

NORTH CAROLINA
DEPARTMENT OF STATE TREASURER



Dale R. Folwell, CPA
STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION

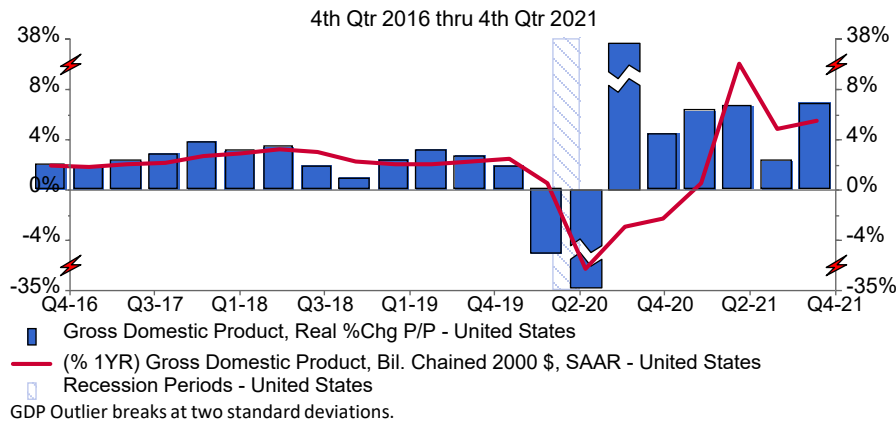
Performance Review

February 23, 2022



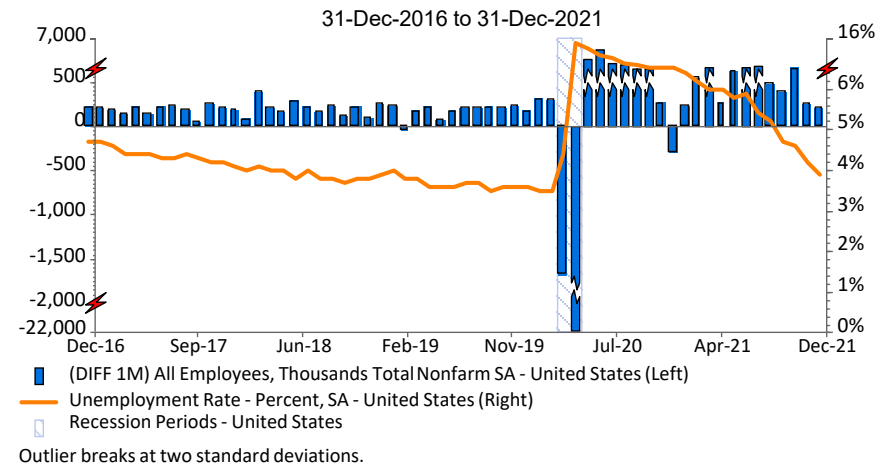
US Economic Environment

US Real GDP Growth



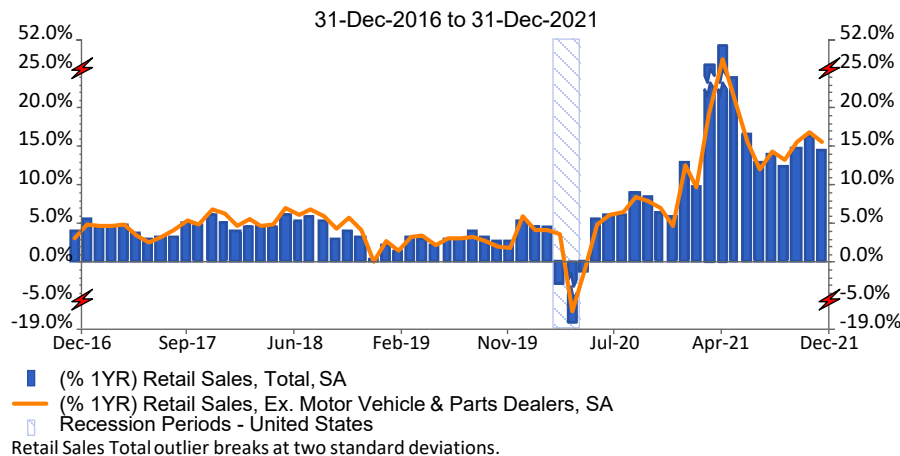
©FactSet Research Systems

US Change in NonFarm Employment & Unemployment Rate



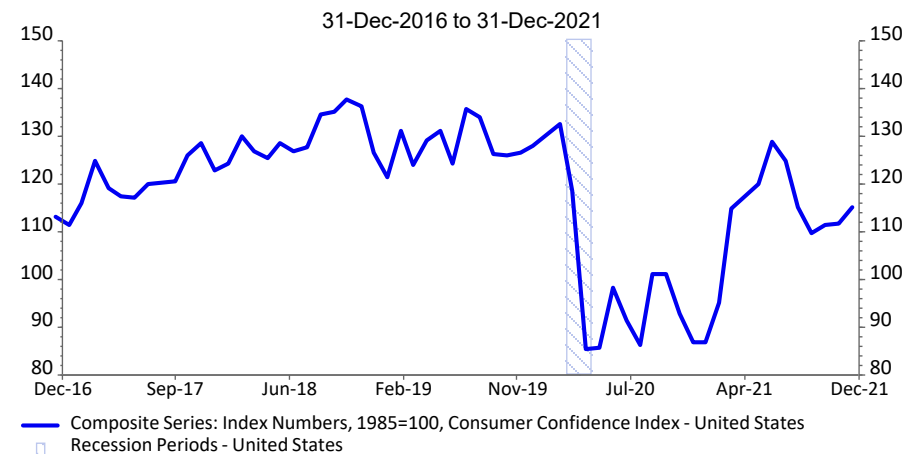
©FactSet Research Systems

US Retail Sales



©FactSet Research Systems

US Consumer Confidence

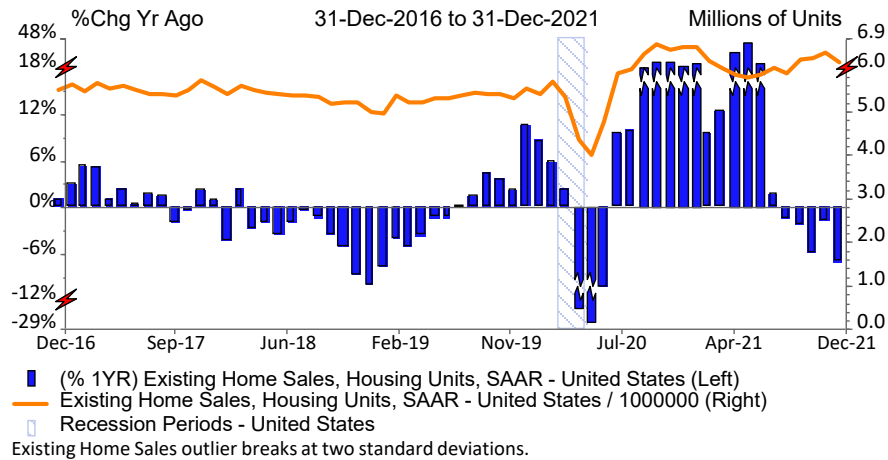


©FactSet Research Systems

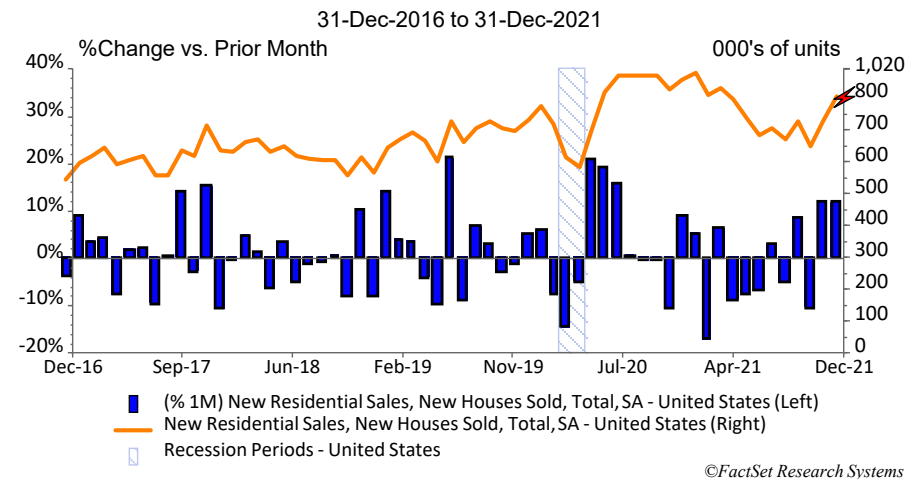


US Economic Environment

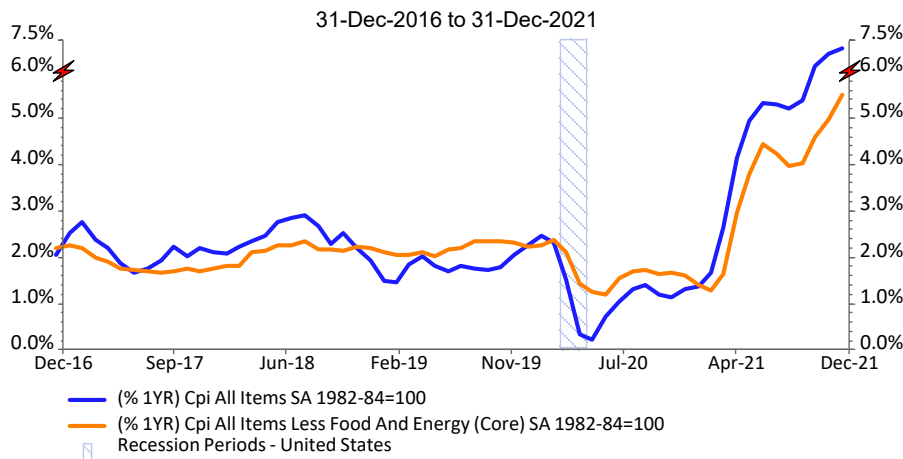
US Existing Home Sales



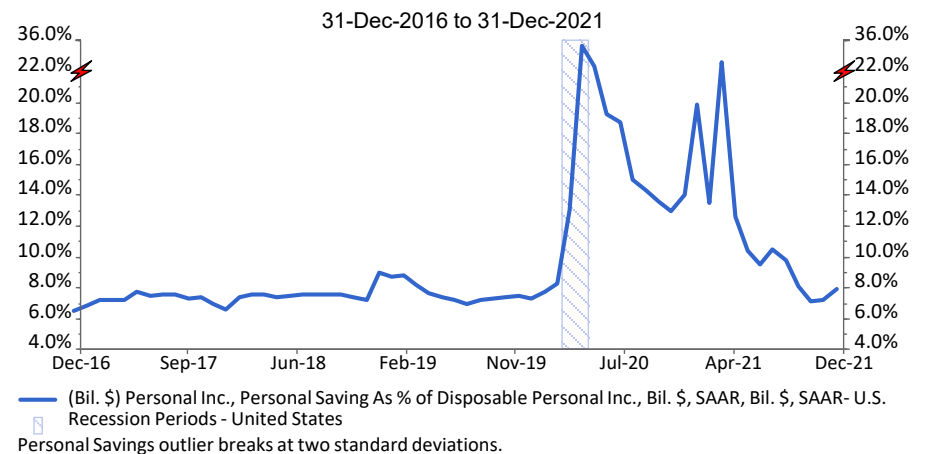
US New Home Sales



US Consumer Price Inflation



US Personal Savings Rate

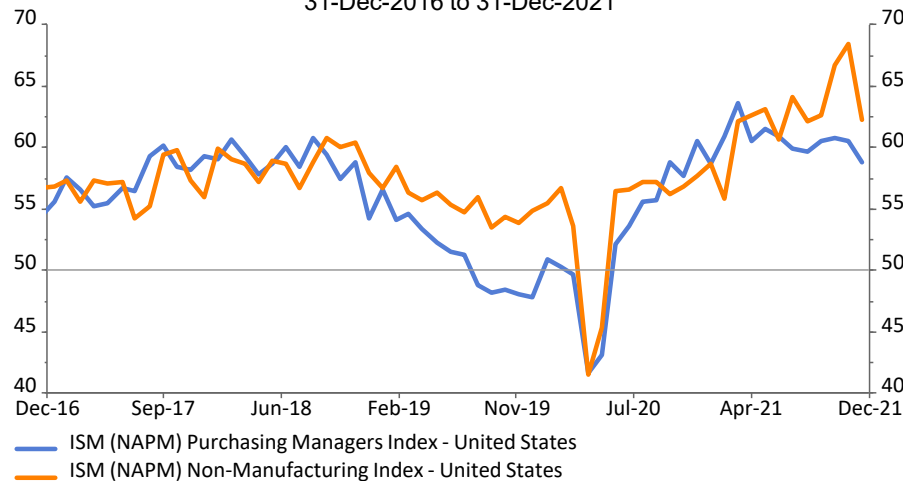




US and Global Economic Environment

ISM Report on Business

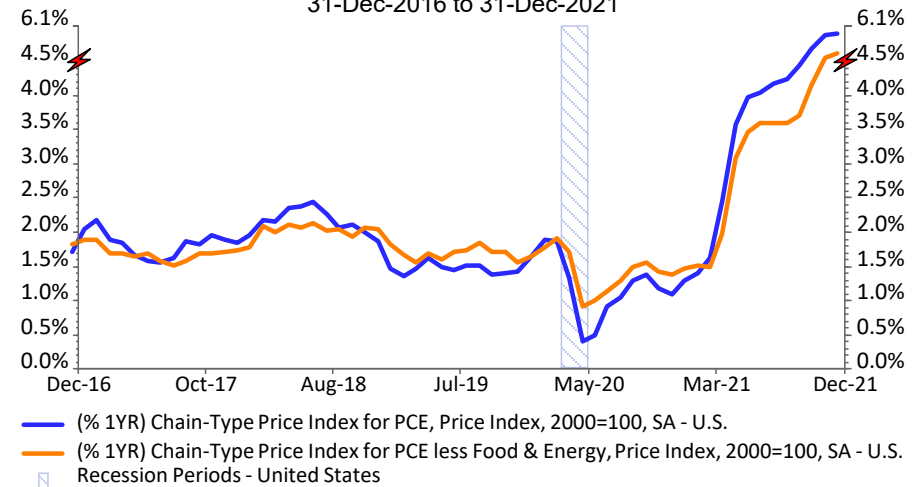
31-Dec-2016 to 31-Dec-2021



©FactSet Research Systems

US PCE Inflation

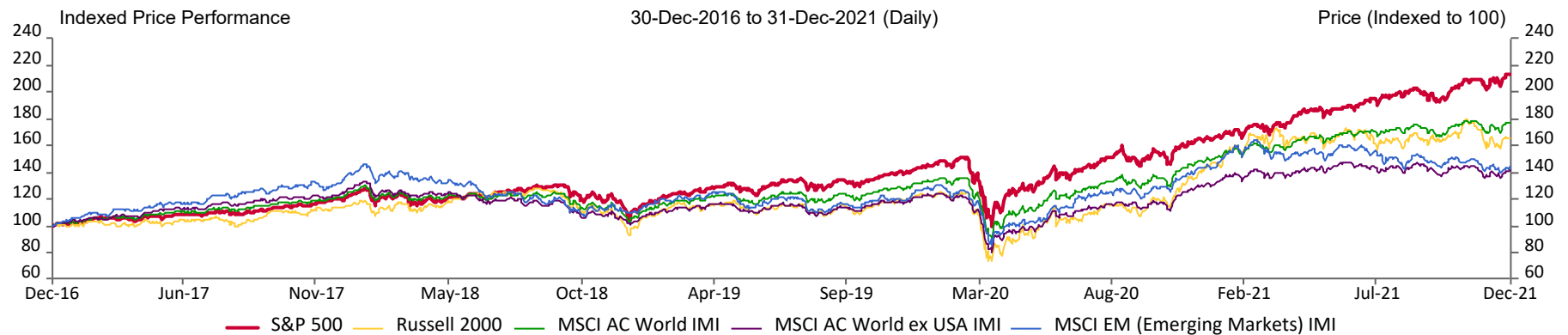
31-Dec-2016 to 31-Dec-2021



©FactSet Research Systems

S&P 500 vs. Peers

30-Dec-2016 to 31-Dec-2021 (Daily)

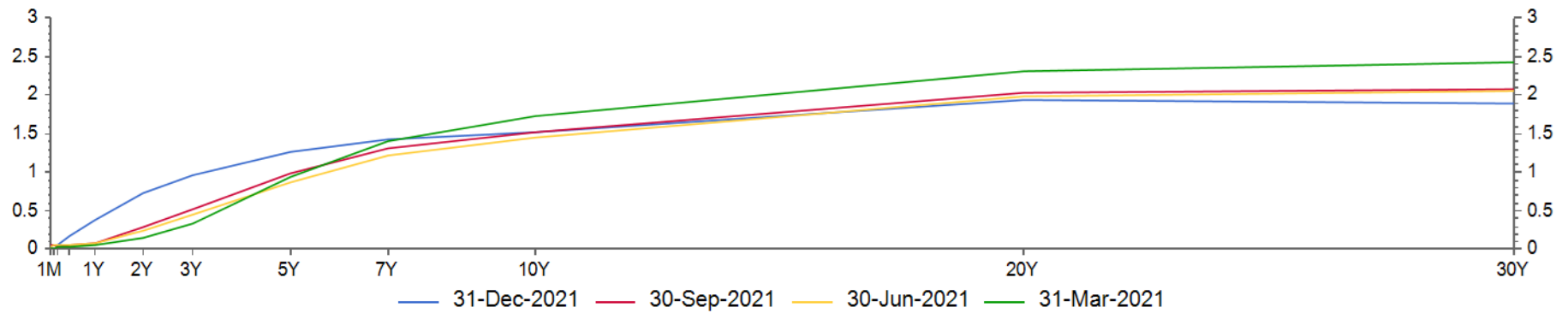


Source: FactSet Prices



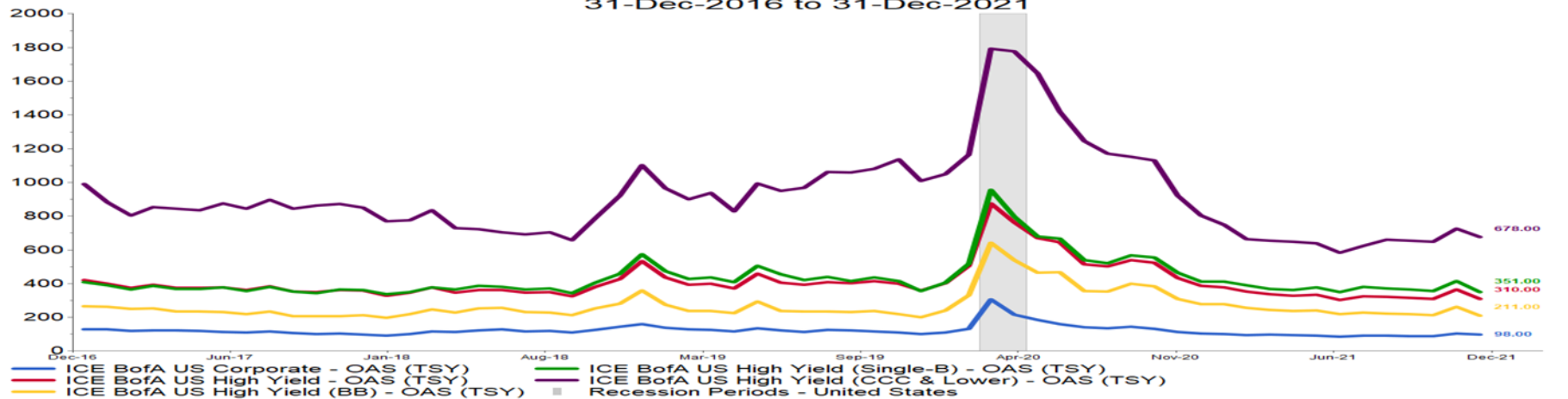
Market Environment

United States Treasury Yield Curve



Source: FactSet Interest Rate Database

Corporate Credit OAS (BofAML Indices) 31-Dec-2016 to 31-Dec-2021



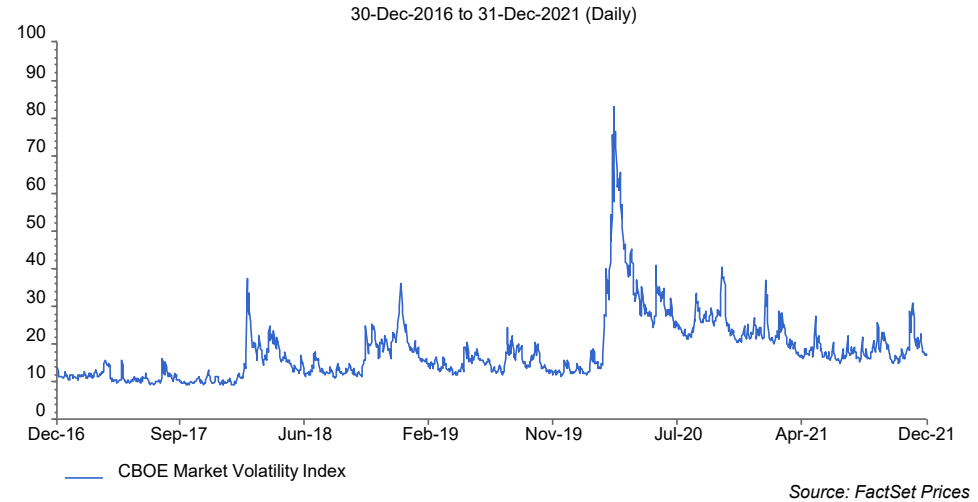


Market Environment

Closing Price Fed Nominal Broad Dollar Index



Closing Price CBOE VIX Index

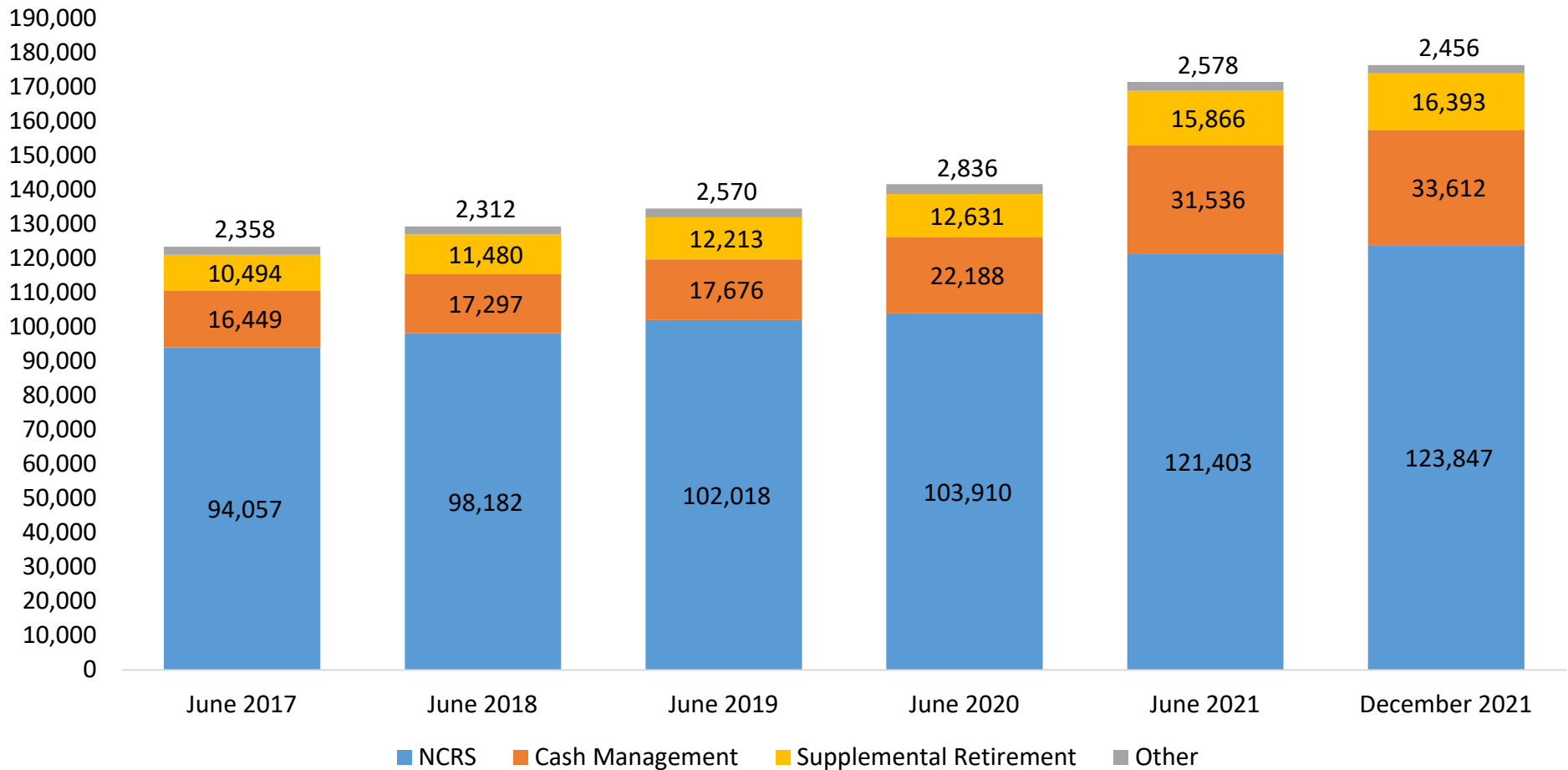


Countries	Real GDP YoY		Unemployment		CPI YoY		Countries	Real GDP YoY		Unemployment		CPI YoY	
	Date	Value	Date	Value	Date	Value		Date	Value	Date	Value	Date	Value
U.S.	12/21	5.5	12/21	3.9	12/21	7.0	Asia/Pacific/Latam						
Europe							China	12/21	4.0			12/21	1.5
Germany	12/21	1.4	12/21	5.2	12/21	5.3	India	09/21	8.4			12/21	5.6
France	12/21	5.4	11/21	7.5	12/21	2.8	Japan	09/21	1.2	11/21	2.8	12/21	0.8
U.K.	09/21	6.8	11/21	4.1	12/21	5.4	Indonesia	09/21	3.5			12/21	1.9
Italy	12/21	6.4	11/21	9.2	12/21	3.9	Brazil	09/21	4.0			12/21	10.1
Spain	12/21	5.2	11/21	14.1	12/21	6.5	Australia	09/21	3.9	12/21	4.2	12/21	3.5



Assets Under Management (\$MM)

\$176.3 billion as of December 31, 2021



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 December 31, 2021

	Market Value (\$MM)	%	Target	Range		Relative %	Relative \$ (\$MM)
				Minimum	Maximum		
Growth	61,921	50.00%	58.0%	37.0%	71.0%	-8.00%	(9,910)
Public Equity	44,564	35.98%	42.0%	37.0%	47.0%	-6.02%	(7,452)
Private Equity	7,429	6.00%	6.0%	0.0%	8.8%	0.00%	(1)
Non Core Real Estate	2,604	2.10%	3.0%	0.0%	8.0%	-0.90%	(1,111)
Opportunistic Fixed Income	7,323	5.91%	7.0%	0.0%	7.5%	-1.09%	(1,346)
Rates & Liquidity	47,582	38.42%	29.0%	24.0%	42.0%	9.42%	11,667
IG Fixed Income & Cash	33,364	26.94%	28.0%	24.0%	32.0%	-1.06%	(1,313)
Pension Cash	14,218	11.48%	1.0%	0.0%	10.0%	10.48%	12,980
Inflation Sensitive & Diversifiers	12,001	9.69%	11.0%	4.0%	16.0%	-1.31%	(1,622)
Inflation Sensitive	5,548	4.48%	6.0%	2.0%	7.5%	-1.52%	(1,883)
Core Real Estate	6,453	5.21%	5.0%	2.0%	10.0%	0.21%	260
Multi-Strategy	2,343	1.89%	2.0%	0.0%	4.0%	-0.11%	(134)
Grand Total	123,847	100.00%					



NCRS Asset Allocation (Unaudited)

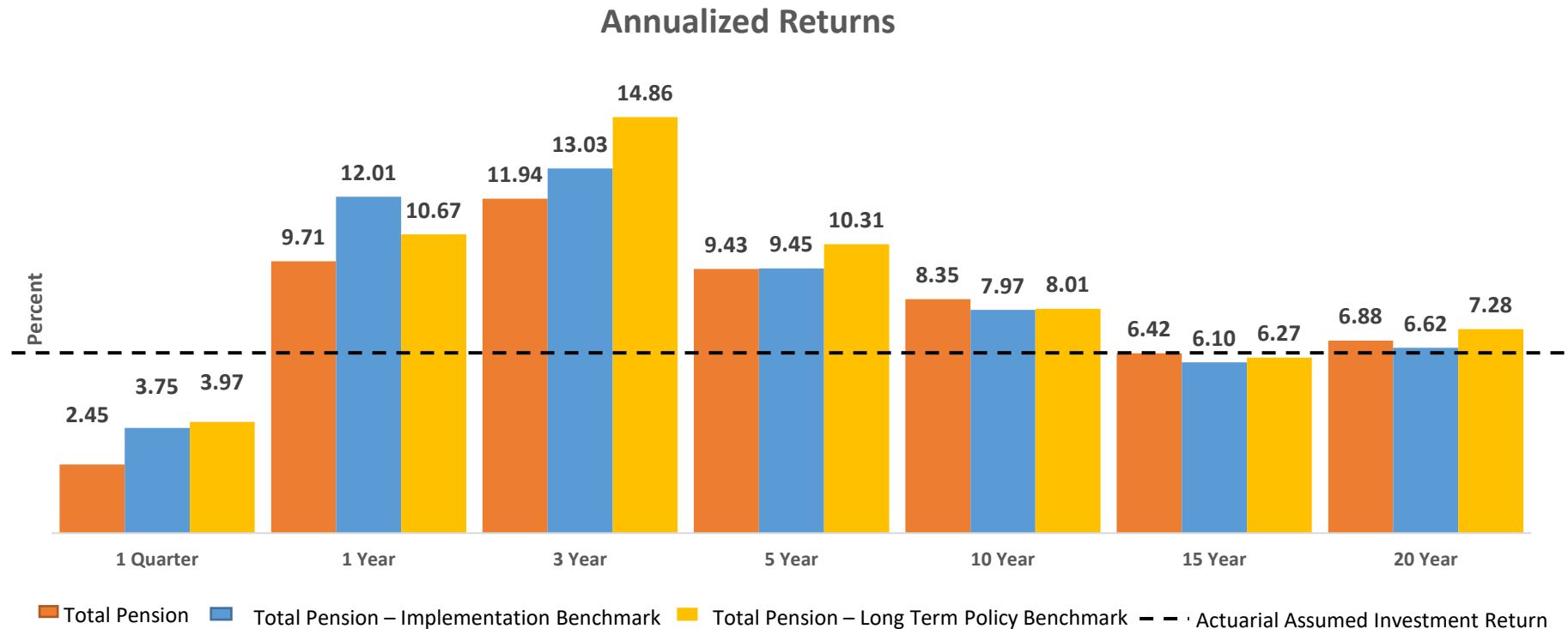
As of February 15, 2022

	Market Value (\$MM)	%	Target	Range		Relative %	Relative \$ (\$MM)
				Minimum	Maximum		
Growth	59,148	49.49%	58.0%	37.0%	71.0%	-8.51%	(10,165)
Public Equity	42,007	35.15%	42.0%	37.0%	47.0%	-6.85%	(8,185)
Private Equity	7,247	6.06%	6.0%	0.0%	8.8%	0.06%	76
Non Core Real Estate	2,670	2.23%	3.0%	0.0%	8.0%	-0.77%	(915)
Opportunistic Fixed Income	7,225	6.05%	7.0%	0.0%	7.5%	-0.95%	(1,141)
Rates & Liquidity	46,421	38.84%	29.0%	24.0%	42.0%	9.84%	11,764
IG Fixed Income & Cash	32,027	26.80%	28.0%	24.0%	32.0%	-1.20%	(1,434)
Pension Cash	14,393	12.04%	1.0%	0.0%	10.0%	11.04%	13,198
Inflation Sensitive & Diversifiers	11,634	9.74%	11.0%	4.0%	16.0%	-1.26%	(1,512)
Inflation Sensitive	5,470	4.58%	6.0%	2.0%	7.5%	-1.42%	(1,700)
Core Real Estate	6,164	5.16%	5.0%	2.0%	10.0%	0.16%	188
Multi-Strategy	2,302	1.93%	2.0%	0.0%	4.0%	-0.07%	(88)
Grand Total	119,506	100.00%					



NCRS Total Net Portfolio Return vs. Benchmarks

As of December 31, 2021



Notes:

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

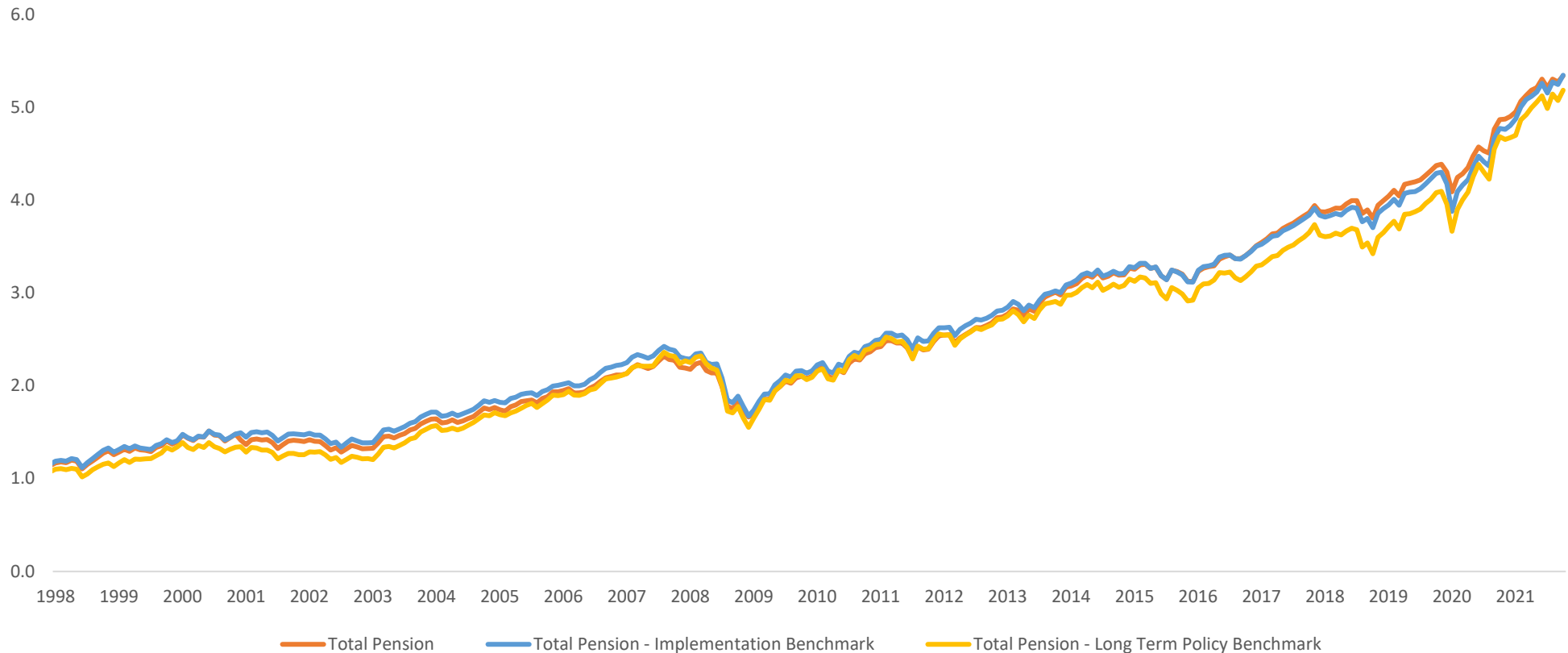
Returns for periods greater than one year are annualized.

Implementation Benchmark is a blend of the Asset Class Benchmarks at policy weights. It is currently weighted as follows: 58% Growth Benchmark; 29% Rates & Liquidity Benchmark; 11% Inflation Sensitive & Diversifiers Benchmark; and 2% Multi-Strategy Benchmark.

Long-Term Policy Benchmark is comprised of 57% MSCI ACWI IMI Net; 33% BOAML 5+ Years U.S. Treasury Index; 6% Bloomberg Commodity Index; and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.



Growth of a Dollar Through December 31, 2021



@FactSet Research Systems

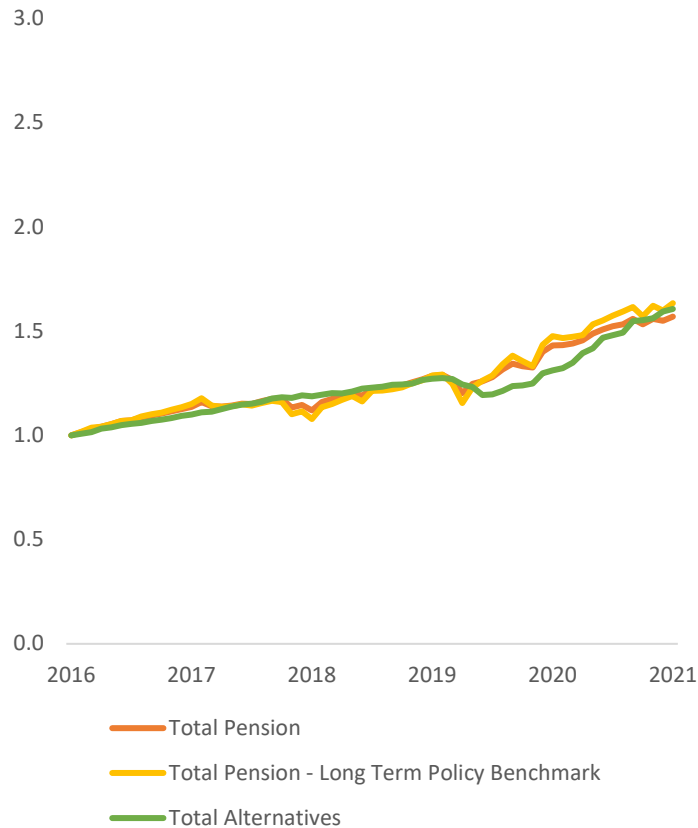
Notes:

Long-Term Policy Benchmark is comprised of 57% MSCI ACWI IMI Net; 33% BOAML 5+ Years U.S. Treasury Index; 6% Bloomberg Commodity Index; and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.



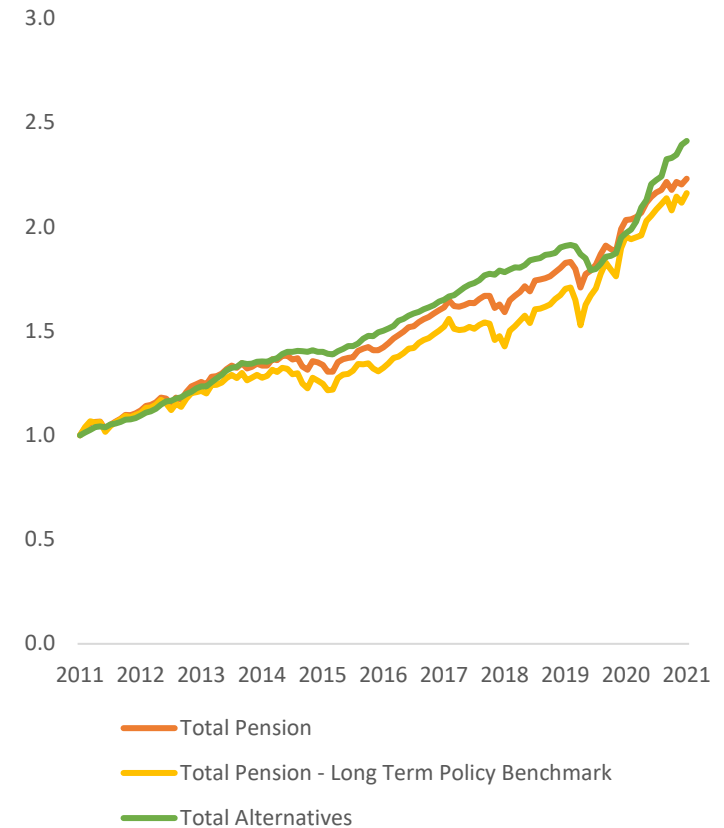
Growth of a Dollar

5 Years Ending December 31, 2021



@FactSet Research Systems

10 Years Ending December 31, 2021



@FactSet Research Systems

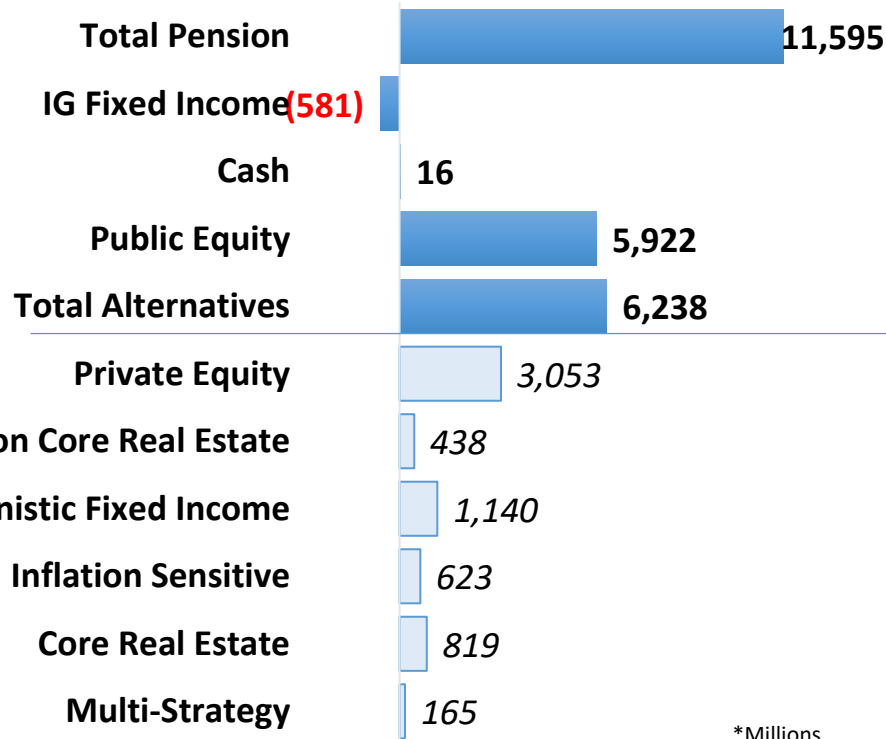
Note: NCRS Alternatives includes the following: Core Real Estate; Inflation Sensitive – Private Natural Resources; Inflation Sensitive – Real Assets and Other Diversifiers; Multi-Strategy Investments; Non-Core Real Estate; Opportunistic Fixed Income; Private Equity; Equity Hedge Strategies; and closed-end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



Estimated Contribution to Total Plan Return – 1 Year

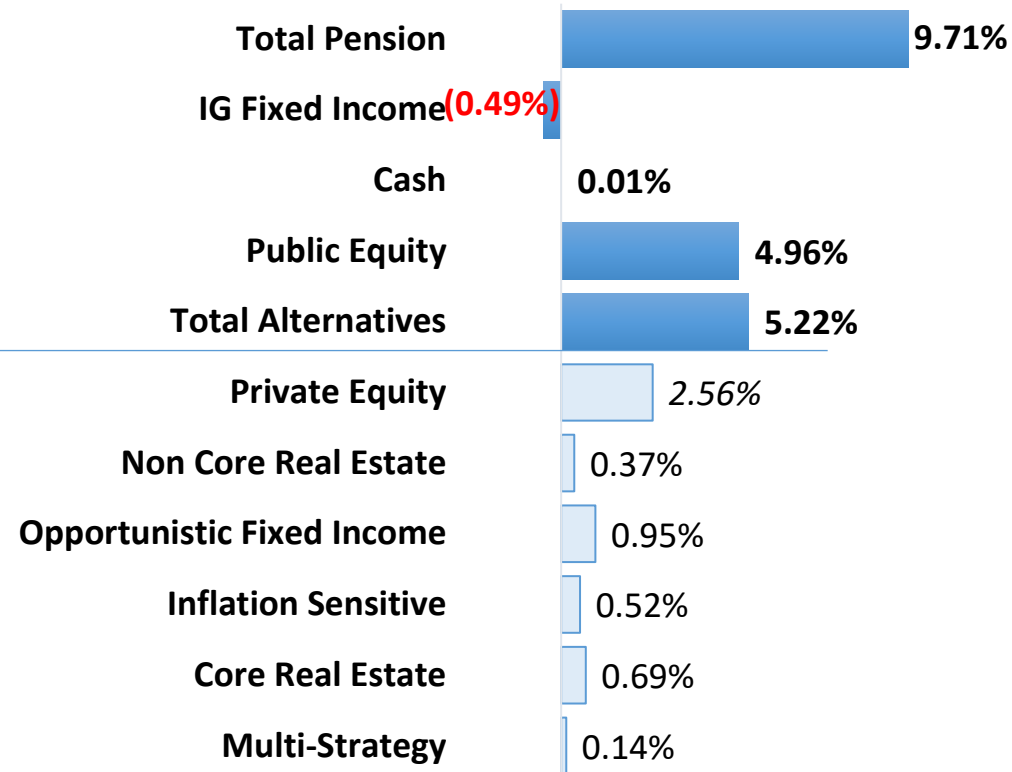
As of December 31, 2021

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

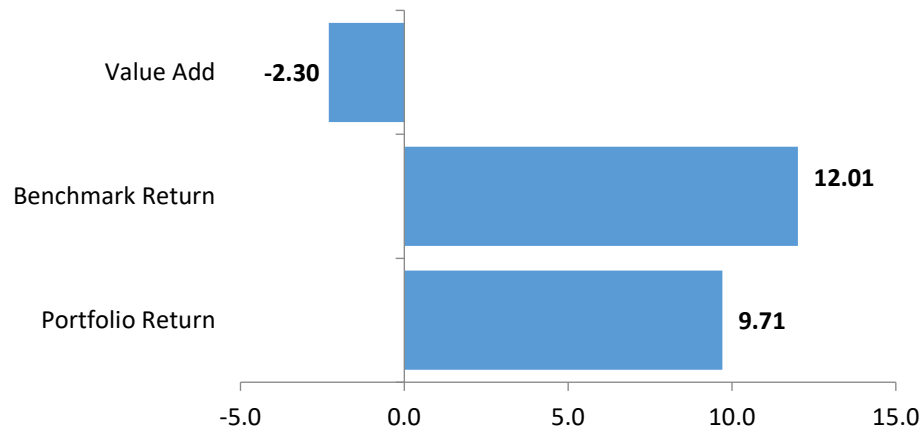
2.) Alternatives for this analysis include the following: Private Equity, Non-Core Real Estate, Opportunistic Fixed Income, Inflation Sensitive, Core Real Estate, and Multi-Strategy investments.



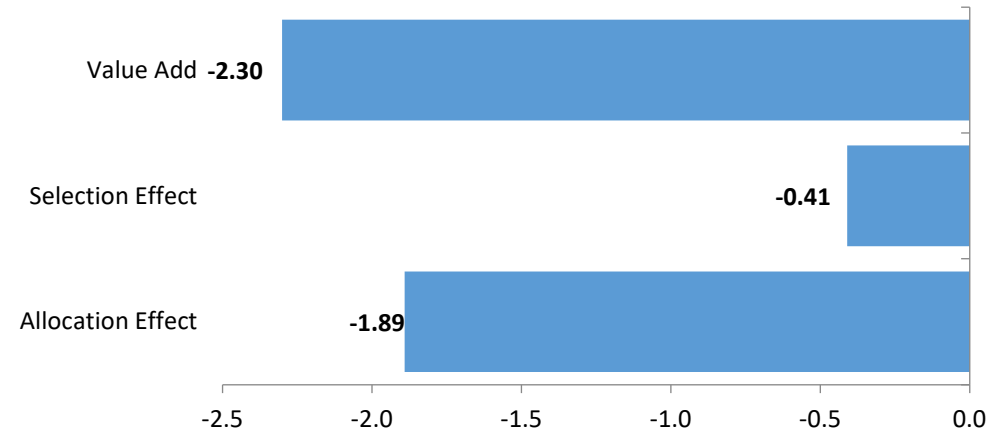
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 1 Year Ending December 31, 2021

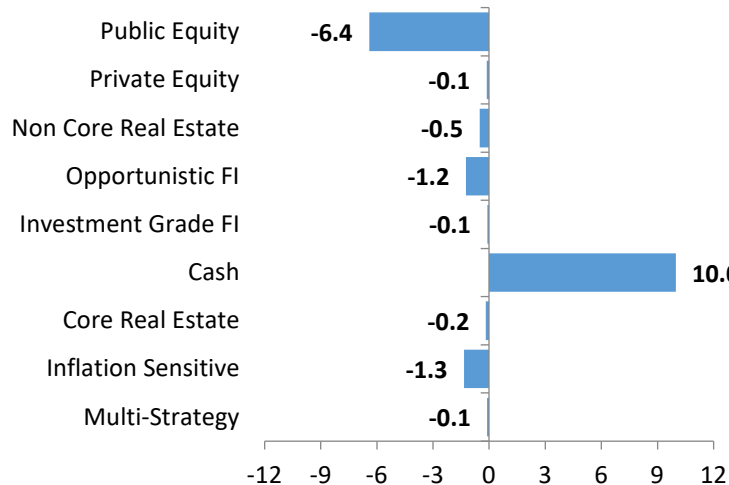
Total Fund Performance



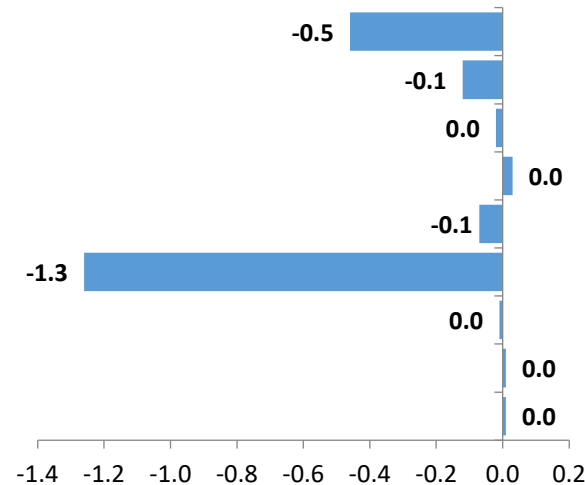
Attribution



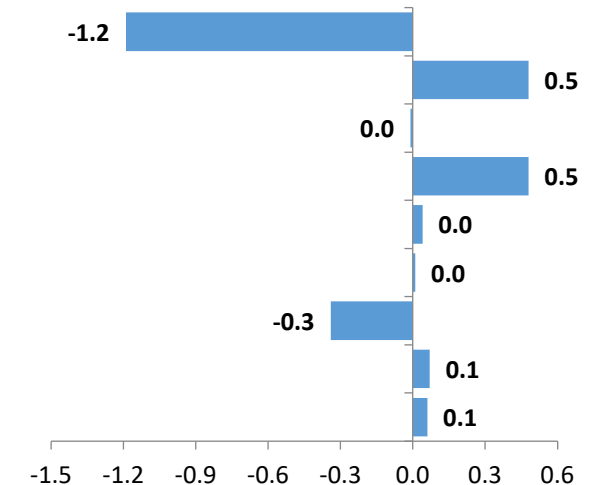
Avg Active Weight



Allocation Effect



Selection Effect

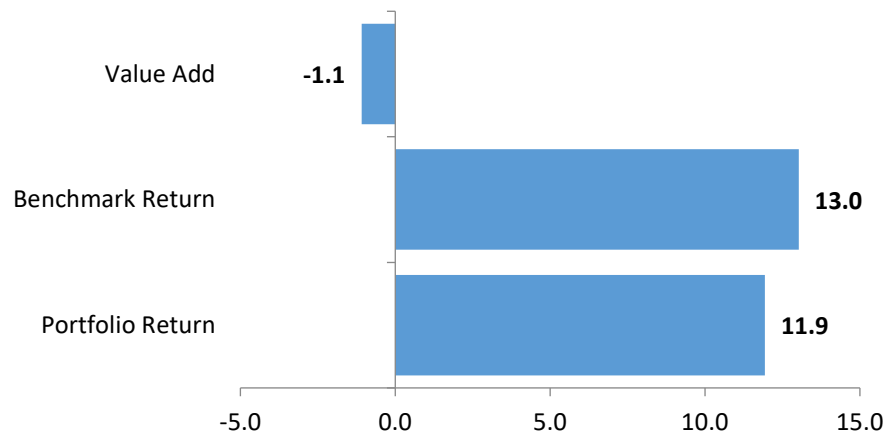




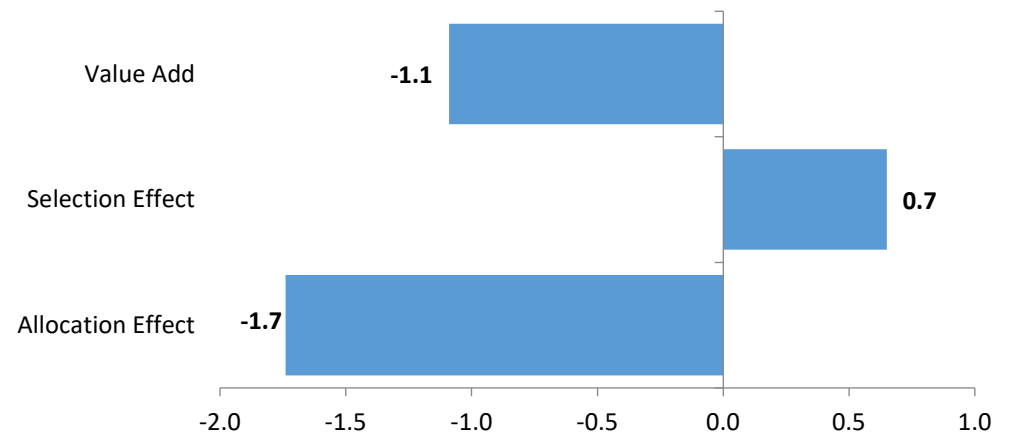
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 3 Years Ending December 31, 2021

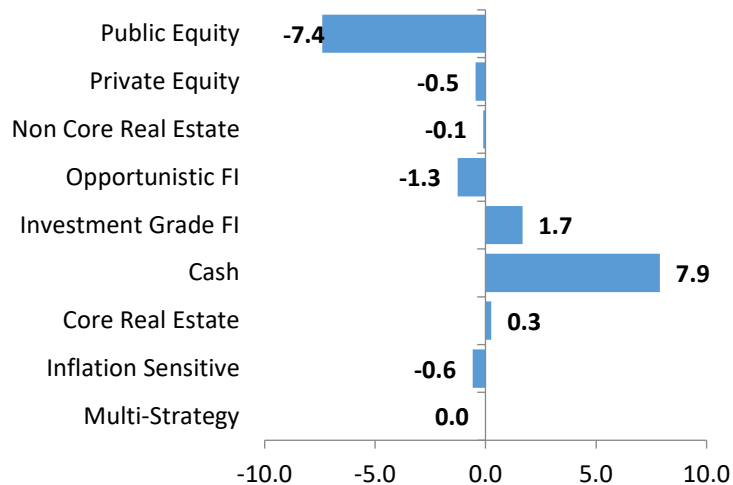
Total Fund Performance



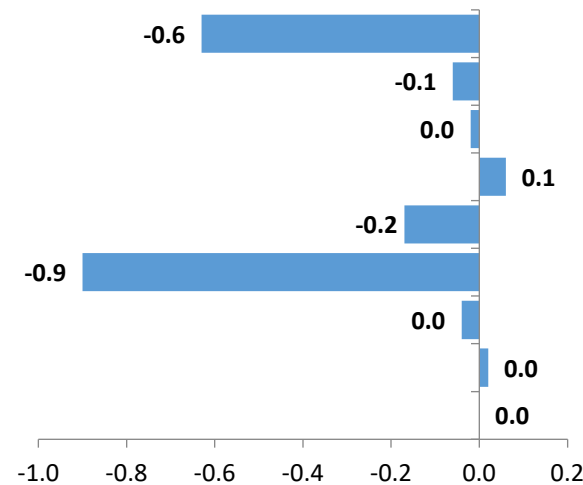
Attribution



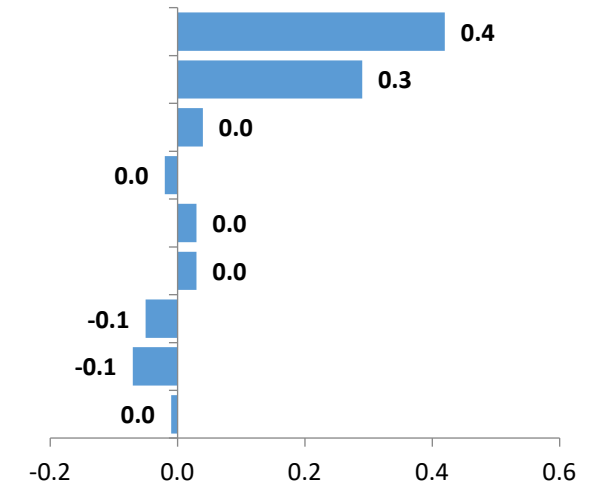
Avg Active Weight



Allocation Effect



Selection Effect

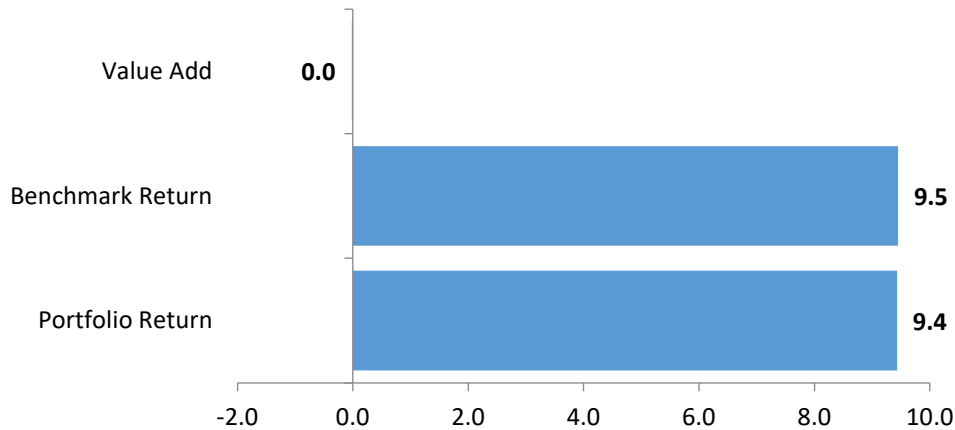




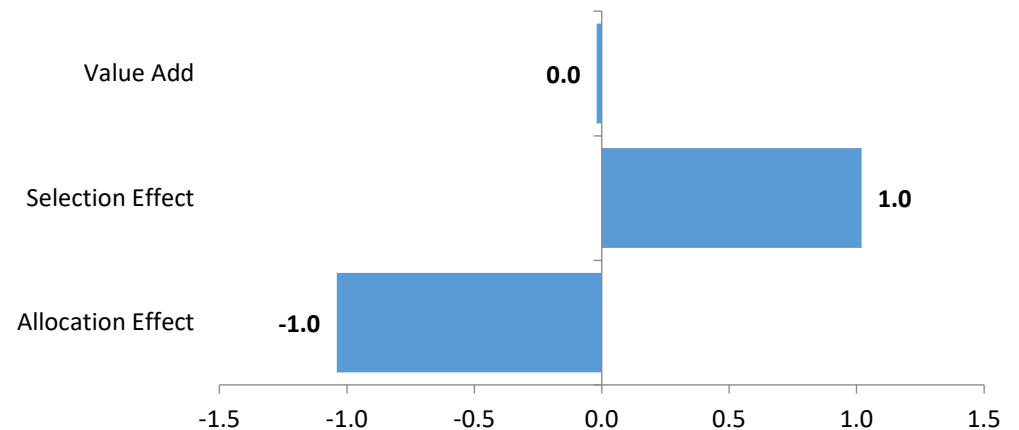
NCRS Net of Fees Return Attribution

Total Fund vs. Implementation Benchmark: 5 Years Ending December 31, 2021

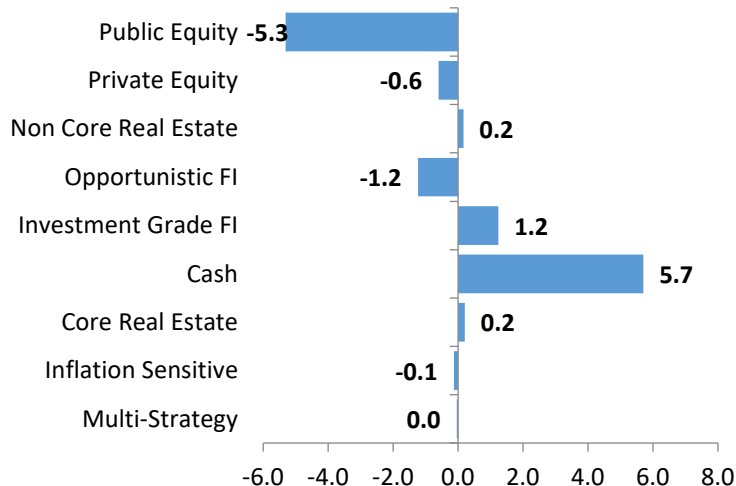
Total Fund Performance



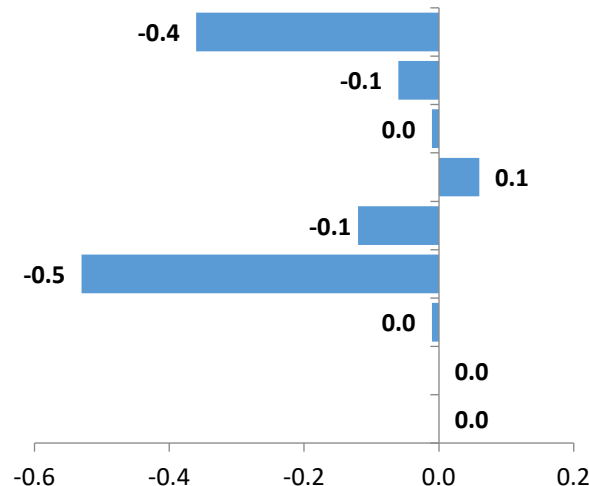
Attribution



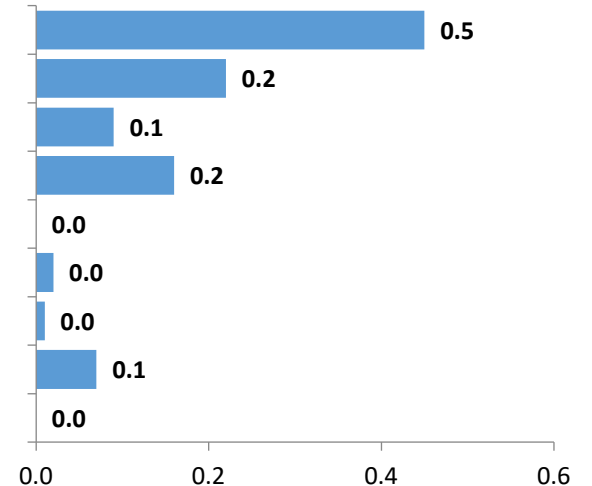
Avg Active Weight



Allocation Effect



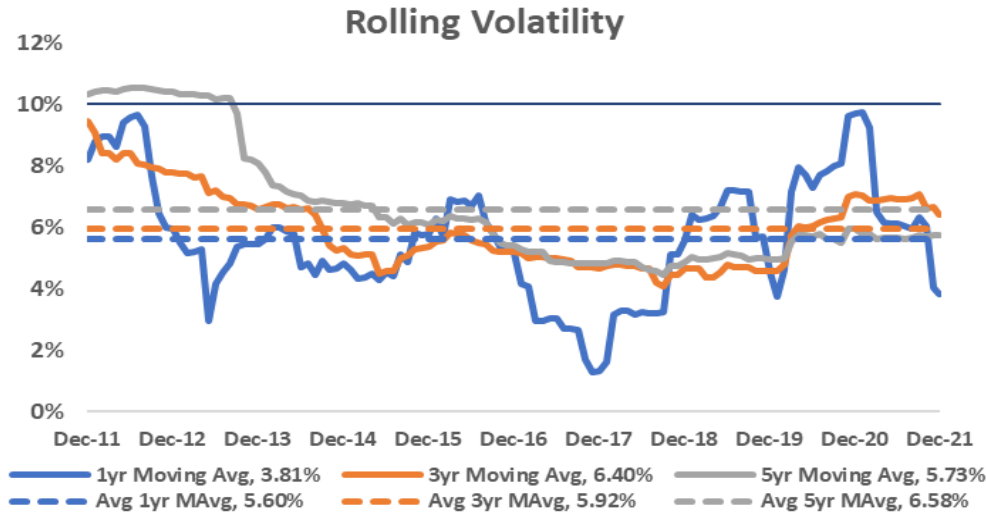
Selection Effect



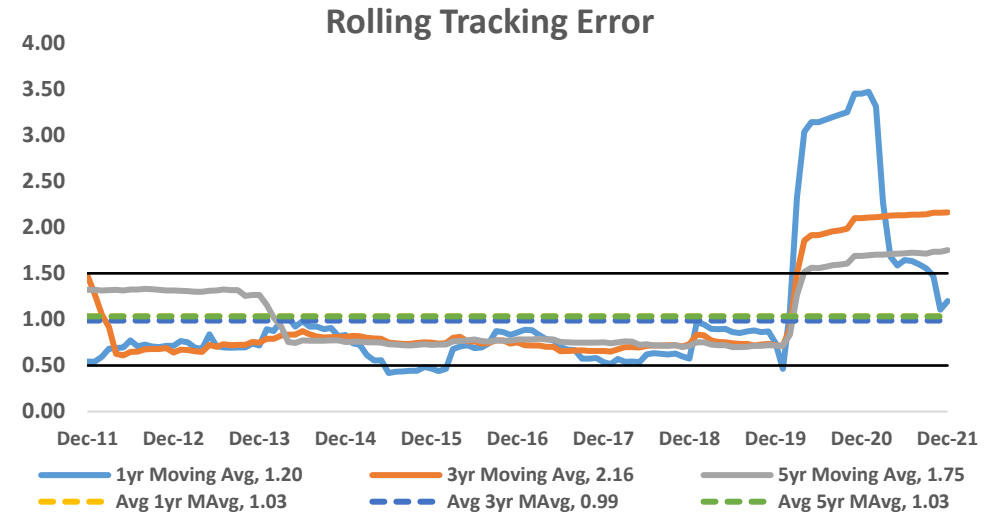


NCRS Net of Fees Risk Metrics

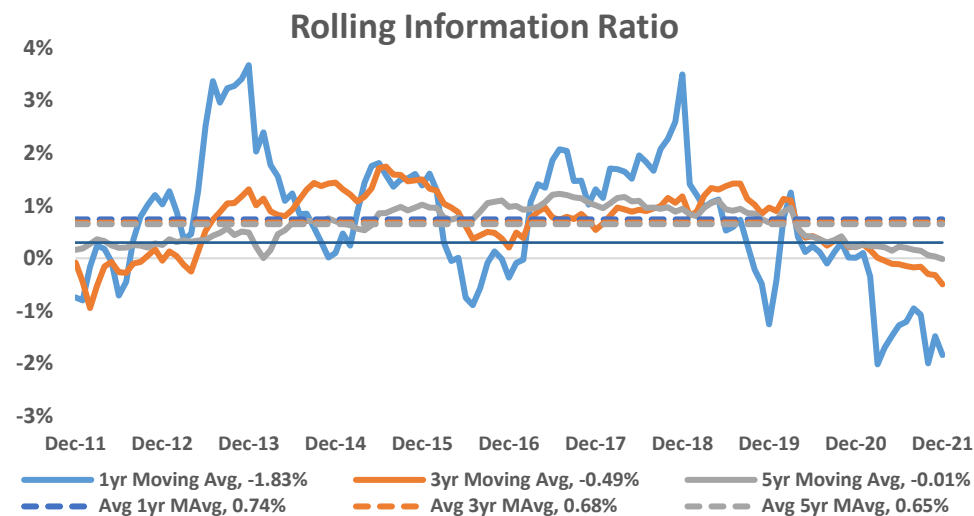
As of December 31, 2021



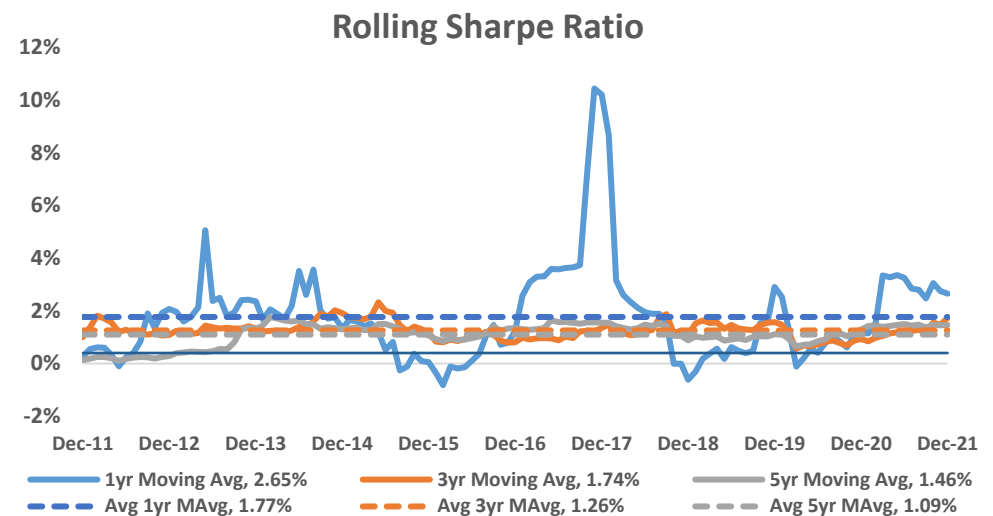
@FactSet Research Systems



@FactSet Research Systems



@FactSet Research Systems

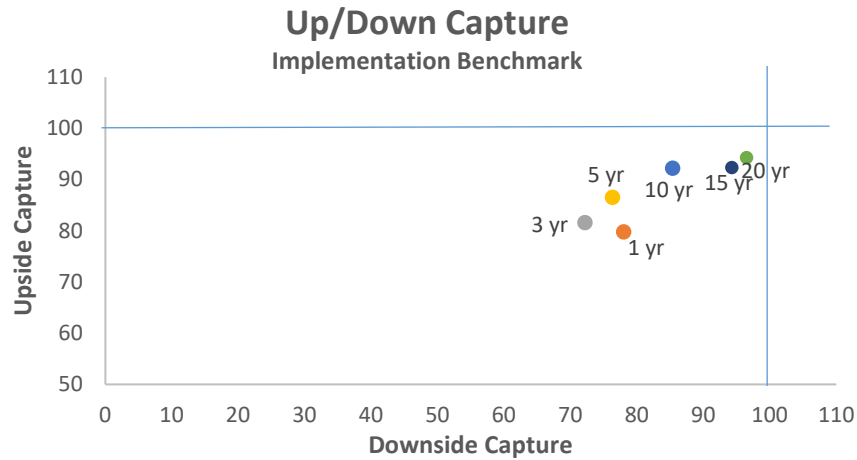


@FactSet Research Systems

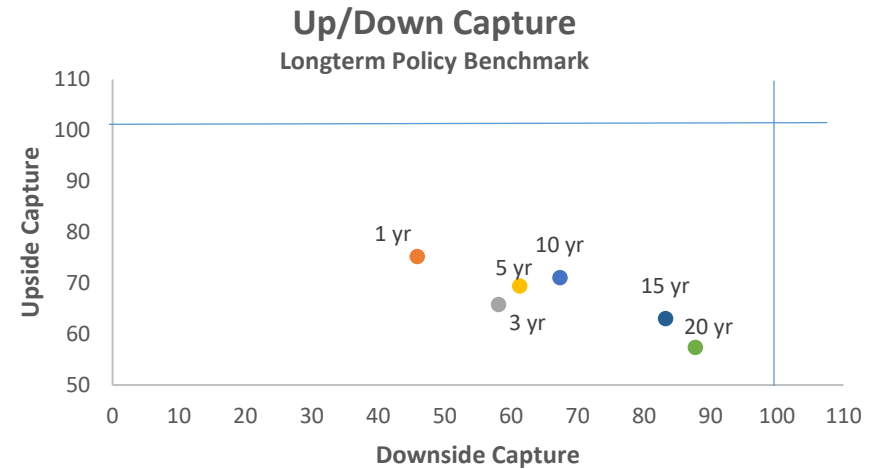


NCRS Net of Fees Risk Metrics

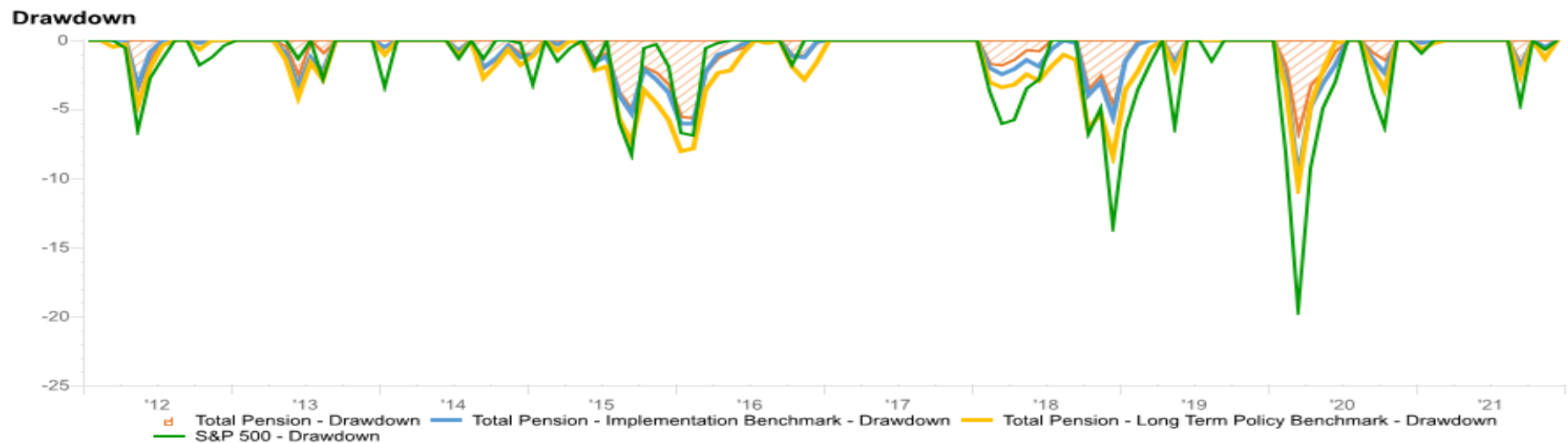
As of December 31, 2021



@FactSet Research Systems



@FactSet Research Systems



©FactSet Research Systems

NCRS Gross of Fees Return and Risk

BNY Mellon Universe: US Public Funds > \$20B; Data as of December 31, 2021

Returns	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	19.27	16.71	12.72	10.93	7.64	8.22
Median Percentile	18.29	15.56	11.86	10.14	7.35	8.10
75th Percentile	15.49	14.72	11.08	9.58	7.14	7.75
NCRS	10.03	12.27	9.86	8.86	6.89	7.25
Percentile Rank (1 = highest performance)	88	94	88	82	82	87

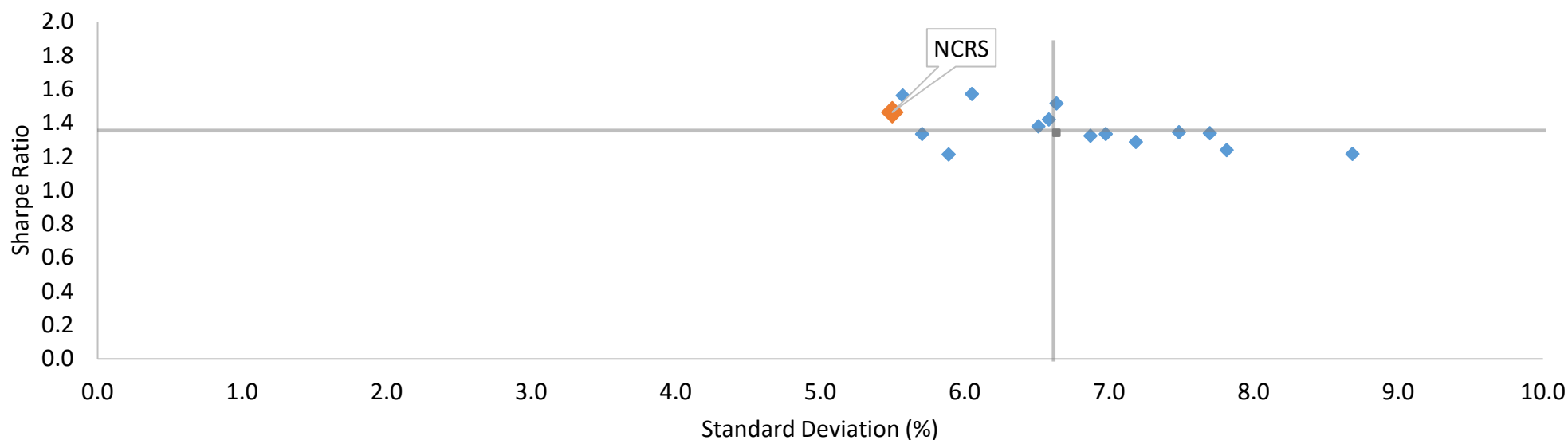
Risk	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	5.63	9.45	8.23	7.48	9.57	9.28
Median Percentile	4.89	8.22	7.30	6.64	9.05	8.51
75th Percentile	4.35	7.57	6.49	5.89	8.15	8.04
NCRS	3.66	6.32	5.67	5.50	7.45	7.17
Percentile Rank (1 = highest risk)	94	94	94	94	88	94

NCRS Gross of Fees Sharpe Ratio

BNY Mellon Universe: US Public Funds > \$20B; Data as of December 31, 2021

Sharpe	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	3.85	1.72	1.49	1.46	0.79	0.84
Median Percentile	2.98	1.63	1.35	1.34	0.76	0.82
75th Percentile	2.80	1.53	1.26	1.29	0.70	0.74
NCRS	2.63	1.71	1.49	1.46	0.81	0.84
Percentile Rank (1 = highest performance)	88	32	25	25	13	34

10 Year Plot: Sharpe Ratio vs. Volatility



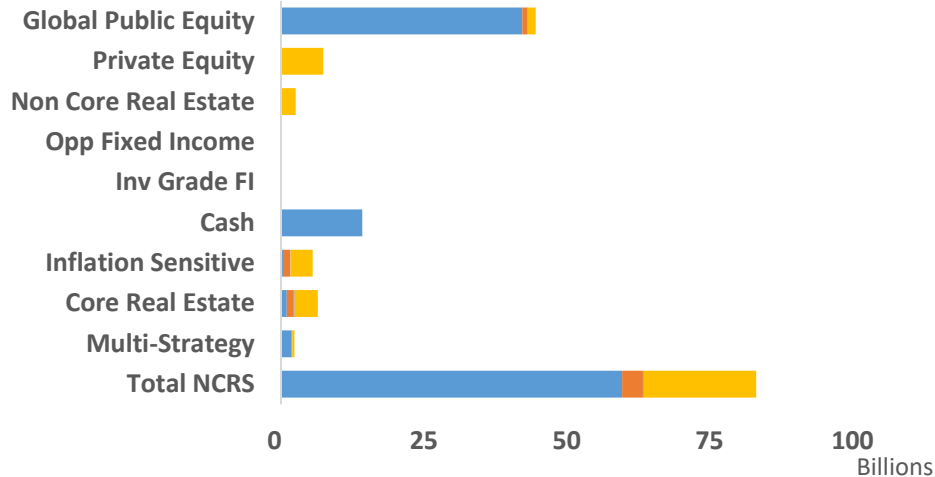
Note: Data shown is gross of fees with the exception of incentive payments, which have been deducted from NAV when applicable.



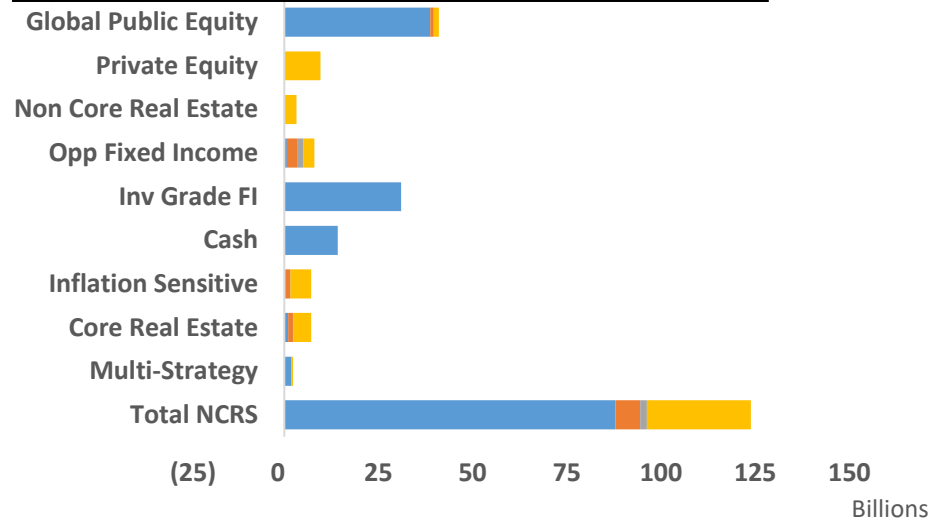
NCRS Liquidity Profile

As of December 30, 2021

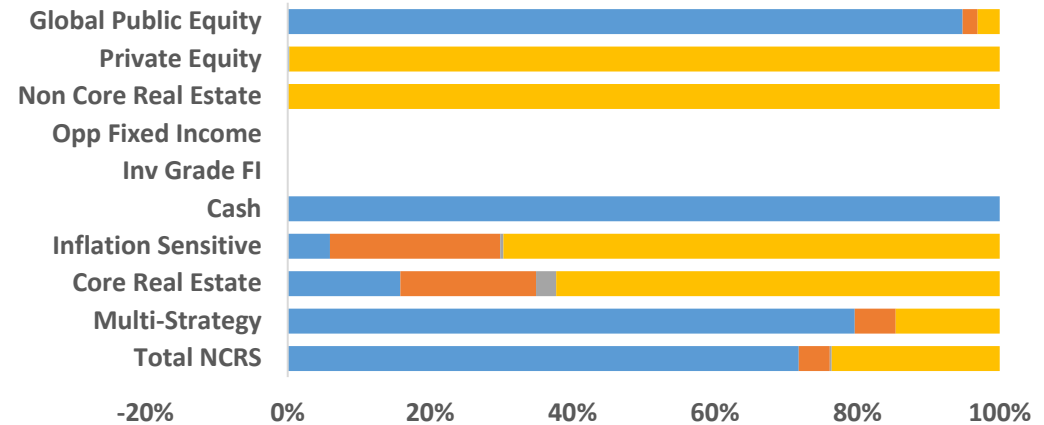
Liquidity Allocation (\$ Market Value)



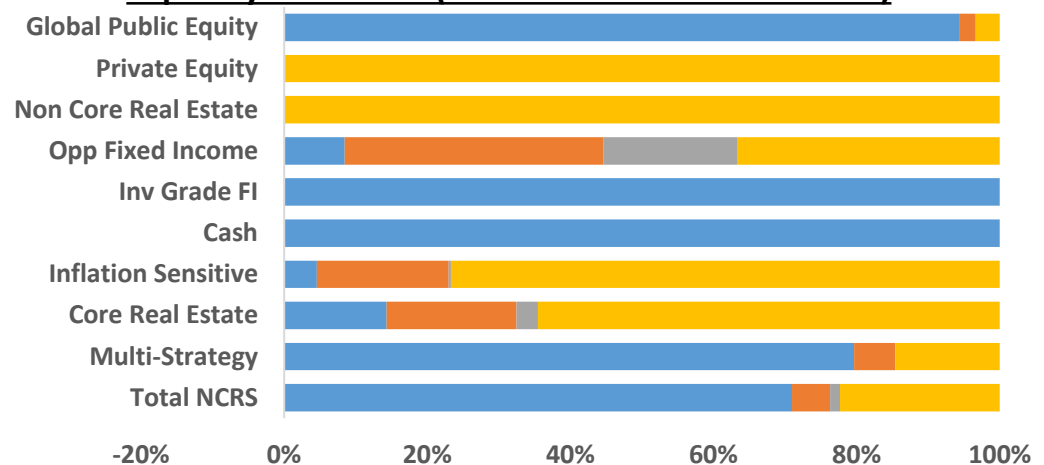
Liquidity Allocation (\$ Market Value + Unfunded)



Liquidity Allocation (% Market Value)



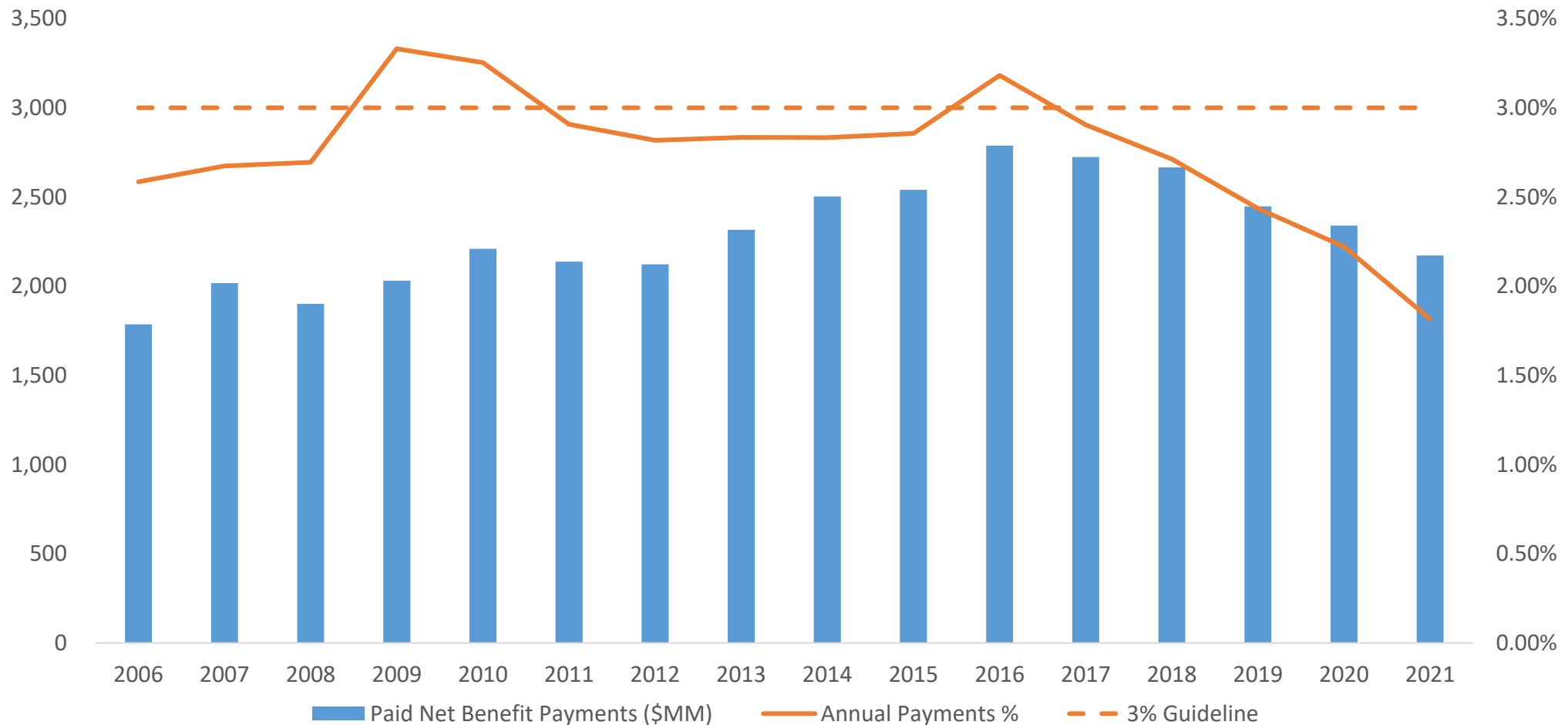
Liquidity Allocation (% Market Value + Unfunded)





NCRS Liquidity Profile

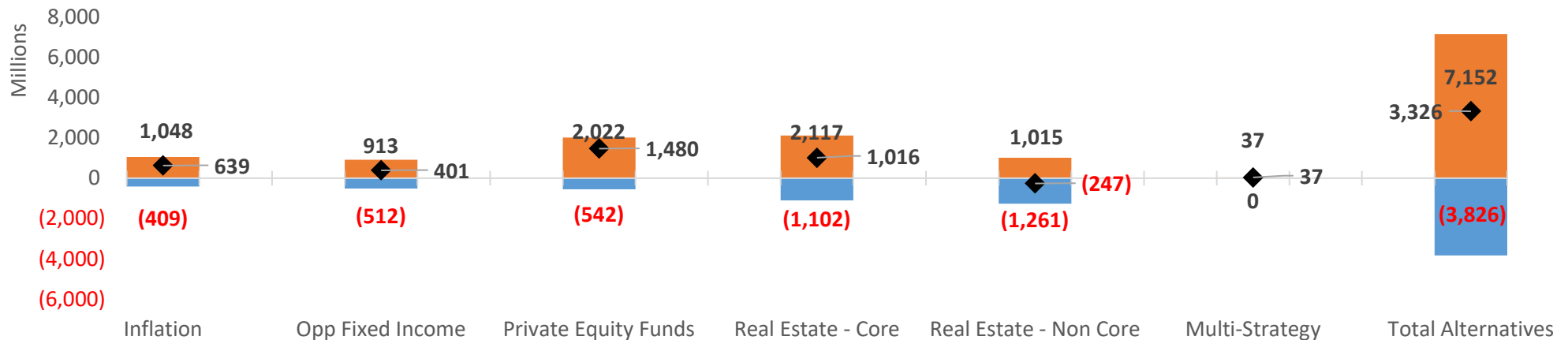
Net benefit payments by calendar year



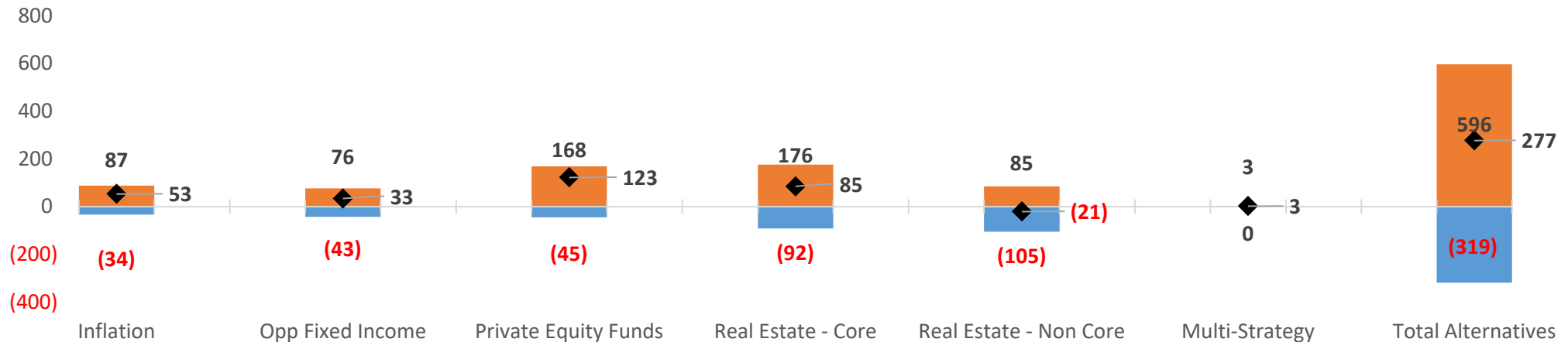


NCRS Alternatives Liquidity Profile Through December 31, 2021

Prior 12-Months
Total Cash Flows by Alternative Asset Class (\$MM)



Prior 12-Months
Average Monthly Cash Flows by Alternative Asset Class (\$MM)

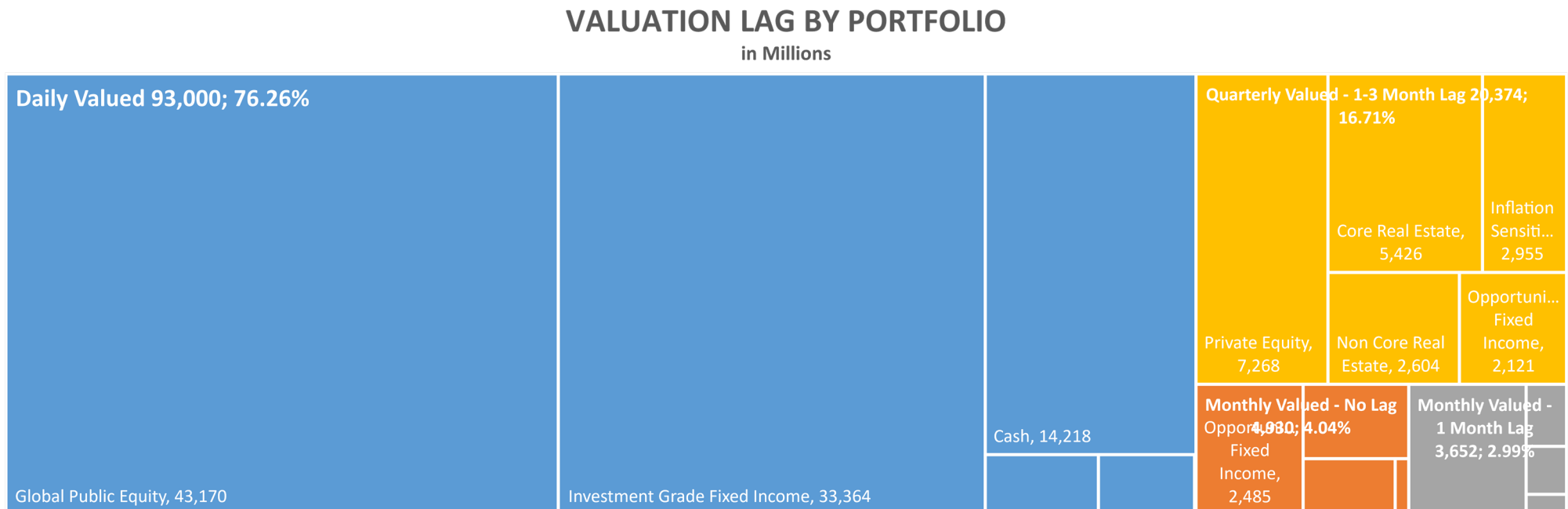
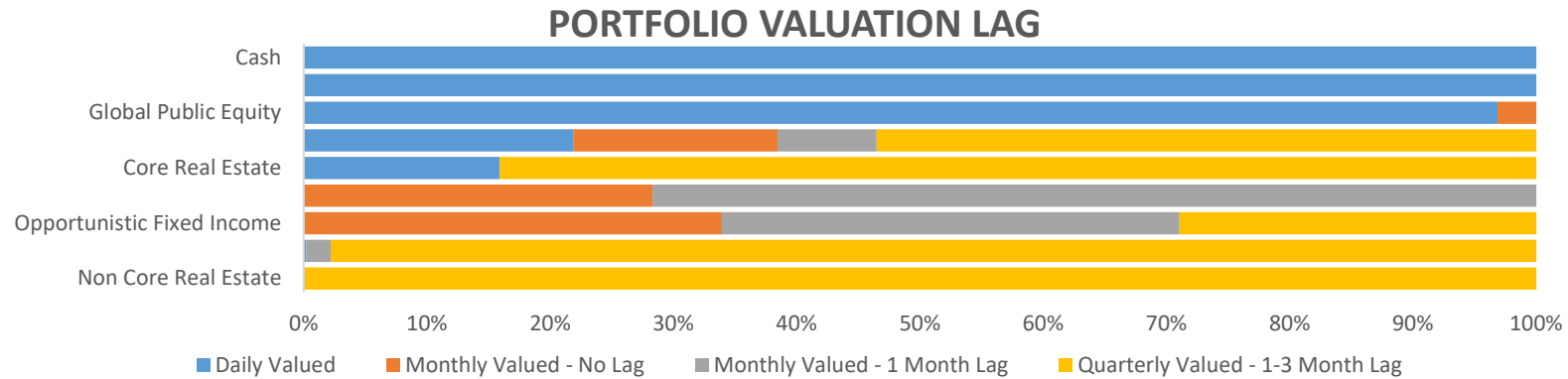


■ Contributions ■ Distributions ◆ Net



NCRS Valuation Lag Profile

As of December 31, 2021





NCRS Asset Class Net of Fees Performance

As of December 31, 2021

	Market Value (\$MM)	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
Growth	\$61,921	18.63	19.32	14.48	12.31	7.50	7.82
Benchmark ¹		19.02	18.05	12.80	10.94	6.61	7.13
Public Equity	\$44,564	14.51	21.43	15.10	12.67	7.67	7.95
Benchmark ²		18.14	20.06	13.81	11.66	6.85	7.20
Private Equity	\$7,429	48.03	23.92	20.31	14.67	11.07	8.87
Benchmark ³		37.82	18.39	15.99	13.21	11.13	11.57
Non-Core Real Estate	\$2,604	16.75	8.84	10.43	11.84	5.67	6.61
Benchmark ⁴		17.01	7.54	7.92	8.56	3.92	7.09
Opportunistic Fixed Income	\$7,323	17.46	7.77	7.21	7.33	6.81	-
Benchmark ⁵		8.93	7.87	4.37	3.81	1.70	-
Rates & Liquidity	\$47,582	-1.35	4.96	3.71	3.36	5.02	5.35
Benchmark ⁶		-1.86	5.56	4.11	3.49	4.95	5.27
IG Fixed Income	\$33,364	-1.84	5.80	4.22	3.64	5.20	5.49
Benchmark ⁷		-1.93	5.73	4.22	3.56	5.00	5.31
Cash	\$14,218	0.15	1.15	1.29	-	-	-
Benchmark ⁸		0.02	0.87	1.06	-	-	-
Inflation Sensitive & Diversifiers	\$12,001	13.29	5.68	6.38	4.97	2.61	4.32
Benchmark ⁹		15.51	6.59	5.72	4.88	1.99	4.20
Inflation Sensitive	\$5,548	11.97	3.33	4.86	2.05	0.74	3.41
Benchmark ¹⁰		10.59	4.37	3.88	1.22	2.44	3.74
Core Real Estate	\$6,453	14.51	8.18	8.06	9.04	5.58	6.56
Benchmark ¹¹		21.59	9.22	7.90	9.54	5.89	7.18
Multi-Strategy	\$2,343	7.74	5.85	5.10	7.07	5.18	-
Benchmark ¹²		4.97	6.31	4.94	6.48	4.96	-
Total Pension Plan	\$123,847	9.71	11.94	9.43	8.35	6.42	6.88
Implementation Benchmark ¹³		12.01	13.03	9.45	7.97	6.10	6.62
Long-Term Policy Benchmark ¹⁴		10.67	14.86	10.31	8.01	6.27	7.28



NCRS Calendar Year Asset Class Return Diversification

As of December 31, 2021

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Public Equity 17.59%	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%
Multi-Strategy 14.70%	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%
Opportunistic Fixed Income 13.95%	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 13.67%	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%
Total Pension 11.84%	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%
Non-Core Real Estate 7.78%	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%
IG Fixed Income & Cash 7.29%	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 5.74%	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%
Inflation Sensitive 1.06%	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%
		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%



New, Incremental, & Unfunded Investment Commitments

Since November 17th IAC Meeting

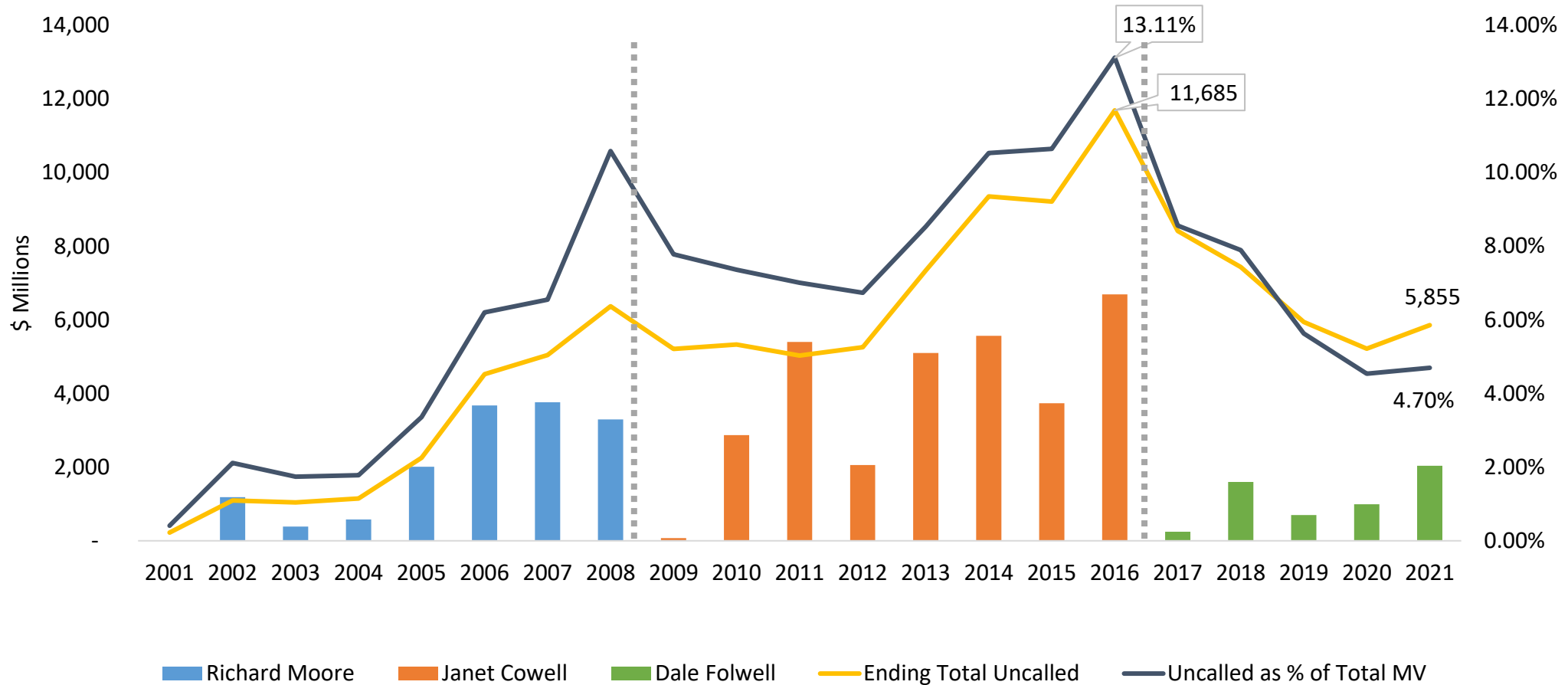
As of December 31, 2021

<u>Fund Name</u>	<u>Firm Name</u>	<u>New or Incremental Commitment (\$MM)</u>	<u>Closing Date</u>
Public Equity			
None			
Private Equity			
None			
Non-Core Real Estate			
None			
Opportunistic Fixed Income			
None			
Inflation Sensitive			
None			
Core Real Estate			
LBA NC Core Industrial	LBA Realty	300	12/7/2021
Multi-Strategy			
None			

<u>Asset Class</u>	<u>Unfunded Commitments (\$MM)</u>
Public Equity	0
Private Equity	2,220
Non-Core Real Estate	613
Opportunistic Fixed Income	680
Inflation Sensitive	1,662
Core Real Estate	680
Multi Strategy	0
Total	5,855

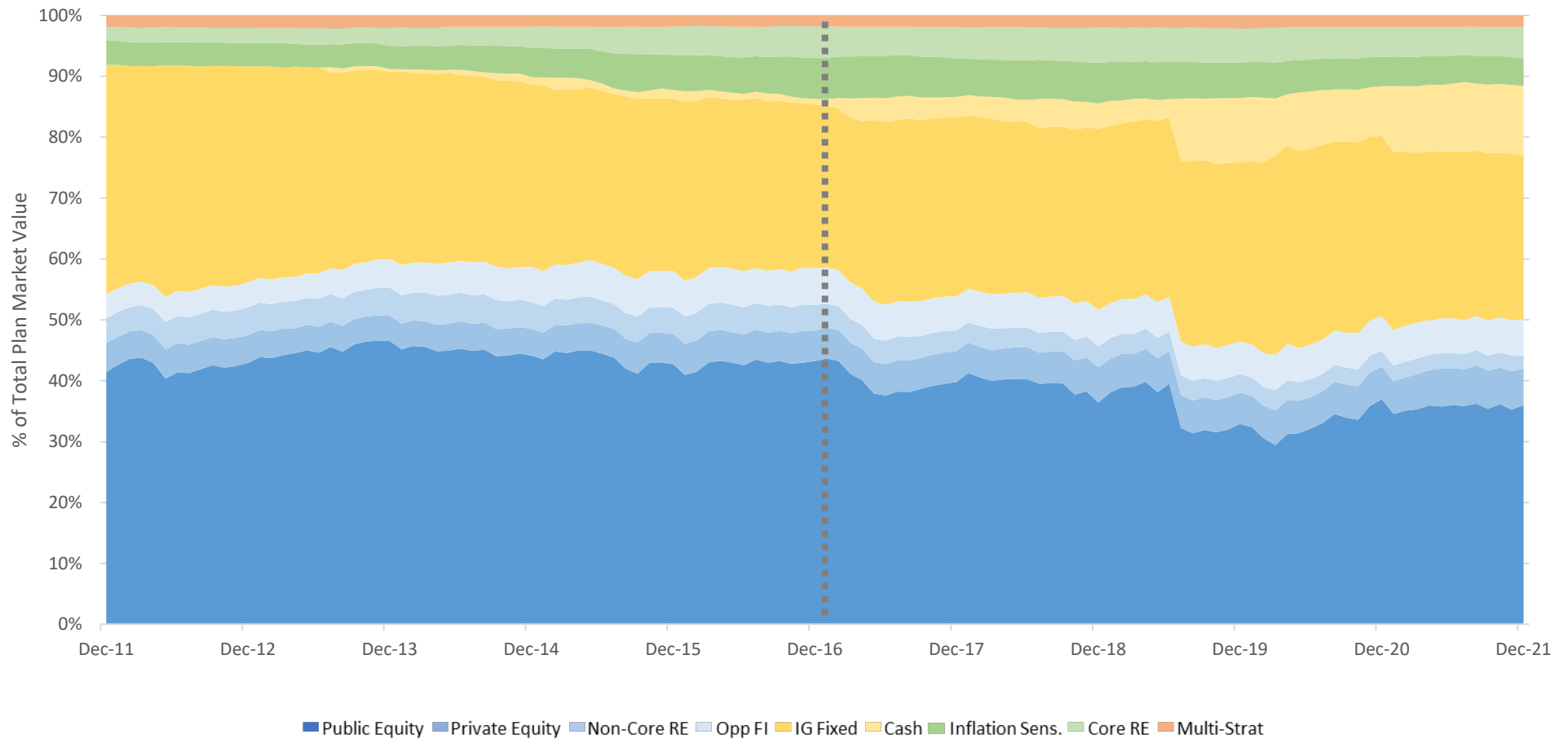


New and Total Unfunded Private Asset Class Commitments By Calendar Year of Closing





Asset Allocation History as of December 31, 2021





Exited Investments

Since November 17th 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 December 31, 2021

	Manager	Market Value (\$)	Uncalled (\$)	% MV	% MV Cum.
1	Internal Fixed Income	47,582,101,604	-	38.4%	38.4%
2	Internal Equity	18,946,702,292	-	15.3%	53.7%
3	BlackRock, Inc.	9,900,753,056	-	8.0%	61.7%
4	Baillie Gifford	4,471,335,149	-	3.6%	65.3%
5	Wellington Management	3,555,368,620	-	2.9%	68.2%
6	Mondrian Investment Partners Limited	2,946,059,673	-	2.4%	70.6%
7	Walter Scott & Partners	2,888,044,290	-	2.3%	72.9%
8	Rockwood Capital	2,881,045,119	145,999,381	2.3%	75.2%
9	Blackstone Group	2,855,895,361	750,326,025	2.3%	77.5%
10	Gladius Capital Management LP	2,000,565,111	-	1.6%	79.2%
11	Angelo, Gordon & Co.	1,907,243,760	49,036,361	1.5%	80.7%
12	Landmark Partners, Inc.	1,488,647,901	2,301,517,055	1.2%	81.9%
13	ValueAct Capital	1,391,794,815	-	1.1%	83.0%
14	HPS Investment Partners, LLC	1,083,842,899	117,087,135	0.9%	83.9%
15	LBA Realty	882,604,543	300,000,000	0.7%	84.6%
16	DoubleLine Capital LP	878,384,172	-	0.7%	85.3%
17	Earnest Partners	838,971,374	-	0.7%	86.0%
18	Franklin Templeton Investments	813,200,739	-	0.7%	86.6%
19	Rockpoint Group, LLC	795,915,082	85,870,046	0.6%	87.3%
20	Brigade Capital Management	735,831,424	(0)	0.6%	87.9%
	88 Remaining Managers*	15,002,444,723	2,105,378,046	12.1%	100.0%
Total		123,846,751,707	5,855,214,049	100.0%	100.0%

*Manager count consists of all manager accounts with a market value greater than \$5.1 million and new, not yet funded, accounts.



Appendix



NCRS Public Equity Net of Fees Performance

As of December 31, 2021

	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	\$44,564	4.36	14.51	21.43	15.10	12.67
Benchmark ²		6.09	18.14	20.06	13.81	11.66
Domestic Portfolio	\$23,553	8.63	24.49	26.42	18.55	16.54
Russell 3000		9.28	25.66	25.79	17.97	16.30
Non-US Portfolio	\$21,008	0.01	4.62	16.27	12.26	9.03
Custom Benchmark		1.64	8.53	13.62	9.83	7.57
Equity Hedge	\$2	(3.78)	40.25	14.26	9.04	-
MSCI ACWI (Beta Adjusted)		2.45	7.06	8.06	5.73	-

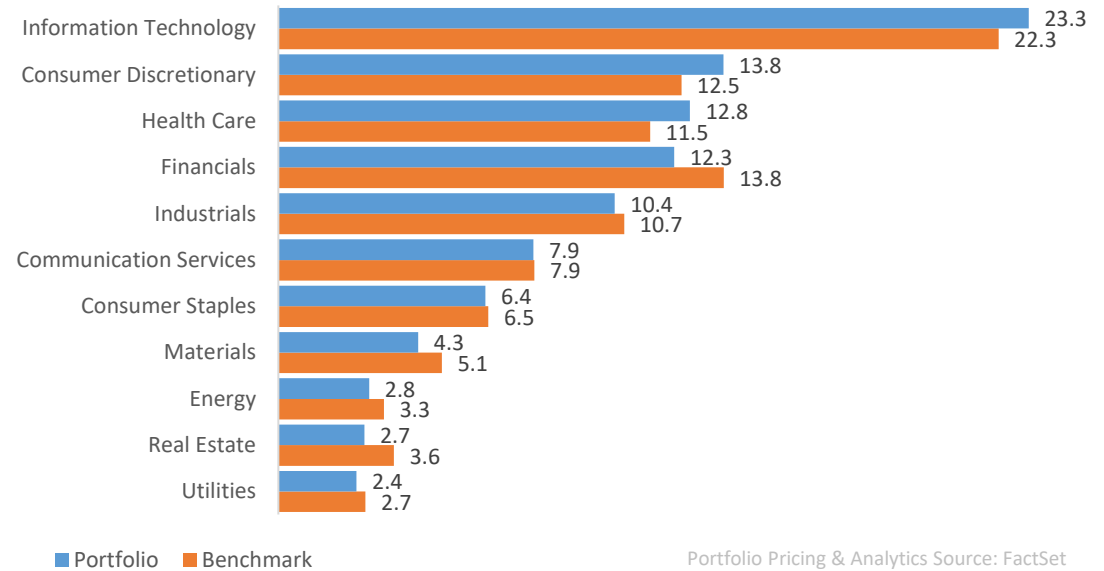


NCRS Public Equity Portfolio Characteristics

As of December 31, 2021

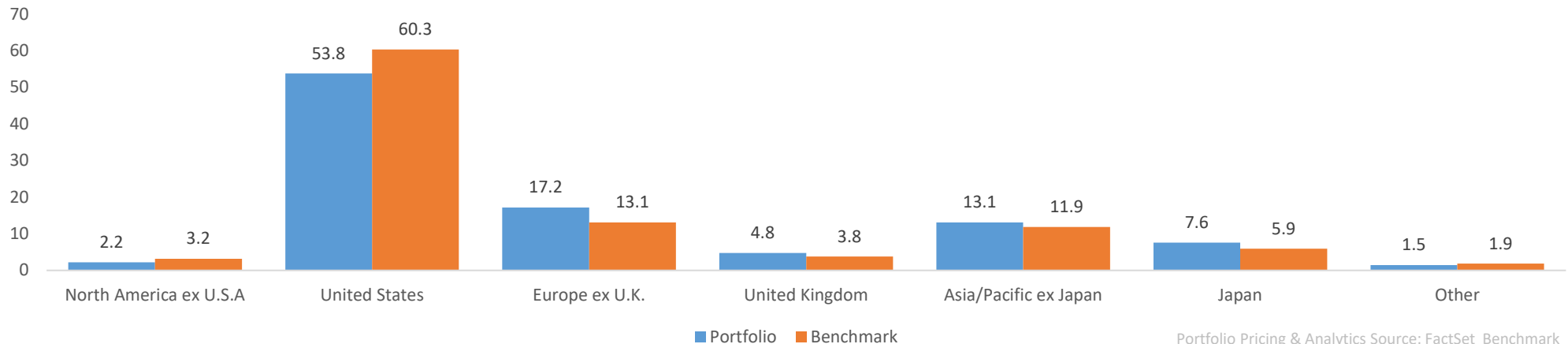
Portfolio Characteristics		
	Portfolio	MSCI ACWI IMI
Price/Earnings	20.2	19.0
Dividend Yield	1.4	1.7
Price/Book	3.2	2.8
Market Capitalization	380,376	378,824
Return On Equity	16.6	16.9

@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 December 31, 2021

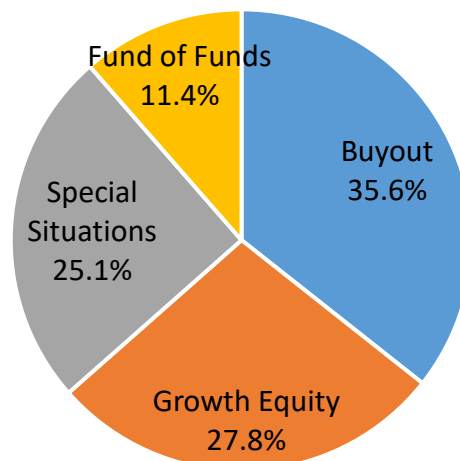
Net of Fees Performance (%)

	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Private Equity	\$7,429	3.60	48.03	23.92	20.31	14.67
Benchmark ³		3.43	37.82	18.39	15.99	13.21
Buyout	\$2,643	6.16	44.45	23.35	19.54	13.60
Growth	\$2,065	(3.03)	47.69	29.76	24.97	18.41
Special Situations	\$1,860	7.91	49.69	18.15	15.17	10.44
Fund of Funds	\$847	4.76	63.13	24.93	21.70	16.40

IRR by Vintage Year

	Pre-2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
NCRS	12.03	6.90	5.11	3.53	9.83	11.30	9.48	20.30	9.88	16.17	14.26	19.02	23.67	31.11	22.07	25.07	N/A	N/A	-3.45	10.97
# of Funds	28	3	11	21	15	17	3	1	6	6	9	4	9	6	7	3	N/A	N/A	4	153

Strategy Allocation (Based on Valuation)



*Private Equity returns include a stock distribution account, in the amount of roughly \$14.4 million, which does not fall under any specific sub-section. 35



NCRS Non-Core Real Estate Portfolio

As of December 31, 2021

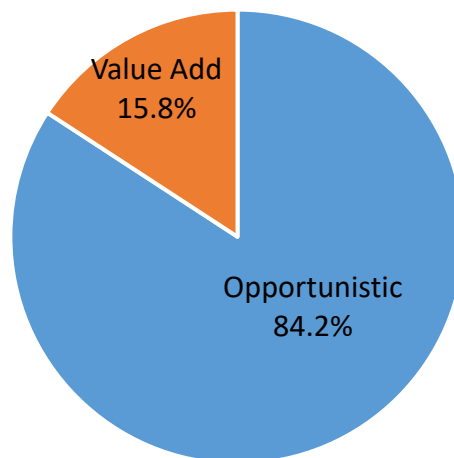
Net of Fees Performance (%)

	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Non-Core Real Estate	\$2,604	6.40	16.75	8.84	10.43	11.84
Benchmark ⁴		4.80	17.01	7.54	7.92	8.56
Opportunistic	\$2,193	7.41	18.00	9.50	11.04	11.65
Value Add	\$412	3.89	13.78	7.31	8.97	11.95

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>Total</u>
NCRS	8.91	15.69	-1.49	3.08	2.09	15.45	N/A	15.95	17.53	16.18	12.81	4.62	8.43	13.73	N/A	11.82	28.61	N/A	N/A	6.74
# 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	108

Strategy Allocation (Based on Valuation)





NCRS Opportunistic Fixed Income Portfolio

As of December 31, 2021

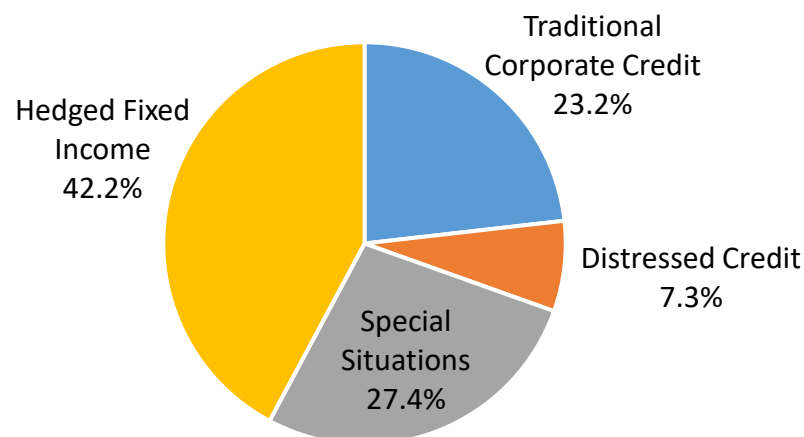
Net of Fees Performance (%)

	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Opportunistic Fixed Income	\$7,323	2.57	17.46	7.77	7.21	7.33
Benchmark ⁵		1.45	8.93	7.87	4.37	3.81
Traditional Corporate Credit	\$1,698	5.27	10.98	7.40	7.47	7.95
Distressed Credit	\$532	2.14	29.82	12.96	11.21	11.45
Special Situations	\$2,005	2.70	19.97	6.86	8.20	12.98
Hedged Fixed Income	\$3,088	1.13	17.88	8.16	6.26	5.44

IRR by Vintage Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
NCRS	2.87	N/A	16.90	8.08	22.42	5.60	5.02	4.09	4.99	4.05	8.62	8.18	18.95	N/A	10.90	26.89	0.00	6.63
# of Funds	1	N/A	1	3	1	4	9	2	7	3	1	8	2	N/A	1	2	1	46

Strategy Allocation (Based on Valuation)





NCRS Rates & Liquidity Portfolio

As of December 31, 2021

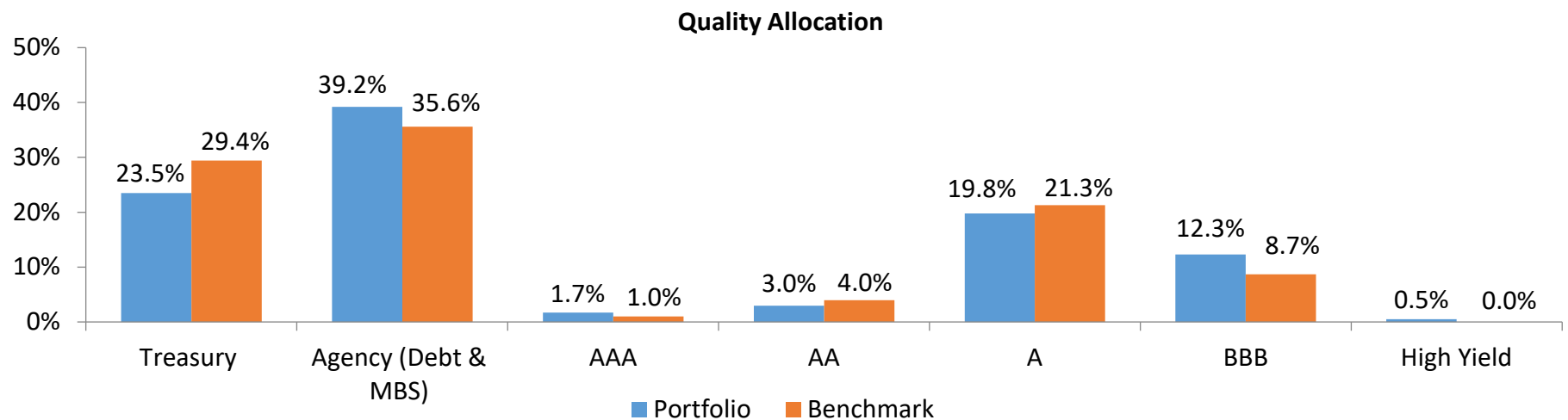
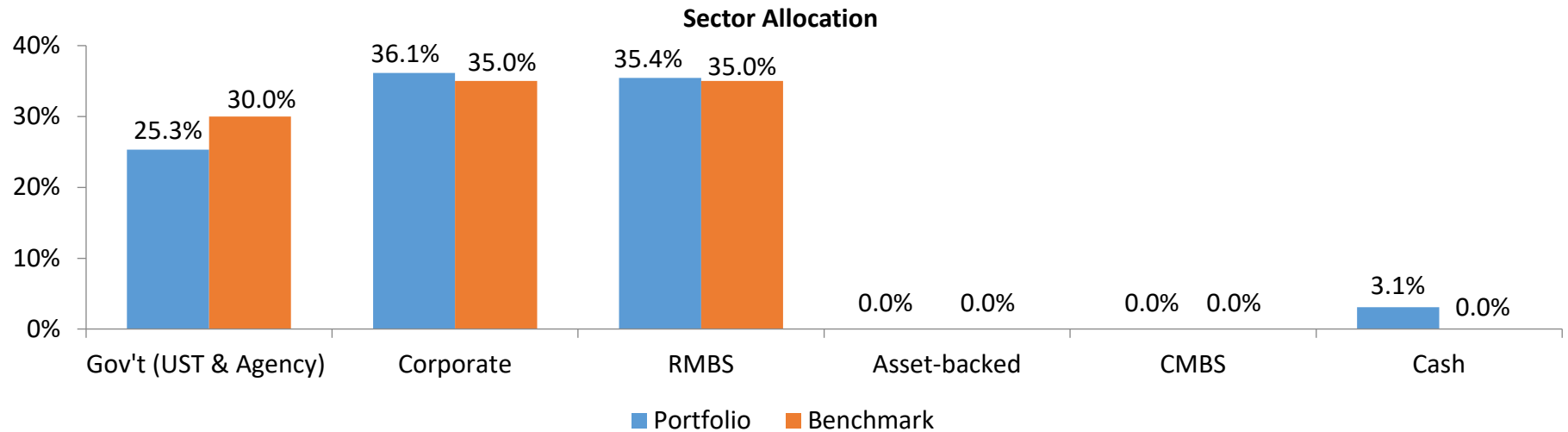
Net of Fees Performance (%)						
	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Rates & Liquidity	\$47,582	0.14	(1.35)	4.96	3.71	3.36
Benchmark ⁶		0.46	(1.86)	5.56	4.11	3.49
IG Fixed Income	\$33,364	0.19	(1.84)	5.80	4.22	3.64
Core Fixed Income	\$29,766	0.20	(2.03)	6.29	4.54	3.81
IG Fixed Income Cash	\$3,598	0.04	0.18	1.14	1.24	-
Pension Cash	\$14,218	0.03	0.15	1.15	1.29	-

Core Fixed Income Portfolio Characteristics			
	<u>Avg. Coupon</u>	<u>Yield to Worst</u>	<u>Effective Duration</u>
Government (Treasury & Agency)	3.8%	1.5%	9.6
Corporate	4.1%	2.5%	10.0
Mortgage	2.9%	1.8%	3.4
Total	3.6%	2.0%	7.4



NCRS Core Fixed Income Portfolio Characteristics

As of December 31, 2021





NCRS Inflation Sensitive Portfolio

As of December 31, 2021

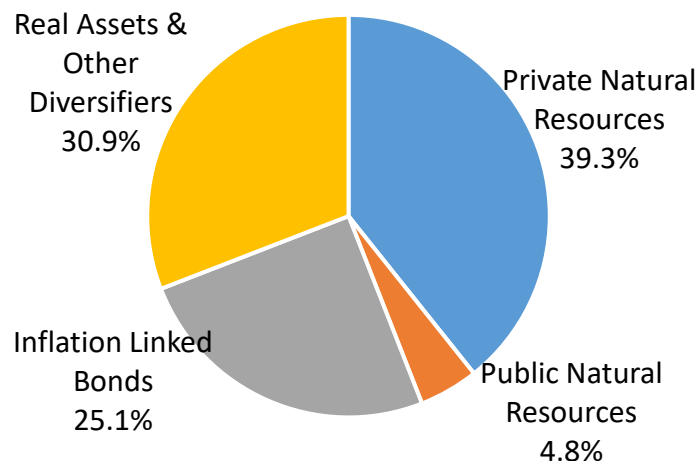
Net of Fees Performance (%)

	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Inflation Sensitive	\$5,548	1.53	11.97	3.33	4.86	2.05
Benchmark ¹⁰		2.35	10.59	4.37	3.88	1.22
Private Natural Resources	\$2,180	2.42	12.81	(0.57)	2.78	2.54
Public Natural Resources	\$265	(1.05)	27.13	10.50	2.79	(2.73)
Inflation Linked Bonds	\$64	1.22	5.43	4.54	2.91	-
Real Assets & Other Diversifiers	\$1,713	1.39	15.10	6.68	8.13	7.03

IRR by Vintage Year

	<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>Total</u>
NCRS	0.62	-7.73	-4.86	N/A	-7.01	-6.07	5.69	6.81	7.36	7.21	4.18	-3.55	20.64	29.99	N/A	0.00	1.66
# of Funds	3	2	2	N/A	3	9	7	11	12	4	4	1	3	2	N/A	5	68

Strategy Allocation (Based on Valuation)





NCRS Core Real Estate Portfolio

As of December 31, 2021

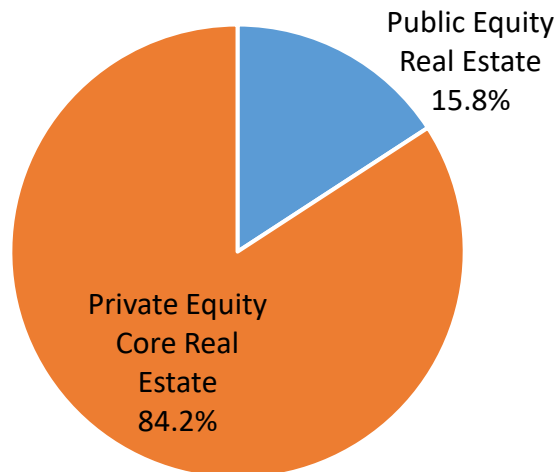
Net of Fees Performance (%)

	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Core Real Estate	\$6,453	4.26	14.51	8.18	8.06	9.04
Benchmark ¹¹		8.01	21.59	9.22	7.90	9.54
Public Equity Real Estate	\$1,021	7.83	24.65	14.62	10.39	10.77
Private Equity Core Real Estate	\$5,432	3.64	12.82	7.17	7.66	8.78

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>Total</u>
NCRS	7.51	9.74	-8.33	4.36	1.39	9.54	N/A	23.62	N/A	N/A	3.90	6.51	7.29	9.86	N/A	15.77	N/A	N/A	0.20	7.26
# 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	2	36

Strategy Allocation (Based on Valuation)



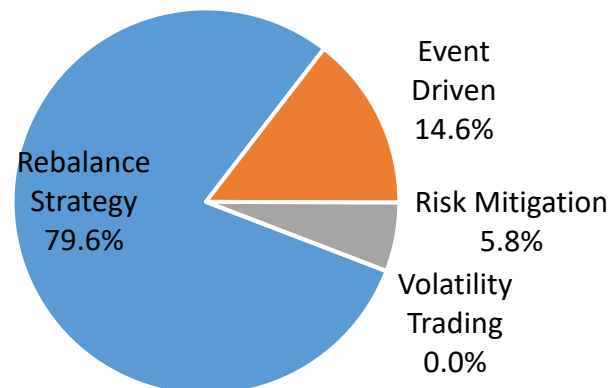


NCRS Multi-Strategy Portfolio

As of December 31, 2021

Net of Fees Performance (%)						
	Market Value	3 Month	1 Year	3 Years	5 Years	10 Years
Multi-Strategy	\$2,343	2.46	7.74	5.85	5.10	7.07
Benchmark ¹²		1.43	4.97	6.31	4.94	6.48
Rebalance Strategy	\$1,865	2.75	6.67	8.72	6.88	8.67
Event Driven	\$342	1.06	17.68	6.46	6.53	-
Risk Mitigation	\$135	2.02	(0.36)	(3.46)	-	-
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: 50% Buyout, 20% 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 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% NCREIF ODCE Net 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: 58% Growth Benchmark, 29% Rates & Liquidity Benchmark, 11% Inflation Sensitive & Diversifiers Benchmark, and 2% Multi-Strategy Benchmark.
14. The Long-Term Policy Benchmark is comprised of 57% MSCI ACWI IMI Net, 33% BOAML 5+ Years U.S. Treasury Index, 6% Bloomberg Commodity Index, and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.

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



Disclaimer

BOFA MERRILL LYNCH IS LICENSING THE BOFA MERRILL LYNCH INDICES "AS IS," MAKES NO WARRANTIES REGARDING SAME, DOES NOT GUARANTEE THE SUITABILITY, QUALITY, ACCURACY, TIMELINESS, AND/OR COMPLETENESS OF THE BOFAML INDICES OR ANY DATA INCLUDED IN, RELATED TO, OR DERIVED THEREFROM, ASSUMES NO LIABILITY IN CONNECTION WITH THEIR USE, AND DOES NOT SPONSOR, ENDORSE, OR RECOMMEND THE DEPARTMENT OF STATE TREASURER, OR ANY OF ITS PRODUCTS OR SERVICES.

NORTH CAROLINA
DEPARTMENT OF STATE TREASURER



Dale R. Folwell, CPA
STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION