



IAC Performance Review

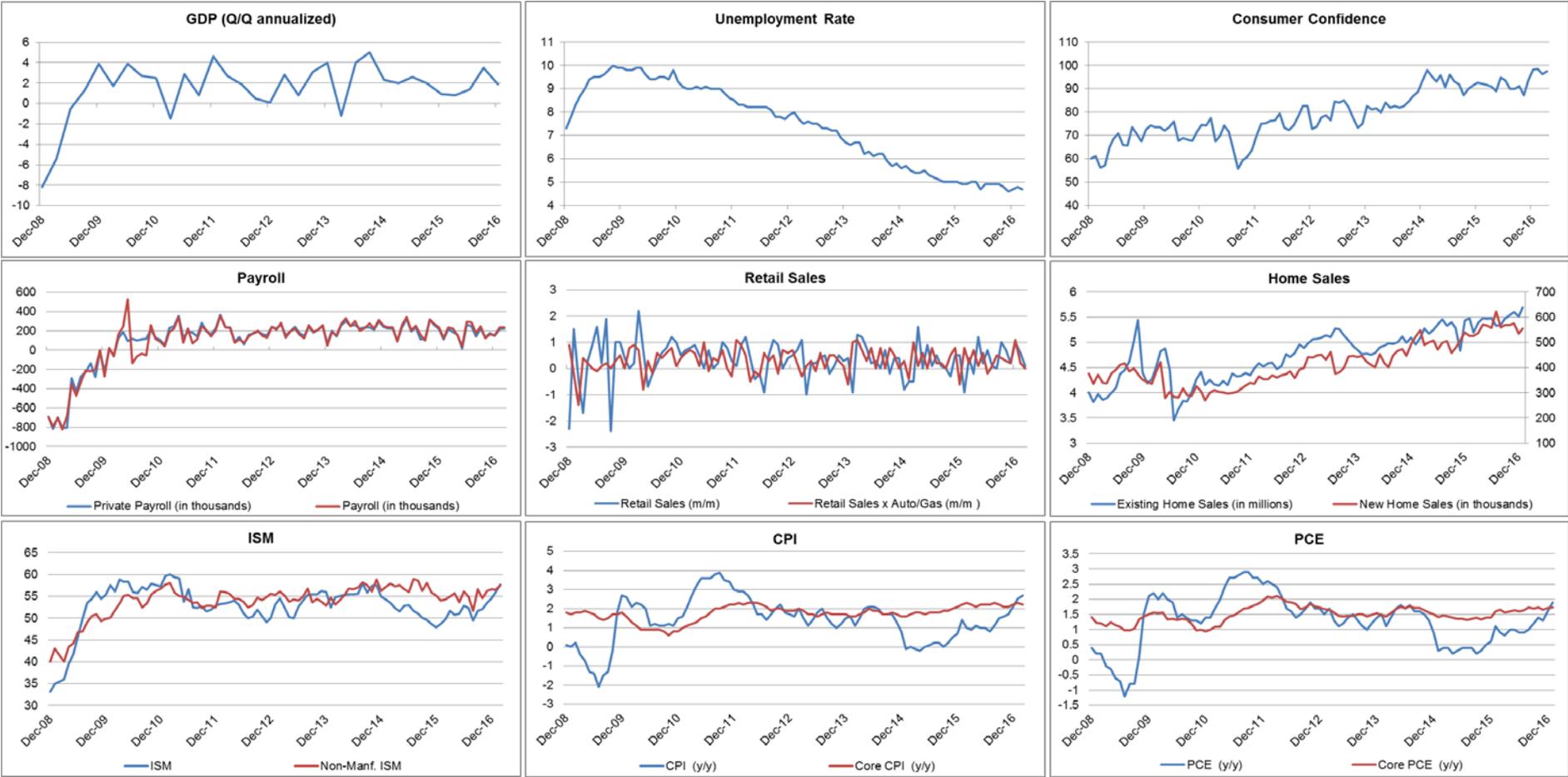
March 29, 2017



North Carolina Department of State Treasurer
Investment Management

Learn. Invest. Grow. Prosper.

U.S. Economic Environment



Source: Bloomberg; Data as of 03/20/17



Global Economic Environment

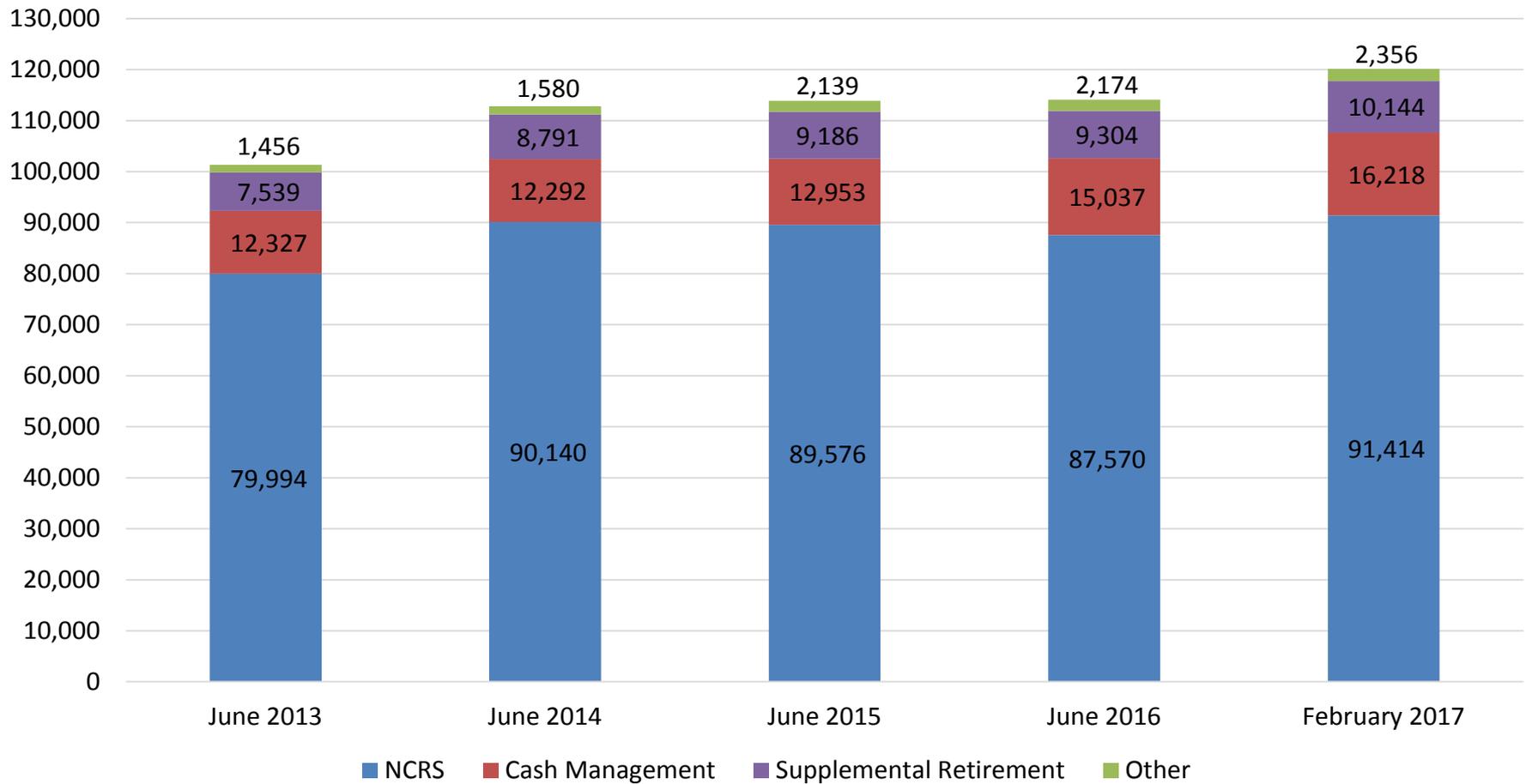
Countries	Real GDP YoY		Unemployment		CPI YoY		Countries	Real GDP YoY		Unemployment		CPI YoY	
	Date	Value	Date	Value	Date	Value		Date	Value	Date	Value	Date	Value
U.S.	12/16	1.9	02/17	4.7	02/17	2.7	Asia/Pacific/Latam						
Europe							China	12/16	6.8			02/17	0.8
Germany	12/16	1.7	02/17	5.9	02/17	2.2	India	12/16	7			01/17	1.86
France	12/16	1.2	01/17	10	02/17	1.2	Japan	12/16	1.6	01/17	3	01/17	0.4
U.K	12/16	2	01/17	4.7	02/17	2.3	Indonesia	12/16	4.94			02/17	3.83
Italy	12/16	0.987	01/17	11.9	02/17	1.6	Brazil	12/16	-2.46			02/17	4.76
Spain	12/16	3	01/17	18.2	02/17	3	Australia	12/16	2.4	02/17	5.9	12/16	1.5

Source: Bloomberg; Data as of 03/20/17



Assets Under Management (\$mil)

\$120.1 Billion as of February 28, 2017



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 Unaudited Asset Allocation

As of March 27, 2017

	Market Value (\$000)	%	Target	Range		Relative %	Relative \$ (\$000)
				Minimum	Maximum		
Growth	\$51,946,303	56.73%	58.00%	37.00%	71.00%	-1.27%	(\$1,163,190)
Public Equity	38,233,930	41.75%	42.00%	37.00%	47.00%	-0.25%	(224,669)
Private Equity	4,641,027	5.07%	6.00%	0.00%	8.75%	-0.93%	(853,058)
Non Core Real Estate	3,542,593	3.87%	3.00%	0.00%	8.00%	0.87%	795,550
Opportunistic Fixed Income	5,528,753	6.04%	7.00%	0.00%	7.50%	-0.96%	(881,013)
Rates & Liquidity	27,217,946	29.72%	29.00%	24.00%	42.00%	0.72%	663,199
IG Fixed Income & Cash	25,006,521	27.31%	28.00%	24.00%	32.00%	-0.69%	(632,545)
Pension Cash	2,211,425	2.42%	1.00%	0.00%	10.00%	1.42%	1,295,744
Inflation Sensitive & Diversifiers	10,681,690	11.67%	11.00%	4.00%	16.00%	0.67%	609,200
Inflation Sensitive	6,215,027	6.79%	6.00%	2.00%	7.50%	0.79%	720,942
Core Real Estate	4,466,663	4.88%	5.00%	2.00%	10.00%	-0.12%	(111,741)
Multi-Strategy	1,722,153	1.88%	2.00%	0.00%	4.00%	-0.12%	(109,209)
Grand Total	\$91,568,093	100.00%					



NCRS Unaudited Asset Allocation

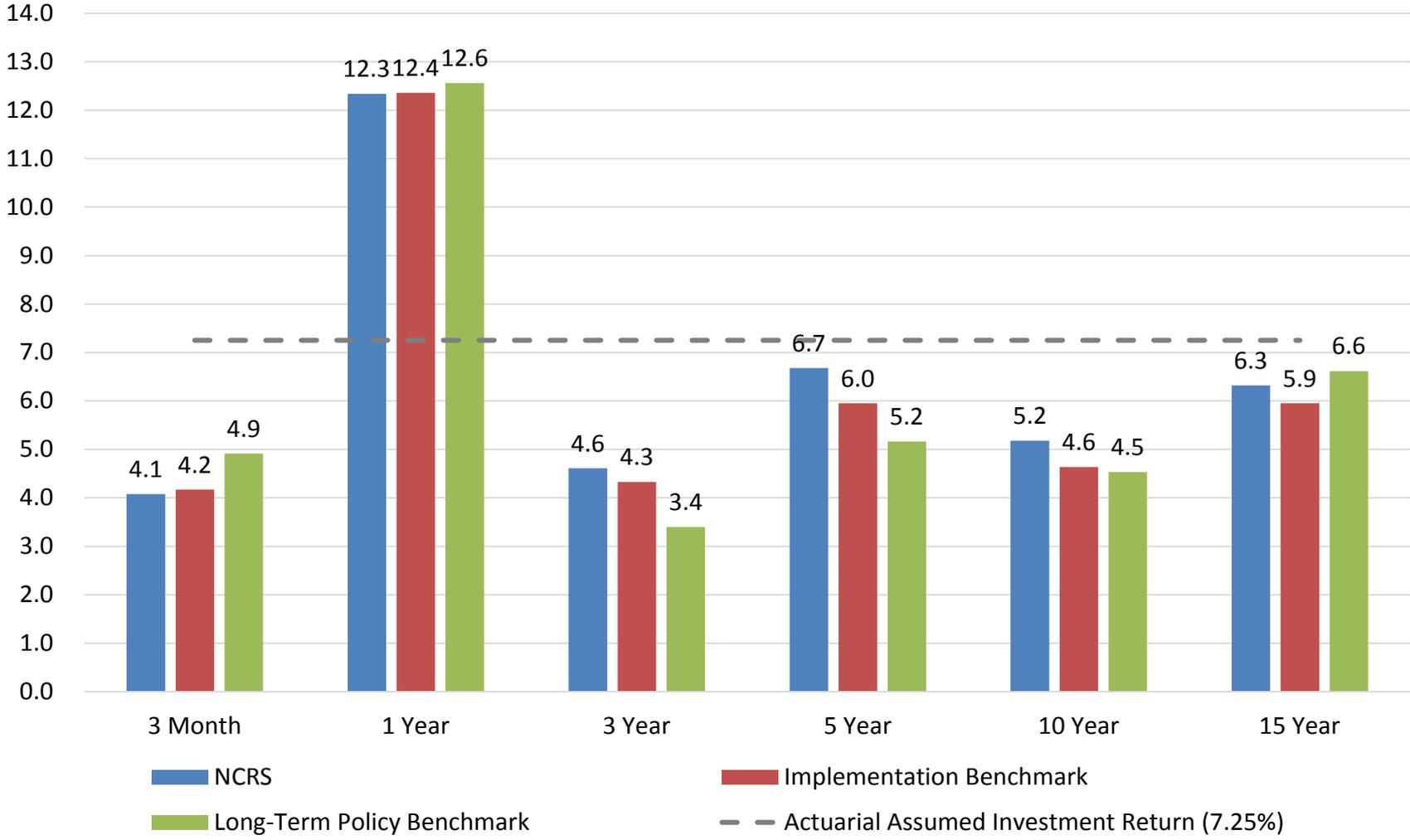
As of March 20, 2017

	Market Value (\$000)	%	Target	Range		Relative %	Relative \$ (\$000)
				Minimum	Maximum		
Growth	\$53,668,615	58.54%	58.00%	37.00%	71.00%	0.54%	\$498,047
Public Equity	39,933,626	43.56%	42.00%	37.00%	47.00%	1.56%	1,430,801
Private Equity	4,650,242	5.07%	6.00%	0.00%	8.75%	-0.93%	(850,161)
Non Core Real Estate	3,571,805	3.90%	3.00%	0.00%	8.00%	0.90%	821,603
Opportunistic Fixed Income	5,512,941	6.01%	7.00%	0.00%	7.50%	-0.99%	(904,196)
Rates & Liquidity	25,604,427	27.93%	29.00%	24.00%	42.00%	-1.07%	(980,857)
IG Fixed Income & Cash	24,037,246	26.22%	28.00%	24.00%	32.00%	-1.78%	(1,631,304)
Pension Cash	1,567,181	1.71%	1.00%	0.00%	10.00%	0.71%	650,447
Inflation Sensitive & Diversifiers	10,678,198	11.65%	11.00%	4.00%	16.00%	0.65%	594,125
Inflation Sensitive	6,212,735	6.78%	6.00%	2.00%	7.50%	0.78%	712,332
Core Real Estate	4,465,463	4.87%	5.00%	2.00%	10.00%	-0.13%	(118,207)
Multi-Strategy	1,722,153	1.88%	2.00%	0.00%	4.00%	-0.12%	(111,315)
Grand Total	\$91,673,392	100.00%					



NCRS Total Net Portfolio Return vs. Benchmarks

As of February 28, 2017

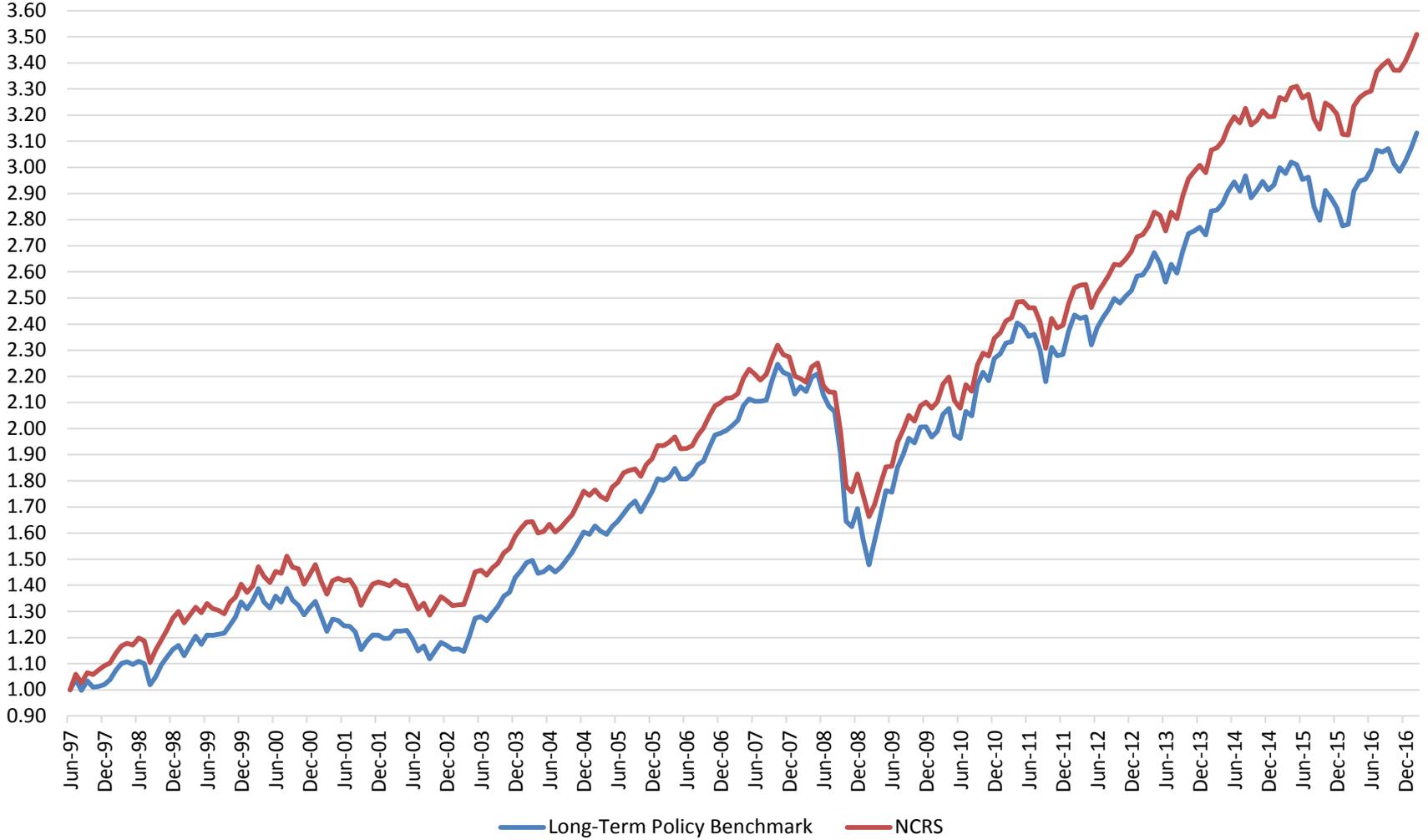


Note: Returns for periods greater than one year are annualized.



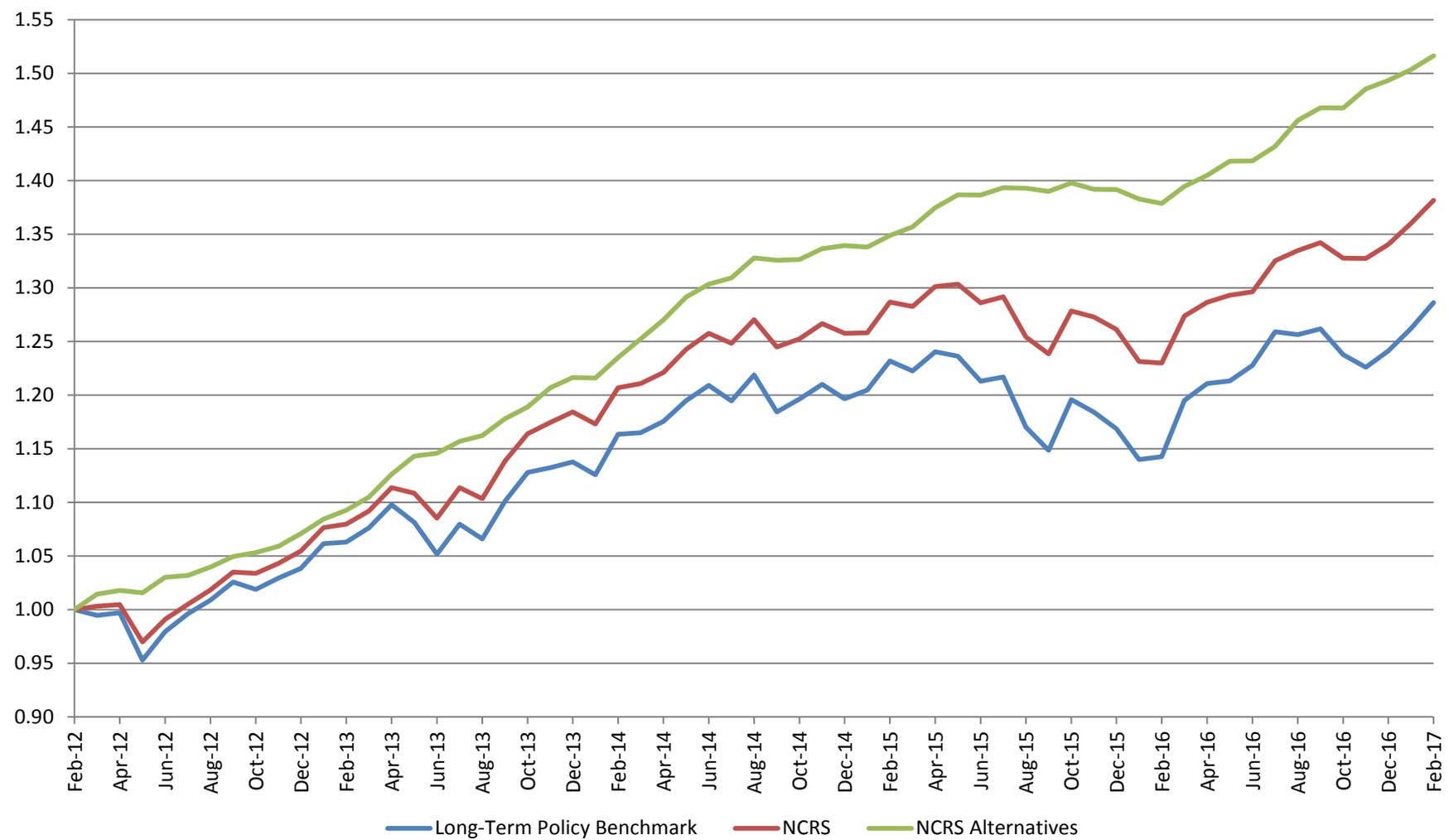
Growth of a Dollar

As of February 28, 2017



Growth of a Dollar

5 Years Ending February 28, 2017



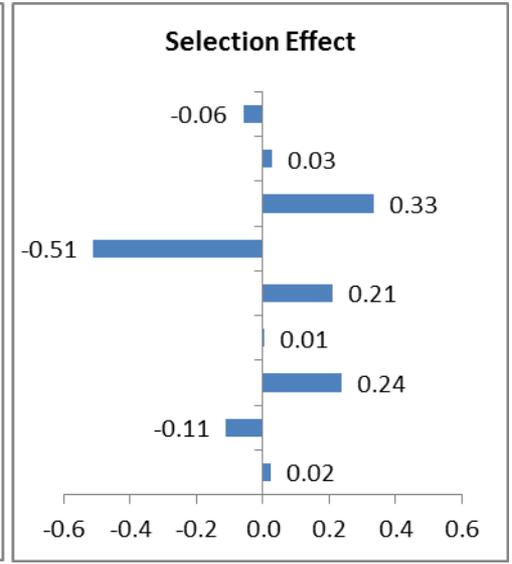
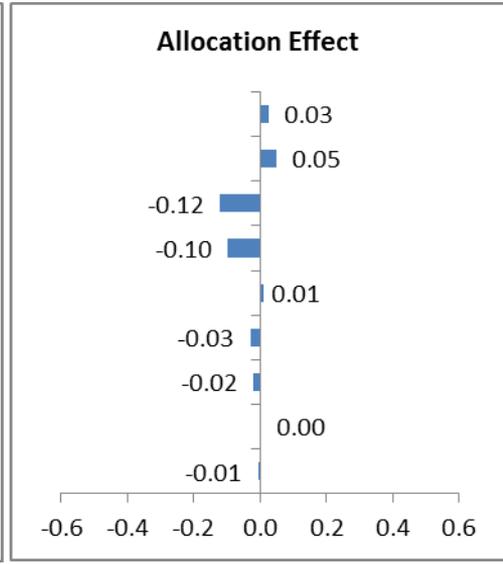
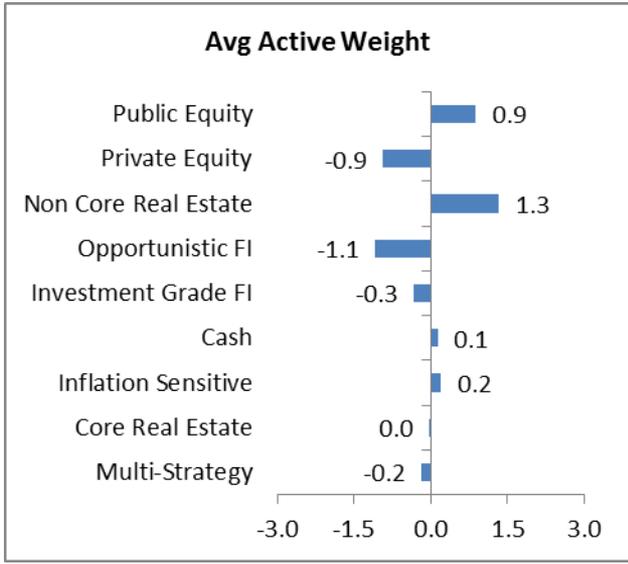
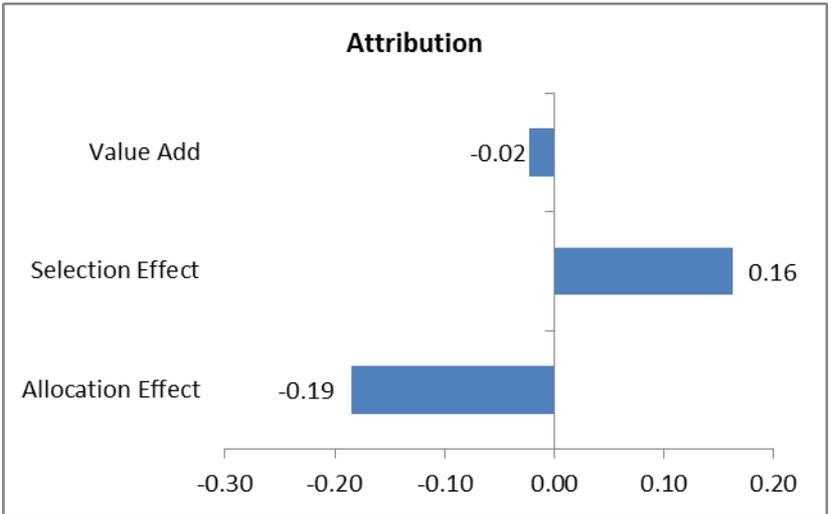
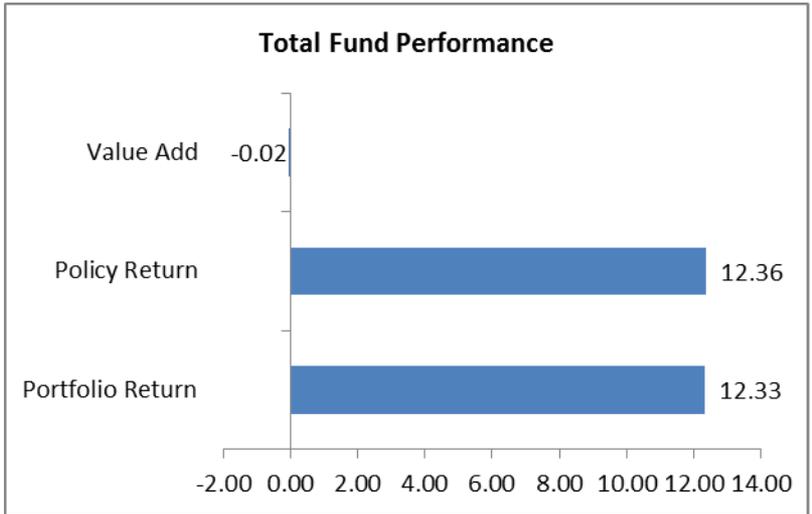
Note: NCRS Alternatives includes the following: Core Real Estate, Inflation Sensitive - Private Natural Resources, Inflation Sensitive - Real Assets and Other, Multi-Strategy Investments, Non Core Real Estate, Opportunistic Fixed Income, Private Equity, Equity Hedge Strategies and the Blackstone Granite Fund (Class B).



NCRS Net Return Attribution

Total Fund Performance vs. Implementation Benchmark

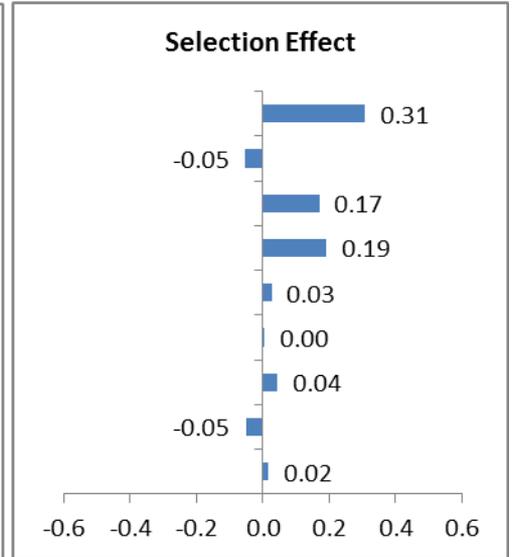
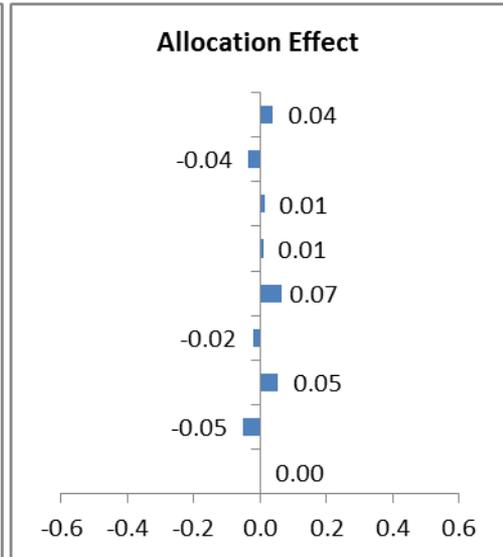
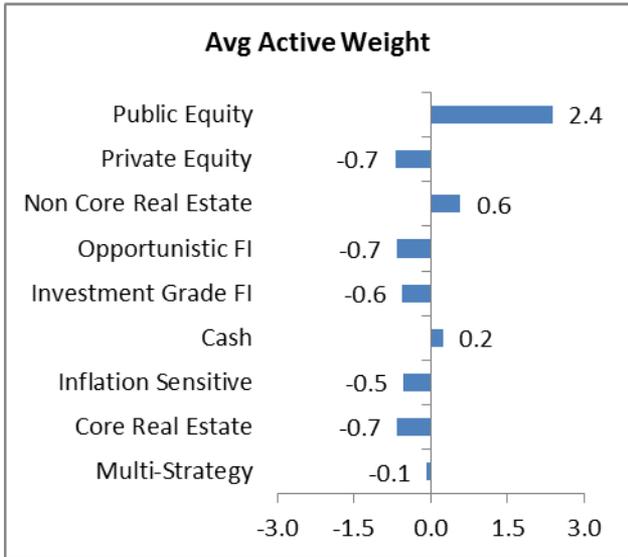
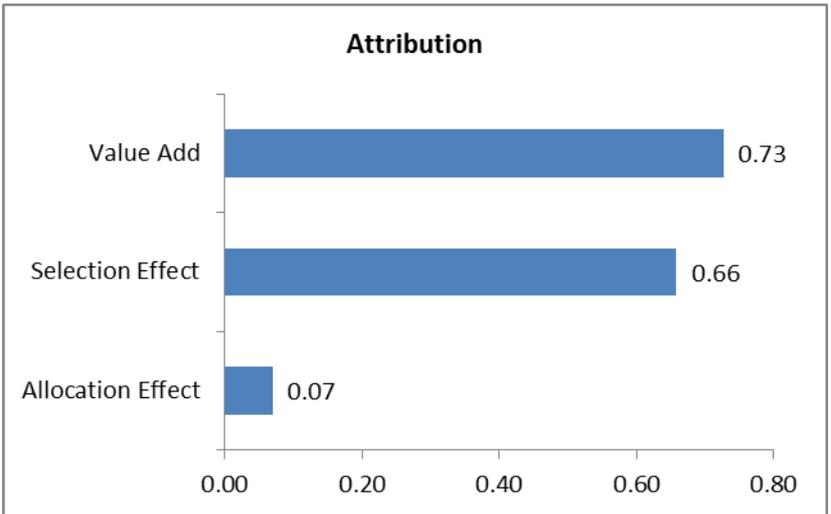
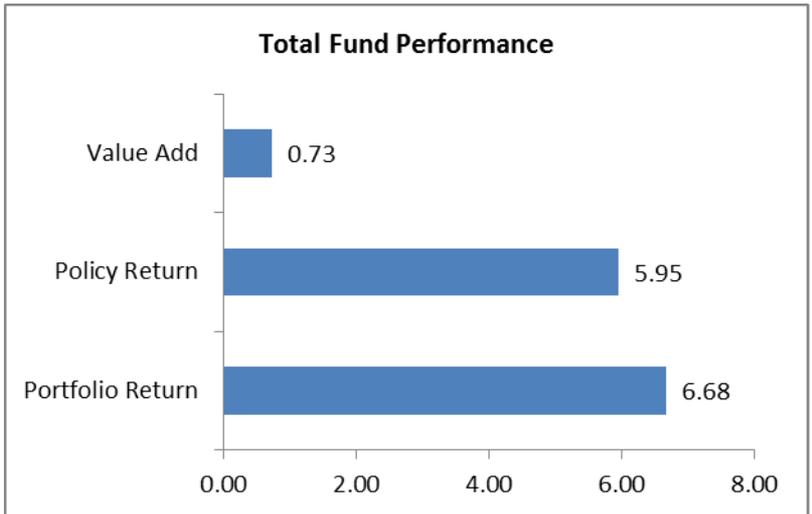
1 Year Ending February 28, 2017



NCRS Net Return Attribution

Total Fund Performance vs. Implementation Benchmark

5 Years Ending February 28, 2017

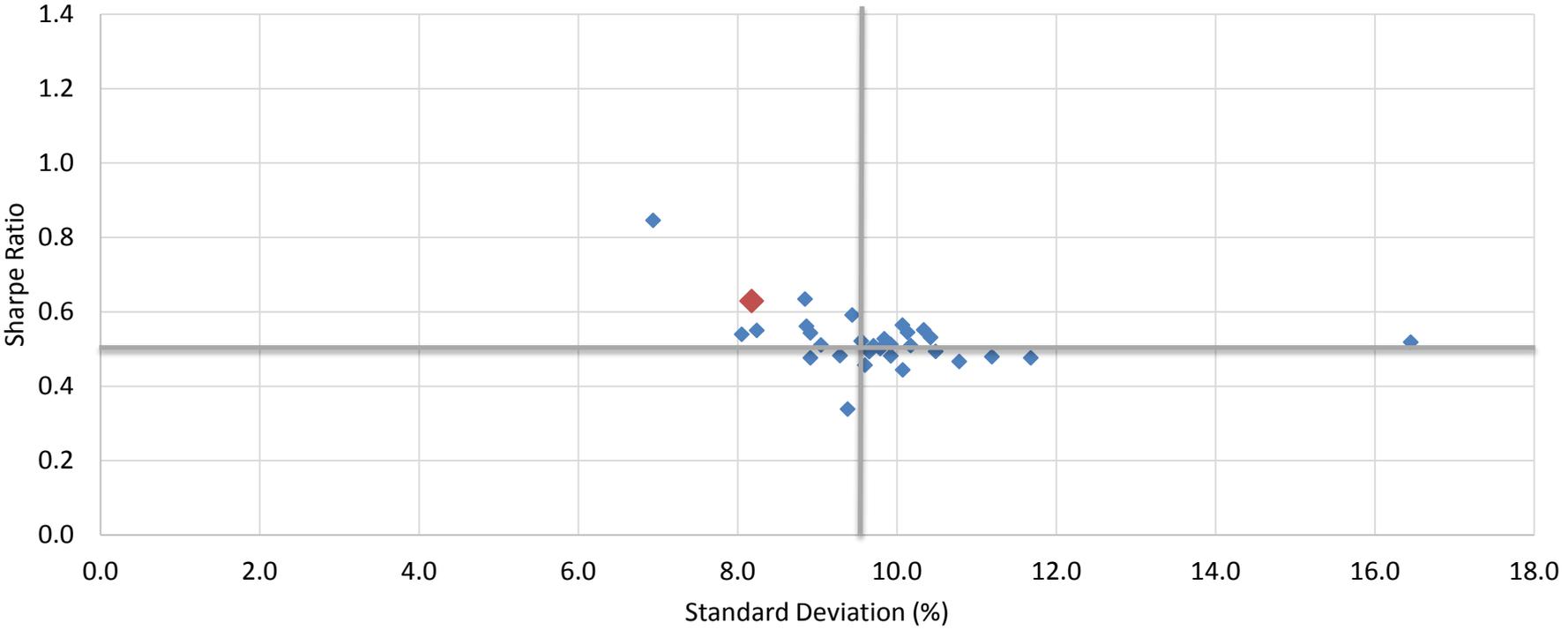


NCRS Gross of Fees Return and Risk
 BNY Mellon Universe: Public Funds > \$5B
 As of February 28, 2017

<u>Returns</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>15 Year</u>
25th percentile	6.18	8.52	5.87	7.38
Median	5.65	7.74	5.43	6.97
75th percentile	5.11	7.28	5.04	6.68
NCRS	5.23	7.26	5.67	6.69
Percentile Rank (1 st percentile = highest performance)	64	76	32	74
<u>Risk</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>15 Year</u>
25th percentile	6.49	6.45	10.17	9.63
Median	5.64	5.94	9.71	9.22
75th percentile	5.25	5.32	8.92	8.45
NCRS	4.90	5.12	8.18	7.59
Percentile Rank (99 th percentile = lowest risk)	82	79	91	97



NCRS Gross of Fees Sharpe Ratio
 BNY Mellon Universe: Public Funds > \$5B
 As of February 28, 2017

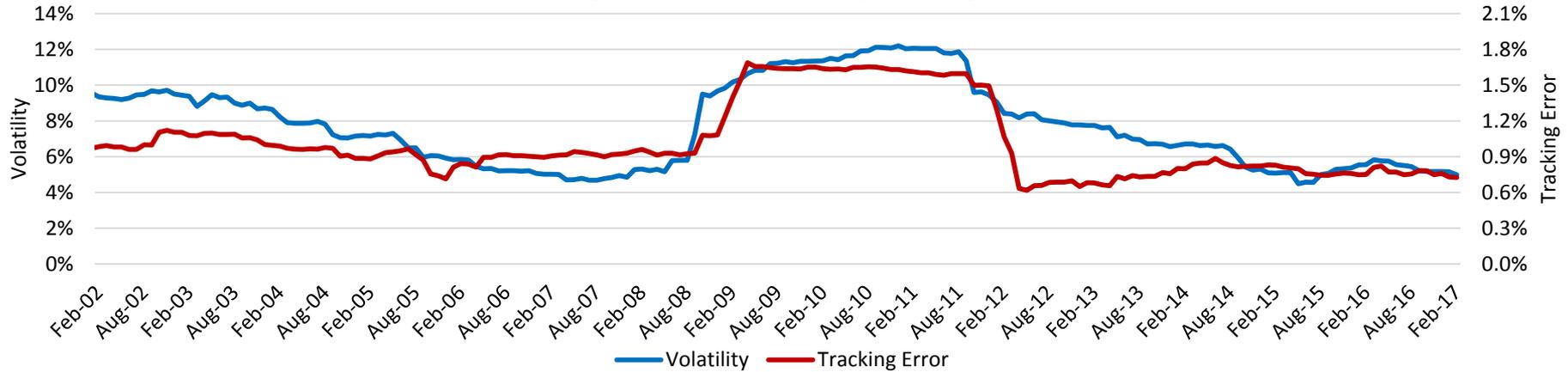


<u>Sharpe Ratio</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>15 Year</u>
25th percentile	1.05	1.38	0.55	0.70
Median	0.95	1.24	0.51	0.65
75th percentile	0.82	1.17	0.48	0.60
NCRS	1.03	1.37	0.63	0.72
Percentile Rank	37	28	10	16

Note: Scatter plot shows Sharpe Ratio and Volatility for 10 years ending February 28, 2017

NCRS Rolling 3 Year Total Fund Volatility & Tracking Error*

Rolling 3-Year Total Fund Volatility & Tracking Error



NCRS Risk and Return Metrics*

Program	POSITION		36-MONTH					60-MONTH				
	\$ Bil	% Wgt	Return	St. Dev	Active Return	TE	IR	Return	St. Dev	Active Return	TE	IR
Total NCRS	91.4	100.0	4.6	5.0	0.3	0.7	0.4	6.7	5.2	0.7	0.8	0.9
Growth	53.2	58.2	5.5	8.0	0.6	0.9	0.7	9.2	8.4	1.0	0.9	1.2
Public Equity	39.5	43.2	4.6	10.5	0.0	0.5	0.0	9.0	10.9	0.7	0.7	1.0
Private Equity	4.6	5.1	9.5	3.6	1.5	4.0	0.4	9.3	3.1	-1.2	3.7	-0.3
Non-Core Real Estate	3.6	3.9	15.3	3.3	7.5	4.4	1.7	13.4	3.1	4.1	3.7	1.1
Opportunistic Fixed Income	5.4	6.0	2.4	3.3	0.4	3.8	0.1	7.3	3.3	4.5	3.6	1.2
Rates & Liquidity	25.9	28.3	3.2	3.4	-0.3	0.6	-0.5	2.9	3.8	0.1	0.6	0.1
IG Fixed Income & Cash	24.2	26.5	3.3	3.5	-0.3	0.6	-0.5	3.0	3.9	0.1	0.6	0.1
Pension Cash	1.6	1.8	0.7	0.1	0.6	0.1	6.4	--	--	--	--	--
Inflation Sensitive & Diversifiers	10.7	11.7	2.5	2.8	-0.6	2.4	-0.2	2.9	3.5	-0.5	2.4	-0.2
Inflation Sensitive	6.2	6.8	-1.5	4.7	1.3	3.3	0.4	-1.2	5.3	0.6	2.9	0.2
Core Real Estate	4.5	4.9	8.1	2.4	-2.3	1.9	-1.2	9.3	3.8	-1.2	2.7	-0.5
Multi-Strategy	1.7	1.9	4.2	7.5	1.4	1.0	1.5	8.1	8.2	1.0	1.0	1.0

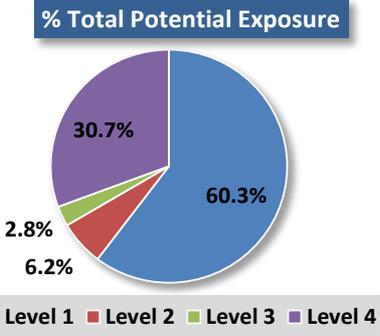
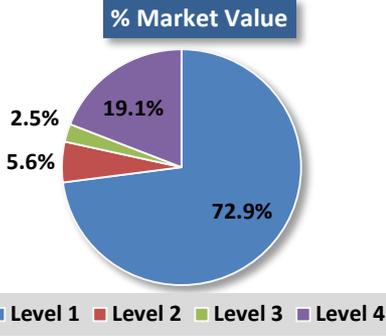
Note: Active Return= Net Managed less benchmark returns; TE=Tracking Error; IR = Information Ratio

*As of February 28, 2017



NCRS Liquidity Profile

As of January 31, 2017



Liquidity Levels
Level 1: Highly Liquid (T+3)
Level 2: T+3 to 12 Months
Level 3: 12 to 24 Months
Level 4: Greater than 24 Months

Current Exposure (Market Value)											
	Global Public Equity	Private Equity	Non Core Real Estate	Opportunistic Fixed Income	Investment Grade Fixed Income	Pension Cash	Inflation Sensitive	Core Real Estate	Multi-Strategy	Total \$	Total %
Level 1	\$38,002	\$2	\$0	\$497	\$24,007	\$895	\$271	\$629	\$1,504	\$65,808	72.9%
Level 2	\$795	\$0	\$0	\$1,997	\$0	\$0	\$1,115	\$1,109	\$0	\$5,015	5.6%
Level 3	\$194	\$0	\$0	\$1,084	\$0	\$0	\$227	\$707	\$7	\$2,219	2.5%
Level 4	\$400	\$4,562	\$3,548	\$1,834	\$0	\$0	\$4,526	\$2,182	\$142	\$17,194	19.1%
Total \$	\$39,391	\$4,564	\$3,548	\$5,411	\$24,007	\$895	\$6,140	\$4,627	\$1,653	\$90,236	100.0%
Total %	43.65%	5.06%	3.93%	6.00%	26.61%	0.99%	6.80%	5.13%	1.83%		

Total Potential Exposure (Market Value + Unfunded Commitments)											
	Global Public Equity	Private Equity	Non Core Real Estate	Opportunistic Fixed Income	Investment Grade Fixed Income	Pension Cash	Inflation Sensitive	Core Real Estate	Multi-Strategy	Total	Total %
Level 1	\$29,817	\$2	\$0	\$497	\$20,810	\$895	\$271	\$629	\$1,504	\$54,424	60.3%
Level 2	\$795	\$0	\$0	\$2,283	\$0	\$0	\$1,115	\$1,275	\$150	\$5,618	6.2%
Level 3	\$194	\$0	\$0	\$1,241	\$0	\$0	\$227	\$856	\$7	\$2,525	2.8%
Level 4	\$775	\$8,039	\$6,080	\$3,192	\$0	\$0	\$6,358	\$2,863	\$362	\$27,669	30.7%
Total \$	\$31,580	\$8,041	\$6,080	\$7,213	\$20,810	\$895	\$7,971	\$5,624	\$2,023	\$90,236	100.0%
Total %	35.00%	8.91%	6.74%	7.99%	23.06%	0.99%	8.83%	6.23%	2.24%		



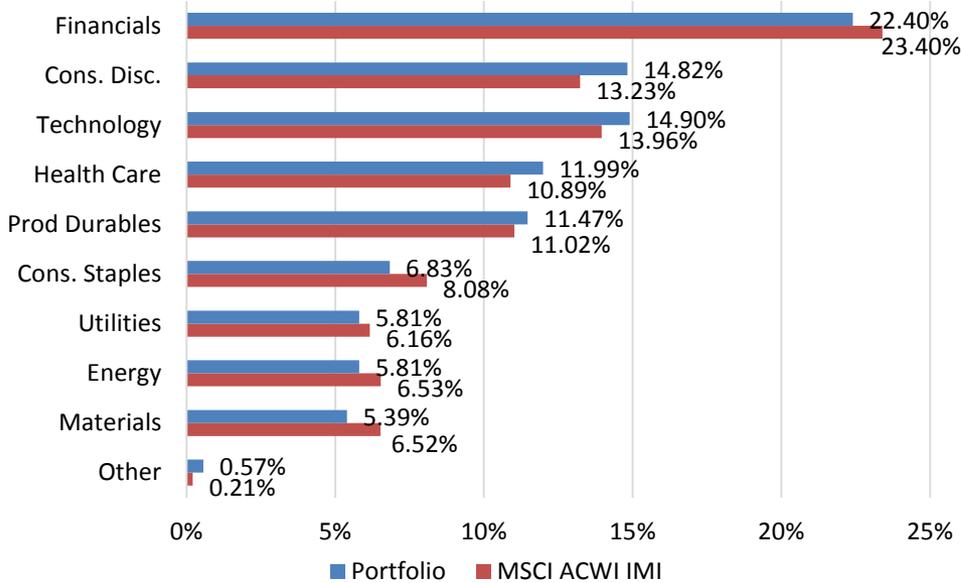
NCRS Public Equity Net Performance

As of February 28, 2017

	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Public Equity	\$39,518	7.45	21.41	4.62	9.02	4.69
Benchmark ²		7.45	21.57	4.62	8.31	4.01
Domestic Portfolio	\$18,195	7.60	25.37	8.93	13.58	7.71
Russell 3000		7.73	26.29	9.92	13.85	7.64
Non-US Portfolio	\$15,555	8.14	19.61	0.40	4.46	1.50
Custom Benchmark		8.02	19.33	0.08	3.86	0.65
Global Portfolio	\$2,773	7.75	20.81	6.82	12.63	-
MSCI ACWI		7.90	22.07	4.81	8.25	4.08
Equity Hedge	\$2,995	3.13	9.09	2.75	-	-
MSCI ACWI (beta adjusted)		3.08	8.64	1.37	-	-



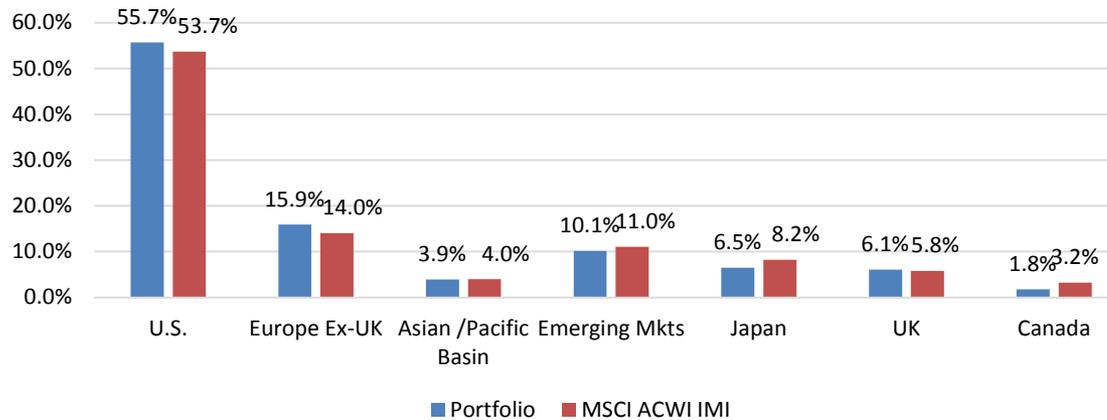
Total Equity Sector Allocation



Portfolio Characteristics

	Portfolio	MSCI ACWI IMI
Price/Earnings	23.2	22.5
Dividend Yield	2.11	2.33
Price/Book	3.00	2.80
Debt/Equity	0.99	1.02
Market Cap (\$B Weighted Median)	34.683	35.910
Return on Equity - 1 Year	14.5	14.1

Total Equity Regional Allocation



As of February 28, 2017



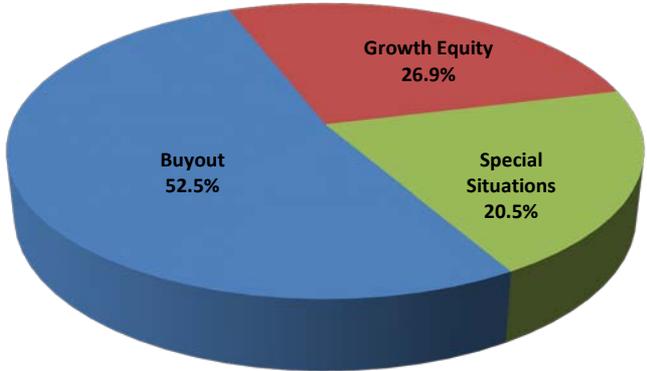
Private Equity

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Private Equity*	\$4,640	0.27	7.20	9.49	9.31	6.57
Benchmark ³		1.46	6.60	8.00	10.51	8.61
Buyout	\$1,948	0.31	8.36	7.58	7.74	5.94
Growth	\$1,043	(0.43)	8.84	14.05	12.25	7.65
Special Situations	\$706	(0.11)	7.17	4.00	5.99	5.59
Fund of Funds	\$942	1.26	4.50	12.32	11.65	6.86

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>Total</u>
NCRS	12.05	7.10	5.36	2.92	9.09	8.95	12.60	20.13	10.85	12.39	7.38	12.67	1.15	-45.6	N/A	7.41
# of Funds	28	3	11	21	15	17	3	1	6	6	9	4	9	11	2	146

Strategy Allocation (based on commitments)



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

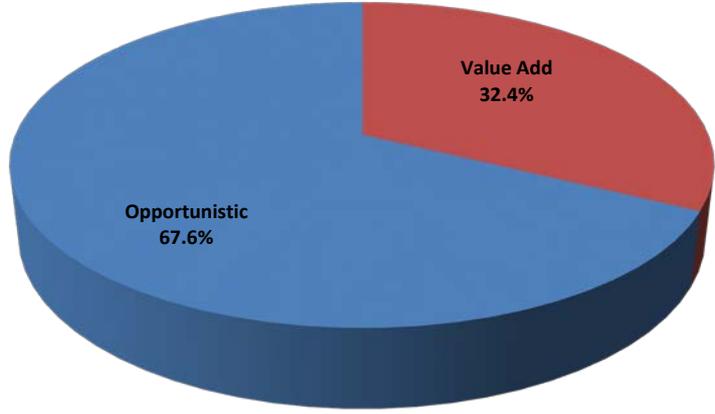
Non-Core Real Estate

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Non-Core Real Estate	\$3,563	1.25	11.36	15.31	13.37	3.35
Benchmark ⁴		1.28	4.08	7.85	9.28	1.95
Opportunistic	\$2,409	0.75	8.99	13.69	12.30	1.90
Value Add	\$1,155	2.30	15.82	18.31	15.24	5.98

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>Total</u>
NCRS	9.17	15.74	-1.38	2.47	1.99	16.89	2.12	17.74	17.04	16.61	13.09	2.60	4.16	-2.48	N/A	5.85
# of Funds	17	3	15	13	8	6	1	5	7	5	7	7	6	7	1	108

Strategy Allocation (based on valuation)



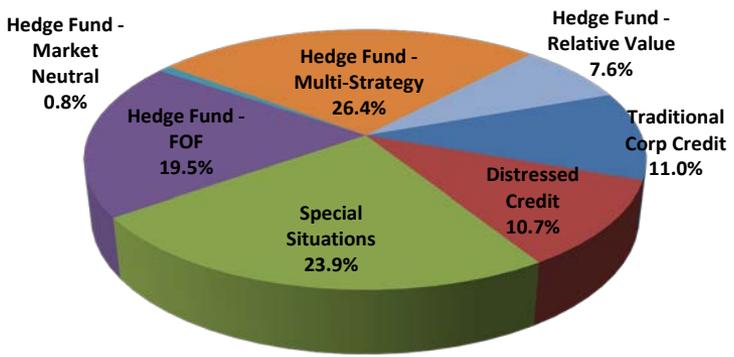
Opportunistic Fixed Income

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Opportunistic Fixed Income	\$5,447	2.78	12.03	2.44	7.32	6.51
Benchmark ⁵		3.73	20.94	2.07	2.80	0.38
Traditional Corporate Credit	\$601	4.01	16.69	3.49	8.18	-
Distressed Credit	\$583	3.47	16.50	5.78	11.09	-
Special Situations	\$1,303	1.28	9.23	9.19	17.31	-
Hedged Fixed Income	\$2,961	3.12	11.40	0.47	4.83	-

IRR by Vintage Year														
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
NCRS	2.63	N/A	17.18	8.69	22.42	7.51	4.59	1.42	3.59	2.74	15.36	11.49	N/A	6.18
# of Funds	1	0	1	3	1	4	9	2	7	3	1	8	1	41

Strategy Allocation (based on valuation)



Rates & Liquidity

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Rates & Liquidity	\$25,862	1.20	2.16	3.20	2.93	5.58
Benchmark ⁶		1.22	1.50	3.52	2.87	5.28
IG Fixed Income & Cash	\$24,213	1.25	2.25	3.29	2.99	5.62
Core Fixed Income	\$21,696	1.38	2.41	3.51	3.06	5.69
IG Fixed Income Cash	\$2,517	0.23	0.89	-	-	-
Pension Cash	\$1,649	0.24	0.87	0.69	-	-

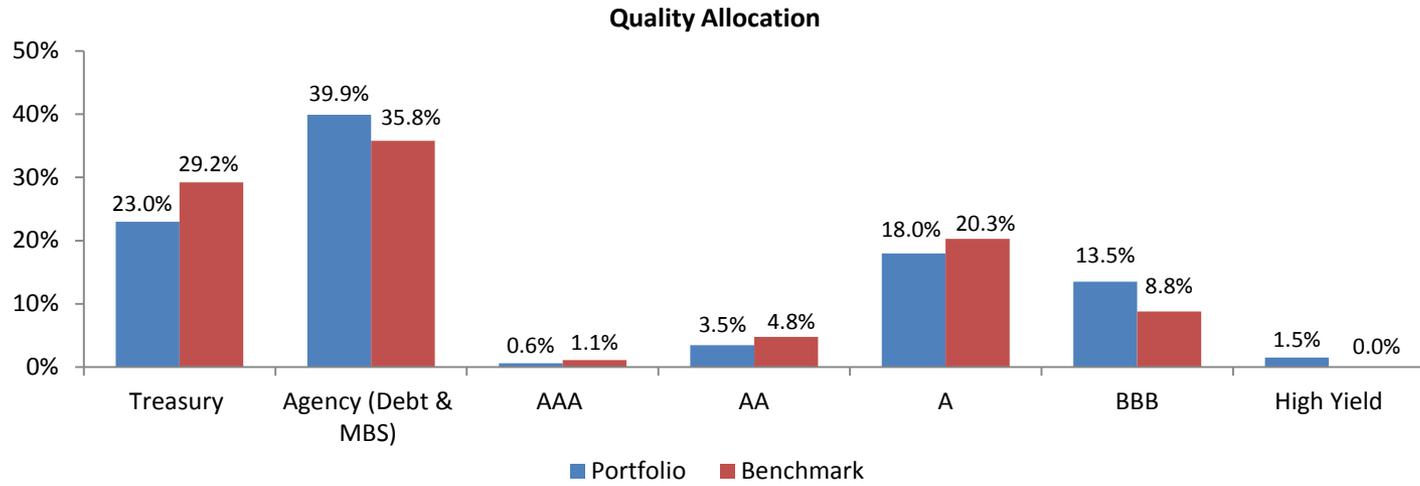
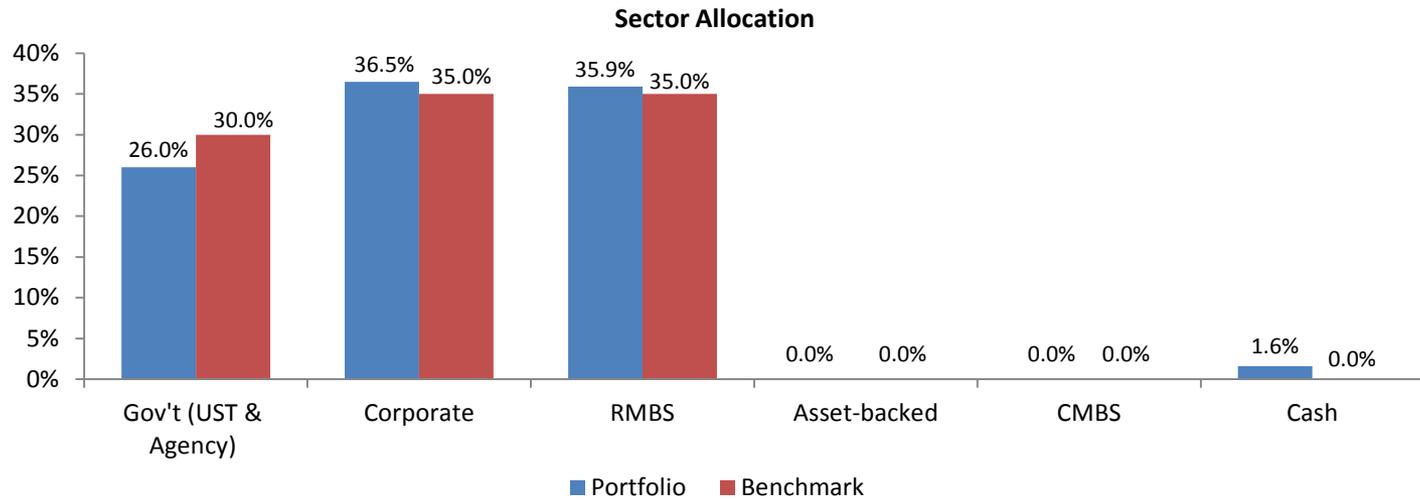
Core Fixed Income Portfolio Characteristics

	<u>Avg. Coupon</u>	<u>Yield to Maturity</u>	<u>Duration</u>
Government (Treasury & Agency)	4.88%	2.57%	10.9
Corporate	4.77%	3.85%	9.0
Mortgage	3.89%	2.77%	4.4
Total	4.48%	3.12%	7.8



Core Fixed Income

As of February 28, 2017



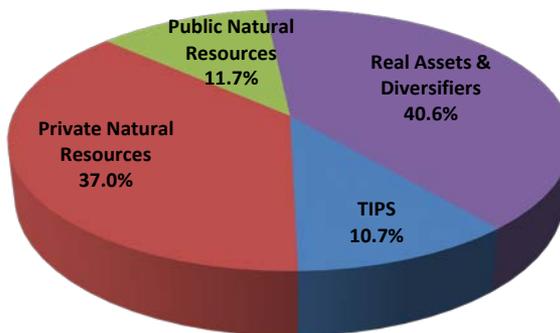
Inflation Sensitive

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Inflation Sensitive	\$6,225	2.05	9.13	(1.47)	(1.24)	(1.18)
Benchmark ¹⁰		1.78	5.68	(2.77)	(1.88)	1.92
Private Natural Resources	\$2,404	1.99	7.70	0.22	2.53	1.11
Public Natural Resources	\$727	3.43	9.73	(11.04)	(8.82)	-
TIPS	\$56	0.81	2.57	-	-	-
Real Assets & Other Diversifiers	\$2,426	1.90	11.54	7.46	7.13	-

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>Total</u>
NCRS	-0.36	7.83	1.47	N/A	-8.07	-7.25	4.92	5.53	6.70	3.48	2.84	N/A	-1.29
# of Funds	3	2	2	0	3	9	7	11	12	4	4	0	57

Strategy Allocation (based on valuation)



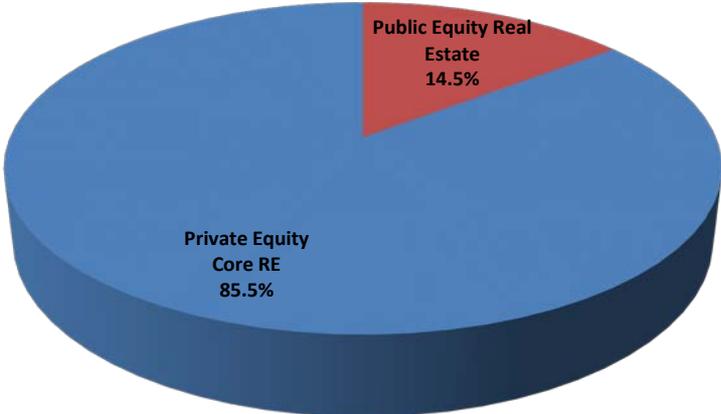
Core Real Estate

As of February 28, 2017

Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Core Real Estate	\$4,465	1.84	7.57	8.08	9.27	4.15
Benchmark ¹¹		2.52	9.80	10.39	10.52	4.71
Public Equity Real Estate	\$649	6.93	13.84	7.36	9.37	-
Private Equity Core Real Estate	\$3,817	1.06	6.62	8.17	9.45	5.10

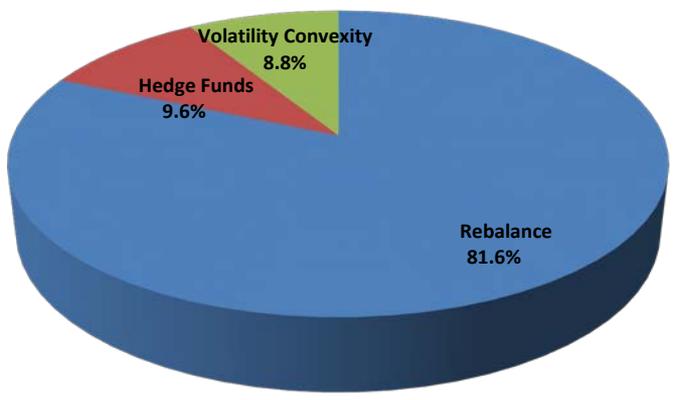
IRR by Vintage Year																
	<u>Pre-2004</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>Total</u>
NCRS	7.64	9.74	-12.44	5.63	1.39	9.23	N/A	23.95	N/A	N/A	7.09	5.93	0.81	9.25	N/A	7.01
# of Funds	5	1	1	2	3	1	0	1	0	0	2	6	1	8	0	31

Strategy Allocation (based on valuation)



Net Performance						
	Market Value (\$MM)	3 Month	1 Year	3 Years	5 Years	10 Years
Multi-Strategy	\$1,694	5.45	16.21	4.18	8.14	5.44
Benchmark ¹²		4.63	14.89	2.74	7.15	4.80
Rebalance Strategy	\$1,381	5.11	16.69	4.65	9.12	-
Hedge Funds	\$162	8.84	14.67	2.21	3.57	1.49
Risk Mitigation	\$150	-	-	-	-	-

Strategy Allocation (based on valuation)



New and Incremental Investment Commitments Since November 16, 2016 IAC Meeting

<u>Fund Name</u>	<u>Firm Name</u>	<u>Commitment</u>	<u>Closing Date</u>
<u>Public Equity</u>			
None	-	-	-
<u>Private Equity</u>			
Carousel Capital Partners V, L.P.	Carousel Capital Partners	\$30,000,000	11/21/2016
ARCH Venture Fund IX Overage, L.P.	ARCH Venture Partners	\$60,000,000	11/23/2016
Blackstone TN Partners L.P.	Blackstone	\$40,000,000	12/23/2016
Littlejohn Opportunities Fund, II, L.P.	Littlejohn & Co.	\$125,000,000	12/19/2016
<u>Non-Core Real Estate</u>			
Rockwood Development Partners, L.P.	Rockwood Capital, LLC	\$50,000,000 (Re-up)	12/2/2016
<u>Core Real Estate</u>			
None	-	-	-
<u>Opportunistic Fixed Income</u>			
Capital Opportunity Fund II, L.P.	Benefit Street Partners LLC	\$150,000,000	12/9/2016
Debt Fund IV, L.P.	Benefit Street Partners LLC	\$250,000,000	12/9/2016
Specialty Loan Fund-2016	HPS Investment Partners, LLC	\$200,000,000	12/9/2016
Cardinal Fund, L.P.	HPS Investment Partners, LLC	\$425,000,000 (Series A \$350,000,000; Series B \$75,000,000)	12/20/2016
Kitty Hawk Credit Fund, LP	HPS Investment Partners, LLC	\$200,000,000	12/20/2016
<u>Inflation Sensitive</u>			
None	-	-	-
<u>Multi Strategy</u>			
Investcorp	Investcorp Investment Advisors LLC	\$300,000,000	12/19/2016
Gladius Arx Fund	Gladius Capital Management LLP	\$150,000,000 (re-allocation)	12/19/2016
Gladius Venator Fund	Gladius Capital Management LLP	\$150,000,000	12/21/2016



Exited Investments

January 2016 Through Present

	<u>Fund Name</u>	<u>Redemption Amount</u>	<u>Redemption Effective</u>
<u>Public Equity</u>			
	Piedmont Strategic Core	~\$345,000,000	01/23/2017
	GMO International Active Strategy	~\$527,000,000	01/23/2017
	Leading Edge	~\$231,000,000	03/03/2017
	Longview Global Equity	~\$1,636,000,000	03/15/2017
	TimesSquare Focused Growth	~\$216,000,000	03/15/2017
	Numeric Emerging Growth	~\$372,000,000	03/15/2017
<u>Private Equity</u>			
	None	-	-
<u>Non-Core Real Estate</u>			
	None	-	-
<u>Core Real Estate</u>			
	Morgan Stanley Global REIT Securities	~429,000,000	02/29/2016
	Security Capital Focus Select REIT Securities	~42,000,000	02/29/2016
	UBS Trumbull Property Income Fund	~168,000,000	06/30/2016
<u>Opportunistic Fixed Income</u>			
	None	-	-
<u>Inflation Sensitive</u>			
	None	-	-
<u>Multi Strategy</u>			
	None	-	-



Appendix: NCRS Asset Class Net Performance

As of February 28, 2017

	Market Value (\$MM)	1 Year	3 Years	5 Years	10 Years	15 Years
Growth	\$53,168	18.36	5.54	9.19	4.61	6.25
Benchmark ¹		18.97	4.93	8.14	4.01	5.83
Public Equity	\$39,518	21.41	4.62	9.02	4.69	6.31
Benchmark ²		21.57	4.62	8.31	4.01	5.69
Private Equity	\$4,640	7.20	9.49	9.31	6.57	5.89
Benchmark ³		6.60	8.00	10.51	8.61	10.74
Non-Core Real Estate	\$3,563	11.36	15.31	13.37	3.35	5.45
Benchmark ⁴		4.08	7.85	9.28	1.95	6.89
Opportunistic Fixed Income	\$5,447	12.03	2.44	7.32	6.51	-
Benchmark ⁵		20.94	2.07	2.80	0.38	-
Rates & Liquidity	\$25,862	2.16	3.20	2.93	5.58	5.81
Benchmark ⁶		1.50	3.52	2.87	5.28	5.57
IG Fixed Income	\$24,213	2.25	3.29	2.99	5.62	5.83
Benchmark ⁷		1.54	3.60	2.92	5.31	5.59
Cash	\$1,649	0.87	0.69	-	-	-
Benchmark ⁸		0.38	0.16	-	-	-
Inflation Sensitive & Diversifiers	\$10,691	8.44	2.49	2.94	0.61	3.71
Benchmark ⁹		7.57	3.05	3.46	(0.01)	3.77
Inflation Sensitive	\$6,225	9.13	(1.47)	(1.24)	(1.18)	3.02
Benchmark ¹⁰		5.68	(2.77)	(1.88)	1.92	3.77
Core Real Estate	\$4,465	7.57	8.08	9.27	4.15	6.11
Benchmark ¹¹		9.80	10.39	10.52	4.71	7.02
Multi-Strategy	\$1,694	16.21	4.18	8.14	5.44	-
Benchmark ¹²		14.89	2.74	7.15	4.80	-



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 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 page.



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