NORTH CAROLINA
DEPARTMENT OF STATE TREASURER

STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION

Performance Review

May 17, 2018

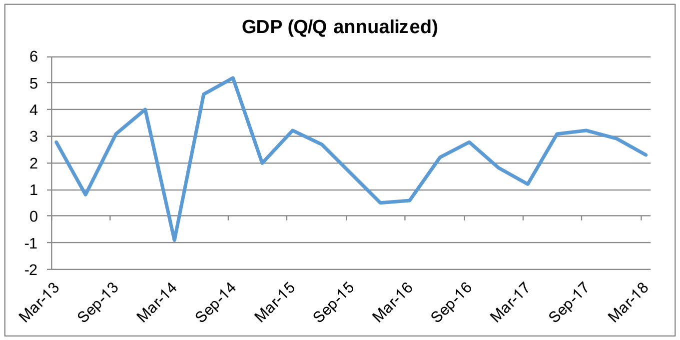
Cost-Efficiencies Initiative Update

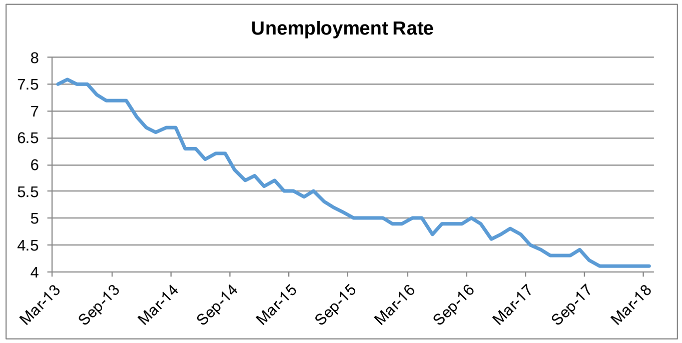
- Goal:
  - Obtain $100 million of incremental cost-efficiencies for the NCRS investment program, consistent with fiduciary requirements and investment objectives
  - The $100 million goal would be measured on a cumulative basis over a four-year timeframe
  - The goal is comprehensive of the Pension and Supplemental Retirement Plans

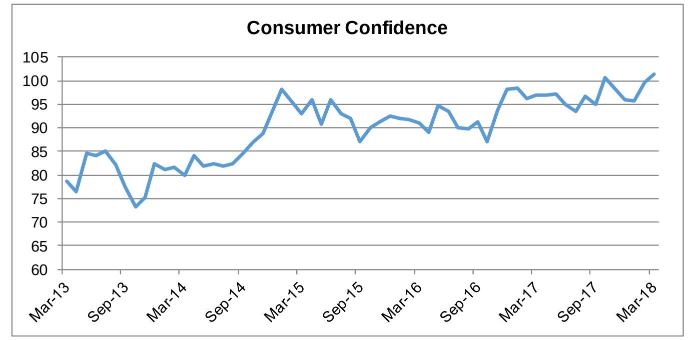
- Progress to date:

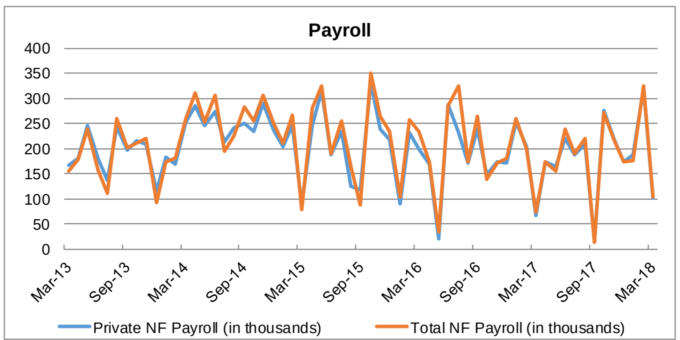
Fully Executed Activities	**Approx. Annual Savings ($000)**
Investment-related services: renegotiations / restructuring	$7,985
Investment manager terminations / renegotiations	$68,653
Sub-Total	**$76,638**
In Process	
Investment manager & services renegotiations / restructuring	$3,372
Grand Total	**$80,011**

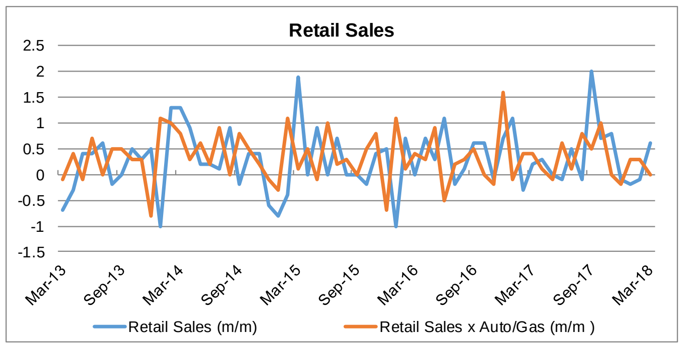
US Economic Environment

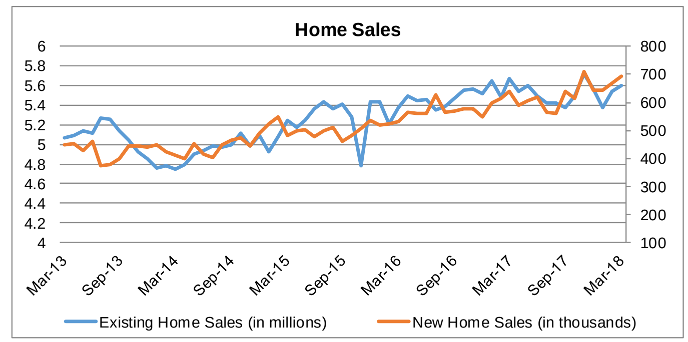


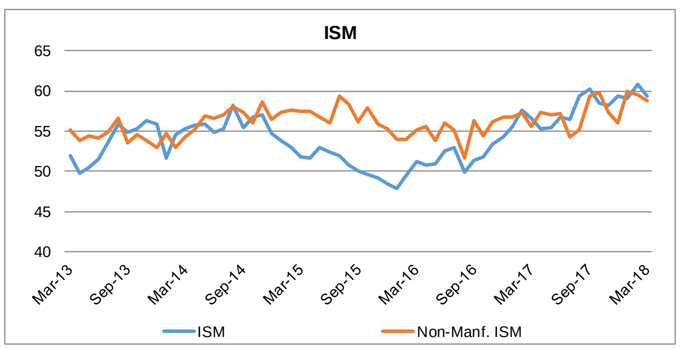


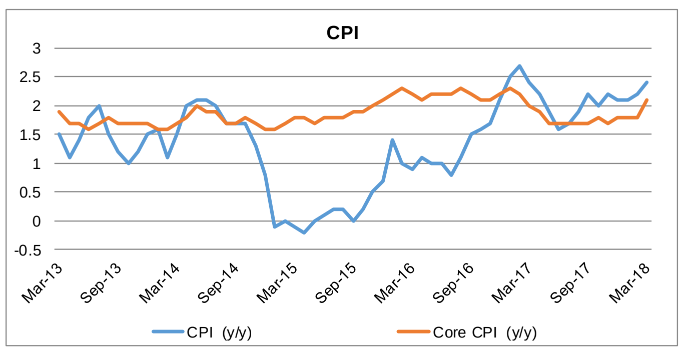


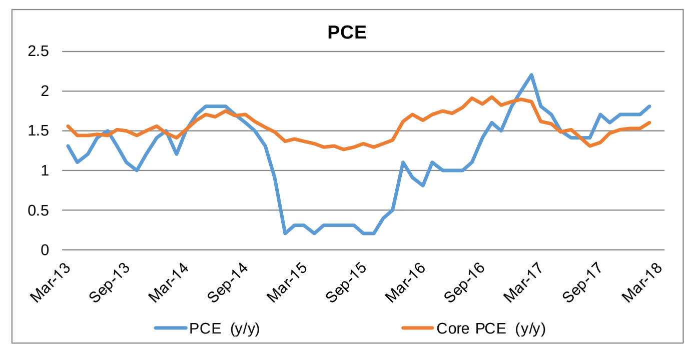












Source: Bloomberg (data as of 03/31/18)

Global Economic Environment

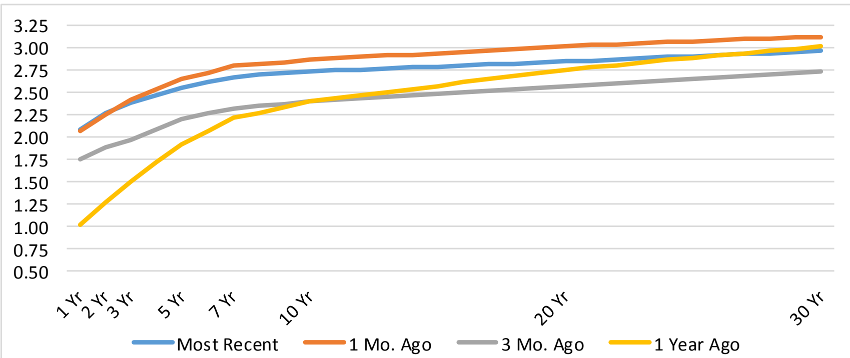
Countries	Real GDP YoY Date	Real GDP YoY Value	Unemployment Date	Unemployment Value	CPI YoY Date	CPI YoY Value
U.S.	03/18	2.9	03/18	4.1	03/18	2.4
Europe						
Germany	12/17	2.9	03/18	5.3	03/18	1.6
France	03/18	2.1	02/18	8.9	03/18	1.6
U.K.	03/18	1.2	02/18	4.2	03/18	2.5
Italy	12/17	1.6	02/18	10.9	03/18	0.8
Spain	03/18	2.9	02/18	16.1	03/18	1.2

Countries	Real GDP YoY Date	Real GDP YoY Value	Unemployment Date	Unemployment Value	CPI YoY Date	CPI YoY Value
Asia/Pacific/Latam						
China	03/18	6.8			03/18	2.1
India	12/17	7.2			03/18	4.4
Japan	12/17	2.0	03/18	2.5	03/18	1.1
Indonesia	12/17	5.2			03/18	3.4
Brazil	12/17	2.1			03/18	2.7
Australia	12/17	2.4	03/18	5.5	03/18	1.9

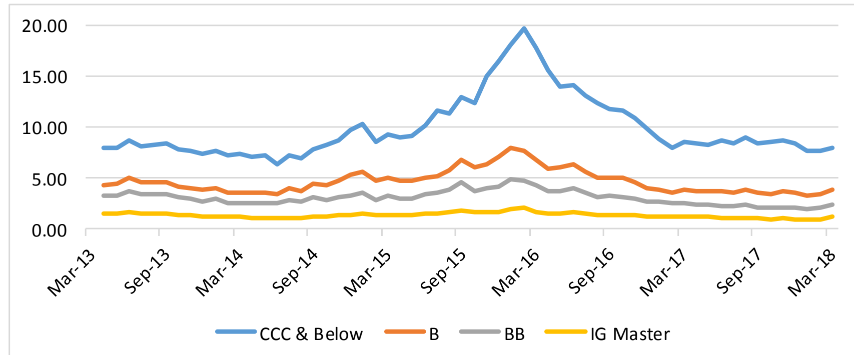
Source: Bloomberg (data as of 03/31/18)

Market Environment

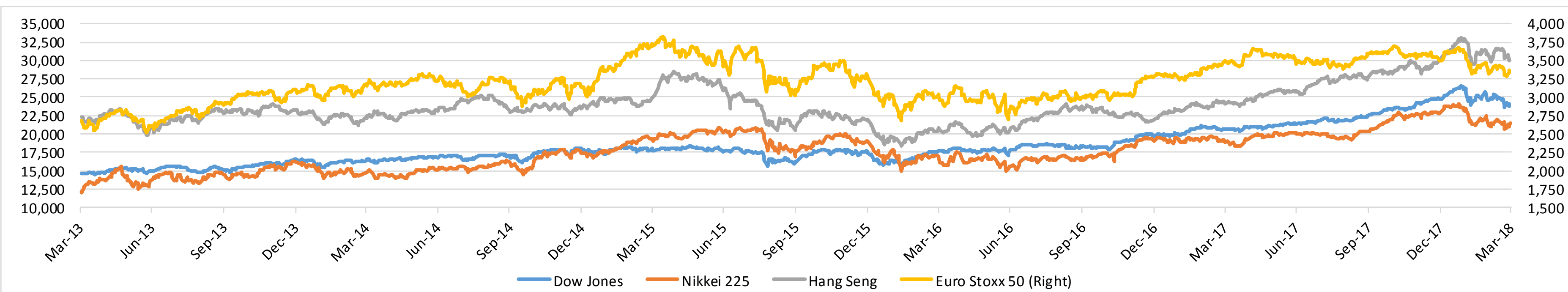
UST (Constant Maturity) Curve



Corporate Credit OAS (BofAML Indices)

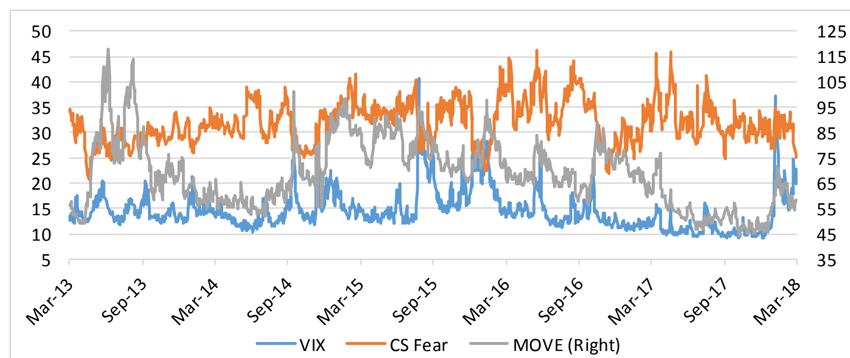


Global Equity Markets



US Dollar Trade Weighted Broad Index

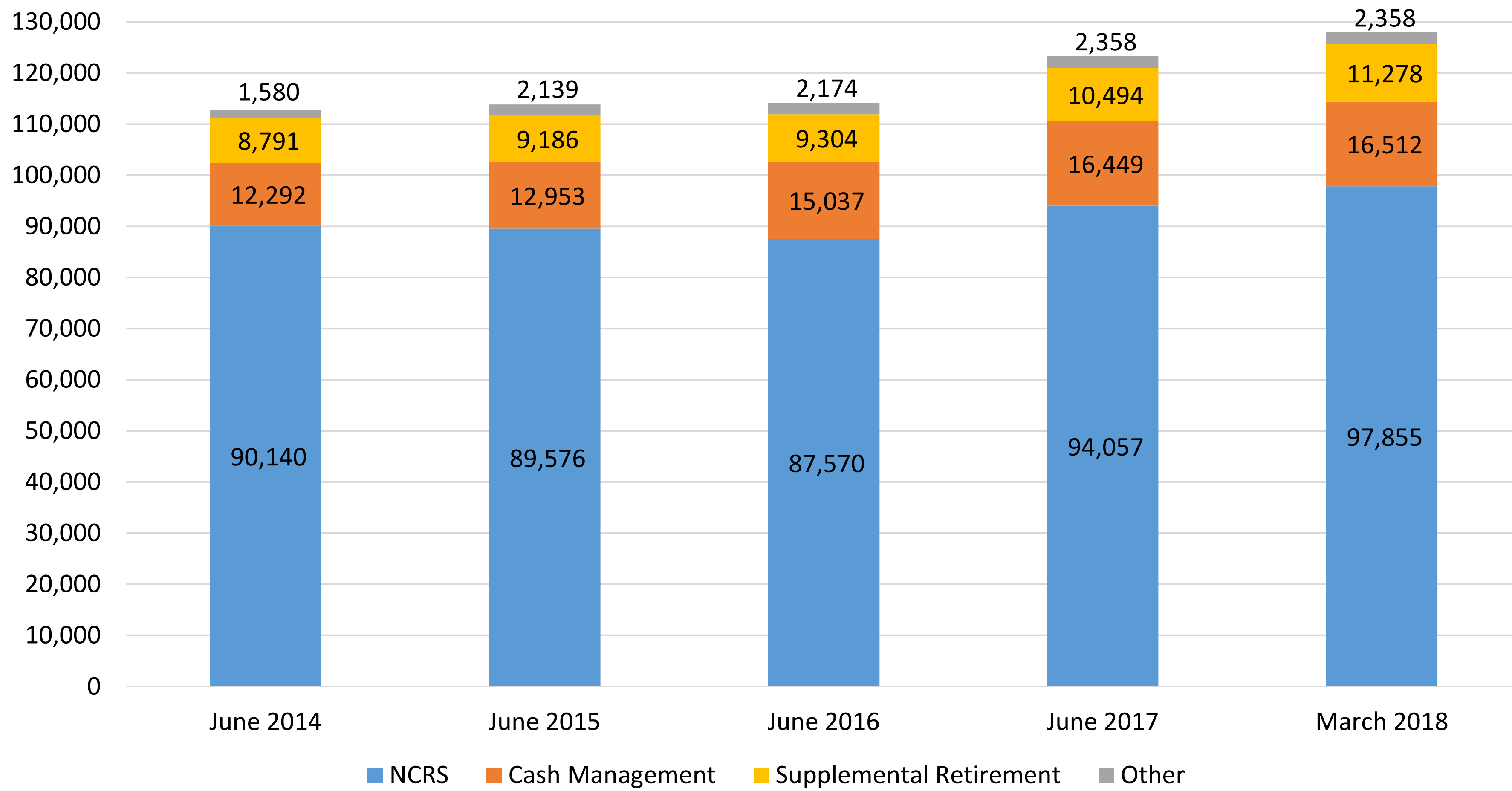
Volatility Indicators



Source: Federal Reserve Bank of St. Louis; Bloomberg (data as of 03/31/18)

Assets Under Management ($MM)

$128.0 billion as of March 31, 2018



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 March 31, 2018

	Market Value ($MM)	%	Target	Range Minimum	Range Maximum	Relative %	Relative $ ($MM)
Growth	**$53,078**	**54.24%**	**58.00%**	**37.00%**	**71.00%**	**-3.76%**	**($3,678)**
Public Equity	39,096	39.95%	42.00%	37.00%	47.00%	-2.05%	(2,004)
Private Equity	4,928	5.04%	6.00%	0.00%	8.75%	-0.96%	(943)
Non Core Real Estate	3,480	3.56%	3.00%	0.00%	8.00%	0.56%	544
Opportunistic Fixed Income	5,574	5.70%	7.00%	0.00%	7.50%	-1.30%	(1,276)
Rates & Liquidity	**31,659**	**32.35%**	**29.00%**	**24.00%**	**42.00%**	**3.35%**	**3,281**
IG Fixed Income & Cash	28,155	28.77%	28.00%	24.00%	32.00%	0.77%	756
Pension Cash	3,504	3.58%	1.00%	0.00%	10.00%	2.58%	2,525
Inflation Sensitive & Diversifiers	**11,206**	**11.45%**	**11.00%**	**4.00%**	**16.00%**	**0.45%**	**442**
Inflation Sensitive	5,999	6.13%	6.00%	2.00%	7.50%	0.13%	127
Core Real Estate	5,207	5.32%	5.00%	2.00%	10.00%	0.32%	314
Multi-Strategy	**1,912**	**1.95%**	**2.00%**	**0.00%**	**4.00%**	**-0.05%**	**(45)**
Grand Total	**$97,855**	**100.00%**					

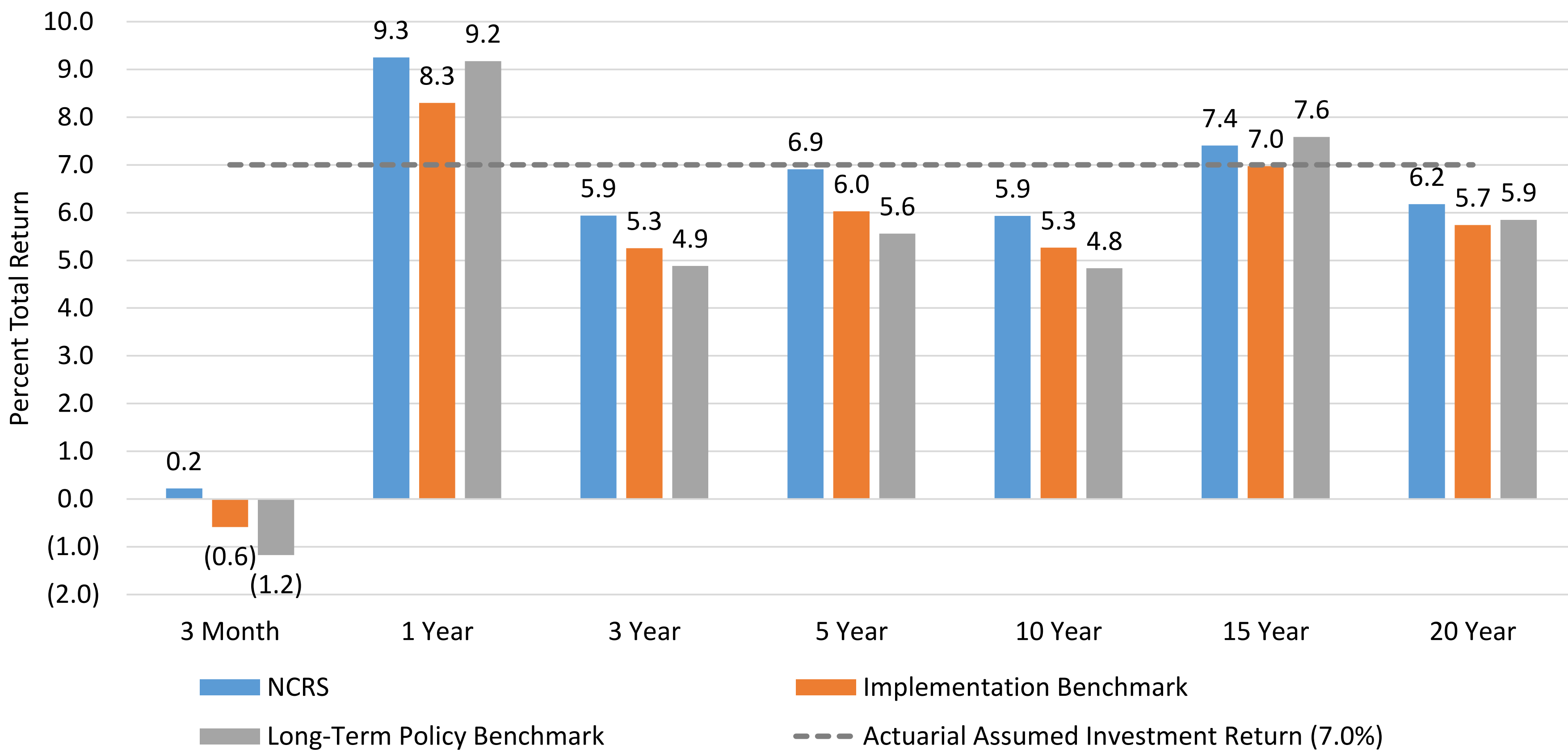
NCRS Asset Allocation (Unaudited)

As of April 26, 2018

	Market Value ($MM)	%	Target	Range		Relative %	Relative $ ($000)
				Minimum	Maximum		
Growth	**$53,044**	**54.31%**	**58.00%**	**37.00%**	**71.00%**	**-3.69%**	**($3,602)**
Public Equity	39,424	40.37%	42.00%	37.00%	47.00%	-1.63%	(1,595)
Private Equity	4,905	5.02%	6.00%	0.00%	8.75%	-0.98%	(955)
Non Core Real Estate	3,153	3.23%	3.00%	0.00%	8.00%	0.23%	223
Opportunistic Fixed Income	5,562	5.69%	7.00%	0.00%	7.50%	-1.31%	(1,275)
Rates & Liquidity	**31,494**	**32.25%**	**29.00%**	**24.00%**	**42.00%**	**3.25%**	**3,171**
IG Fixed Income & Cash	27,561	28.22%	28.00%	24.00%	32.00%	0.22%	215
Pension Cash	3,933	4.03%	1.00%	0.00%	10.00%	3.03%	2,956
Inflation Sensitive & Diversifiers	**11,216**	**11.48%**	**11.00%**	**4.00%**	**16.00%**	**0.48%**	**473**
Inflation Sensitive	6,006	6.15%	6.00%	2.00%	7.50%	0.15%	146
Core Real Estate	5,210	5.33%	5.00%	2.00%	10.00%	0.33%	327
Multi-Strategy	**1,912**	**1.96%**	**2.00%**	**0.00%**	**4.00%**	**-0.04%**	**(42)**
Grand Total	**$97,666**	**100.00%**					

NCRS Total Net Portfolio Return vs. Benchmarks

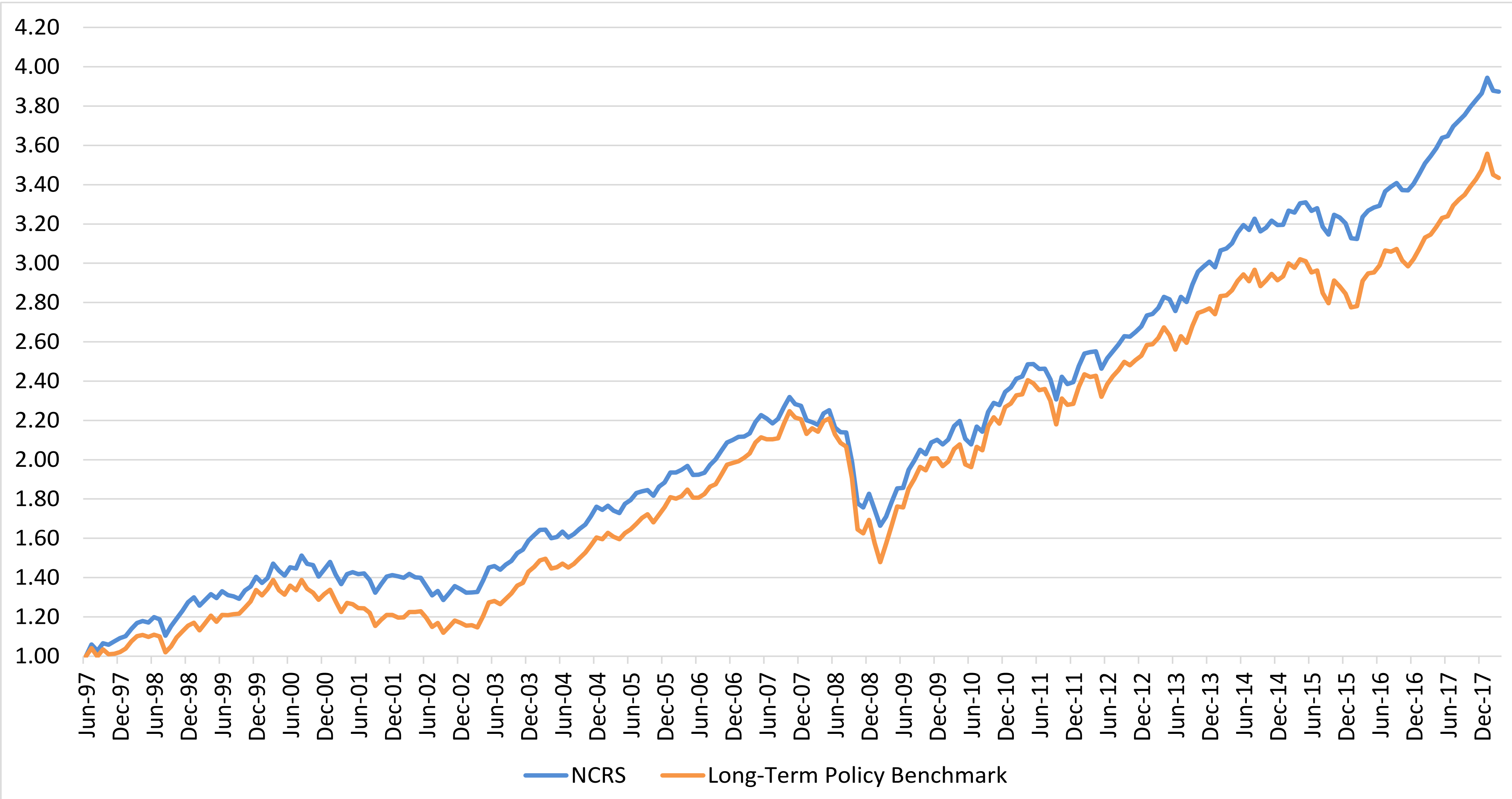
As of March 31, 2018



Notes:
Actuarial Assumed Investment Return was lowered from 7.2% to 7.0% in April 2018
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 March 31, 2018



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.

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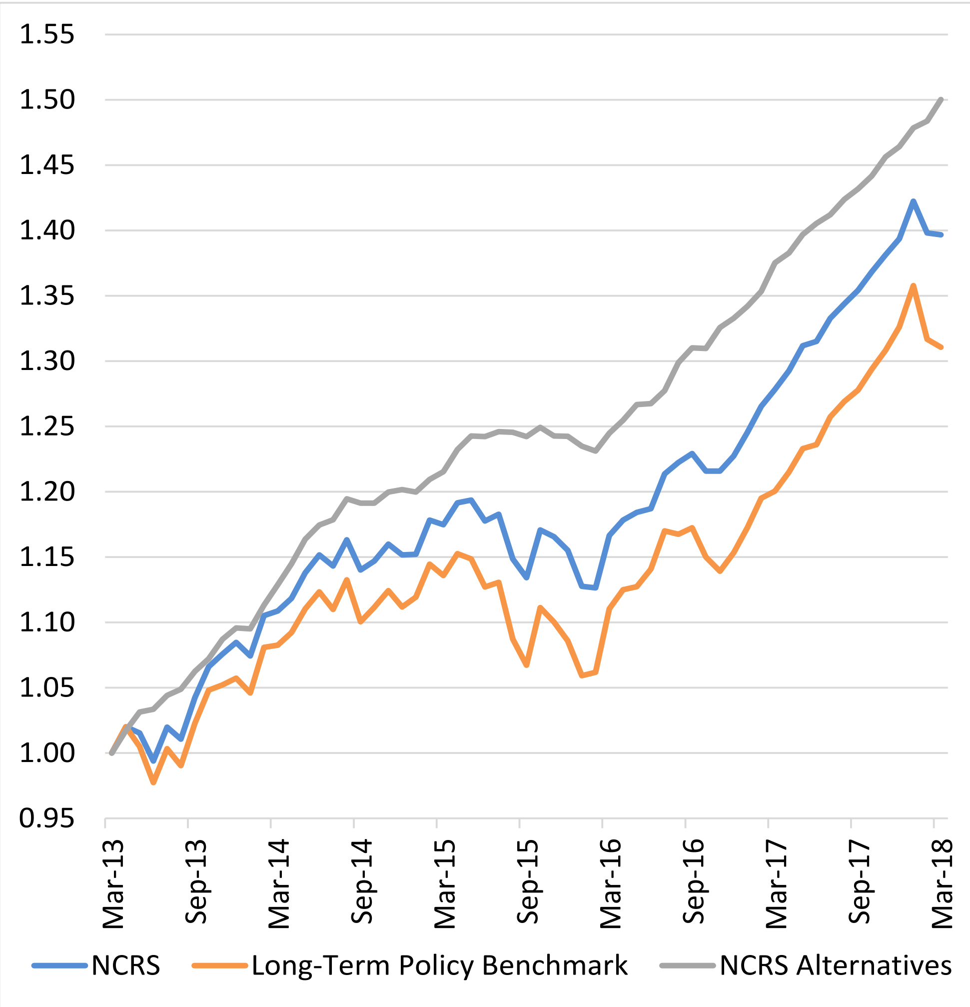
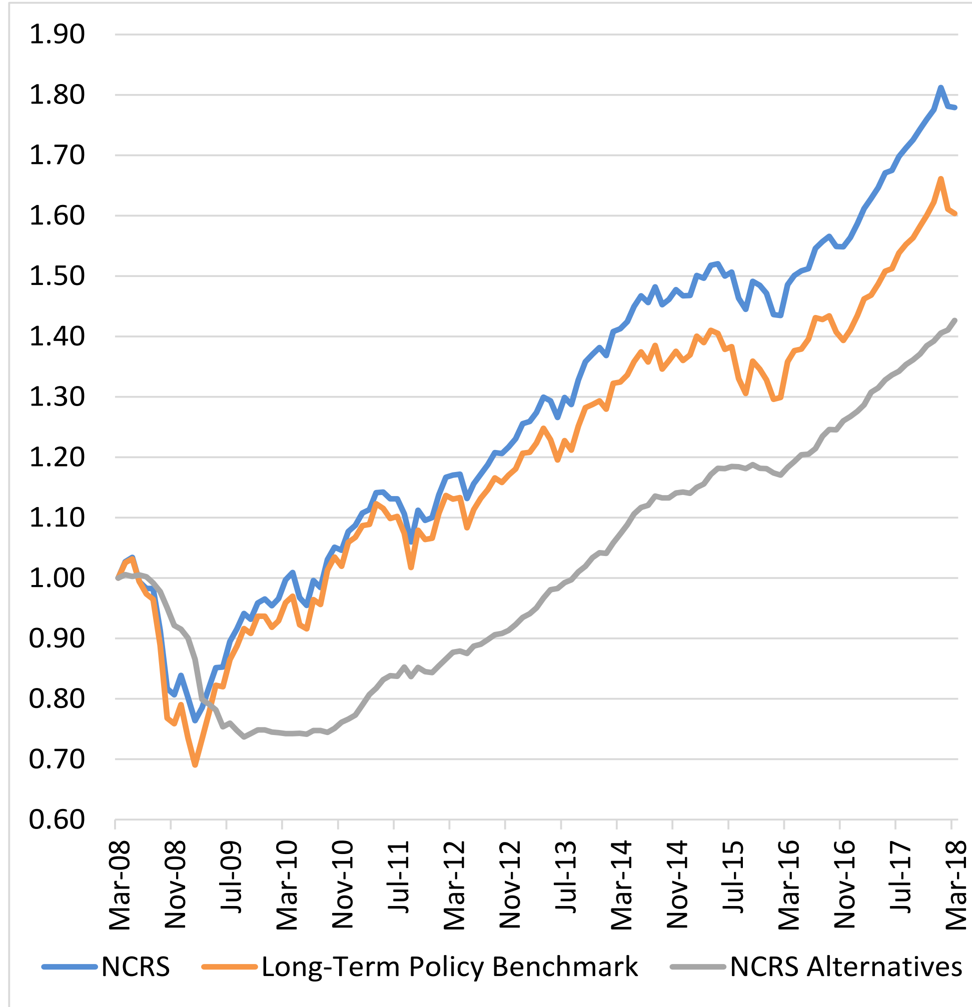
Growth of a Dollar

5 Years Ending March 31, 2018



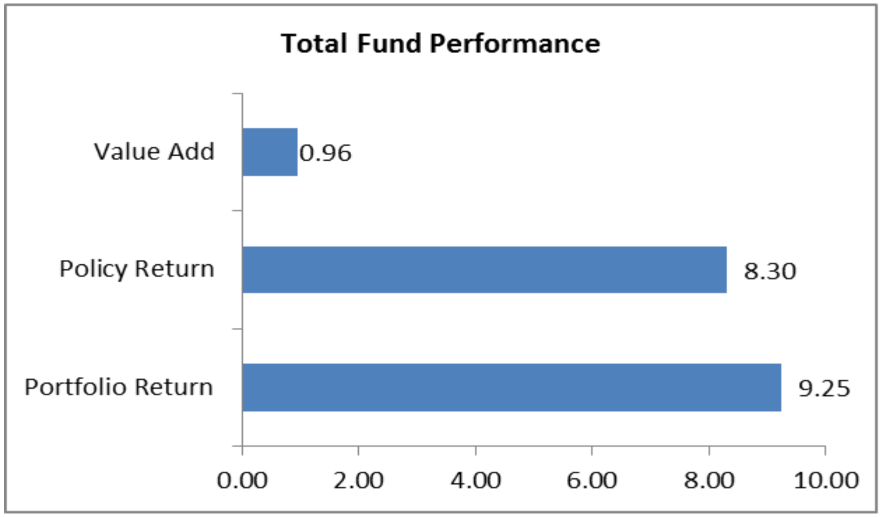
10 Years Ending March 31, 2018

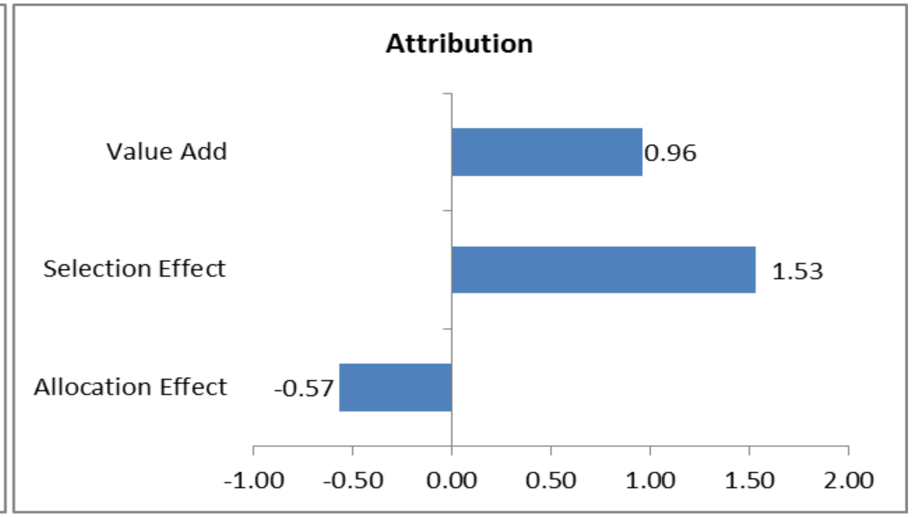


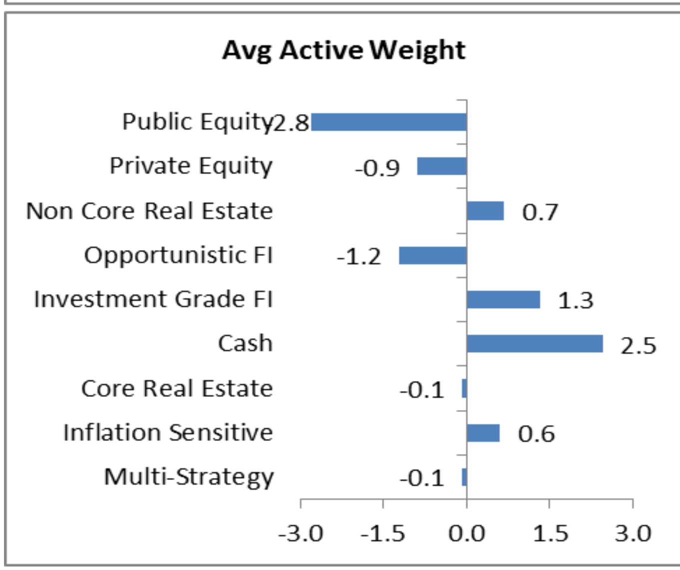
Note: NCRS Alternatives includes the following: Core Real Estate; Inflation Sensitive – Private Natural Resources; Inflation Sensitive – Real Assets and Other Diversifiers; Multi-Strategy Investments; Non Core Real Estate; Opportunistic Fixed Income; Private Equity; Equity Hedge Strategies; and closed-end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

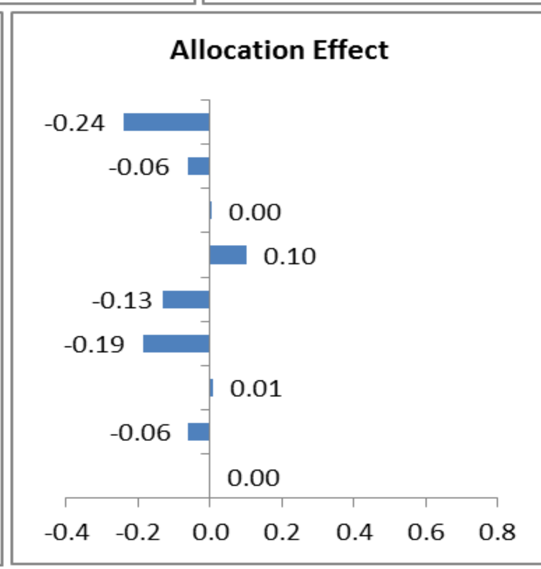
NCRS Net of Fees Return Attribution

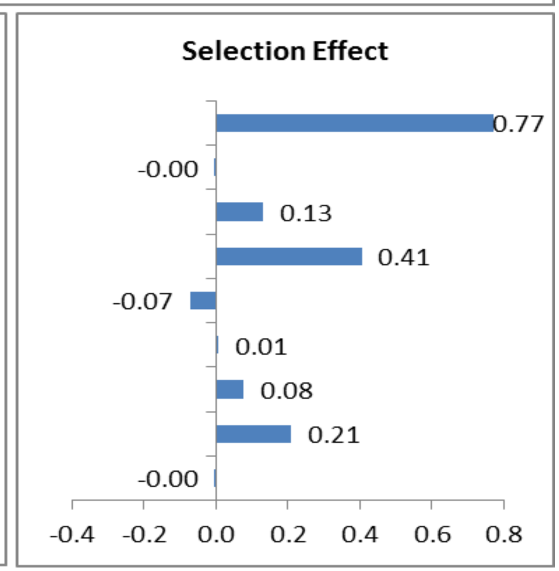
Total Fund vs. Implementation Benchmark: 1 Year Ending Mar. 31, 2018





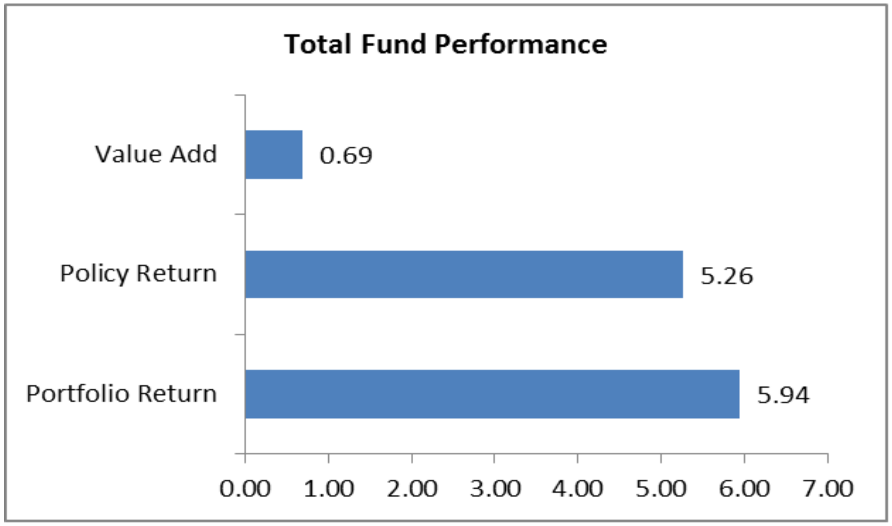


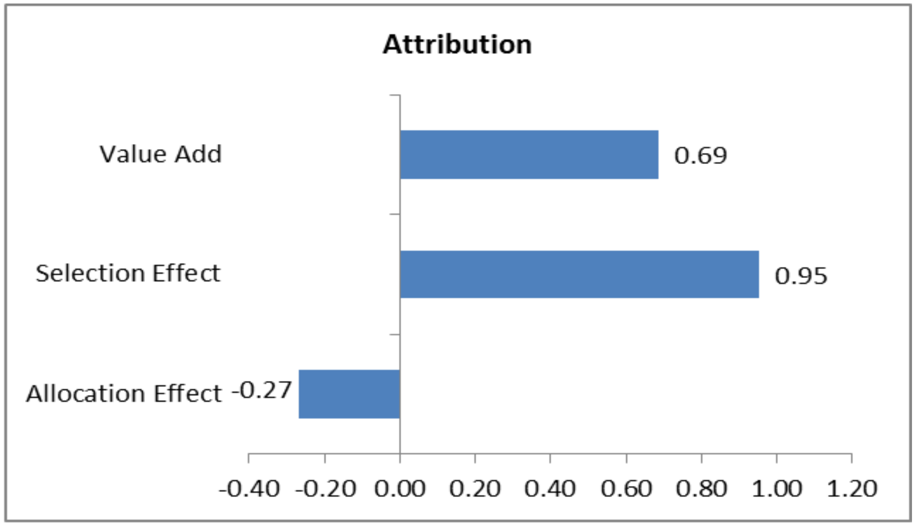


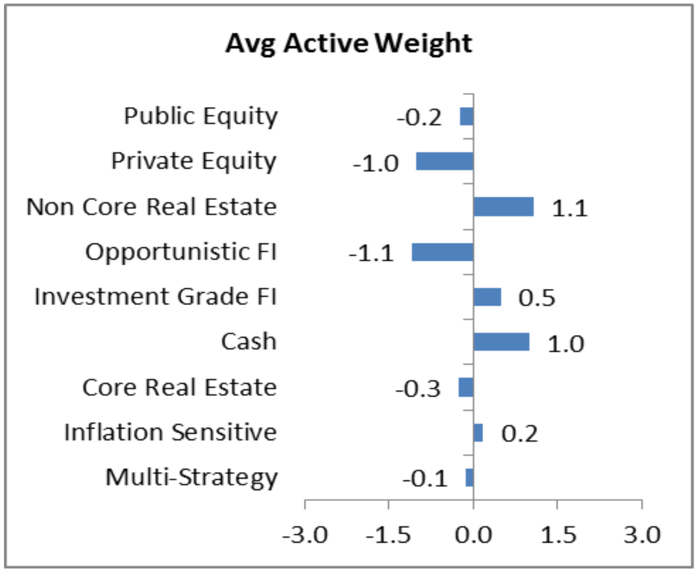


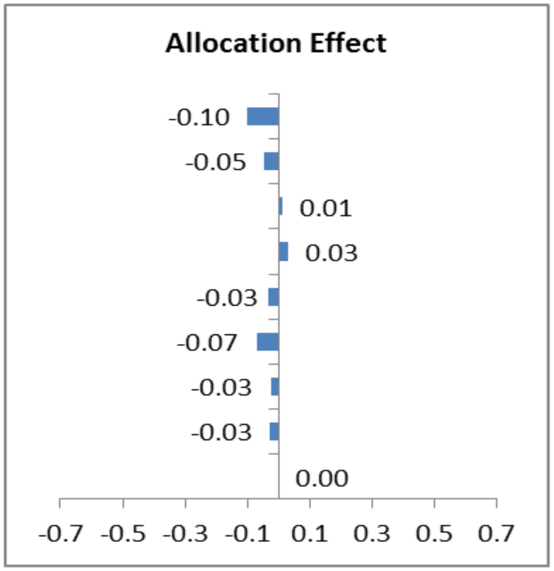
NCRS Net of Fees Return Attribution

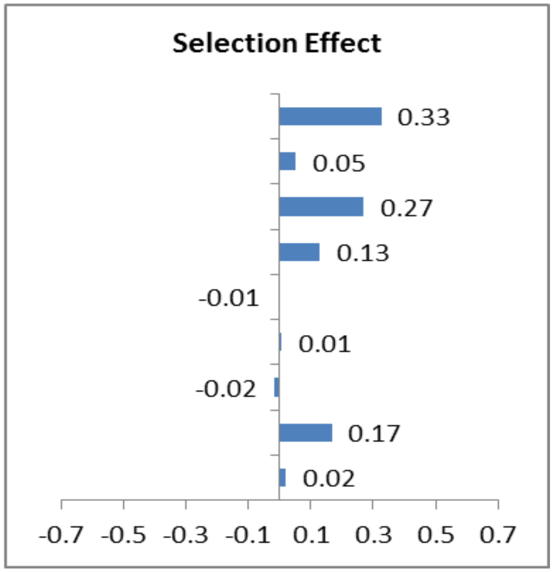
Total Fund vs. Implementation Benchmark: 3 Years Ending Mar. 31, 2018





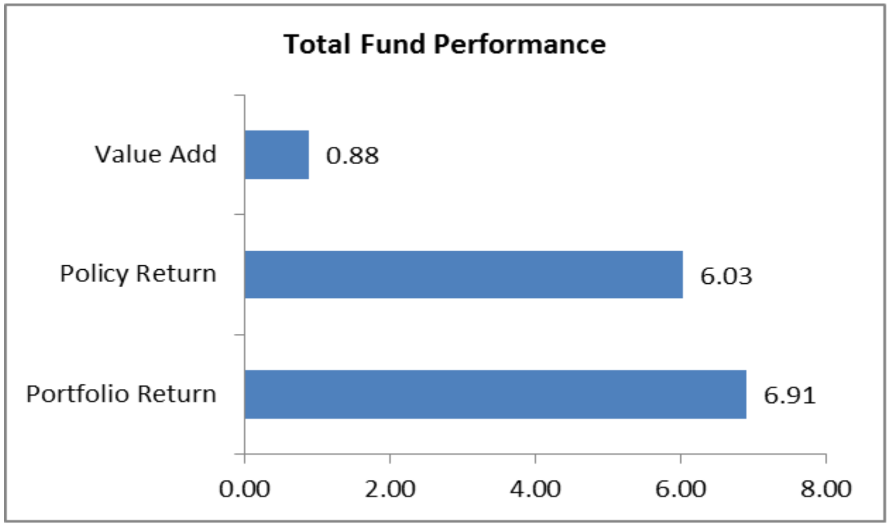


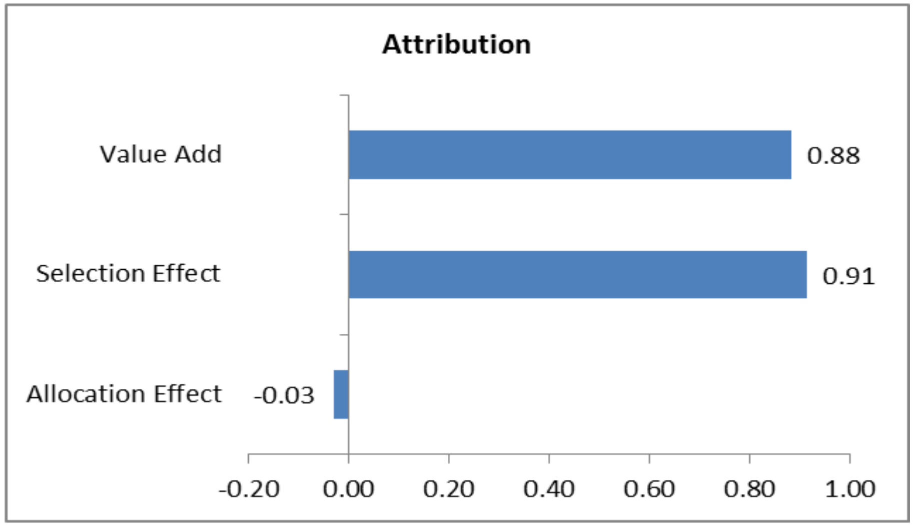


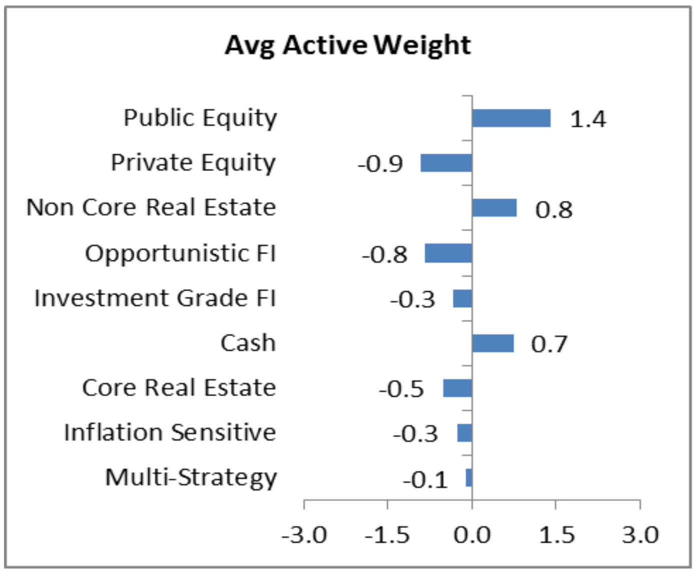


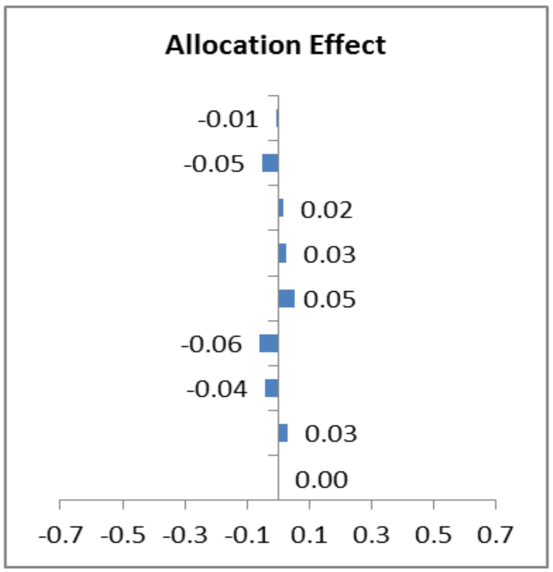
NCRS Net of Fees Return Attribution

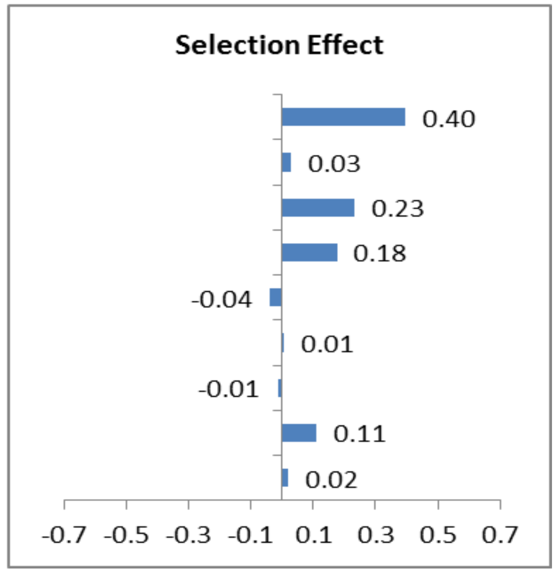
Total Fund vs. Implementation Benchmark: 5 Years Ending Mar. 31, 2018











NCRS Gross of Fees Return and Risk

BNY Mellon Universe: U.S. Public Funds > $20B; Data as of Mar. 31, 2018

Returns	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	7.67	8.58	6.80	8.86	6.81
Median Percentile	**7.19**	**8.05**	**6.41**	**8.52**	**6.60**
75th Percentile	6.65	7.77	6.15	8.02	6.44
NCRS	**6.56**	**7.52**	**6.45**	**7.81**	**6.48**
Percentile Rank (1 = highest performance)	77	83	42	88	74

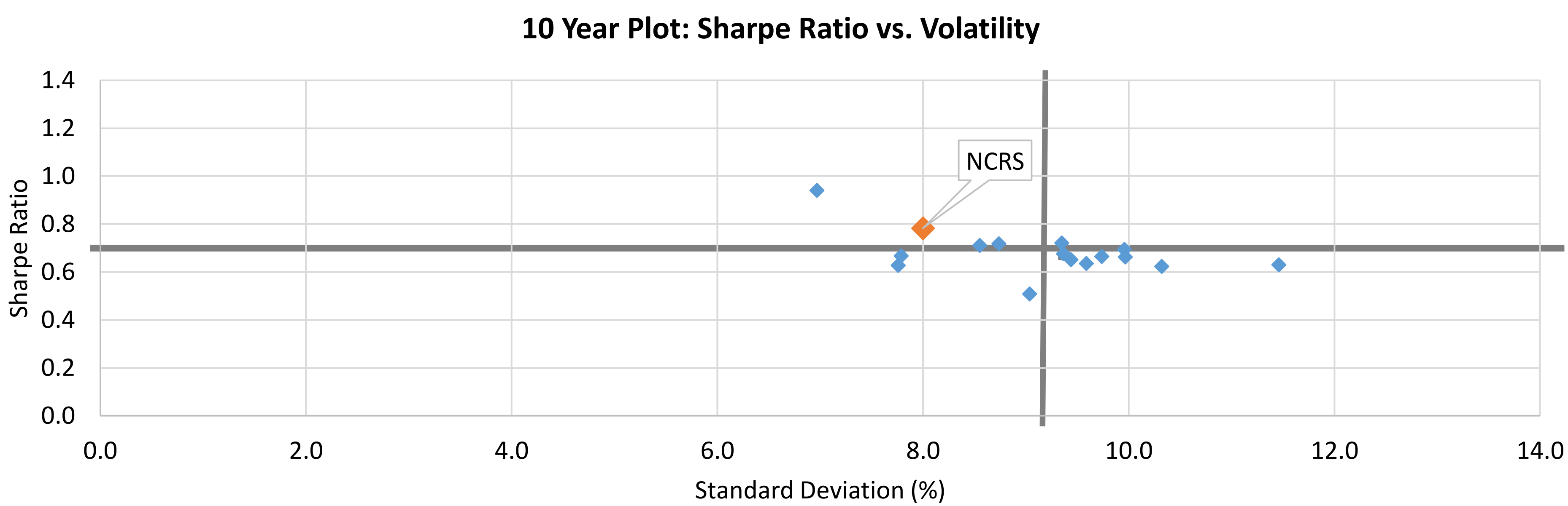
Risk	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	5.96	5.7	9.90	8.99	9.65
Median Percentile	**5.48**	**5.35**	**9.36**	**8.49**	**8.70**
75th Percentile	4.85	4.83	8.14	7.95	8.16
Total Pension Plan	**4.67**	**4.82**	**8.00**	**7.32**	**7.91**
Percentile Rank (100 = lowest risk)	83	77	77	94	87

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: U.S. Public Funds > $20B; Data as of Mar. 31, 2018

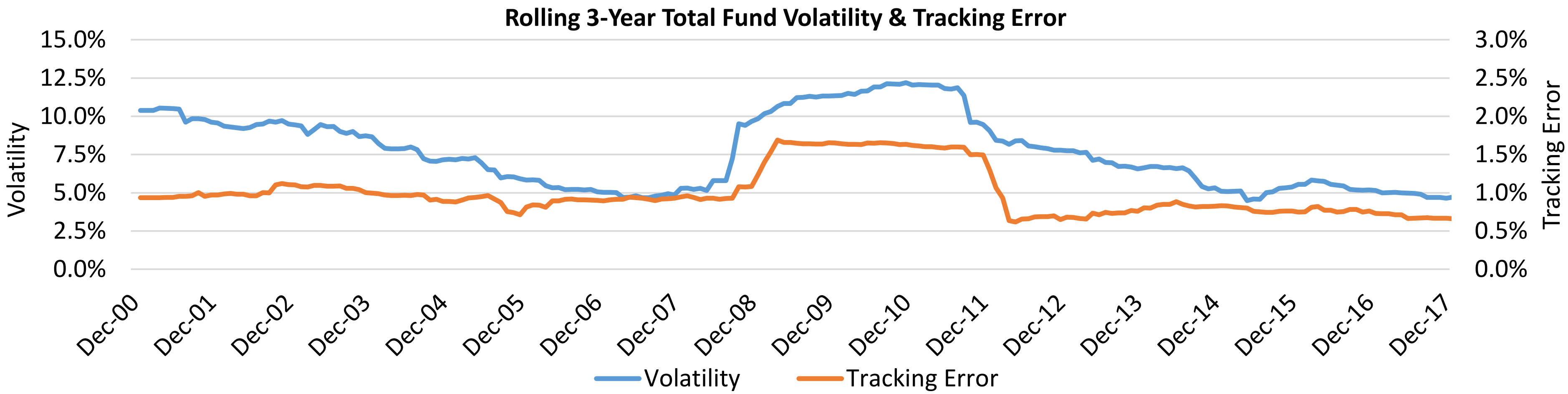
Sharpe	3 Years	5 Years	10 Years	15 Years	20 Years
25th Percentile	1.28	1.54	0.72	0.91	0.58
Median Percentile	**1.24**	**1.40**	**0.67**	**0.84**	**0.54**
75th Percentile	1.08	1.29	0.63	0.79	0.50
NCRS	**1.27**	**1.46**	**0.78**	**0.89**	**0.58**
Percentile Rank	30	36	12	32	27



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

NCRS Net of Fees Risk and Return Metrics

As of March 31, 2018



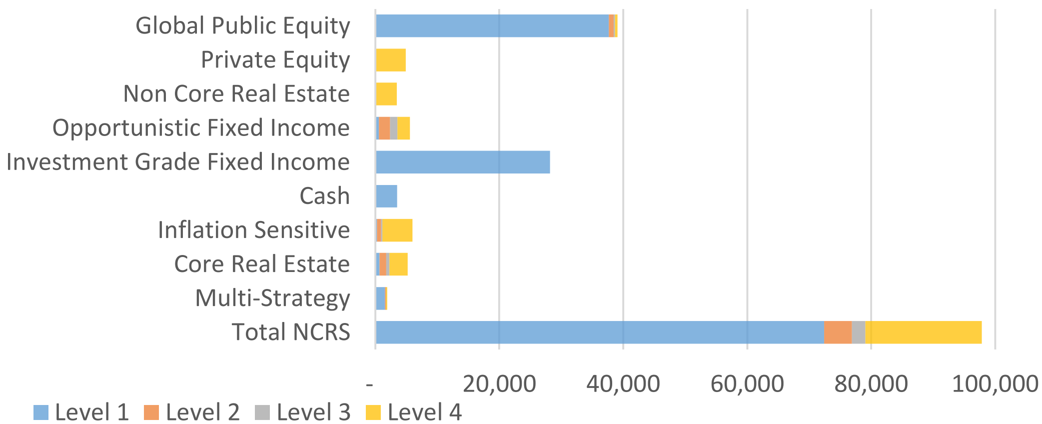
	POSITION		36-MONTH					60-MONTH				
Program	$ Bil	% Wgt	Return	St. Dev	Active Return	TE	IR	Return	St. Dev	Active Return	TE	IR
Total NCRS	**97.9**	**100.0**	**5.9**	**4.8**	**0.7**	**0.7**	**1.0**	**6.9**	**4.9**	**0.9**	**0.8**	**1.1**
Growth	53.1	54.2	8.6	7.8	1.4	0.9	1.5	10.0	7.7	1.5	0.9	1.7
Public Equity	39.1	40.0	8.7	10.5	0.8	0.7	1.2	10.0	10.1	0.9	0.7	1.3
Private Equity	4.9	5.0	9.7	3.1	1.2	2.0	0.6	11.1	3.2	0.6	3.2	0.2
Non-Core Real Estate	3.5	3.6	13.9	3.1	6.9	3.8	1.8	14.9	3.3	5.8	3.7	1.6
Opportunistic Fixed Income	5.6	5.7	4.3	3.0	2.2	4.5	0.5	5.7	3.1	3.4	3.8	0.9
Rates & Liquidity	31.7	32.4	1.4	3.0	0.0	0.5	0.0	2.1	3.7	-0.1	0.6	-0.2
IG Fixed Income & Cash	28.2	28.8	1.4	3.2	0.0	0.5	0.0	2.2	3.8	-0.1	0.6	-0.2
Pension Cash	3.5	3.6	1.0	0.1	0.5	0.1	4.6	--	--	--	--	--
Inflation Sensitive & Diversifiers	11.2	11.5	5.6	2.3	1.0	2.4	0.4	4.3	2.7	0.5	2.4	0.2
Inflation Sensitive	6.0	6.1	3.8	3.9	2.5	3.0	0.8	0.8	4.3	1.7	2.8	0.6
Core Real Estate	5.2	5.3	8.0	2.4	-0.4	2.0	-0.2	9.3	3.6	-0.3	2.7	-0.1
Multi-Strategy	1.9	2.0	5.7	7.4	1.1	1.0	1.1	7.5	7.2	1.0	0.9	1.0

Note: Active Return = Net Managed less benchmark returns; TE = Tracking Error; IR = Information Ratio

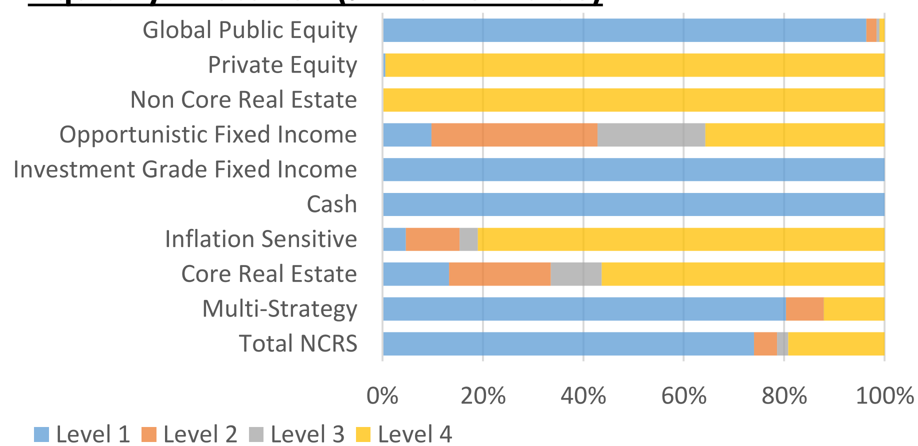
NCRS Liquidity Profile

As of March 31, 2018

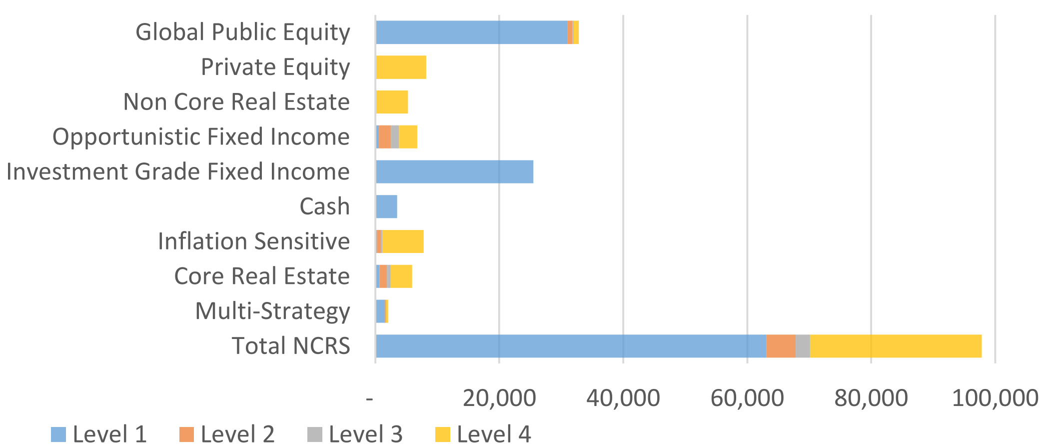
Liquidity Allocation ($ Market Value)



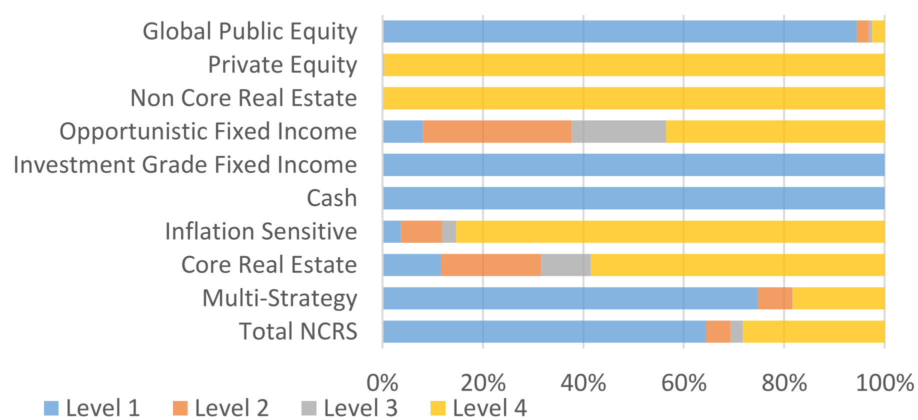
Liquidity Allocation (% Market Value)



Liquidity Allocation ($ Market Value + Unfunded)



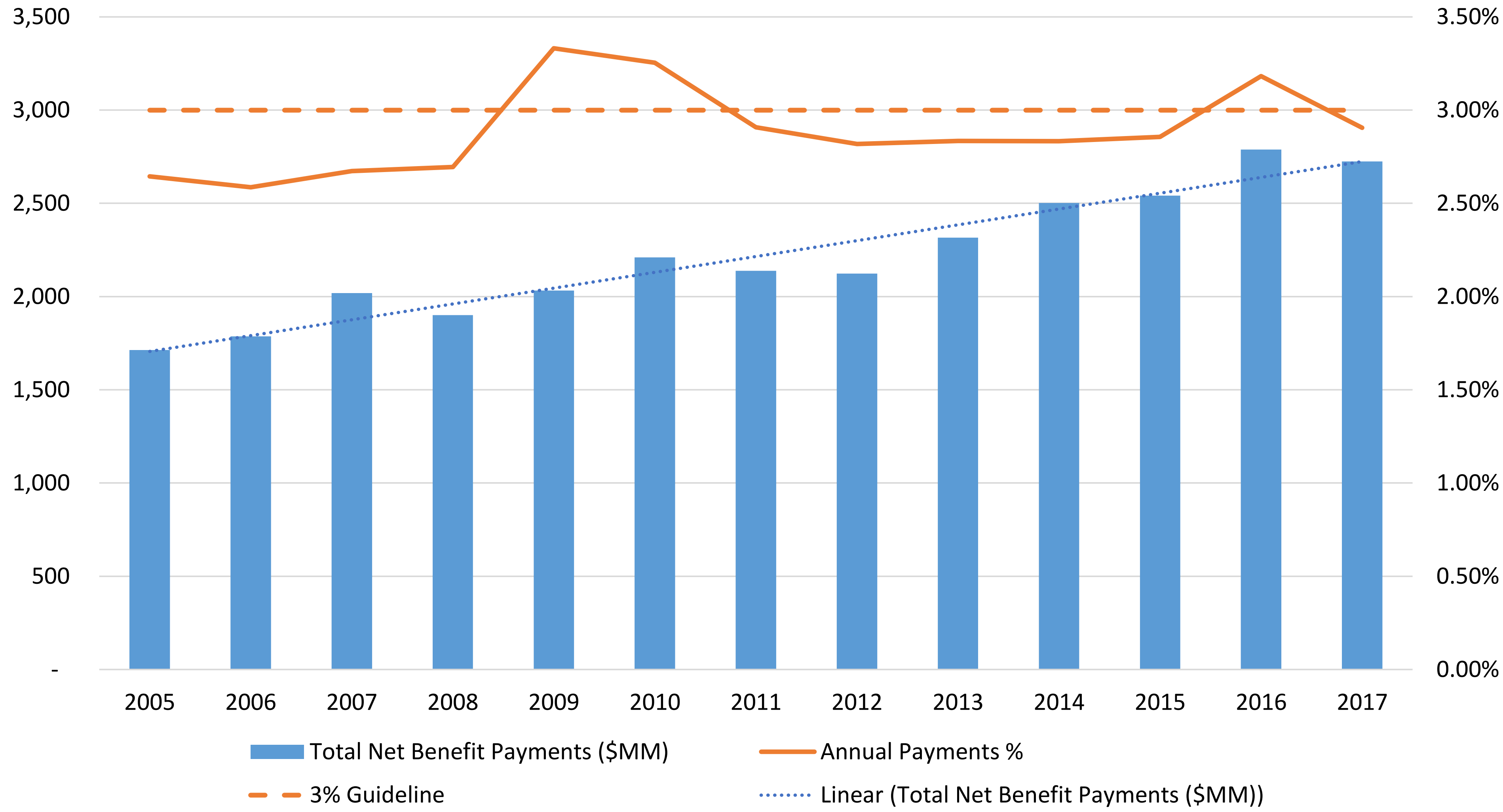
Liquidity Allocation (% Market Value + Unfunded)



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

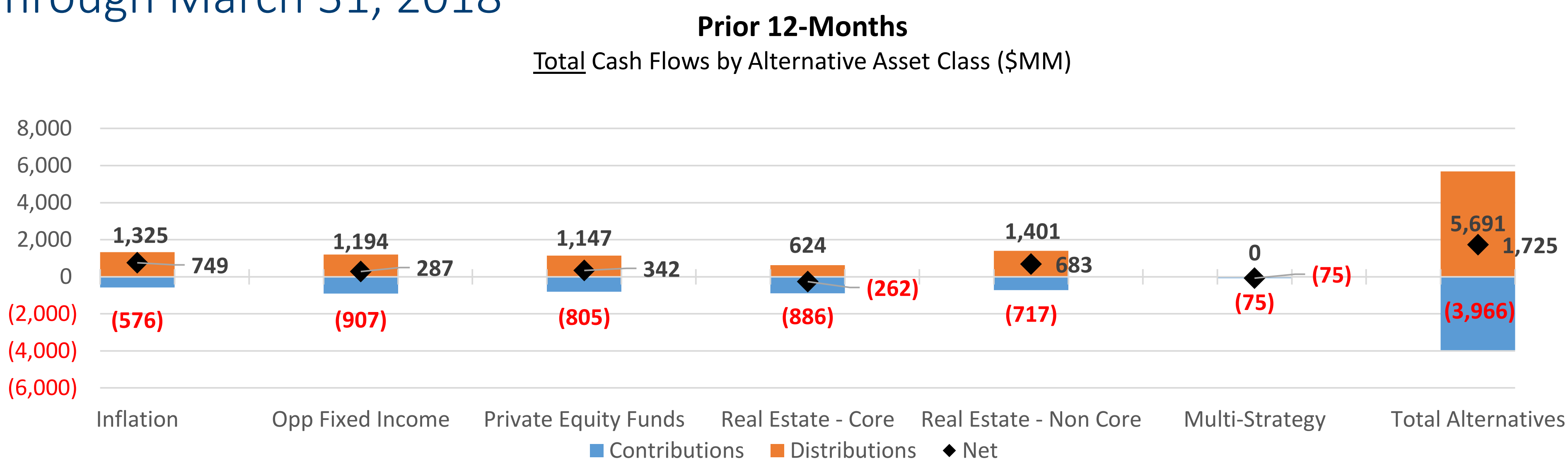
NCRS Liquidity Profile

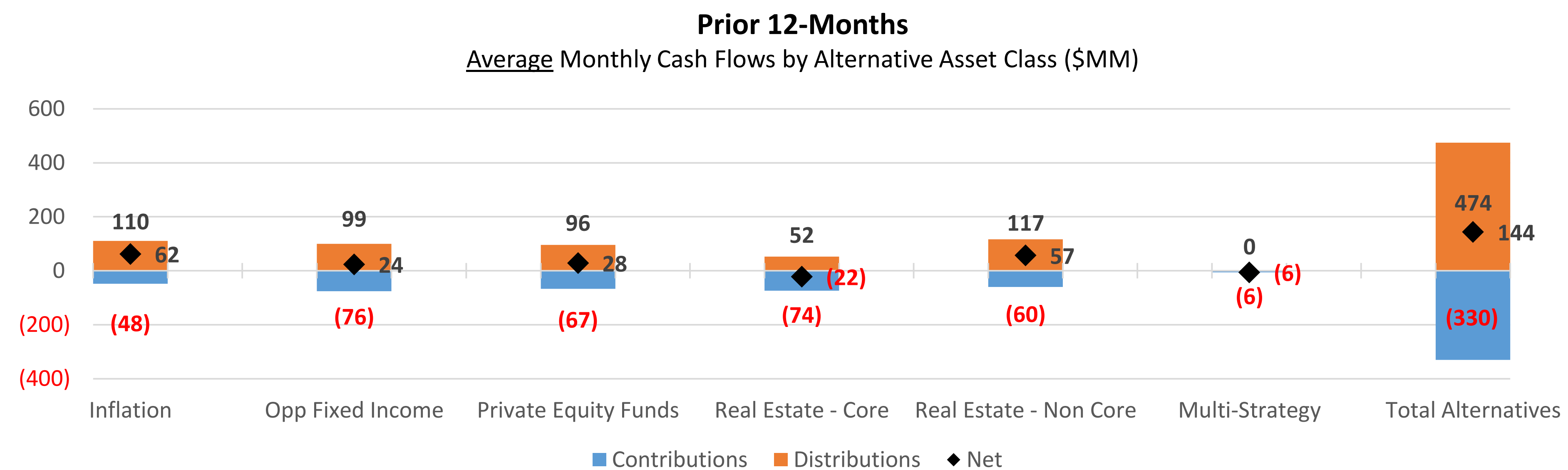
Net benefit payments by calendar year



NCRS Alternatives Liquidity Profile

Through March 31, 2018





NCRS Asset Class Net of Fees Performance

As of March 31, 2018

	Market Value ($MM)	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
Growth	**$53,078**	**14.82**	**8.60**	**10.00**	**6.33**	**8.96**	**6.02**
Benchmark[1]		12.30	7.25	8.53	5.46	8.35	5.22
Public Equity	**$39,096**	**16.29**	**8.65**	**10.00**	**6.79**	**9.12**	**6.11**
Benchmark[2]		14.23	7.83	9.06	5.92	8.43	5.16
Private Equity	**$4,928**	**14.15**	**9.65**	**11.13**	**6.40**	**7.99**	**6.97**
Benchmark[3]		14.18	8.49	10.54	7.30	11.99	11.86
Non-Core Real Estate	**$3,480**	**14.58**	**13.93**	**14.94**	**2.67**	**7.26**	**7.46**
Benchmark[4]		10.87	7.06	9.14	0.42	7.44	7.56
Opportunistic Fixed Income	**$5,574**	**6.78**	**4.30**	**5.66**	**6.93**	**-**	**-**
Benchmark[5]		-0.03	2.06	2.23	0.60	-	-
Rates & Liquidity	**$31,659**	**1.55**	**1.38**	**2.13**	**4.96**	**5.01**	**5.84**
Benchmark[6]		1.81	1.39	2.26	4.71	4.83	5.63
IG Fixed Income	**$28,155**	**1.62**	**1.42**	**2.20**	**5.00**	**5.04**	**5.86**
Benchmark[7]		1.84	1.41	2.32	4.74	4.84	5.64
Cash	**$3,504**	**1.24**	**0.97**	**-**	**-**	**-**	**-**
Benchmark[8]		1.03	0.51	0.32	-	-	-
Inflation Sensitive & Diversifiers	**$11,206**	**7.03**	**5.56**	**4.25**	**0.96**	**4.09**	**5.06**
Benchmark[9]		4.78	4.54	3.74	-0.36	3.84	5.31
Inflation Sensitive	**$5,999**	**6.11**	**3.75**	**0.79**	**-1.28**	**3.00**	**3.20**
Benchmark[10]		3.01	1.29	-0.89	-0.23	4.37	4.14
Core Real Estate	**$5,207**	**8.43**	**8.03**	**9.32**	**4.71**	**6.61**	**7.02**
Benchmark[11]		6.91	8.48	9.61	4.57	7.24	7.88
Multi-Strategy	**$1,912**	**7.82**	**5.71**	**7.48**	**5.84**	**6.11**	**-**
Benchmark[12]		7.88	4.61	6.51	4.94	7.57	-

New, Incremental, & Unfunded Investment Commitments

Since February 15 IAC Meeting

Fund Name	Firm Name	New or Incremental Commitment ($MM)	Closing Date
Public Equity			
Russell 200 Passive[1]	Internal	1,575	2/28/18
Russell MidCap Passive[1]	Internal	675	2/28/18
Russell MidCap Value Passive[1]	Internal	390	2/28/18
Private Equity			
Landmark Equity Partners XVI, LP	Landmark Partners	300	3/29/18
Landmark Equity Partners XVI Opportunities, LP[2]	Landmark Partners	300	3/29/18
Landmark Equity Partners XVI Overflow, LP	Landmark Partners	200	3/29/18
Non-Core Real Estate			
Harrison Street RE Partners VI Co-Investment 3, LP	Harrison Street Real Estate Capital	50	3/23/18
Inflation Sensitive			
Landmark Real Assets Fund II, LP	Landmark Partners	250	3/29/18
Landmark Real Estate Partners VIII, LP	Landmark Partners	125	3/29/18
Landmark Real Estate Partners VIII Overflow	Landmark Partners	75	3/29/18
DL Blue Diamond Fund	Doubleline	425	5/1/18
NC Garnet Fund	Blackrock	75	5/1/18

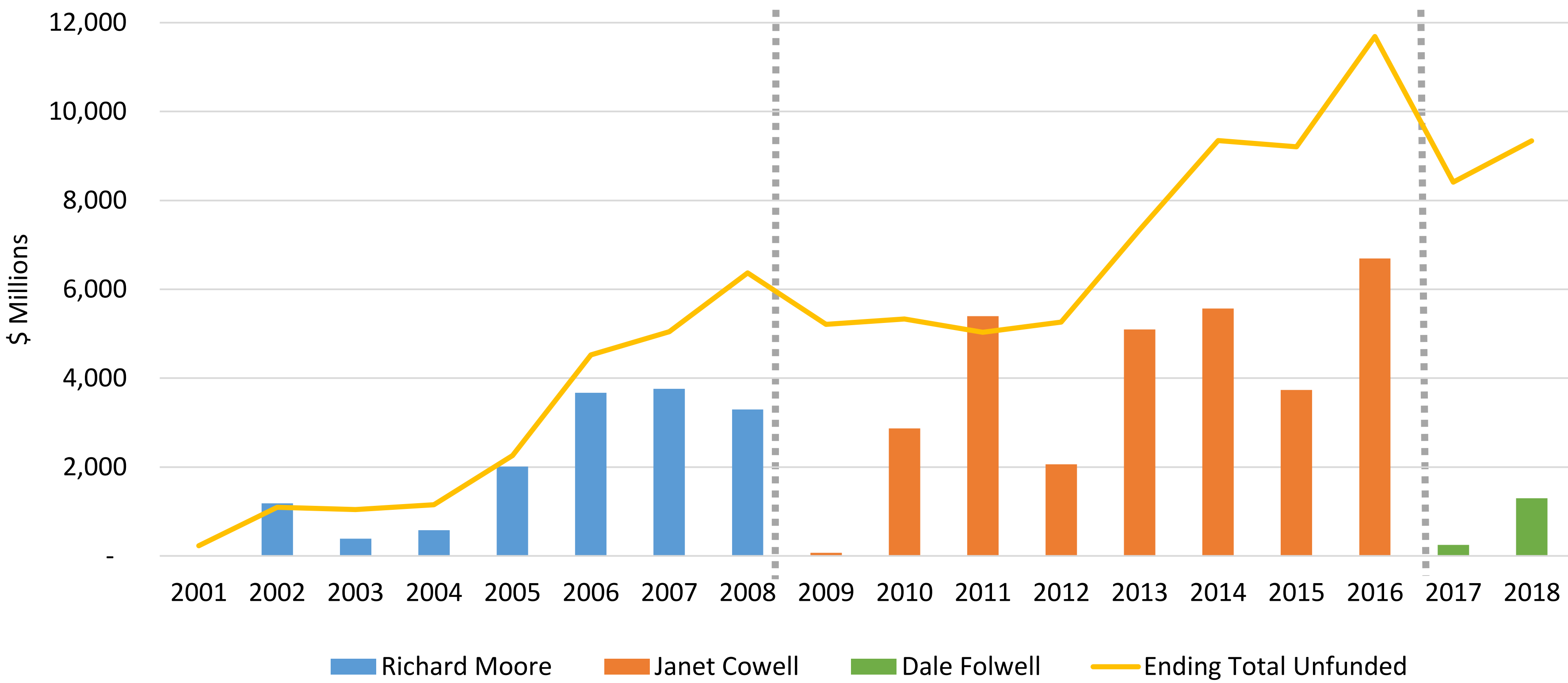
[1] Incremental monies allocated to the internal public equity portfolios came from existing public equity managers.
[2] The $300m commitment to Landmark Equity Partners XVI Opportunities is contingent upon NCDST approval of individual investments.

As of March 31, 2018

Asset Class	Unfunded Commitments ($MM)
Public Equity	**410**
Private Equity	**3,304**
Non-Core Real Estate	**1,779**
Opportunistic Fixed Income	**1,189**
Inflation Sensitive	**1,783**
Core Real Estate	**730**
Multi Strategy	**145**
Total	**9,341**

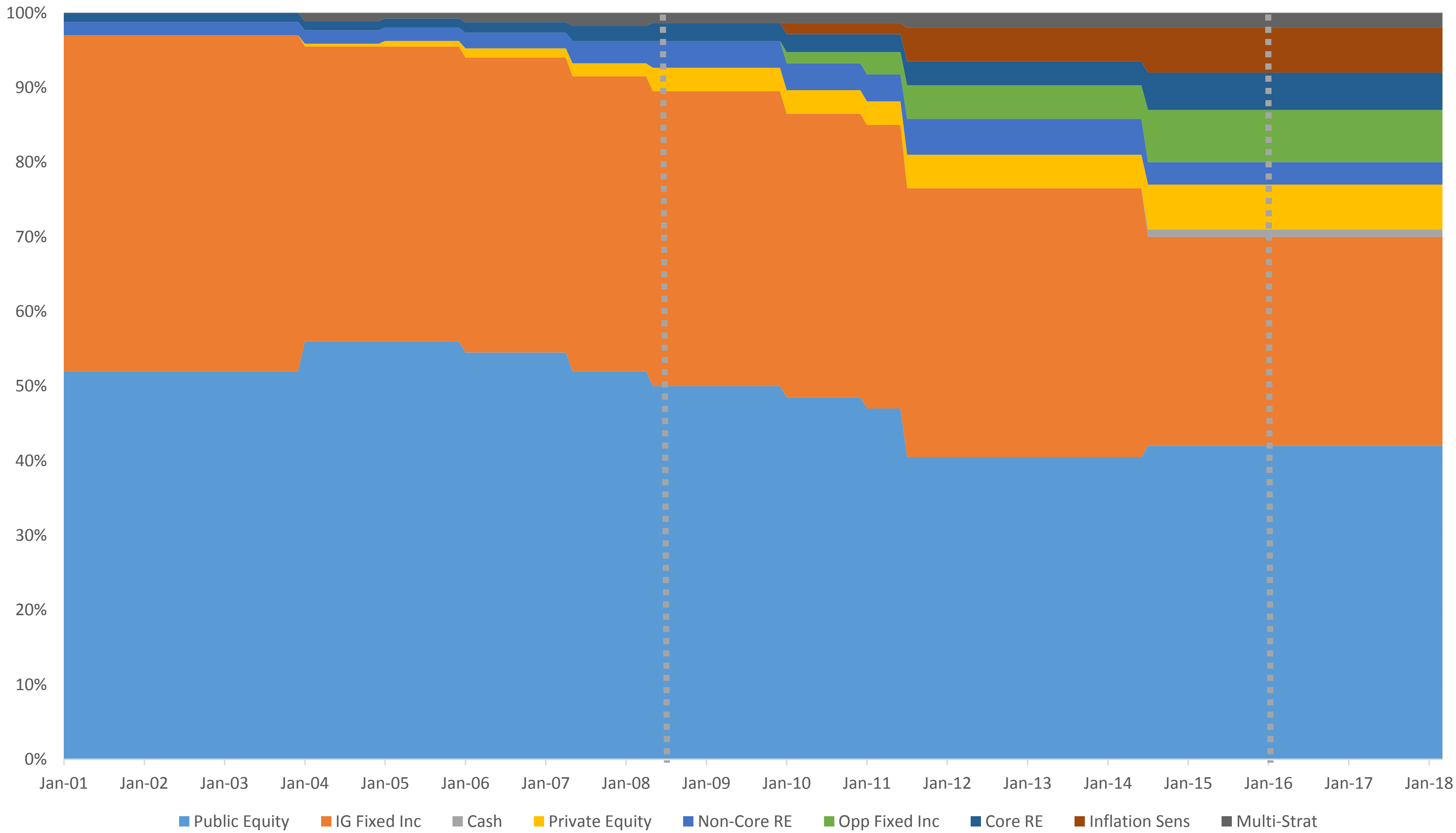
New and Total Unfunded Private Asset Class Commitments

By Calendar Year of Closing



*2018 data as of 3/31/2018

Strategic Asset Allocation Policy History



Exited Investments

Since February 15 IAC Meeting

Fund Name	Redemption Amount ($MM)	Redemption Effective
Public Equity		
BlackRock MidCap Value Passive[1]	390	2/28
Private Equity		
None	--	--
Non-Core Real Estate		
NorthCreek Fund	611[2]	4/18
Opportunistic Fixed Income		
None	--	--
Inflation Sensitive		
Blackstone Granite Fund – Class A	290	1/30
Blackstone Granite Fund – Class B	190	1/30
Core Real Estate		
None	--	--
Multi Strategy		
None	--	--

[1] The internal public equity team took over the management of this account

[2] Total distributions received during the life of the fund. Residual holdback still pending

Appendix

NCRS Public Equity Net of Fees Performance

As of March 31, 2018

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	**$39,096**	**(0.02)**	**16.29**	**8.65**	**10.00**	**6.79**
Benchmark[2]		(0.85)	14.23	7.83	9.06	5.92
Domestic Portfolio	**$17,295**	**(0.19)**	**14.62**	**10.03**	**13.05**	**9.84**
Russell 3000		(0.64)	13.81	10.22	13.03	9.62
Non-US Portfolio	**$18,586**	**0.18**	**20.26**	**8.23**	**7.44**	**3.40**
Custom Benchmark		(1.06)	17.10	6.75	6.24	2.52
Equity Hedge	**$3,206**	**(0.22)**	**6.36**	**3.22**	**5.32**	**-**
MSCI ACWI (Beta Adjusted)		(0.30)	5.86	2.99	2.89	-

*Public Equity returns also include the global portfolio, which has been liquidated but currently contains a residual amount of roughly $1 million.

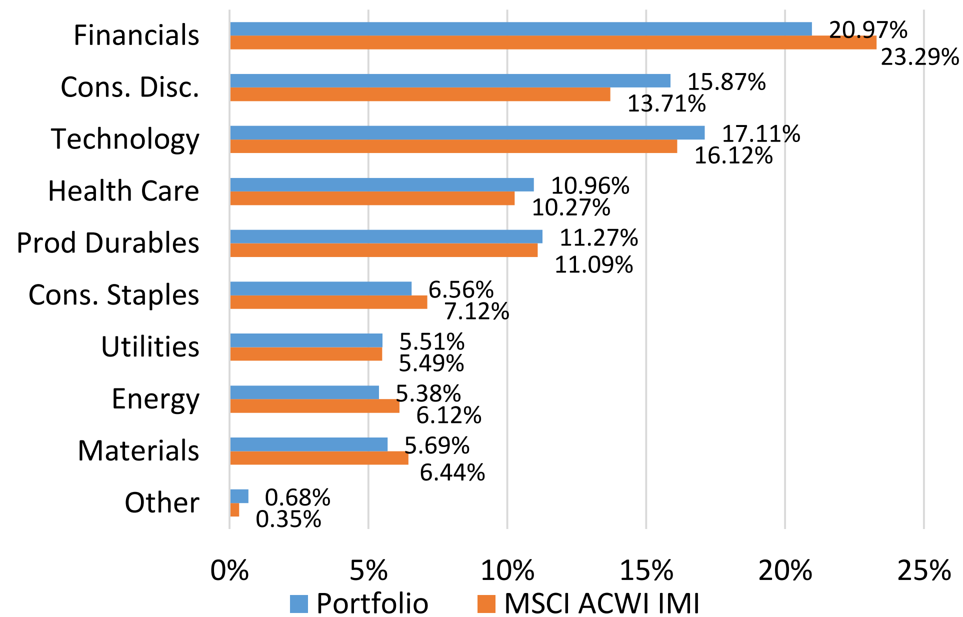
NCRS Public Equity Portfolio Characteristics

As of March 31, 2018

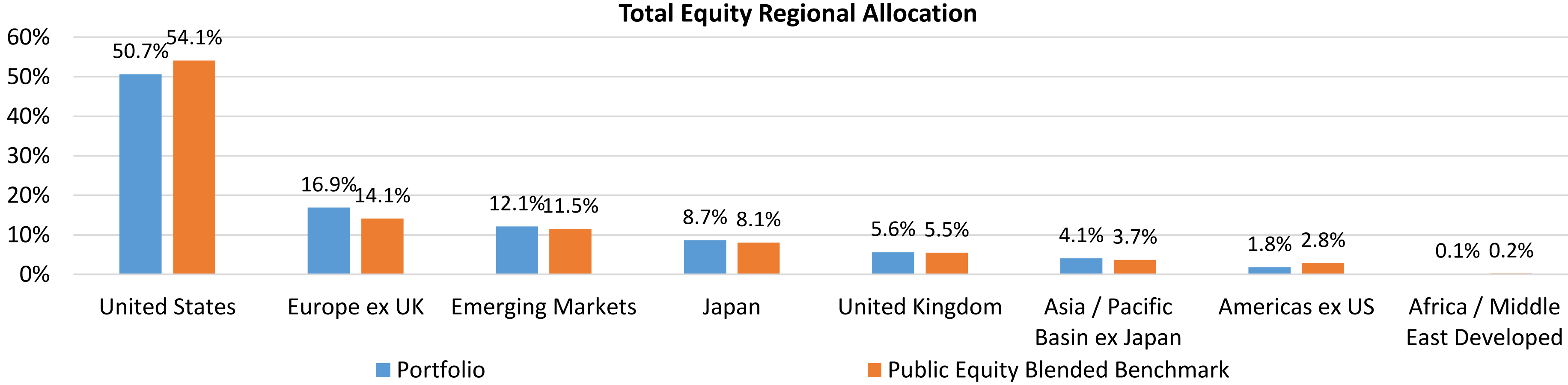
Portfolio Characteristics

	Portfolio	MSCI ACWI IMI
Price / Earnings	20.20	19.30
Dividend Yield	2.13	2.35
Price / Book	3.37	2.86
Debt / Equity	0.91	0.95
Market Cap ($B Weighted Median)	41.82	41.77
Return on Equity - 1 Year	16.20	15.90

Total Equity Sector Allocation



Total Equity Regional Allocation



NCRS Private Equity Portfolio
As of March 31, 2018

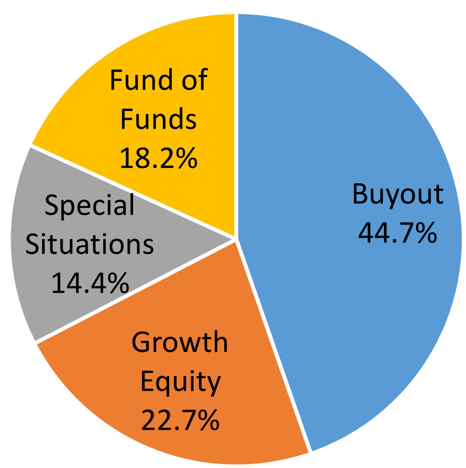
Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Private Equity	**$4,928**	**4.34**	**14.15**	**9.65**	**11.13**	**6.40**
Benchmark[3]		4.18	14.18	8.49	10.54	7.30
Buyout	**$2,188**	**6.00**	**16.79**	**11.24**	**10.47**	**5.23**
Growth	**$1,113**	**2.62**	**12.15**	**7.93**	**13.88**	**8.74**
Special Situations	**$706**	**2.81**	**10.30**	**6.44**	**5.98**	**5.20**
Fund of Funds	**$890**	**3.99**	**14.03**	**10.65**	**13.28**	**7.37**

IRR by Vintage Year

	Pre-2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NCRS	12.02	6.85	5.44	3.20	9.36	9.47	11.64	21.02	11.33	13.81	11.85	17.58	9.33	3.93	3.23	N/A	8.09
# of Funds	28	3	11	21	15	17	3	1	6	6	9	4	9	6	7	3	149

Strategy Allocation (Based on Valuation)



*Private Equity returns include a stock distribution account, in the amount of roughly $30 million, which does not fall under any specific sub-section.

NCRS Non-Core Real Estate Portfolio

As of March 31, 2018

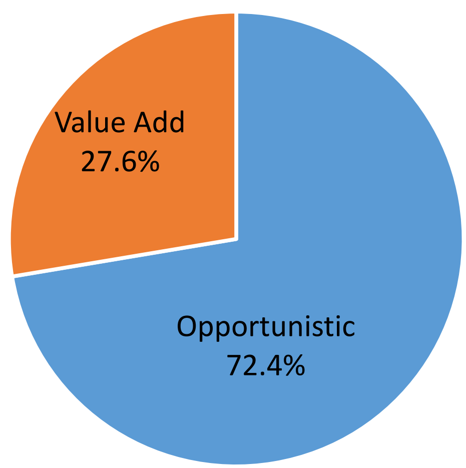
Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Non-Core Real Estate	**$3,480**	**5.62**	**14.58**	**13.93**	**14.94**	**2.67**
Benchmark[4]		4.02	10.87	7.06	9.14	0.42
Opportunistic	**$2,518**	**6.29**	**15.93**	**13.58**	**14.81**	**1.20**
Value Add	**$962**	**3.93**	**11.24**	**14.28**	**14.95**	**5.07**

IRR by Vintage Year

	Pre-2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NCRS	9.14	15.69	-1.41	2.83	2.41	16.74	N/A	16.32	17.47	19.06	16.77	9.26	8.71	8.13	N/A	N/A	6.52
# of Funds	17	3	15	13	8	6	N/A	6	7	5	7	7	6	7	N/A	1	108

Strategy Allocation (Based on Valuation)



NCRS Opportunistic Fixed Income Portfolio

As of March 31, 2018

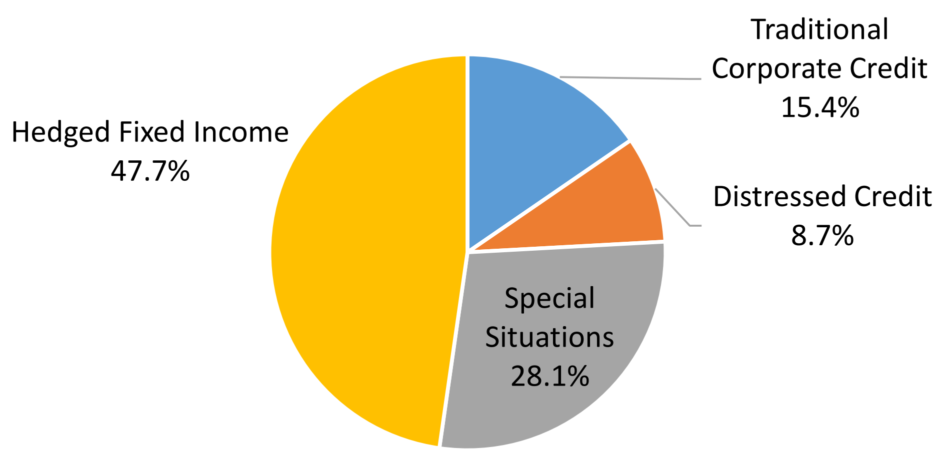
Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Opportunistic Fixed Income	**$5,574**	**2.41**	**6.78**	**4.30**	**5.66**	**6.93**
Benchmark[5]		(2.43)	(0.03)	2.06	2.23	0.60
Traditional Corporate Credit	**$859**	**2.38**	**7.37**	**5.53**	**5.93**	**-**
Distressed Credit	**$486**	**2.64**	**11.85**	**8.23**	**9.21**	**8.10**
Special Situations	**$1,568**	**3.23**	**9.61**	**9.03**	**13.87**	**10.82**
Hedged Fixed Income	**$2,661**	**1.94**	**4.22**	**2.15**	**3.56**	**-**

IRR by Vintage Year

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NCRS	2.87	N/A	17.07	8.67	22.42	6.62	4.65	2.28	5.39	4.28	13.82	9.43	17.54	N/A	6.27
# of Funds	1	N/A	1	3	1	4	9	2	7	3	1	8	2	N/A	42

Strategy Allocation (Based on Valuation)



NCRS Rates & Liquidity Portfolio

As of March 31, 2018

Net of Fees Performance

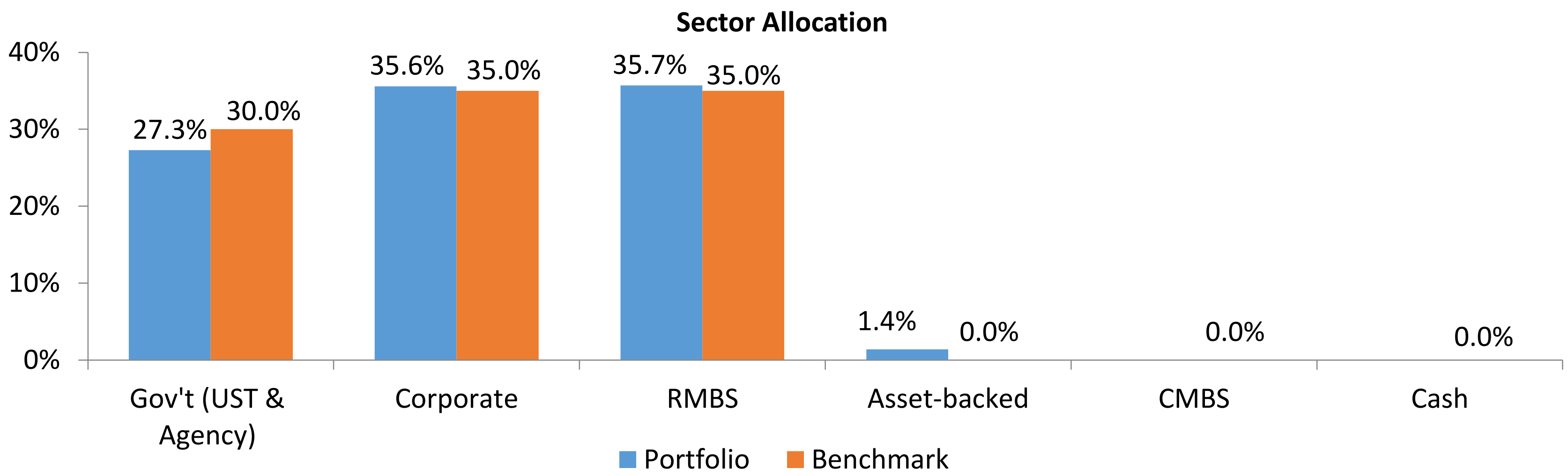
	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Rates & Liquidity	**$31,659**	**(1.54)**	**1.55**	**1.38**	**2.13**	**4.96**
Benchmark[6]		(1.91)	1.81	1.39	2.26	4.71
IG Fixed Income	**$28,155**	**(1.74)**	**1.62**	**1.42**	**2.20**	**5.00**
Core Fixed Income	$25,145	(1.98)	1.67	1.50	2.29	5.02
IG Fixed Income Cash	$3,011	0.34	1.23	0.93	-	-
Pension Cash	**$3,504**	**0.36**	**1.24**	**0.97**	**-**	**-**

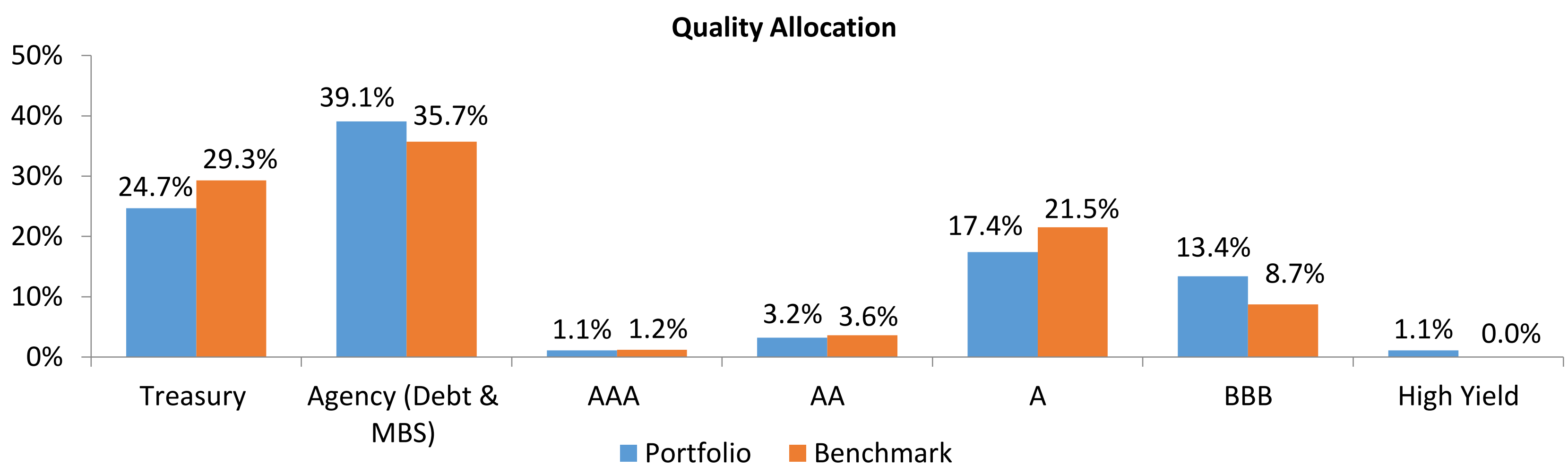
Core Fixed Income Portfolio Characteristics

	Avg. Coupon	Yield to Maturity	Duration (Years)
Government (Treasury & Agency)	4.16%	2.79%	9.8
Corporate	4.52%	3.92%	9.1
Mortgage	3.71%	3.30%	4.7
Total	**4.13%**	**3.38%**	**7.7**

NCRS Core Fixed Income Portfolio Characteristics

As of March 31, 2018





NCRS Inflation Sensitive Portfolio

As of March 31, 2018

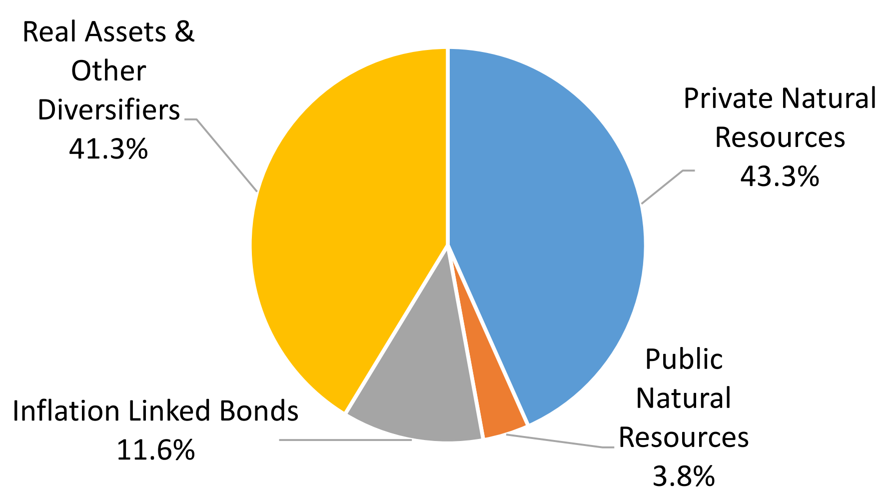
Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Inflation Sensitive	**$5,999**	**2.07**	**6.11**	**3.75**	**0.79**	**(1.28)**
Benchmark[10]		0.72	3.01	1.29	(0.89)	(0.23)
Private Natural Resources	**$2,599**	**2.21**	**5.12**	**3.74**	**2.57**	**1.13**
Public Natural Resources	**$228**	**(1.13)**	**(1.61)**	**(4.68)**	**(7.92)**	**-**
Inflation Linked Bonds	**$56**	**0.44**	**0.31**	**-**	**-**	**-**
Real Assets & Other Diversifiers	**$2,477**	**2.86**	**9.66**	**8.22**	**8.38**	**-**

IRR by Vintage Year

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NCRS	0.25	6.88	0.14	N/A	-7.99	-6.79	6.96	6.54	10.45	5.09	3.83	N/A	N/A	0.56
# of Funds	3	2	2	N/A	3	9	7	11	12	4	4	N/A	3	60

Strategy Allocation (Based on Valuation)



NCRS Core Real Estate Portfolio

As of March 31, 2018

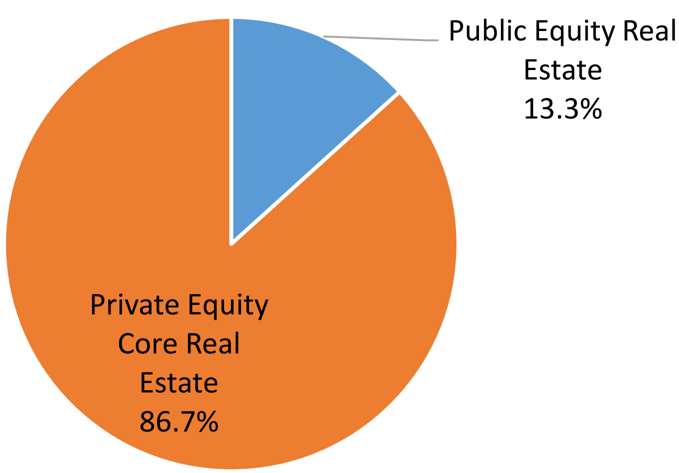
Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Core Real Estate	**$5,207**	**1.57**	**8.43**	**8.03**	**9.32**	**4.71**
Benchmark[11]		0.85	6.91	8.48	9.61	4.57
Public Equity Real Estate	**$693**	**(3.30)**	**8.12**	**3.61**	**6.95**	**5.38**
Private Equity Core Real Estate	**$4,515**	**2.37**	**8.43**	**8.95**	**9.99**	**4.56**

IRR by Vintage Year

	Pre-2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
NCRS	7.64	9.76	-8.32	5.47	1.39	10.11	N/A	23.62	N/A	N/A	7.57	7.99	3.50	9.75	N/A	N/A	7.25
# of Funds	5	1	1	2	3	1	N/A	1	N/A	N/A	2	6	2	9	N/A	1	34

Strategy Allocation (Based on Valuation)



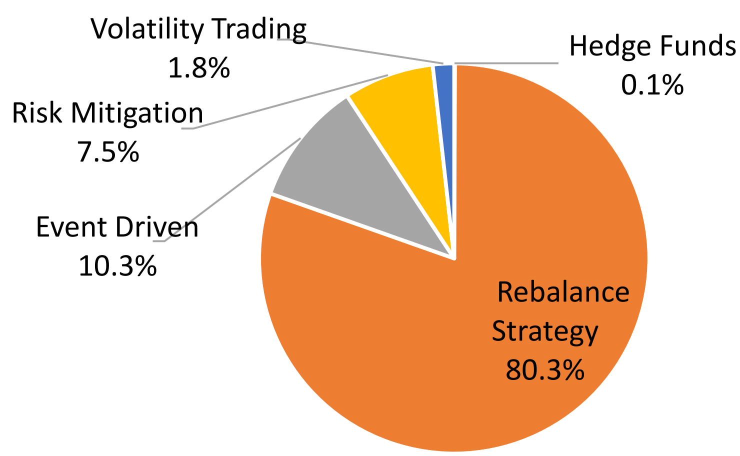
NCRS Multi-Strategy Portfolio

As of March 31, 2018

Net of Fees Performance

	Market Value ($MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Multi-Strategy	**$1,912**	**(0.70)**	**7.82**	**5.71**	**7.48**	**5.84**
Benchmark[12]		(0.96)	7.88	4.61	6.51	4.94
Hedge Funds	**$1**	**(14.14)**	**(33.43)**	**(17.85)**	**(9.64)**	**(5.31)**
Rebalance Strategy	**$1,536**	**(0.98)**	**10.03**	**6.76**	**8.60**	**-**
Event Driven	**$197**	**2.13**	**0.90**	**-**	**-**	**-**
Risk Mitigation	**$144**	**(1.86)**	**(3.89)**	**-**	**-**	**-**
Volatility Trading	**$34**	**2.11**	**(14.64)**	**-**	**-**	**-**

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, and Opportunistic FI Benchmark at policy weights.

2. The Public Equity Benchmark is the 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 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 Benchmark and the Cash Benchmark at policy weights.

7. The IG Fixed Income 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 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.

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

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