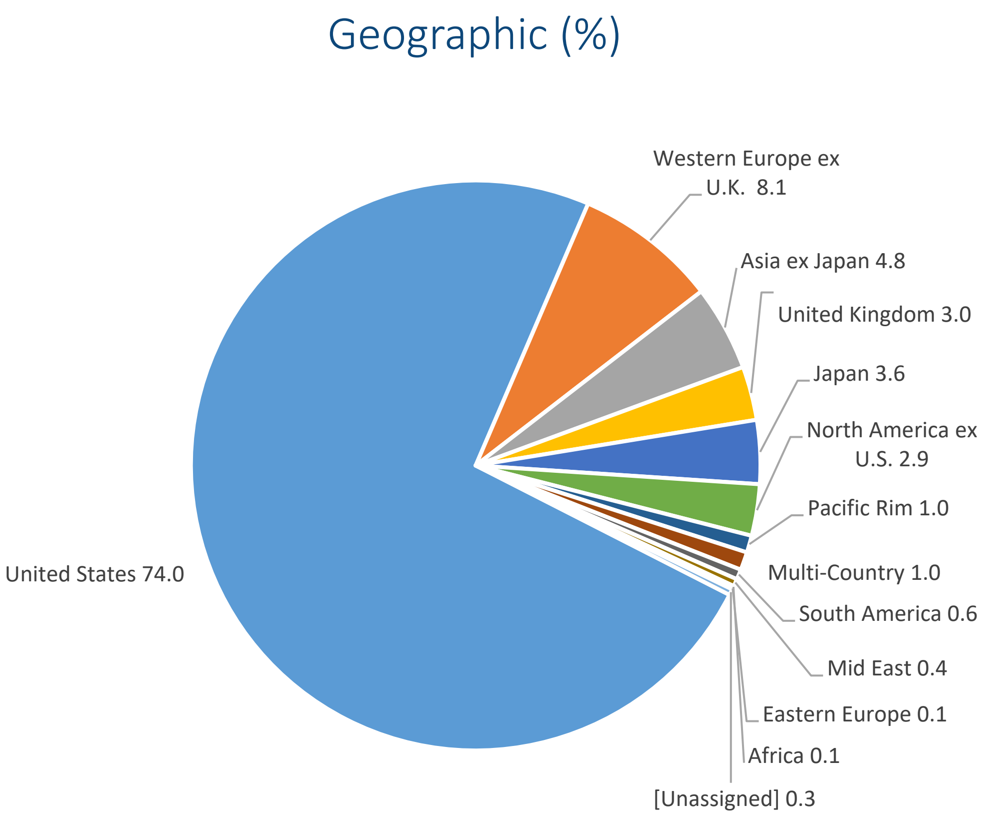
NCRS Strategy Breakout

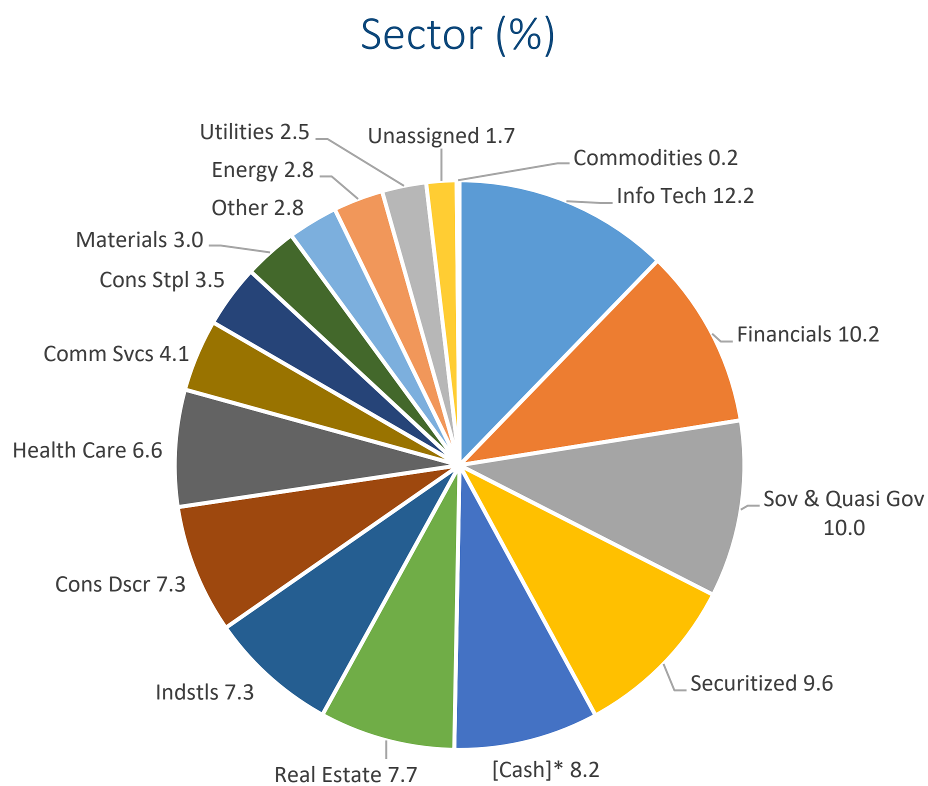
As of September 30, 2024

Portfolio	Managers*	Active Funds
Public Equity:	11	17
Pvt Equity:	37	91
Opportunistic FI:	22	37
Non-Core RE:	17	59
Investment Grade FI:	1	6
Pension Cash:	1	1
Inflation Sensitive:	22	46
Core RE:	7	20
Multi-Strategy:	2	4

*Manager count consists of all manager accounts with a market value greater than $5.0 million.

Portfolio Geographical and Sector Exposures





* This report is looking through the STIF account and classifying the underlying securities. [Cash] consists of money market funds, currency, liabilities and temporary cash entries.

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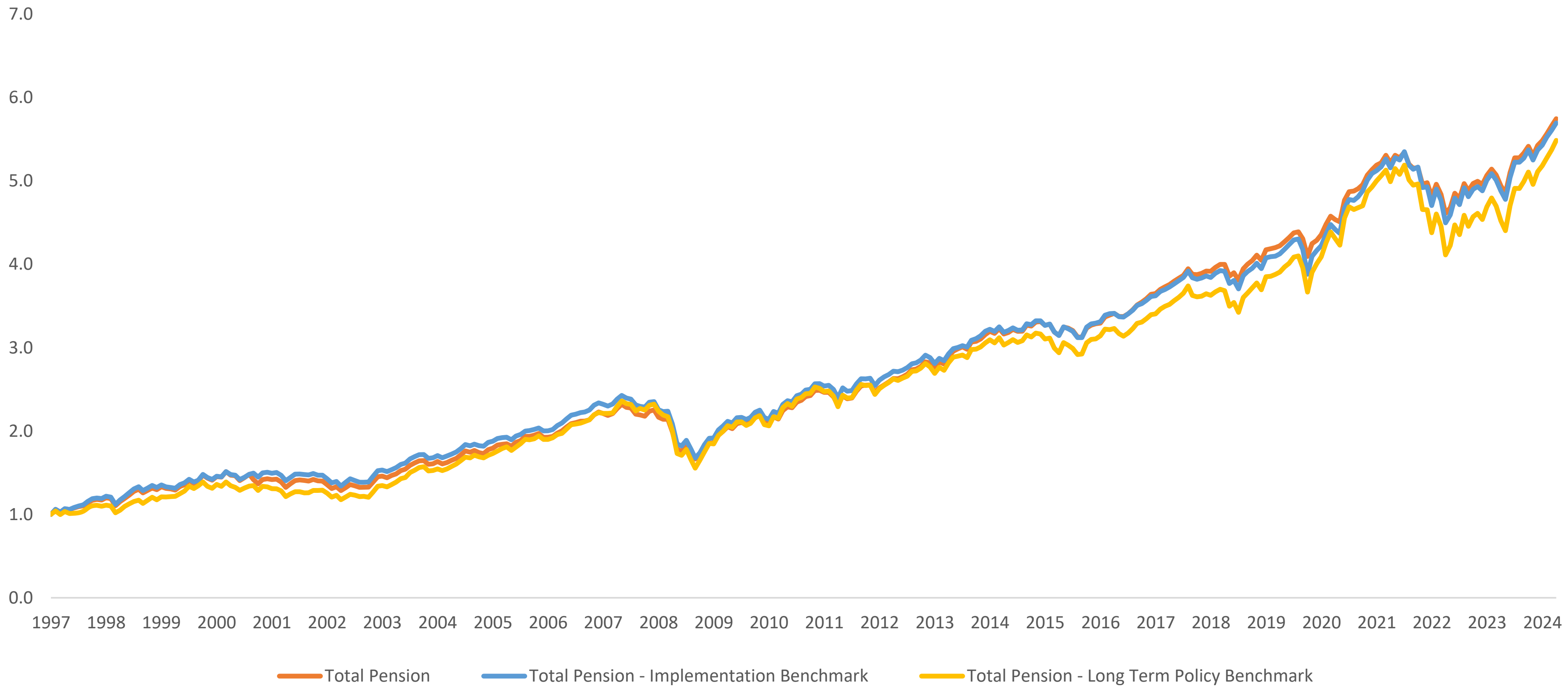
Growth of a Dollar

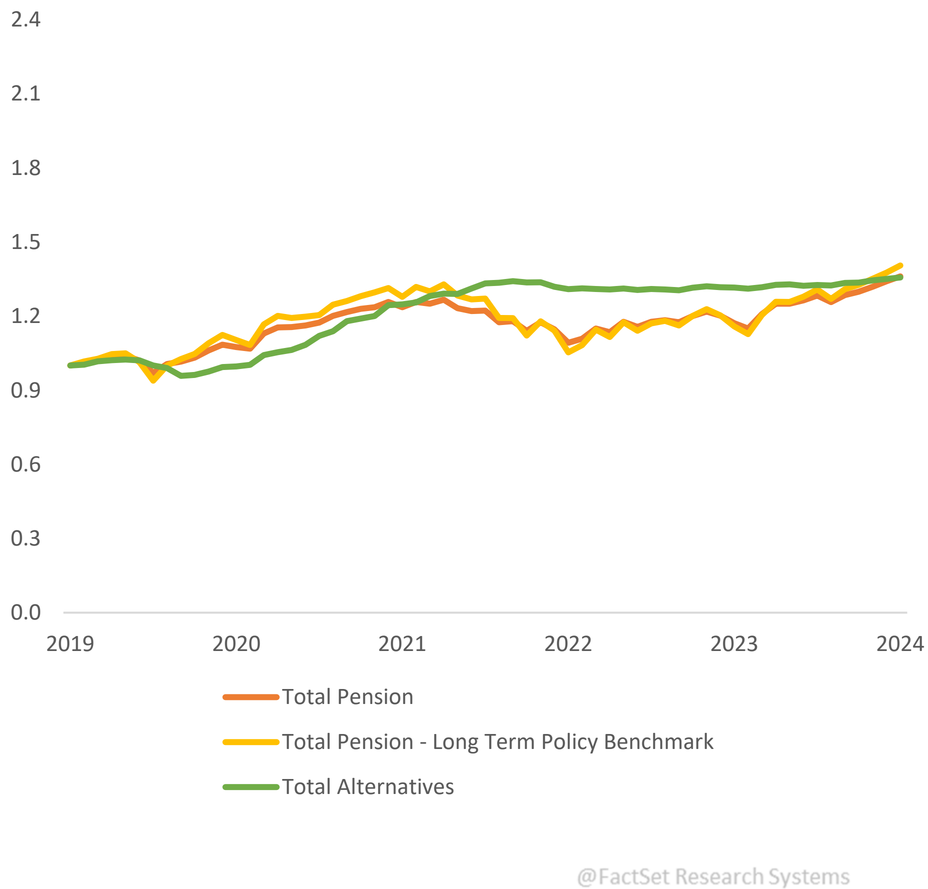
Through September 30, 2024



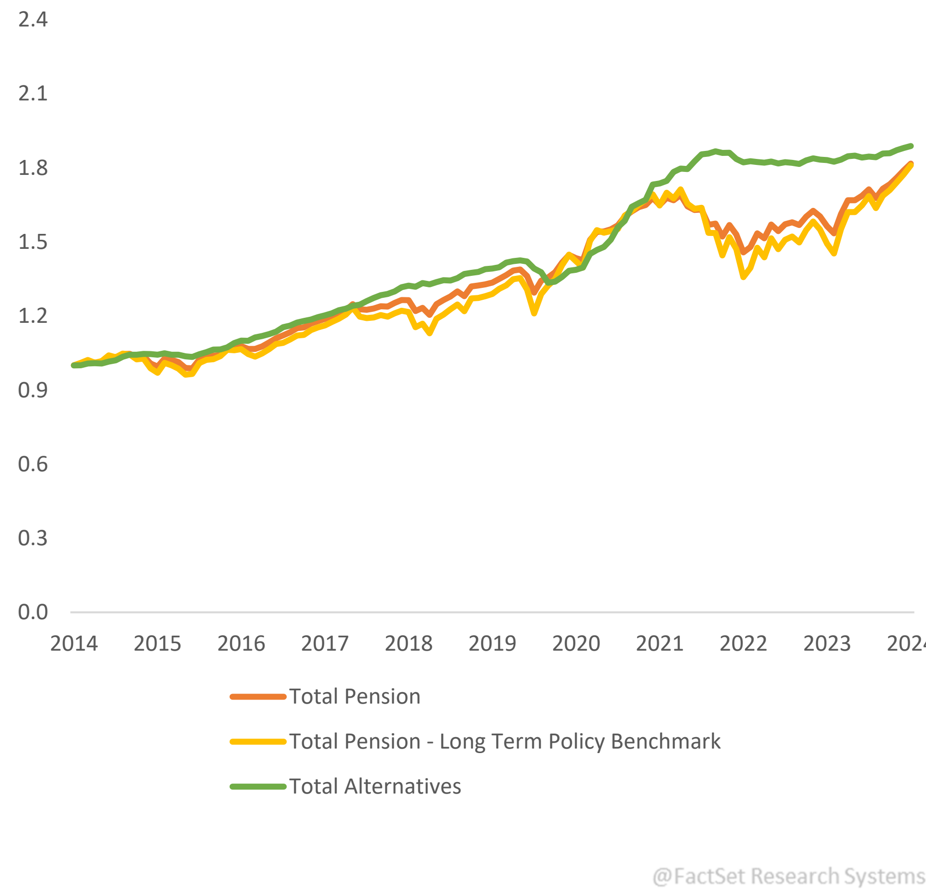
Notes:
Implementation Benchmark is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 55% Growth Benchmark; 33% Rates & Liquidity Benchmark; 11% Inflation Sensitive & Diversifiers Benchmark; and 1% Multi-Strategy Benchmark.
Long-Term Policy Benchmark is comprised of 56% MSCI ACWI IMI Net, 28% ICE BofA 5+ Years U.S. Treasury Index, 6.5% Bloomberg Commodity Index, 5% ICE BofA 3 Month Treasury Bill Index, and 4.5% ICE BofA 1-3 Years U.S. Inflation-Linked Treasury Index.

Growth of a Dollar

5 Years Ending September 30, 2024



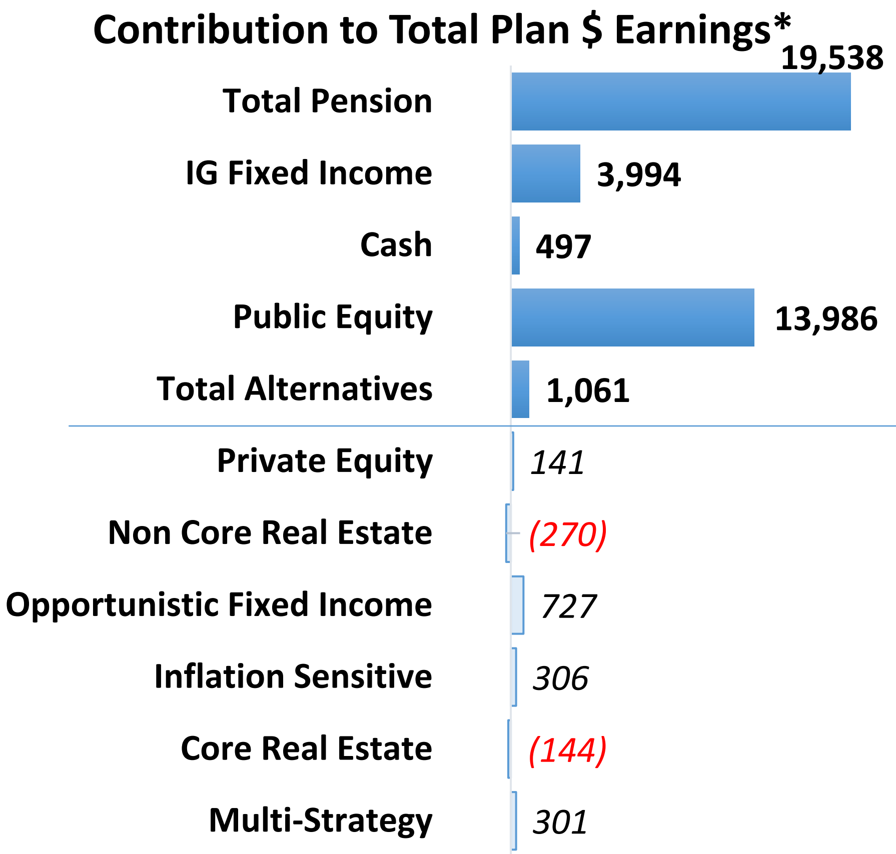
10 Years Ending September 30, 2024

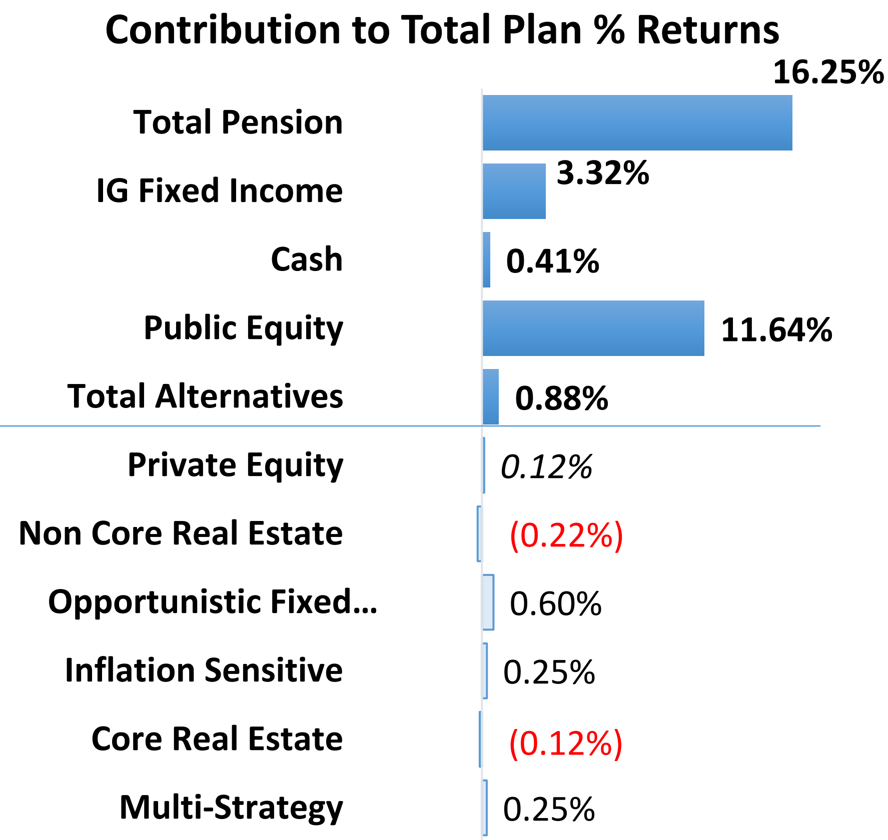


Note: NCRS Alternatives includes the following: Core Real Estate; Inflation Sensitive – Private Natural Resources; Inflation Sensitive – Real Assets and Other Diversifiers; Multi-Strategy Investments; Non-Core Real Estate; Opportunistic Fixed Income; Private Equity; Equity Hedge Strategies; and closed-end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

Estimated Contribution to Total Plan Return – 1 Year

As of September 30, 2024





*Millions

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

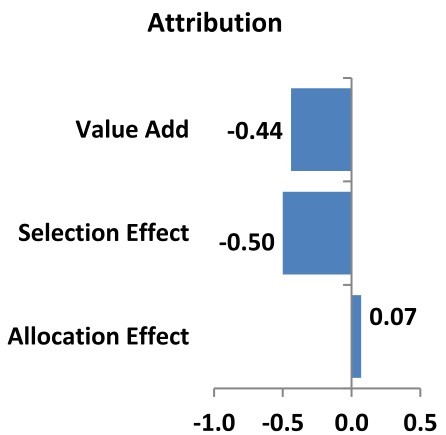
Contribution to Total Plan % Returns = Average Market Value % weight * % Total Return for each asset class

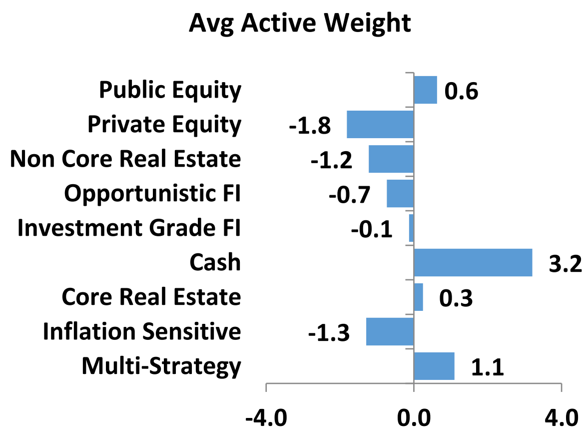
2.) Alternatives for this analysis include the following: Private Equity, Non-Core Real Estate, Opportunistic Fixed Income, Inflation Sensitive, Core Real Estate, and Multi-Strategy investments.

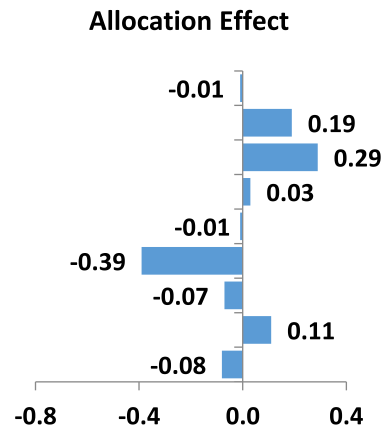
NCRS Net of Fees Return Attribution

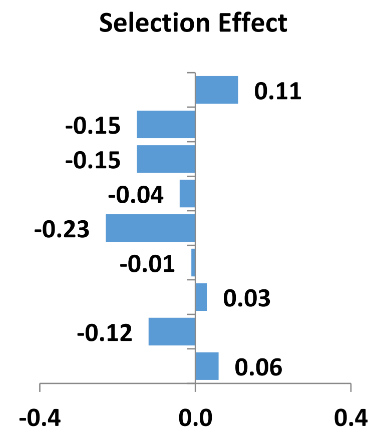
Total Fund vs. Implementation Benchmark: 1 and 3 Years Ending September 30, 2024

1 Year (%)

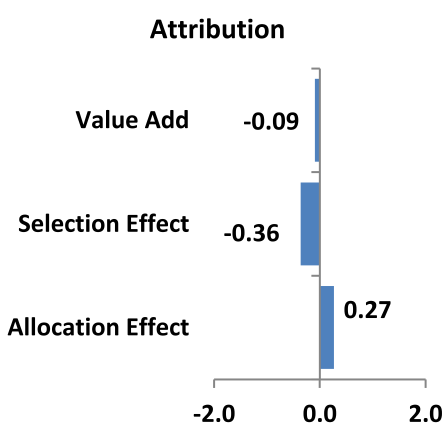


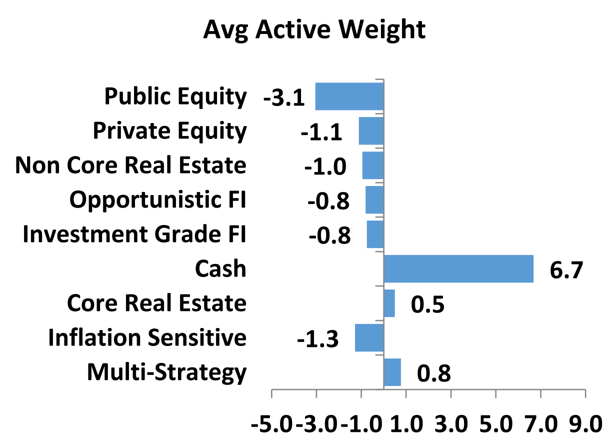


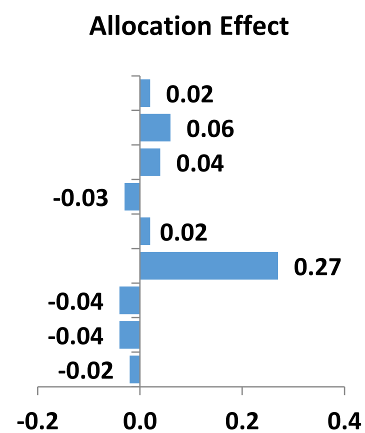


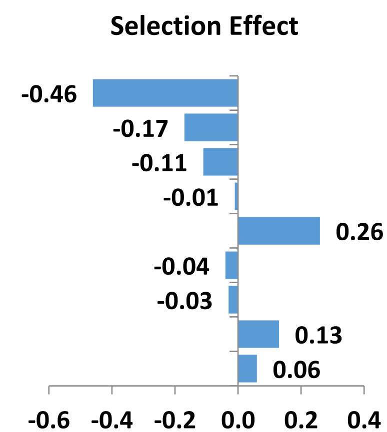


3 Year (%)





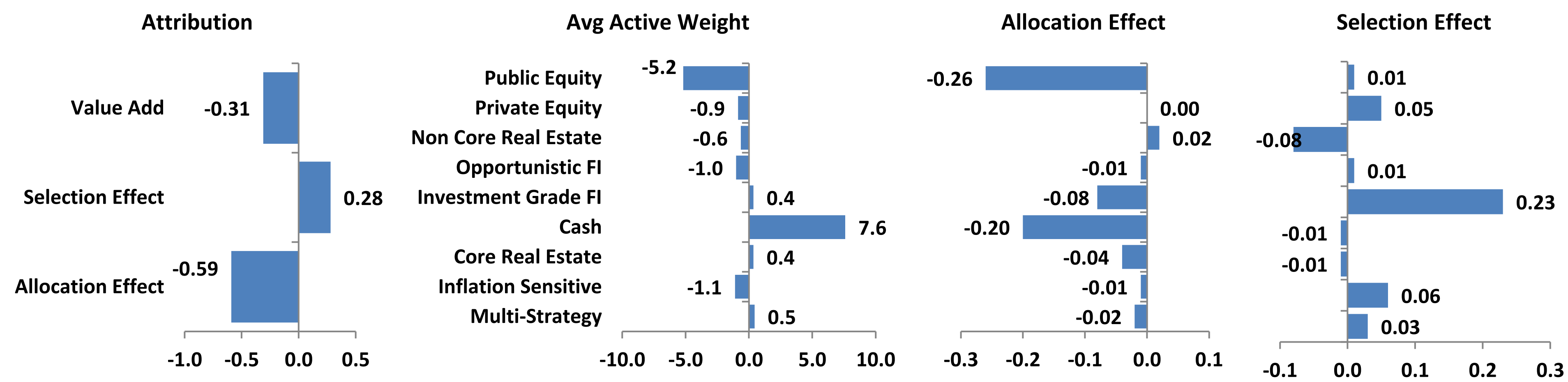




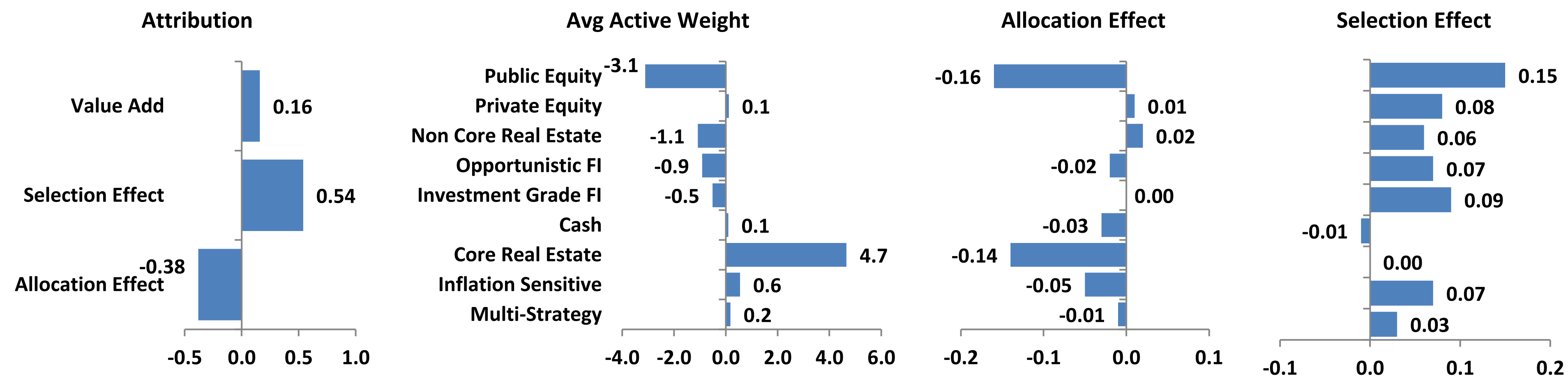
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 5 and 10 Years Ending September 30, 2024

5 Year (%)



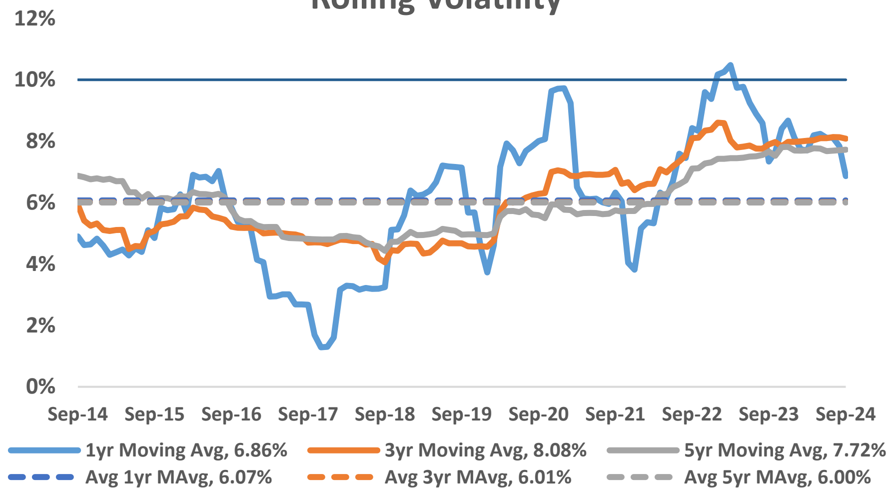
10 Year (%)



NCRS Net of Fees Risk Metrics

As of September 30, 2024

Rolling Volatility



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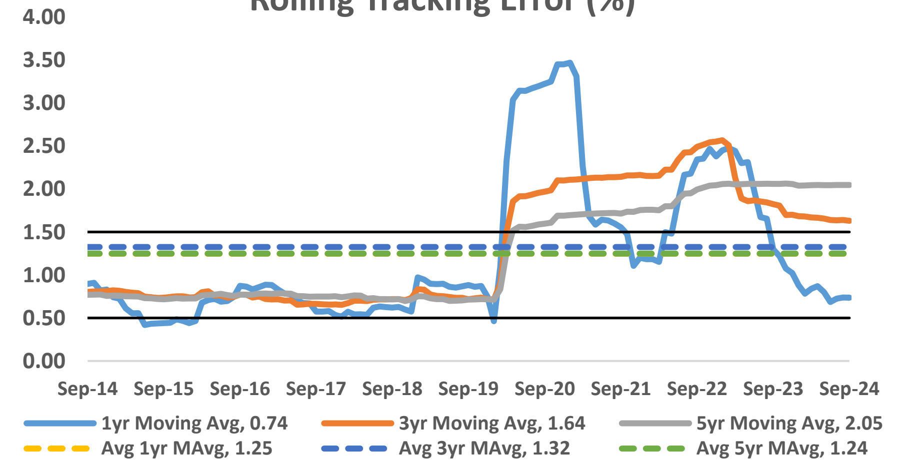
Rolling Tracking Error (%)



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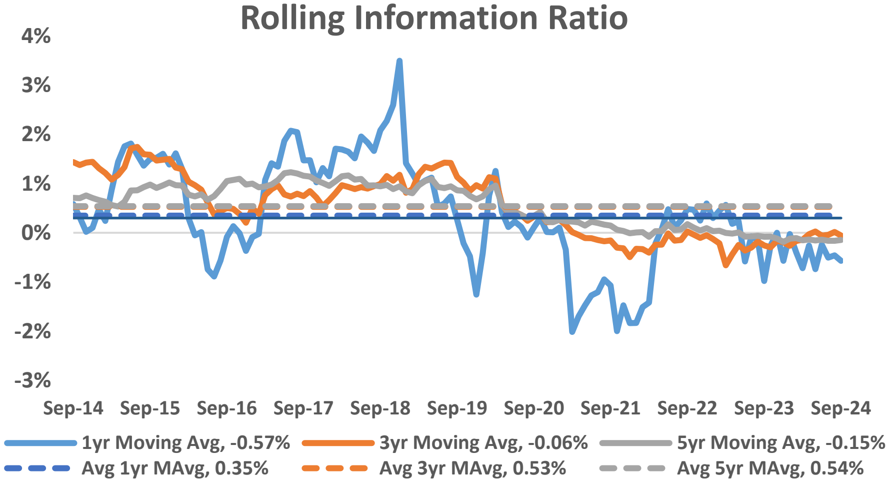
Rolling Information Ratio



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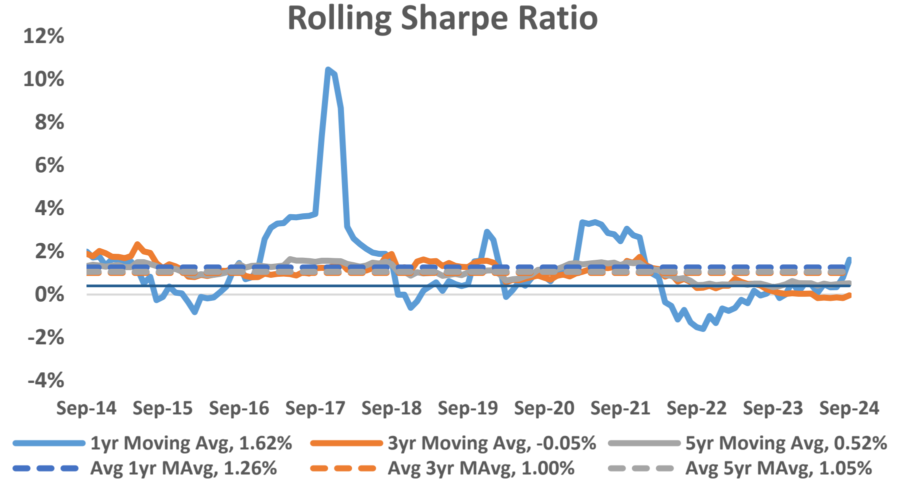
Rolling Sharpe Ratio



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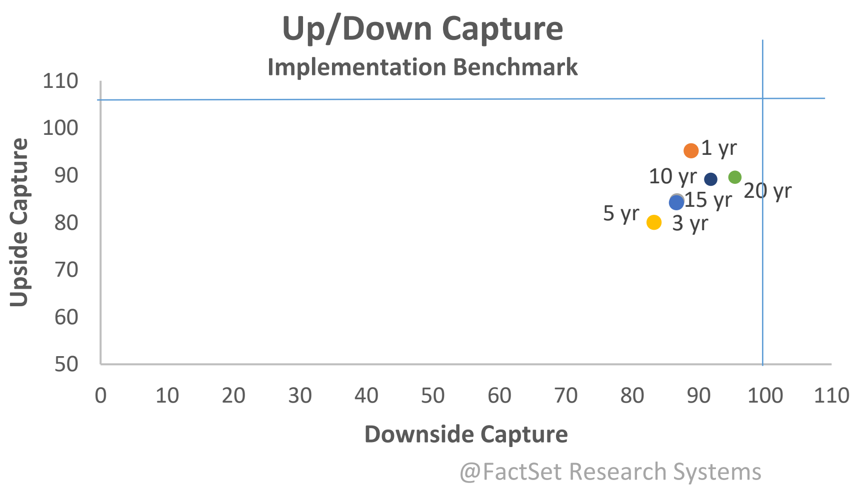
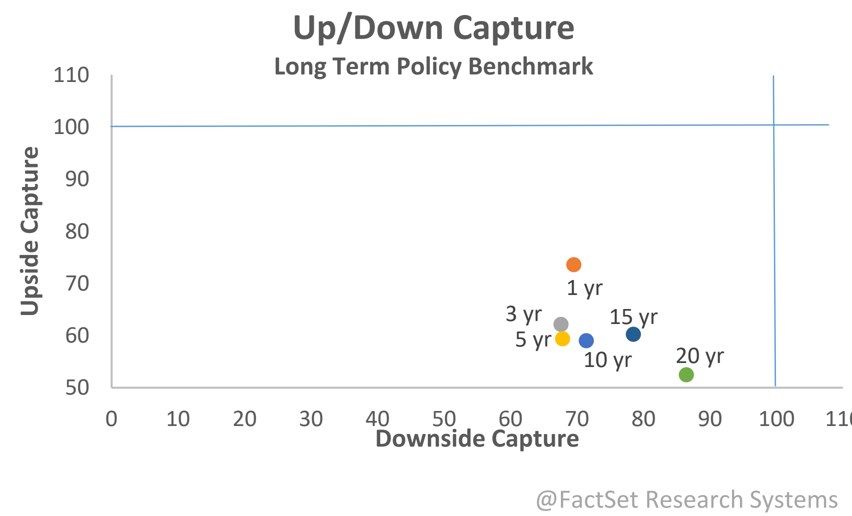
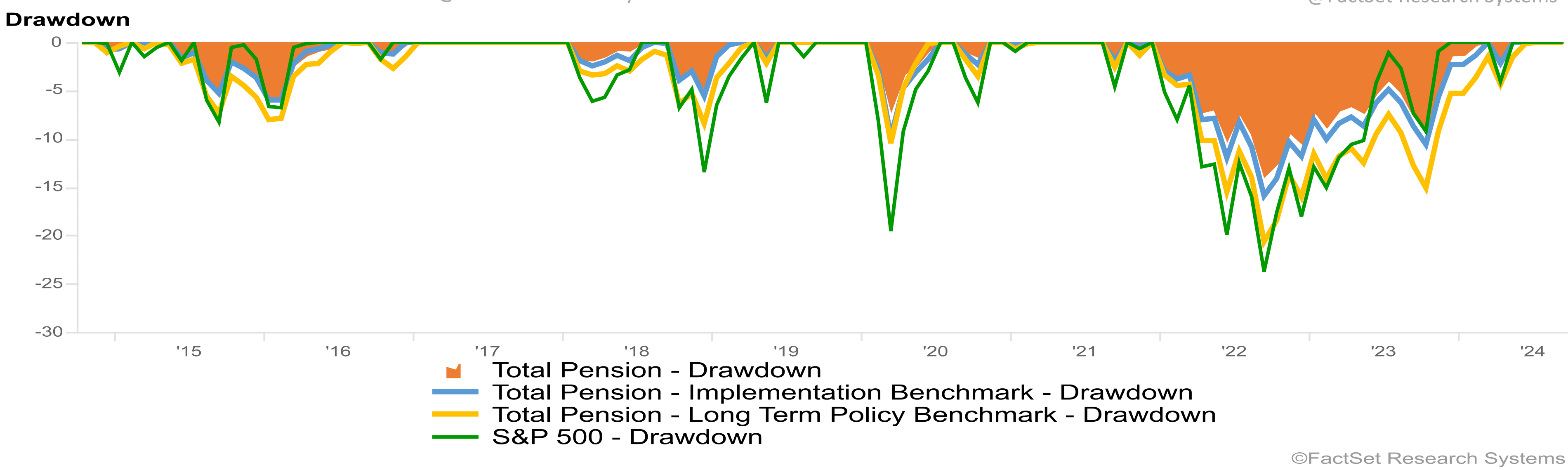
NCRS Net of Fees Risk Metrics (%)

As of September 30, 2024







NCRS Gross of Fees Return and Risk

BNY Mellon Universe: US Public Funds > $20B; Data as of September 30, 2024

Returns	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	18.11	6.32	9.68	8.37	9.11	8.01
Median Percentile	**16.70**	**4.88**	**9.17**	**8.13**	**8.68**	**7.65**
75th Percentile	14.69	4.06	7.77	7.18	8.18	7.48
NCRS	**16.57**	**3.59**	**6.68**	**6.59**	**7.57**	**6.85**
Percentile Rank (1 = highest performance)	54	80	87	80	80	86

Risk	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	7.09	9.65	9.88	8.28	8.41	9.11
Median Percentile	**6.51**	**8.77**	**8.78**	**7.27**	**7.21**	**8.45**
75th Percentile	4.97	6.92	7.79	6.60	6.58	7.92
NCRS	**6.60**	**7.97**	**7.66**	**6.42**	**6.56**	**7.34**
Percentile Rank (1 = highest risk)	47	60	80	80	80	93

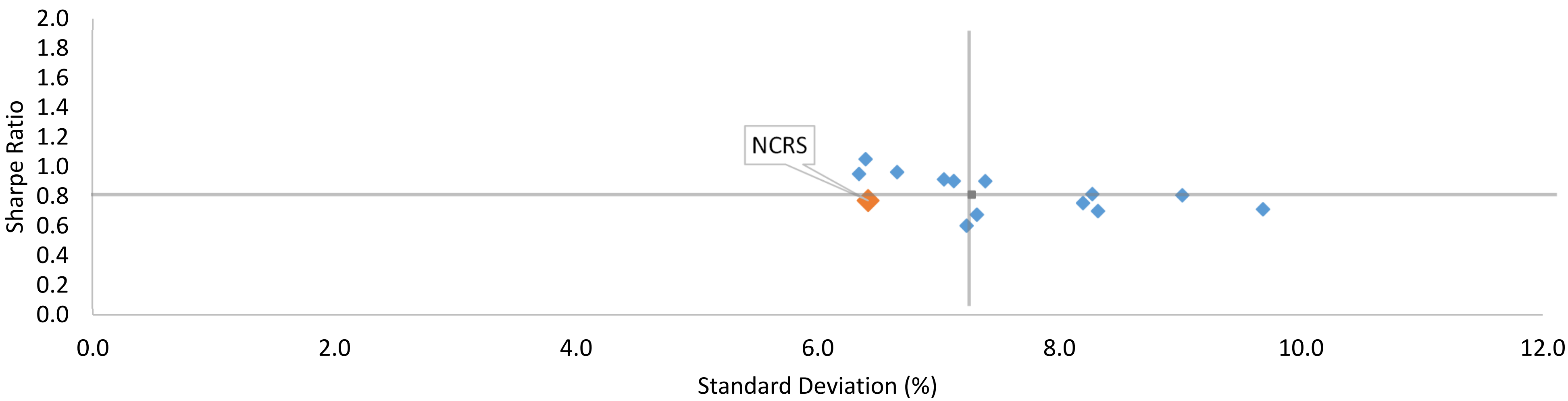
Note: Data shown is gross of fees with the exception of incentive payments, which have been deducted from NAV when applicable.

NCRS Gross of Fees Sharpe Ratio

BNY Mellon Universe: US Public Funds > $20B; Data as of September 30, 2024

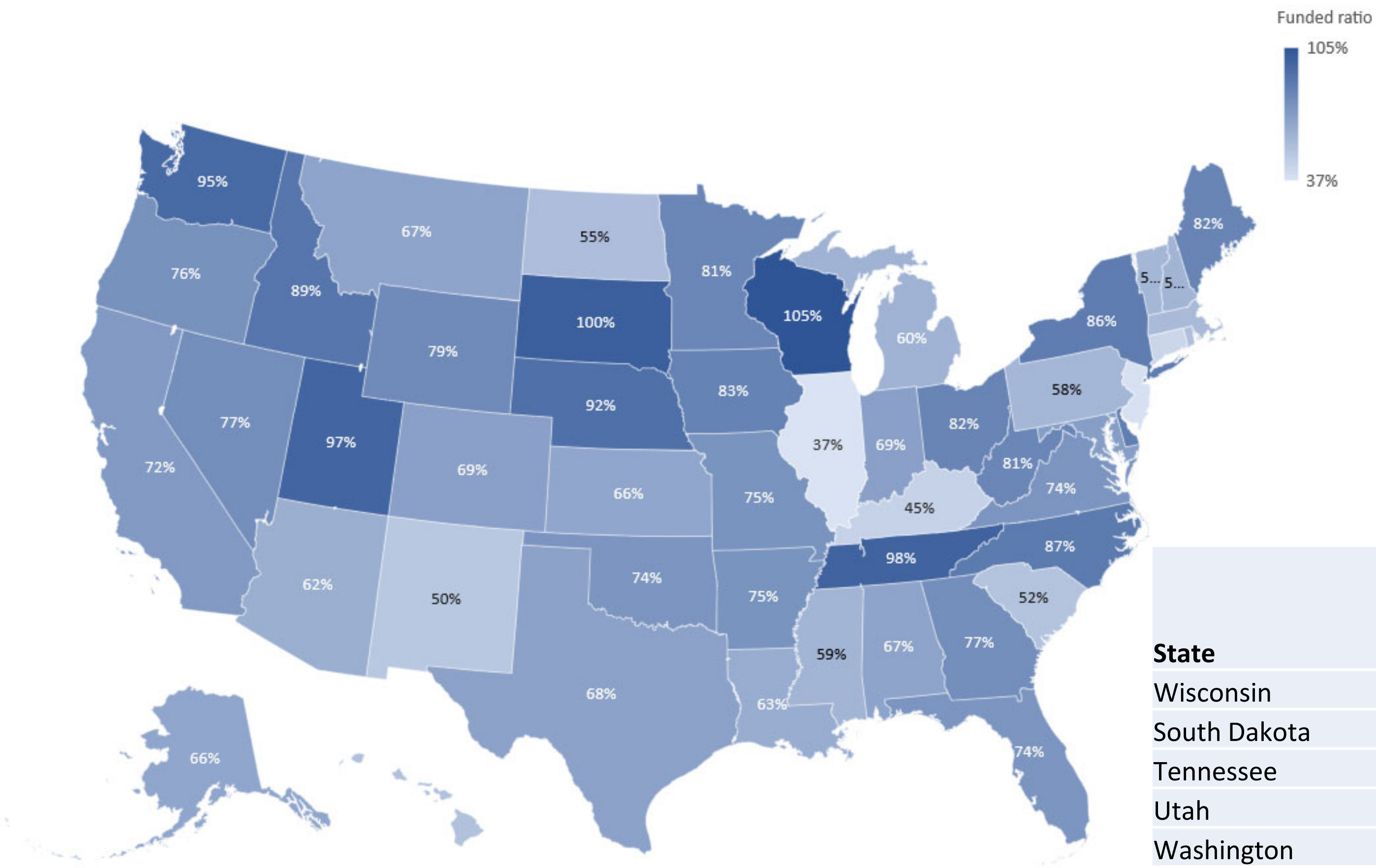
Sharpe	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	1.86	0.34	0.83	0.93	1.03	0.76
Median Percentile	**1.72**	**0.19**	**0.75**	**0.81**	**0.99**	**0.73**
75th Percentile	1.61	0.10	0.59	0.71	0.86	0.68
NCRS	**1.56**	**0.05**	**0.58**	**0.77**	**0.98**	**0.72**
Percentile Rank (1 = highest performance)	80	80	80	60	54	58

10 Year Plot: Sharpe Ratio vs. Volatility

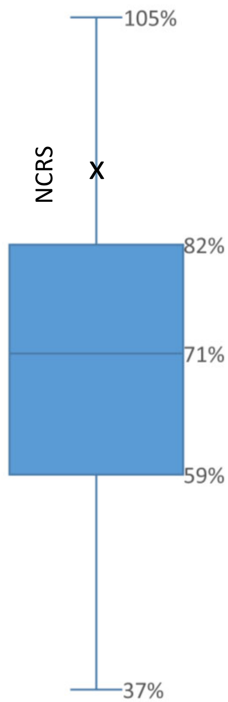


Note: Data shown is gross of fees with the exception of incentive payments, which have been deducted from NAV when applicable. Point of intersection between lines represents the median Sharpe ratio and standard deviation.

Funded Status Universe Comparison
U.S. Public Funds



25th %ile	82%
50th %ile	71%
75th %ile	59%
NCRS	**87%**
NCRS %ile	**14%**



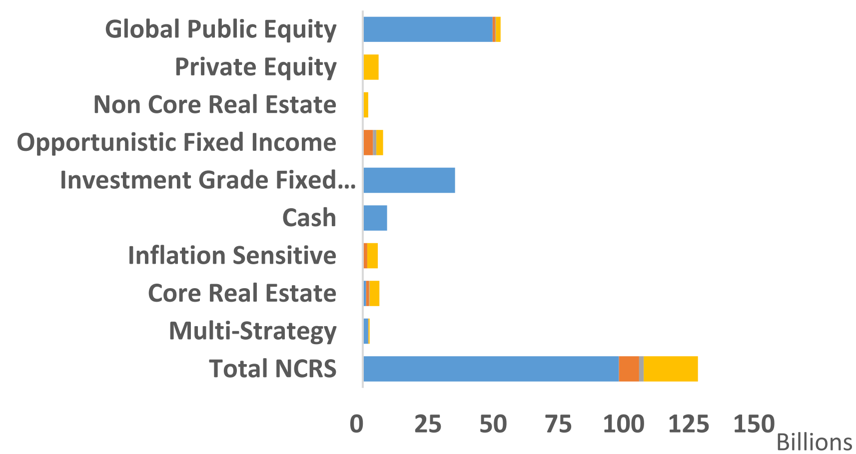
State	**Funded Ratio**	**Actuarial Assumed Rate of Return**
Wisconsin	105%	7.00%
South Dakota	100%	6.50%
Tennessee	98%	7.25%
Utah	97%	6.85%
Washington	95%	7.50%
Nebraska	92%	7.50%
Idaho	89%	7.00%
North Carolina	87%	6.50%

Source: Pew Charitable Trusts & PublicPlansData.org, Data as of 2020

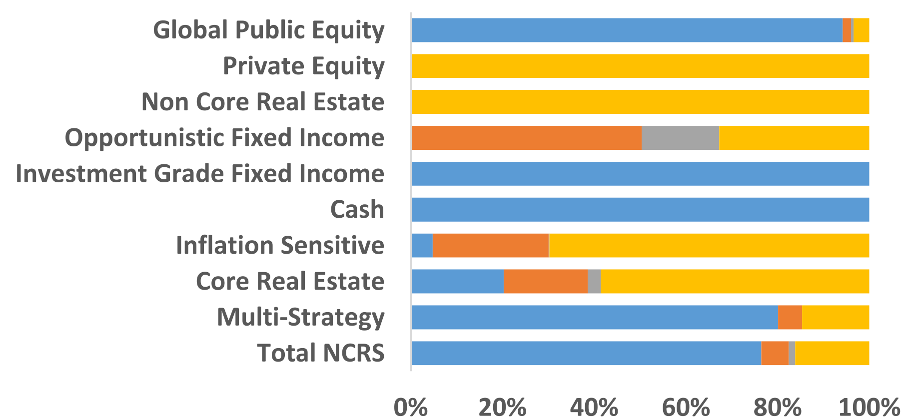
NCRS Liquidity Profile

As of September 30, 2024

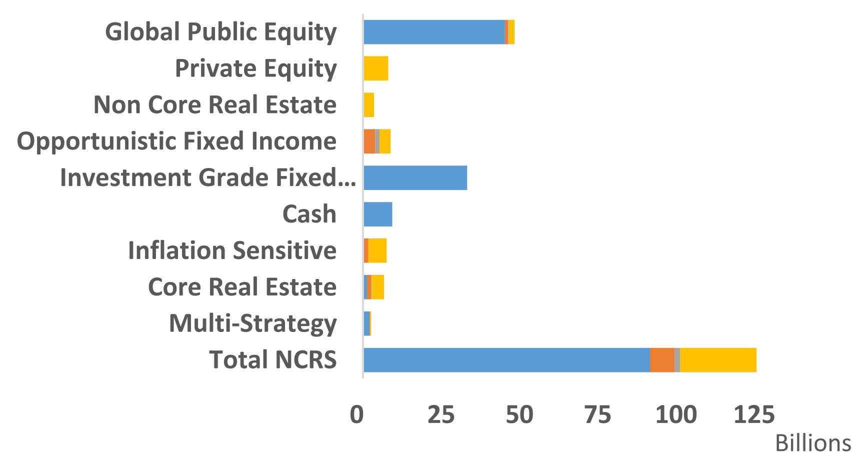
Liquidity Allocation ($ Market Value)



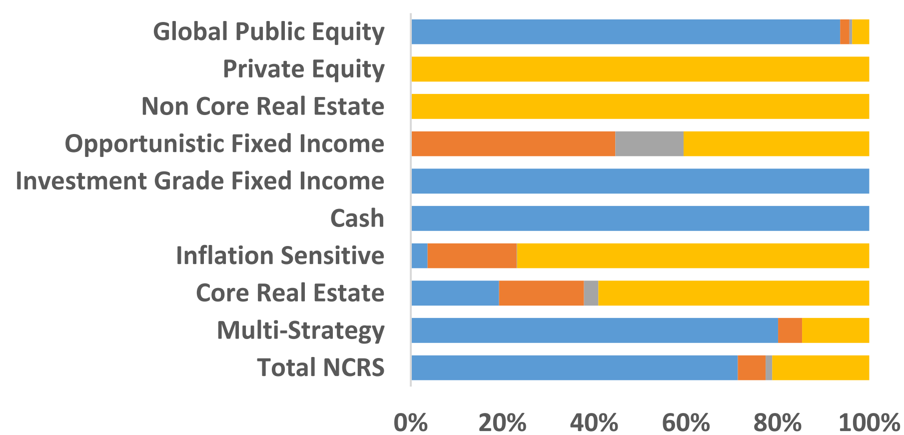
Liquidity Allocation (% Market Value)



Liquidity Allocation ($ Market Value + Unfunded)



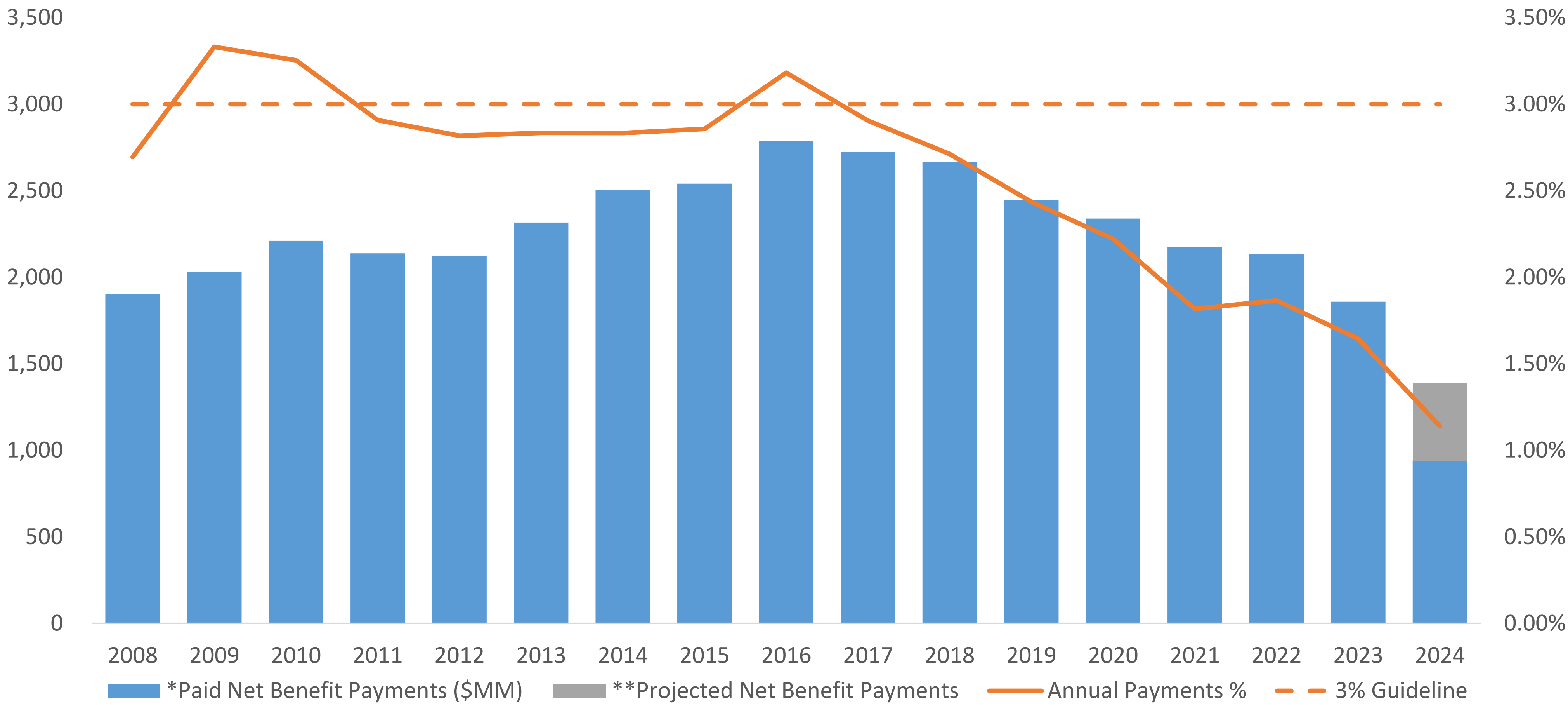
Liquidity Allocation (% Market Value + Unfunded)



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

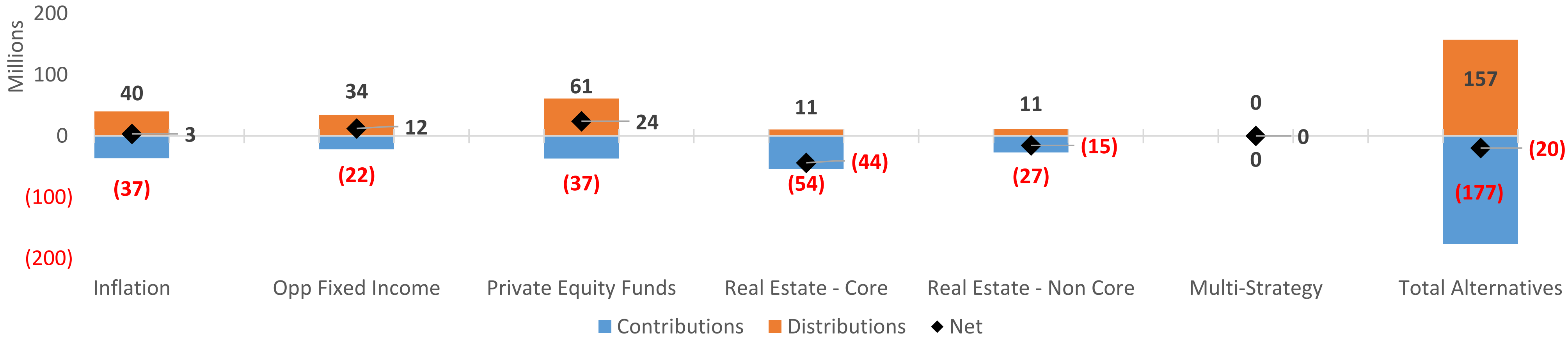
**Projected Net Benefit Payments for remainder of calendar year

NCRS Alternatives Liquidity Profile

Through September 30, 2024

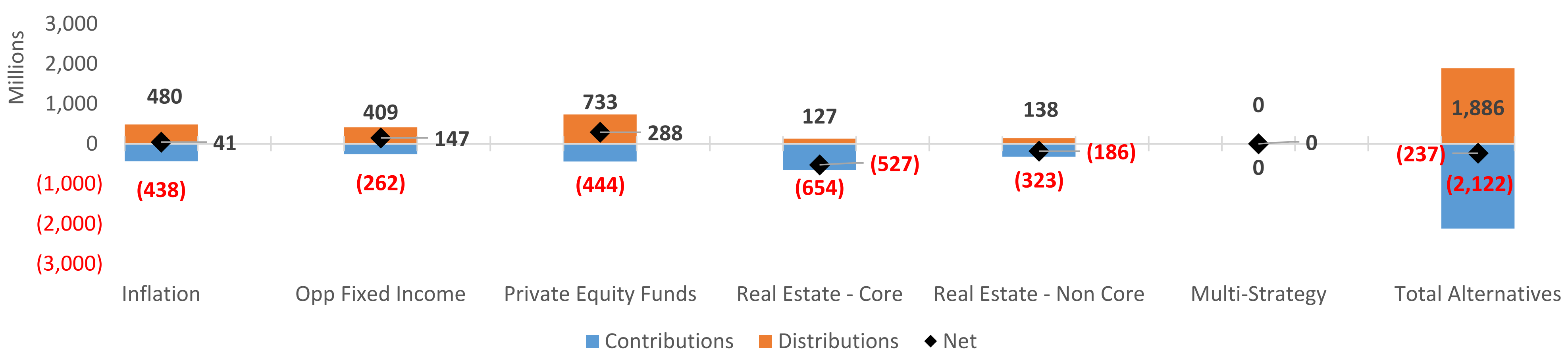
Prior 12-Months

Total Cash Flows by Alternative Asset Class ($MM)



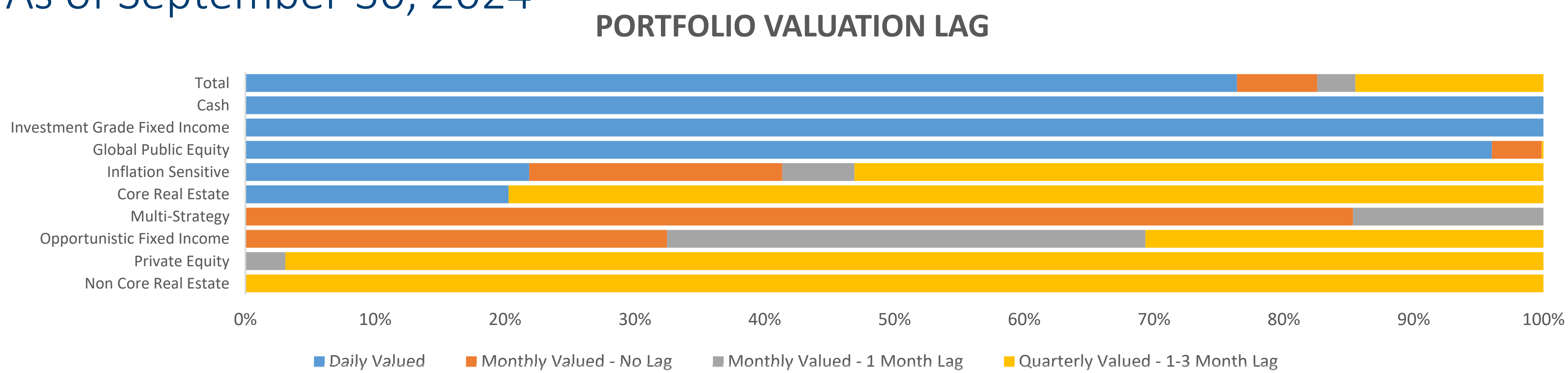
Prior 12-Months

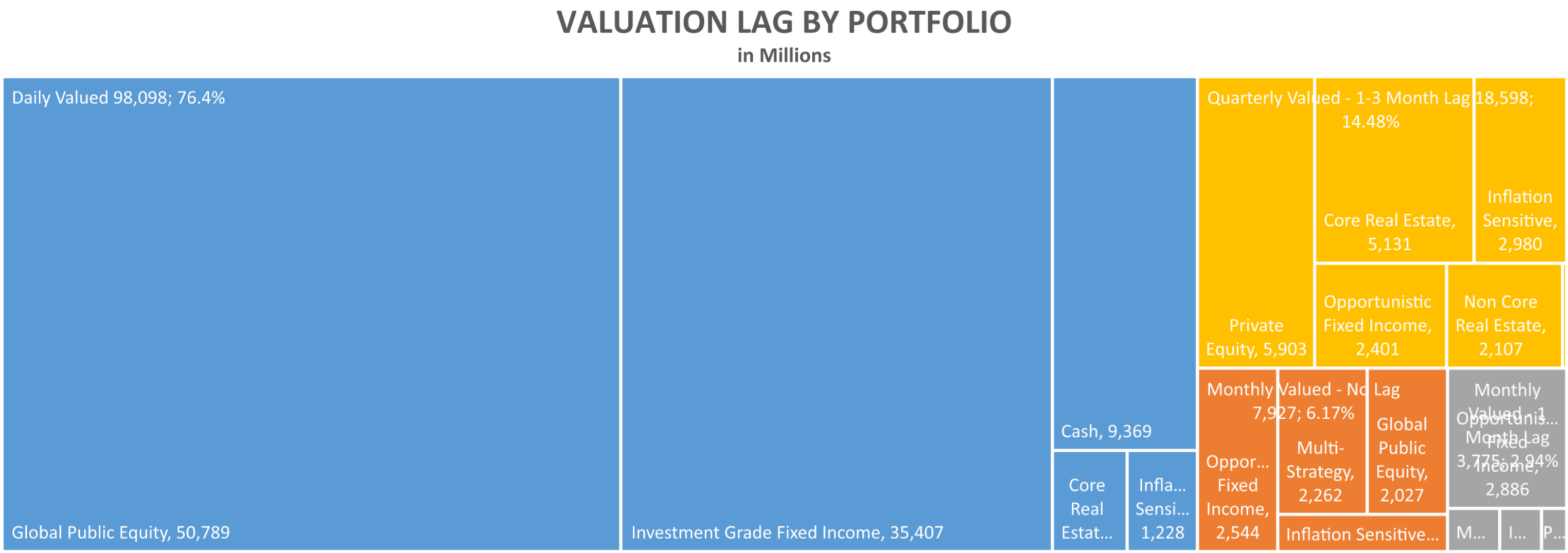
Average Monthly Cash Flows by Alternative Asset Class ($MM)



NCRS Valuation Lag Profile

As of September 30, 2024





NCRS Asset Class Net of Fees Performance (%)

As of September 30, 2024

	Market Value ($MM)	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
Growth	**$68,923**	**23.60**	**5.35**	**10.96**	**9.16**	**9.85**	**7.97**
Benchmark[1]		22.61	6.45	10.78	8.42	9.12	7.48
Public Equity	**$52,892**	**31.29**	**6.10**	**11.96**	**9.44**	**10.09**	**8.19**
Benchmark[2]		30.96	7.44	11.82	9.03	9.55	7.70
Private Equity	**$6,091**	**2.39**	**0.60**	**11.94**	**11.24**	**11.14**	**9.91**
Benchmark[3]		5.10	3.59	11.03	9.72	11.55	11.27
Non-Core Real Estate	**$2,107**	**-13.04**	**-4.06**	**-0.20**	**6.18**	**7.01**	**5.44**
Benchmark[4]		-6.08	1.33	3.44	5.19	6.18	5.91
Opportunistic Fixed Income	**$7,832**	**10.03**	**5.84**	**7.10**	**5.27**	**7.77**	**-**
Benchmark[5]		10.67	6.04	6.86	4.20	4.28	-
Rates & Liquidity	**$44,775**	**10.82**	**0.30**	**1.33**	**2.49**	**3.60**	**4.23**
Benchmark[6]		12.10	-1.72	0.10	2.06	3.26	3.83
IG Fixed Income	**$35,407**	**12.48**	**-1.17**	**0.67**	**2.29**	**3.48**	**4.14**
Benchmark[7]		13.28	-2.10	-0.10	2.01	3.22	3.81
Cash	**$9,369**	**5.18**	**3.18**	**2.23**	**1.76**	**-**	**-**
Benchmark[8]		5.37	3.52	2.28	1.61	-	-
Inflation Sensitive & Diversifiers	**$12,248**	**1.33**	**3.11**	**3.91**	**4.19**	**3.45**	**3.93**
Benchmark[9]		2.87	2.73	3.75	3.77	3.58	3.46
Inflation Sensitive	**$5,811**	**5.61**	**8.08**	**6.26**	**3.98**	**1.55**	**3.85**
Benchmark[10]		7.93	5.26	4.84	2.41	1.20	4.14
Core Real Estate	**$6,436**	**-2.39**	**-0.93**	**2.09**	**5.07**	**6.41**	**5.46**
Benchmark[11]		-2.93	-0.32	2.36	5.32	6.69	5.78
Multi-Strategy	**$2,651**	**12.50**	**5.28**	**4.25**	**4.62**	**6.67**	**5.40**
Benchmark[12]		9.72	2.13	3.06	3.38	5.14	6.09
Total Pension Plan	**$128,596**	**16.25**	**3.28**	**6.36**	**6.15**	**7.11**	**6.44**
Implementation Benchmark[13]		16.69	3.37	6.66	5.99	6.82	6.16
Long-Term Policy Benchmark[14]		21.33	3.21	7.04	6.12	6.74	6.44

See slide 45 for benchmark descriptions

NCRS Calendar Year Asset Class Return Diversification

As of September 30, 2024

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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 22.3%	Public Equity 17.71%
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%	Multi-Strategy 10.31%	Total Pension 8.9%
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%	Total Pension 10.18%	Multi-Strategy 8.09%
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%	Opportunistic Fixed Income 9.67%	Opportunistic Fixed Income 7.44%
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%)	Inflation Sensitive 7.92%	Inflation Sensitive 5.29%
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%)	IG Fixed Income & Cash 5.92%	IG Fixed Income & Cash 4.27%
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%)	Pension Cash 4.44%	Pension Cash 3.86%
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%)	Private Equity 2.42%	Private Equity 1.87%
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 (9.27%)	Core Real Estate (2.81%)
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 (13.66%)	Non-Core Real Estate (9.84%)

New, Incremental, & Unfunded Investment Commitments

Since August 28th IAC Meeting

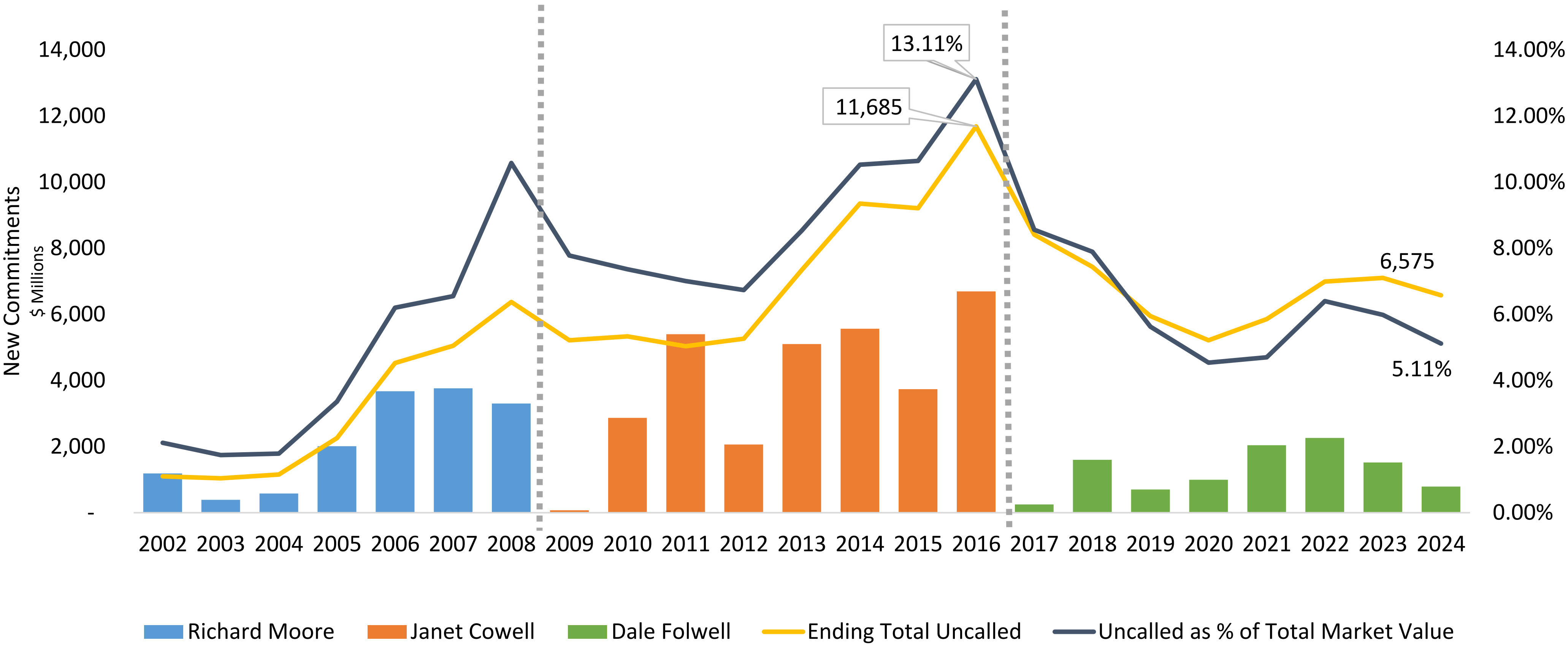
Fund Name	Firm Name	New or Incremental Commitment ($MM)	Closing Date
Public Equity			
Private Equity			
NCL IV LP – GSS I	Ares	$100m	10/22
NCL IV LP – GSS I Overflow	Ares	$50m	10/22
Levine Leichtman Capital Partners VII	Levine Leichtman Capital Partners	$150m	8/12
Non-Core Real Estate			
Opportunistic Fixed Income			
Inflation Sensitive			
North Star Investment Holdings Series IV	Barings	$150m	7/1
Core Real Estate			
Multi-Strategy			

As of September 30, 2024

Asset Class	Unfunded Commitments ($MM)
Public Equity	**0**
Private Equity	**1,989**
Non-Core Real Estate	**1,431**
Opportunistic Fixed Income	**1,060**
Inflation Sensitive	**1,756**
Core Real Estate	**340**
Multi Strategy	**0**
Total	**6,575**

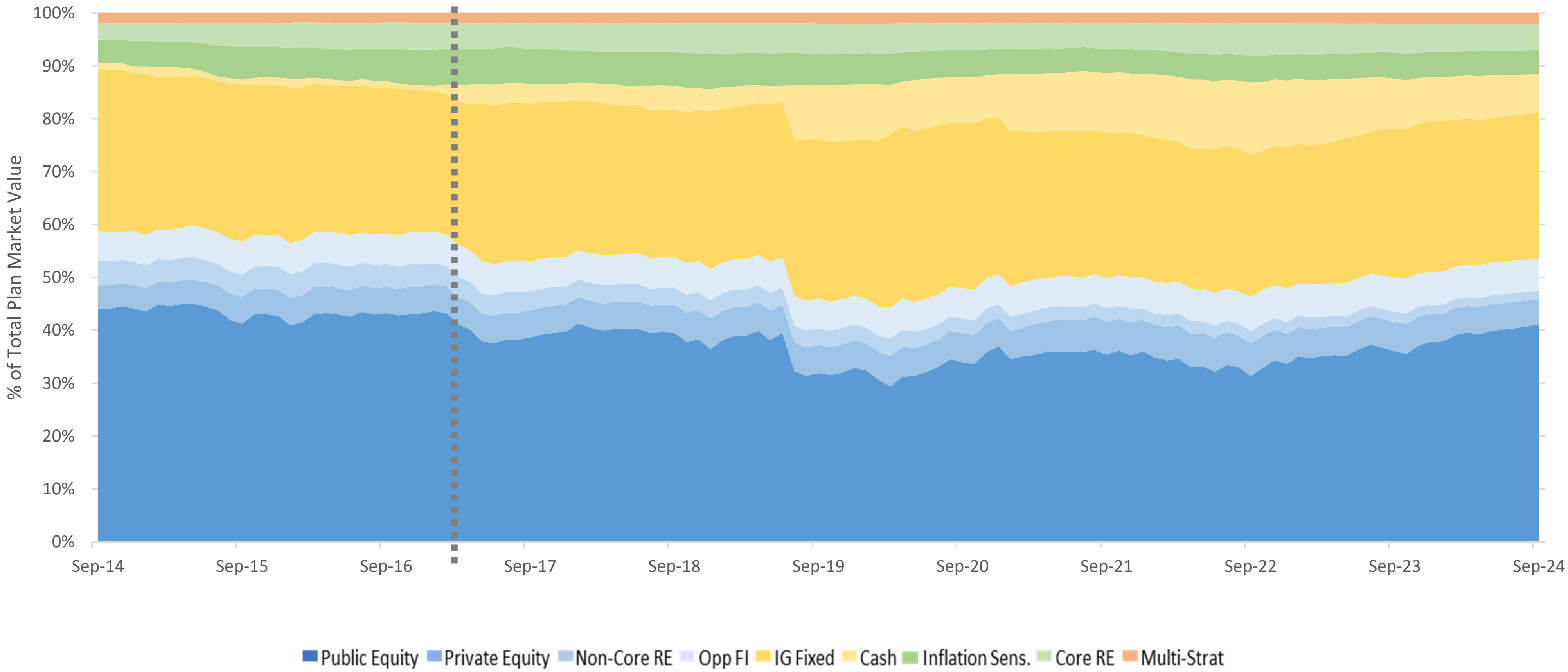
New and Total Unfunded Private Asset Class Commitments

By Calendar Year of Closing through September 30, 2024



Asset Allocation History

as of September 30, 2024



Exited Investments

Since August 28th IAC Meeting

Fund Name	Redemption Amount ($MM)	Redemption Effective
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, 2024

	Manager	Market Value ($)	Uncalled ($)	% MV	% MV Cum.
1	Internal Fixed Income	44,775,034,229	-	34.8%	34.8%
2	Internal Equity	25,031,498,564	-	19.5%	54.3%
3	BlackRock, Inc.	11,035,869,828	-	8.6%	62.9%
4	Wellington Management	4,218,095,768	-	3.3%	66.1%
5	Baillie Gifford	3,992,319,625	-	3.1%	69.3%
6	Mondrian Investment Partners Limited	3,509,054,400	-	2.7%	72.0%
7	Walter Scott & Partners	2,880,879,640	-	2.2%	74.2%
8	Ares Management	2,723,303,071	1,529,917,005	2.1%	76.3%
9	Rockwood Capital	2,461,520,028	149,428,004	1.9%	78.3%
10	Gladius Capital Management LP	2,262,030,029	-	1.8%	80.0%
11	Blackstone Group	2,258,996,536	988,546,257	1.8%	81.8%
12	ValueAct Capital	2,024,737,162	-	1.6%	83.3%
13	Angelo, Gordon & Co.	1,750,240,763	25,278,793	1.4%	84.7%
14	HPS Investment Partners, LLC	1,404,369,468	55,387,626	1.1%	85.8%
15	LBA Realty	1,336,837,118	32,673,267	1.0%	86.8%
16	Earnest Partners	984,422,732	-	0.8%	87.6%
17	DoubleLine Capital LP	949,867,537	-	0.7%	88.3%
18	Campbell Group LLC, The	870,199,502	-	0.7%	89.0%
19	Monarch Alternative Capital	808,400,000	-	0.6%	89.6%
20	Franklin Templeton Investments	803,956,394	-	0.6%	90.3%
	73 Remaining Managers*	12,514,476,247	3,794,228,368	9.7%	100.0%
Total		**128,596,108,640**	**6,575,459,319**	**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, 2024

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	**$52,892**	**7.14**	**31.29**	**6.10**	**11.96**	**9.44**
Benchmark[2]		6.84	30.96	7.44	11.82	9.03
Domestic Portfolio	**$30,659**	**6.18**	**35.11**	**9.86**	**15.26**	**12.84**
Russell 3000		6.23	35.19	10.29	15.26	12.83
Non-US Portfolio	**$22,231**	**8.50**	**26.33**	**1.79**	**8.10**	**6.11**
Custom Benchmark		8.18	25.06	3.74	7.66	5.33

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*

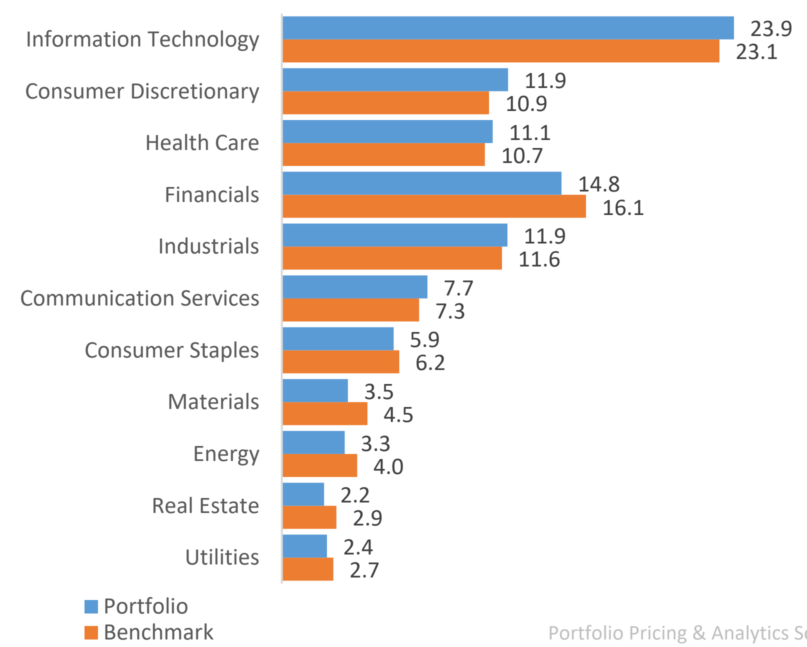
NCRS Public Equity Portfolio Characteristics

As of September 30, 2024

Portfolio Characteristics		
	Portfolio	MSCI ACWI IMI
Price/Earnings	23.2	19.2
Dividend Yield	1.7%	1.8%
Price/Book	3.2	2.9
Market Capitalization ($MM)	$ 586,421	$ 578,725
Return On Equity	23.1%	22.6%

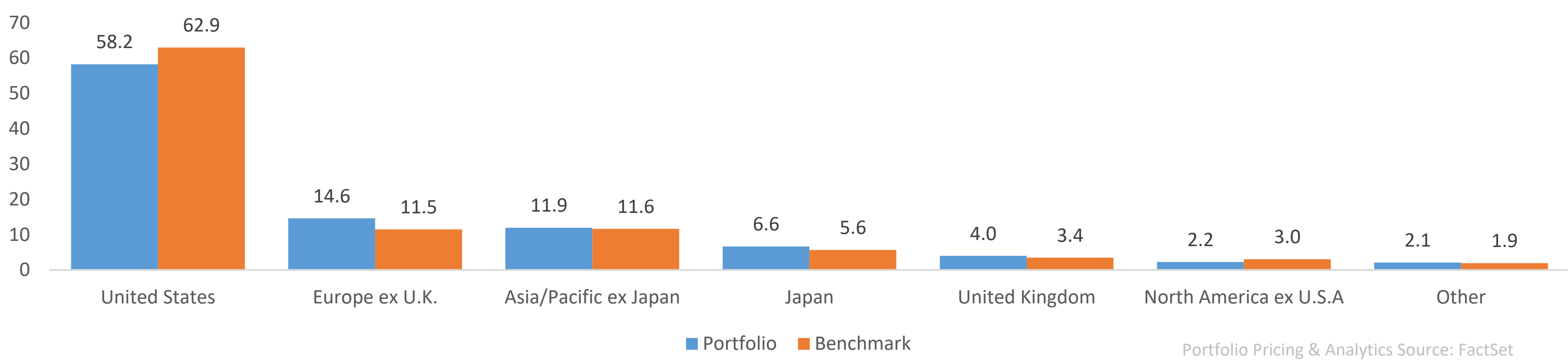
@FactSet Research Systems

Sector Allocation (%)



Portfolio Pricing & Analytics Source:

Total Equity Regional Allocation (%)



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

NCRS Private Equity Portfolio

As of September 30, 2024

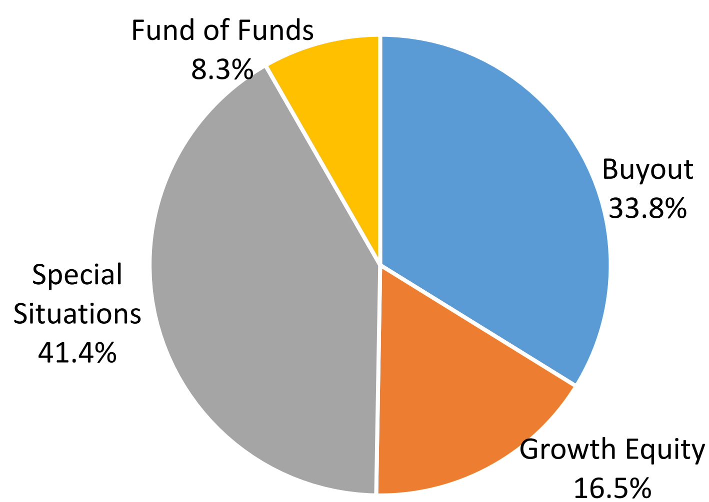
Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Private Equity	**$6,091**	**(0.49)**	**2.39**	**0.60**	**11.94**	**11.24**
Benchmark[3]		1.06	5.10	3.59	11.03	9.72
Buyout	**$2,059**	**0.98**	**3.37**	**5.30**	**13.81**	**12.00**
Growth	**$1,003**	**(5.98)**	**(3.70)**	**(11.34)**	**7.47**	**10.66**
Special Situations	**$2,524**	**0.81**	**6.36**	**7.38**	**13.45**	**9.33**
Fund of Funds	**$504**	**(1.30)**	**(4.99)**	**(4.05)**	**9.38**	**10.50**

IRR by Vintage Year (%)

	Pre-2010	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
NCRS	7.27	19.51	8.39	13.26	10.89	14.13	17.17	20.03	17.94	14.65	N/A	7.93	9.63	9.25	N/A	-22.44	9.78
# of Funds	98	1	6	6	9	4	9	6	7	3	N/A	1	4	2	N/A	3	159

Strategy Allocation (Based on Valuation)



*Private Equity returns include a stock distribution account, in the amount of roughly $1 million, which does not fall under any specific sub-section.

NCRS Non-Core Real Estate Portfolio

As of September 30, 2024

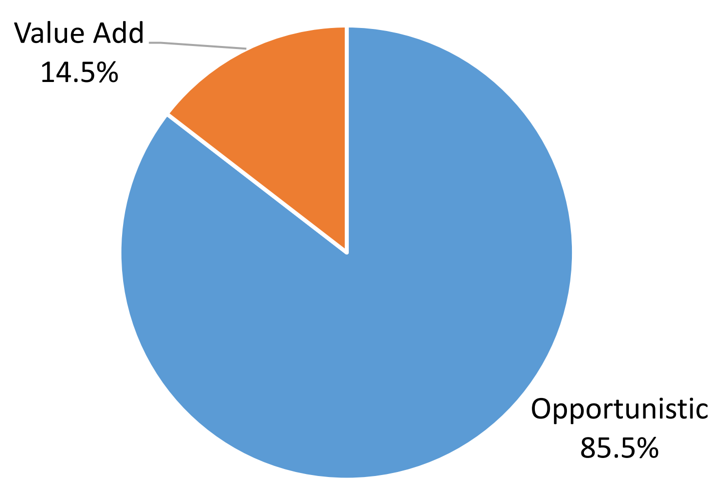
Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Non-Core Real Estate	**$2,107**	**(1.45)**	**(13.04)**	**(4.06)**	**(0.20)**	**6.18**
Benchmark[4]		(0.56)	(6.08)	1.33	3.44	5.19
Opportunistic	**$1,800**	**(1.02)**	**(11.54)**	**(2.38)**	**0.85**	**6.51**
Value Add	**$306**	**(4.19)**	**(22.81)**	**(13.55)**	**(6.21)**	**3.20**

IRR by Vintage Year (%)

	Pre-2010	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	3.07	15.89	17.07	13.81	10.91	0.49	6.97	6.45	N/A	12.79	13.10	N/A	N/A	-4.08	-11.02	5.99
# of Funds	61	6	7	5	7	7	6	7	N/A	1	1	N/A	N/A	4	1	113

Strategy Allocation (Based on Valuation)



NCRS Opportunistic Fixed Income Portfolio

As of September 30, 2024

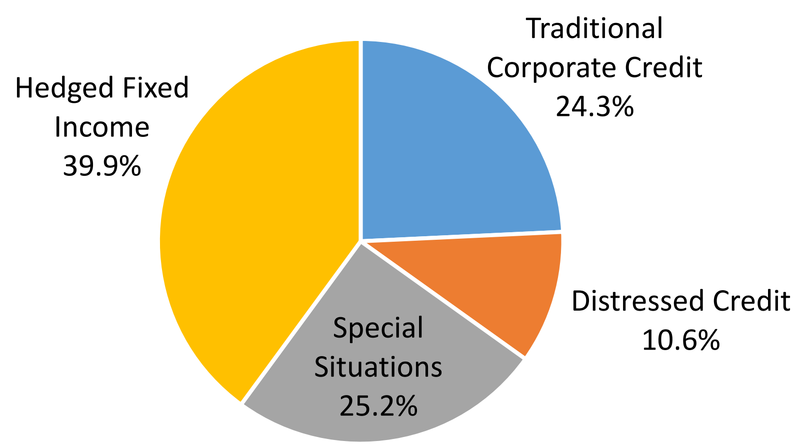
Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Opportunistic Fixed Income	**$7,832**	**1.92**	**10.03**	**5.84**	**7.10**	**5.27**
Benchmark[5]		3.50	10.67	6.04	6.86	4.20
Traditional Corporate Credit	**$1,900**	**0.57**	**9.83**	**6.10**	**6.95**	**5.28**
Distressed Credit	**$832**	**1.61**	**9.68**	**5.57**	**9.82**	**8.07**
Special Situations	**$1,972**	**2.09**	**10.53**	**7.69**	**7.27**	**8.05**
Hedged Fixed Income	**$3,129**	**2.74**	**9.93**	**4.50**	**6.94**	**4.03**

IRR by Vintage Year (%)

	Pre 2010	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	8.81	5.26	5.12	3.57	5.06	4.27	8.34	7.82	9.94	N/A	8.16	13.45	9.73	9.07	10.69	6.37
# of Funds	6	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, 2024

Net of Fees Performance (%)

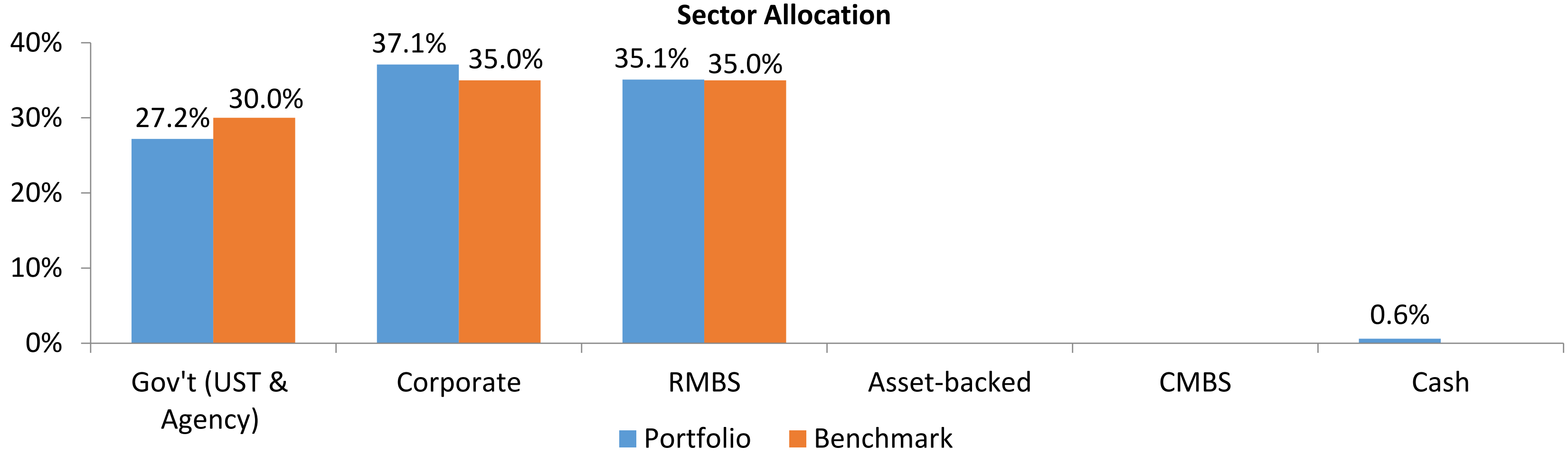
	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Rates & Liquidity	**$44,775**	**4.42**	**10.82**	**0.30**	**1.33**	**2.49**
Benchmark[6]		5.20	12.10	(1.72)	0.10	2.06
IG Fixed Income	**$35,407**	**5.28**	**12.48**	**(1.17)**	**0.67**	**2.29**
Core Fixed Income	**$31,996**	**5.67**	**13.39**	**(1.75)**	**0.39**	**2.32**
IG Fixed Income Cash	**$1,866**	**1.24**	**4.73**	**2.75**	**2.01**	**1.59**
IG Short Credit	**$1,544**	**2.33**	**7.25**	**-**	**-**	**-**
Pension Cash	**$9,369**	**1.29**	**5.18**	**3.18**	**2.23**	**1.76**

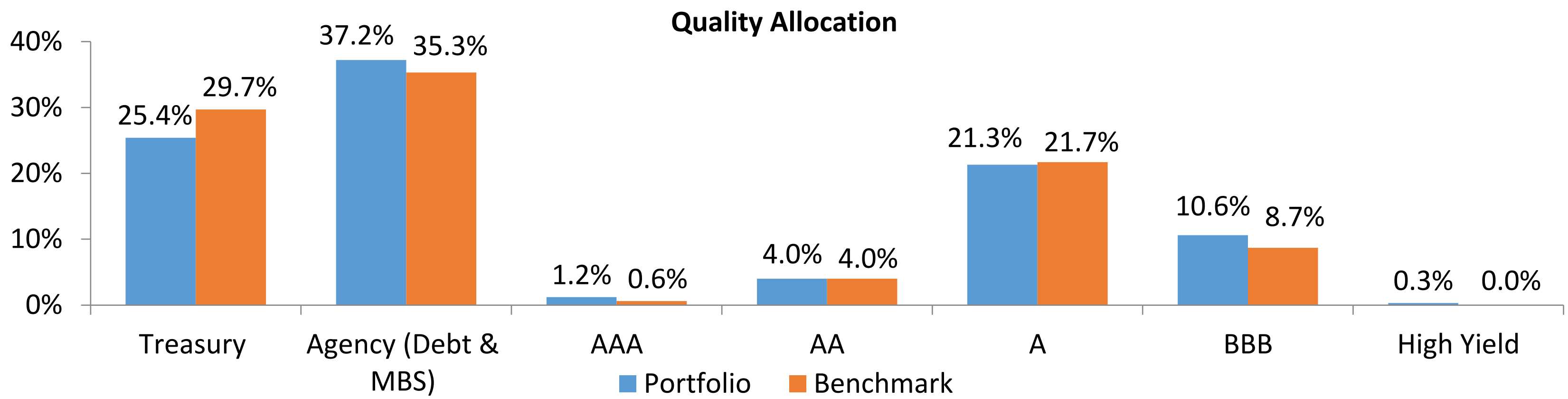
Core Fixed Income Portfolio Characteristics

	Avg. Coupon	Yield to Worst	Effective Duration
Government (Treasury & Agency)	3.5%	4.0%	10.8
Corporate	4.5%	4.8%	9.0
Mortgage	3.9%	4.6%	4.9
Total	**4.0%**	**4.5%**	**8.0**

NCRS Core Fixed Income Portfolio Characteristics

As of September 30, 2024





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

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NCRS Inflation Sensitive Portfolio

As of September 30, 2024

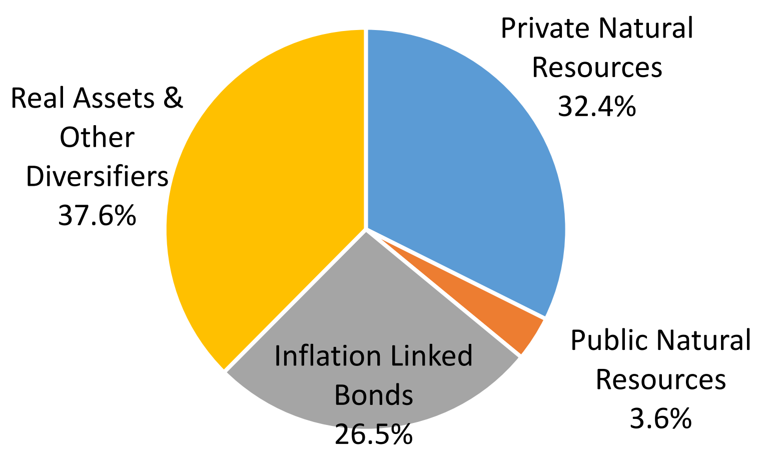
Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Inflation Sensitive	**$5,811**	**2.07**	**5.61**	**8.08**	**6.26**	**3.98**
Benchmark[10]		2.53	7.93	5.26	4.84	2.41
Private Natural Resources	**$1,880**	**2.83**	**6.67**	**11.94**	**7.49**	**3.74**
Public Natural Resources	**$209**	**0.29**	**1.12**	**3.87**	**8.01**	**(0.23)**
Inflation Linked Bonds	**$1,540**	**2.55**	**10.03**	**3.74**	**3.87**	**-**
Real Assets & Other Diversifiers	**$2,182**	**1.23**	**2.00**	**7.56**	**6.64**	**7.71**

IRR by Vintage Year (%)

	Pre-2010	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
NCRS	1.97	-5.20	-5.84	5.50	6.90	7.19	8.65	4.05	7.95	19.54	26.97	N/A	22.60	N/A	4.96	0.00	2.79
# of Funds	8	3	9	7	11	12	4	3	1	3	2	N/A	5	N/A	2	1	71

Strategy Allocation (Based on Valuation)



NCRS Core Real Estate Portfolio

As of September 30, 2024

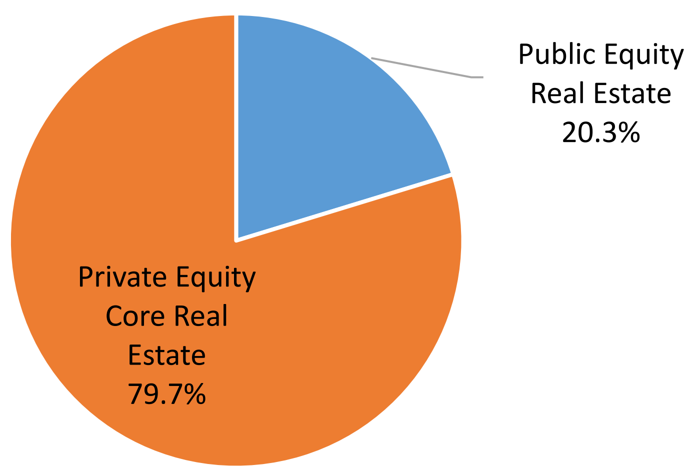
Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Core Real Estate	**$6,436**	**3.30**	**(2.39)**	**(0.93)**	**2.09**	**5.07**
Benchmark[11]		2.59	(2.93)	(0.32)	2.36	5.32
Public Equity Real Estate	**$1,305**	**15.69**	**29.88**	**(0.28)**	**2.90**	**5.49**
Private Equity Core Real Estate	**$5,131**	**0.58**	**(8.36)**	**(1.64)**	**1.56**	**4.79**

IRR by Vintage Year (%)

	Pre-2010	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
NCRS	6.56	23.62	N/A	N/A	4.09	3.51	1.70	6.84	N/A	15.77	N/A	N/A	3.24	N/A	N/A	5.93
# of Funds	13	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)



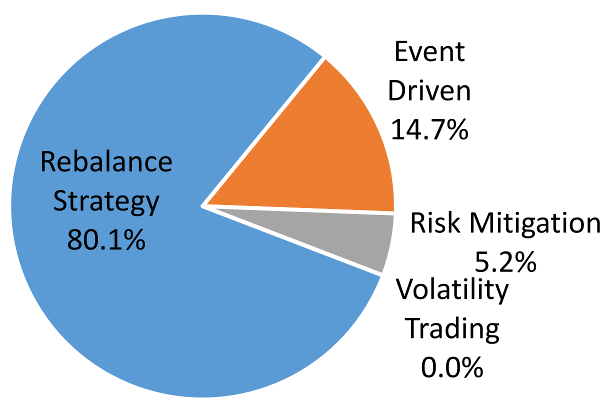
NCRS Multi-Strategy Portfolio

As of September 30, 2024

Net of Fees Performance (%)

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Multi-Strategy	**$2,651**	**3.10**	**12.50**	**5.28**	**4.25**	**4.62**
Benchmark[12]		2.66	9.72	2.13	3.06	3.38
Rebalance Strategy	**$2,123**	**3.17**	**13.30**	**5.36**	**5.14**	**5.68**
Event Driven	**$389**	**3.70**	**14.69**	**6.26**	**7.71**	**-**
Risk Mitigation	**$139**	**0.41**	**(3.07)**	**1.51**	**0.70**	**-**
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 Private Capital 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 Private Capital 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% ICE BofA 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 ICE BofA Core Investment Grade Index. The custom ICE BofA core index is comprised of the following weightings: 30% ICE BofA 5+ Years Governments, 35% ICE BofA 5+ Years Investment Grade Corporates, and 35% ICE BofA 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 ICE BofA 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% ICE BofA 5+ Years U.S. Treasury Index, 6.5% Bloomberg Commodity Index, 5% ICE BofA 3 Month Treasury Bill Index, and 4.5% ICE BofA 1-3 Years U.S. Inflation-Linked Treasury Index.

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