

MEETING MATERIALS

HOWARD COUNTY RETIREMENT PLANS

September 26, 2019

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BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO

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AUGUST FLASH REPORT

NEPC, LLC

CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Aug	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	-1.6%	18.3%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	-1.8%	18.5%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	-4.9%	11.8%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	-4.0%	15.7%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	-2.6%	9.7%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	-4.9%	3.9%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	-2.4%	13.8%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	2.4%	9.1%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	1.6%	7.6%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	2.4%	9.9%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.4%	11.0%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	2.6%	9.1%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	2.0%	7.4%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	10.5%	22.8%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	6.0%	23.7%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	15.9%	33.2%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	-2.6%	6.8%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	0.7%	13.5%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	7.2%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	-2.3%	1.9%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-5.5%	10.3%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	3.4%	23.3%

Source: FactSet, Barclays, Thomson One

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag



TRAILING ANNUAL INDEX PERFORMANCE

Equity						
	Aug-19	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI	-2.4%	13.8%	-0.3%	9.1%	5.5%	8.6%
S&P 500	-1.6%	18.3%	2.9%	12.7%	10.1%	13.4%
Russell 1000	-1.8%	18.5%	2.5%	12.5%	9.8%	13.4%
Russell 2000	-4.9%	11.8%	-12.9%	7.9%	6.4%	11.5%
Russell 2500	-4.0%	15.7%	-7.1%	9.0%	7.0%	12.6%
MSCI EAFE	-2.6%	9.7%	-3.3%	5.9%	1.9%	5.0%
MSCI EM	-4.9%	3.9%	-4.4%	5.7%	0.4%	4.1%

Credit						
	Aug-19	YTD	1 YR	3 YR	5 YR	10 YR
BC Global Agg	2.0%	7.4%	7.8%	2.1%	1.6%	2.7%
BC US Agg	2.6%	9.1%	10.2%	3.1%	3.3%	3.9%
BC Credit	3.1%	13.4%	13.0%	4.5%	4.4%	5.5%
BC US HY	0.4%	11.0%	6.6%	6.2%	4.8%	8.5%
BC Muni	1.6%	7.6%	8.7%	3.3%	3.8%	4.6%
BC Muni HY	2.4%	9.9%	9.8%	6.0%	6.2%	8.0%
BC TIPS	2.4%	9.1%	7.5%	2.9%	2.2%	3.8%
BC 20+ STRIPS	15.9%	33.2%	33.1%	5.5%	9.4%	10.3%
BC Long Treasuries	10.5%	22.8%	24.2%	4.4%	6.9%	7.3%
BC Long Credit	6.0%	23.7%	21.0%	6.6%	6.6%	8.2%
BC Govt/Credit 1-3 Yr	0.8%	3.5%	4.6%	1.9%	1.6%	1.6%
JPM EMBI Glob Div	0.7%	13.5%	13.8%	4.9%	5.4%	7.4%
JPM GBI-EM Glob Div	-2.6%	6.8%	11.9%	3.4%	-0.7%	2.7%

Real Assets						
	Aug-19	YTD	1 YR	3 YR	5 YR	10 YR
BBG Commodity	-2.3%	1.9%	-5.9%	-0.9%	-8.5%	-4.3%
Alerian MLP	-5.5%	10.3%	-10.2%	-2.1%	-9.0%	6.7%
FTSE NAREIT Equity REITs	3.4%	23.3%	12.1%	5.7%	8.3%	13.4%

Source: S&P, MSCI, Russell, Barclays, JPM, Alerian, FTSE, FactSet



Howard County Retirement Plans

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

	Ending August 31, 2019											
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	1,085,627,522	100.0	100.0	-1.0	-0.8	9.7	3.9	8.4	6.3	8.4	7.3	Apr-97
<i>Policy Index</i>				-0.5	-0.4	9.5	5.0	7.3	5.8	7.8	7.2	Apr-97
<i>Allocation Index</i>				-0.6	-0.3	--	--	--	--	--	--	Apr-97
Total US Equity Composite	262,688,676	24.2	20.0	-3.0	-1.8	16.9	-2.3	13.1	9.9	13.9	8.4	Jul-97
<i>Russell 3000</i>				-2.0	-0.6	18.0	1.3	12.2	9.6	13.3	7.7	Jul-97
<i>US Equity Allocation Index</i>				-2.3	-0.9	17.7	-0.4	11.9	9.3	13.5	--	Jul-97
Total International Equity	188,202,660	17.3	20.0	-3.4	-5.1	9.5	-2.4	6.9	2.2	5.3	4.5	Jul-97
<i>MSCI ACWI ex USA</i>				-3.1	-4.3	8.8	-3.3	5.9	1.4	4.7	--	Jul-97
Total Fixed Income Composite	322,161,782	29.7	30.0	1.4	1.7	8.5	9.8	4.0	4.1	5.4	5.5	Jul-97
<i>Fixed Income Policy Index</i>				2.6	2.8	9.1	10.2	3.1	3.3	3.9	5.3	Jul-97
Total Real Assets Composite	38,901,609	3.6	7.5	0.0	0.0	-0.3	2.6	9.4	8.5	4.2	7.3	Jul-03
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	0.0	3.2	6.8	7.1	9.1	8.5	8.8	Jul-03
Cash Composite	9,280,959	0.9		0.1	0.3	1.5	2.3	1.2	0.7	0.4	1.4	Dec-03
<i>91 Day T-Bills</i>				0.2	0.3	1.5	2.3	1.5	0.9	0.5	1.3	Dec-03
Hedge Fund Composite	122,182,961	11.3	12.5	0.1	0.6	6.1	4.5	5.2	4.4	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.3	0.5	5.2	2.2	3.5	2.2	2.9	2.5	Jan-11
Private Equity Composite	141,871,348	13.1	10.0	0.0	0.0	6.8	14.1	16.4	15.1	14.2	12.8	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	0.0	4.8	7.0	13.2	10.2	13.3	9.2	Jul-08

Fiscal year end 6/30.

All history prior to 3/1/2019 was provided by AndCo.



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Ending August 31, 2019											
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	1,085,627,522	100.0	100.0	-1.0	-0.8	9.7	3.9	8.4	6.3	8.4	7.3	Apr-97
Policy Index				-0.5	-0.4	9.5	5.0	7.3	5.8	7.8	7.2	Apr-97
Allocation Index				-0.6	-0.3	--	--	--	--	--	--	Apr-97
Total US Equity Composite	262,688,676	24.2	20.0	-3.0	-1.8	16.9	-2.3	13.1	9.9	13.9	8.4	Jul-97
Russell 3000				-2.0	-0.6	18.0	1.3	12.2	9.6	13.3	7.7	Jul-97
US Equity Allocation Index				-2.3	-0.9	17.7	-0.4	11.9	9.3	13.5	--	Jul-97
Large Cap Composite	202,218,767	18.6	15.0	-3.0	-2.0	15.4	-1.5	12.4	9.0	13.3	8.3	Apr-01
Russell 1000				-1.8	-0.3	18.5	2.5	12.6	9.8	13.5	7.5	Apr-01
Invesco IQS – US Enhanced 1% Risk SMA	68,009,354	6.3		-2.3	-1.0	15.4	-0.2	11.9	8.8	13.1	7.6	Apr-01
S&P 500				-1.6	-0.2	18.3	2.9	12.7	10.1	13.4	7.3	Apr-01
LSV Asset Management SMA	59,766,582	5.5		-4.9	-4.4	8.7	-6.8	8.1	6.2	12.2	9.3	May-00
Russell 1000 Value				-2.9	-2.1	13.8	0.6	8.1	6.6	11.5	6.7	May-00
Westfield Capital Management SMA	74,442,831	6.9		-2.0	-0.9	21.6	2.0	17.0	11.9	--	15.5	Jul-10
Russell 1000 Growth				-0.8	1.5	23.3	4.3	17.0	13.1	15.4	16.4	Jul-10
Small/Mid Cap Composite	60,469,909	5.6	5.0	-3.1	-1.0	22.2	-5.1	15.3	12.7	15.2	12.2	Apr-93
Russell 2500				-4.0	-3.0	15.7	-7.1	9.0	7.1	12.7	10.1	Apr-93
William Blair SMA	20,740,529	1.9		0.1	2.8	28.3	4.0	19.4	14.8	17.2	12.4	Jun-06
Russell 2500 Growth				-2.8	-1.3	22.3	-3.7	13.2	9.6	14.4	9.5	Jun-06
ICM Small Company - ICSCX	21,642,738	2.0		-6.3	-5.0	12.0	-13.6	8.5	8.0	12.2	11.5	Apr-93
Russell 2000 Value				-5.6	-5.4	7.3	-14.9	5.0	4.6	10.0	9.5	Apr-93
Brown Capital Small Company Strategy SMA	18,086,641	1.7		-2.7	-0.2	29.2	-3.4	20.5	17.1	--	18.8	Aug-11
Russell 2000 Growth				-4.3	-3.4	16.3	-11.0	10.6	8.1	13.1	10.7	Aug-11



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

													Ending August 31, 2019
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date	
Total International Equity	188,202,660	17.3	20.0	-3.4	-5.1	9.5	-2.4	6.9	2.2	5.3	4.5	Jul-97	
MSCI ACWI ex USA				-3.1	-4.3	8.8	-3.3	5.9	1.4	4.7	--	Jul-97	
International Developed Markets Composite	121,602,720	11.2	13.0	-3.5	-4.8	9.9	-4.7	5.5	2.1	5.6	2.6	Mar-08	
MSCI EAFE				-2.6	-3.8	9.7	-3.3	5.9	1.9	5.0	1.9	Mar-08	
Mondrian International Equity Fund, L.P.	56,666,419	5.2		-4.4	-6.3	3.7	-5.4	4.0	1.0	4.9	1.2	Dec-07	
MSCI EAFE				-2.6	-3.8	9.7	-3.3	5.9	1.9	5.0	1.0	Dec-07	
Baillie Gifford EAFE Pure K - BGPX	64,936,301	6.0		-2.8	-3.6	16.1	-3.9	--	--	--	-0.9	May-18	
MSCI EAFE				-2.6	-3.8	9.7	-3.3	5.9	1.9	5.0	-4.6	May-18	
International Emerging Markets Composite	66,599,940	6.1	7.0	-3.2	-5.5	8.6	2.2	9.6	2.1	4.6	5.8	Feb-06	
MSCI Emerging Markets				-4.9	-6.0	3.9	-4.4	5.8	0.4	4.1	4.2	Feb-06	
DFA Emerging Markets Value Portfolio Institutional - DFEVX	25,281,056	2.3		-5.1	-9.2	-2.2	-9.9	5.1	-0.4	3.3	4.9	Feb-06	
MSCI Emerging Markets				-4.9	-6.0	3.9	-4.4	5.8	0.4	4.1	4.2	Feb-06	
GQG Partners Emerging Markets Equity Fund	41,318,884	3.8		-1.9	-3.0	16.5	--	--	--	--	16.3	Dec-18	
MSCI Emerging Markets				-4.9	-6.0	3.9	-4.4	5.8	0.4	4.1	1.2	Dec-18	
Total Fixed Income Composite	322,161,782	29.7	30.0	1.4	1.7	8.5	9.8	4.0	4.1	5.4	5.5	Jul-97	
BBgBarc US Aggregate TR				2.6	2.8	9.1	10.2	3.1	3.3	3.9	5.2	Jul-97	
Core Fixed Income Composite	277,850,477	25.6	25.0	2.2	2.4	--	--	--	--	--	7.2	Mar-19	
BBgBarc US Aggregate TR				2.6	2.8	9.1	10.2	3.1	3.3	3.9	8.0	Mar-19	
Dodge & Cox SMA	134,550,458	12.4		1.9	2.4	9.2	9.6	4.2	4.1	--	4.8	May-10	
BBgBarc US Aggregate TR				2.6	2.8	9.1	10.2	3.1	3.3	3.9	3.7	May-10	
PIMCO Total Return	120,144,991	11.1		2.5	2.4	8.8	9.6	3.7	3.5	--	4.2	May-10	
BBgBarc US Aggregate TR				2.6	2.8	9.1	10.2	3.1	3.3	3.9	3.7	May-10	
State Street Global Advisors TIPS	23,155,027	2.1		2.4	2.7	9.0	7.4	2.8	2.2	--	3.5	Nov-09	
BBgBarc US TIPS TR				2.4	2.7	9.1	7.5	2.9	2.2	3.8	3.5	Nov-09	
Emerging Markets Debt Composite	44,311,305	4.1	5.0	-3.5	-2.7	--	--	--	--	--	1.4	Mar-19	
JP Morgan GBI EM Global Diversified TR USD				-2.6	-1.7	6.8	11.9	3.4	-0.7	2.7	2.4	Mar-19	
Colchester Local Markets Debt Fund	44,311,305	4.1		-3.5	-2.7	5.8	12.1	4.8	--	--	8.2	Oct-15	
JP Morgan GBI EM Global Diversified TR USD				-2.6	-1.7	6.8	11.9	3.4	-0.7	2.7	6.3	Oct-15	



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Ending August 31, 2019											
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Assets Composite	38,901,609	3.6	7.5	0.0	0.0	-0.3	2.6	9.4	8.5	4.2	7.3	Jul-03
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	0.0	3.2	6.8	7.1	9.1	8.5	8.8	Jul-03
Real Estate Composite	26,978,623	2.5		0.0	0.0	--	--	--	--	--	0.0	Mar-19
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	0.0	3.2	6.8	7.1	9.1	8.5	3.2	Mar-19
Realty Associates Fund VIII L.P.	9,401	0.0		0.0	0.0	-15.2	-10.3	2.1	5.7	1.9	1.1	Jul-07
Realty Associates Fund IX L.P.	5,396	0.0		0.0	0.0	-56.8	-58.7	-25.3	-12.5	--	-2.5	Apr-10
Partners Group Global RE 2011	5,070,332	0.5		0.0	0.0	-10.8	-13.3	1.4	2.2	--	3.9	Mar-12
Partners Group Global RE 2014	18,240,852	1.7		0.0	0.0	1.0	2.9	10.0	--	--	8.8	Dec-14
Partners Group Global RE 2017	3,652,641	0.3		0.0	0.0	18.4	--	--	--	--	18.4	Dec-18
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	0.0	3.2	6.8	7.1	9.1	8.5	4.9	Dec-18
Real Assets Composite	11,922,986	1.1		0.0	0.0	--	--	--	--	--	-4.3	Mar-19
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				0.0	0.0	-5.1	0.5	9.0	-0.3	5.5	-5.1	Mar-19
Commonfund Natural Resources X	5,090,643	0.5		0.0	0.0	5.4	6.3	40.5	--	--	19.7	Apr-16
Commonfund Natural Resources XI	115,700	0.0		0.0	0.0	-22.9	--	--	--	--	-22.9	Oct-18
Aether Real Assets IV	5,814,863	0.5		0.0	0.0	-0.1	7.0	4.9	--	--	4.5	Jun-16
Aether Real Assets V	901,780	0.1		0.0	0.0	-69.3	-45.0	--	--	--	-42.4	Aug-18
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				0.0	0.0	-5.1	0.5	9.0	-0.3	5.5	0.4	Aug-18
Cash Composite	9,280,959	0.9	0.0	0.1	0.3	1.5	2.3	1.2	0.7	0.4	1.4	Dec-03
<i>91 Day T-Bills</i>				0.2	0.3	1.5	2.3	1.5	0.9	0.5	1.3	Dec-03
Hedge Fund Composite	122,520,488	11.3	12.5	0.1	0.6	6.1	4.5	5.2	4.4	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.3	0.5	5.2	2.2	3.5	2.2	2.9	2.5	Jan-11
Magnitude International Class A Eligible	60,656,188	5.6		0.2	0.6	6.3	4.4	4.7	4.3	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.3	0.5	5.2	2.2	3.5	2.2	2.9	2.5	Jan-11
Blackstone Partners Offshore Fund LTD	61,864,300	5.7		-0.1	0.5	5.9	4.6	5.6	4.4	--	4.8	Mar-11
<i>HFRI FOF: Conservative Index</i>				0.3	0.5	5.2	2.2	3.5	2.2	2.9	2.4	Mar-11
Private Equity Composite	141,871,348	13.1	10.0	0.0	0.0	6.8	14.1	16.4	15.1	14.2	12.8	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	0.0	4.8	7.0	13.2	10.2	13.3	9.2	Jul-08

Magnitude International Class A Eligible market value and performance are estimated.



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL FOOTNOTES

Fiscal year ends 6/30.

Policy index consists of: 15% S&P 500 / 5% Russell 2500 / 13% MSCI EAFE / 7% MSCI Emerging Markets / 25% BBgBarc US Aggregate TR / 5% JP Morgan GBI EM Global Diversified TR USD / 7.5% NCREIF Property Index 1 Qtr. Lag / 12.5% HFRI FOF: Conservative Index / 10% Private Equity Composite.

Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

Fixed Income Policy index consists of: 100% BBgBarc US Aggregate TR.

Core Fixed Income Composite, Emerging Markets Debt, Real Estate Composite, Real Assets Composite and Allocation Index performance is calculated by NEPC as of 6/30/2019.

Real Estate, Real Assets and Private Equity investments are valued as of 06/30/2019 and adjusted for capital calls and distributions through 08/31/2019.

All history prior to 3/1/2019 was provided by AndCo.



Q2 2019 TOTAL FUND PERFORMANCE

NEPC, LLC

MARKET ENVIRONMENT

NEPC, LLC

PERFORMANCE OVERVIEW

Q2 Market Summary

Macro			Equity			Credit			Real Assets		
US Dollar	VIX	US 10-Yr	S&P 500	MSCI EAFE	MSCI EM	US Agg.	High Yield	Dollar EMD	Oil	Gold	REITS
											
-1.2%	1.4	-42 bps	4.3%	3.7%	0.6%	3.1%	2.5%	4.1%	-3.3%	9.0%	1.7%

Global equities broadly increased during the quarter as the market perceived a more dovish policy stance from the Fed

Market expectations for several rate cuts from the Fed reached a fever pitch as investors assessed low inflation data, a weaker global growth outlook, and uncertainties of US-China trade tensions

The spread between the 10-year Treasury Note and 3-month Treasury Bill remained negative through the end of the quarter as yields for longer duration bonds shifted materially lower

Market segment (index representation) as follows: US Dollar (DXY Index), VIX (CBOE Volatility Index), US 10-Year (US 10-Year Treasury Yield), S&P 500 (US Equity), MSCI EAFE Index (International Developed Equity), MSCI Emerging Markets (Emerging Markets Equity), US Agg (Barclays US Aggregate Bond Index), High Yield (Barclays US High Yield Index), Dollar EMD (JPM EMBI Global Diversified Index), Crude Oil (WTI Crude Oil Spot), Gold (Gold Price Spot), and REITs (NAREIT Composite Index). Source: FactSet



MACRO PERFORMANCE OVERVIEW

Q2 Macro Market Summary

The global growth outlook was revised downward – reflecting slower growth in major developed economies

The Fed signaled possible monetary easing to support economic growth

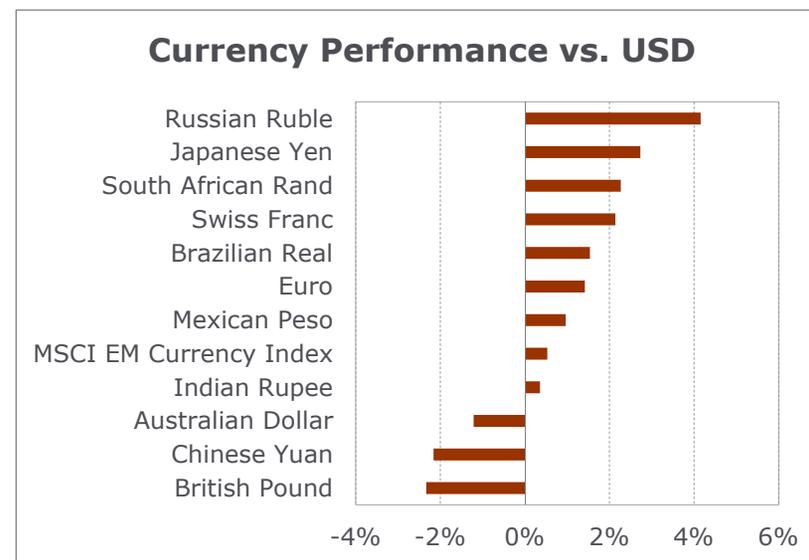
Global government bond yields continued to decline with the 10-year German yield declining 26 bps – reaching an all-time low

	Yield 3/31/19	Yield 6/30/19	\Delta
US 10-Yr	2.42%	2.00%	-0.42%
US 30-Yr	2.82%	2.53%	-0.30%
US Real 10-Yr	0.53%	0.31%	-0.22%
German 10-Yr	-0.07%	-0.33%	-0.26%
Japan 10-Yr	-0.09%	-0.16%	-0.06%
China 10-Yr	3.09%	3.30%	0.22%
EM Local Debt	6.16%	5.69%	-0.48%

Source: FactSet

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	2.25% - 2.50%	1.8%	The Fed held its benchmark interest rate at 2.25% - 2.50% in June, but signaled possible cuts later this year
European Central Bank	0.00%	1.2%	The ECB maintained its current benchmark interest rate and continued with plans to boost commercial lending
Bank of Japan	-0.10%	0.7%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target

Source: FactSet



Source: FactSet



EQUITY PERFORMANCE OVERVIEW

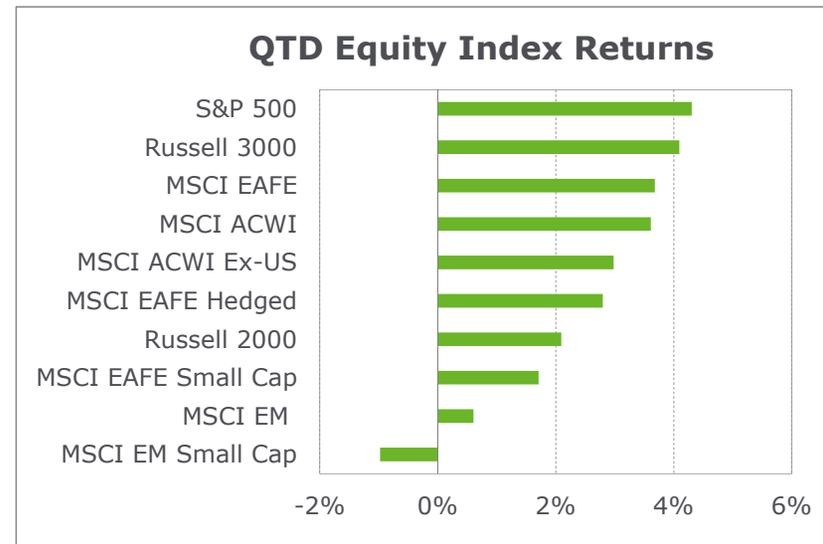
Q2 Equity Market Summary

Developed equities outperformed as hopes for easy monetary policy from the Fed and ECB provided a tailwind for local equity markets

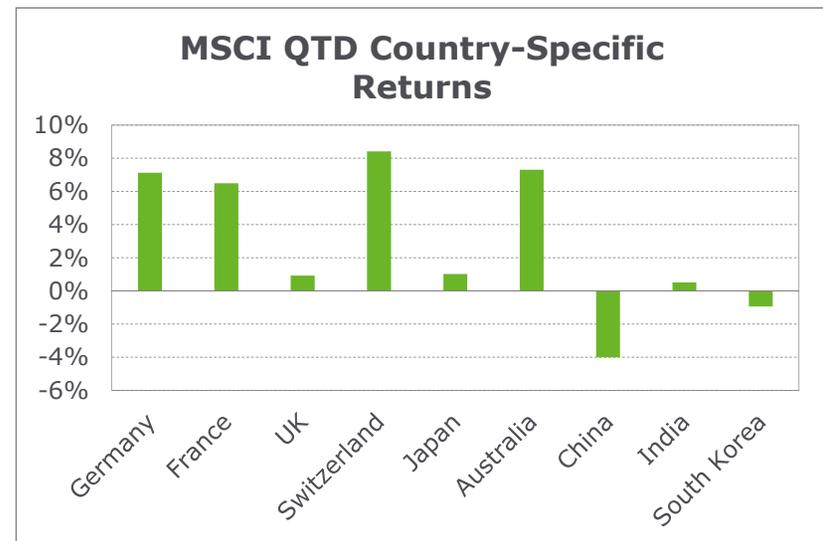
US-China trade uncertainties and yuan weakness weighed on Chinese equity returns

Russell 3000 QTD Sector Returns	
Technology	4.0%
Health Care	1.4%
Consumer Discretionary	6.2%
Consumer Staples	1.9%
Energy	-3.7%
Materials & Processing	5.7%
Producer Durables	4.0%
Financial Services	7.0%
Utilities	3.4%

Source: FactSet



Source: FactSet



Source: FactSet



CREDIT PERFORMANCE OVERVIEW

Q2 Credit Market Summary

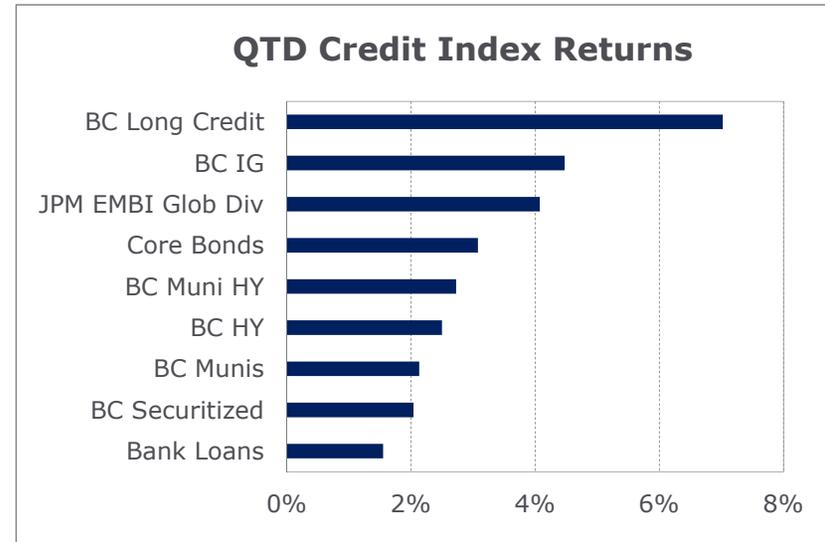
Global yields continued to decline - reflecting concerns over the global growth outlook

Assets with longer duration benefited from the decline of interest rates

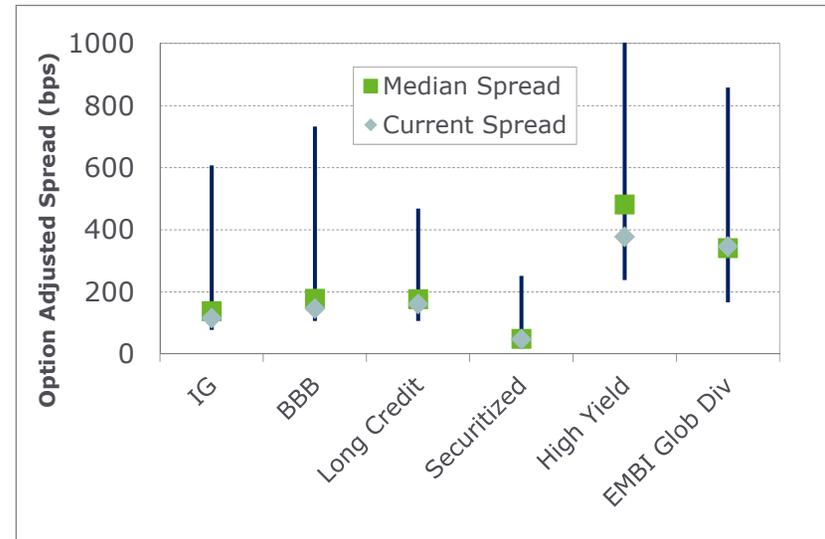
Broad index credit spreads remain below medians in most areas of the credit market

Credit Spread (Basis Points)	3/31/19	6/30/19	\Delta
BC IG Credit	119	115	-4
BC Long Credit	172	161	-11
BC Securitized	37	47	10
BC High Yield	391	377	-14
Muni HY	238	258	20
JPM EMBI	351	346	-5
Bank Loans - Libor	355	383	29

Source: FactSet



Source: FactSet



Source: FactSet; Ranges calculated since 11/30/2000



REAL ASSETS PERFORMANCE OVERVIEW

Q2 Real Assets Market Summary

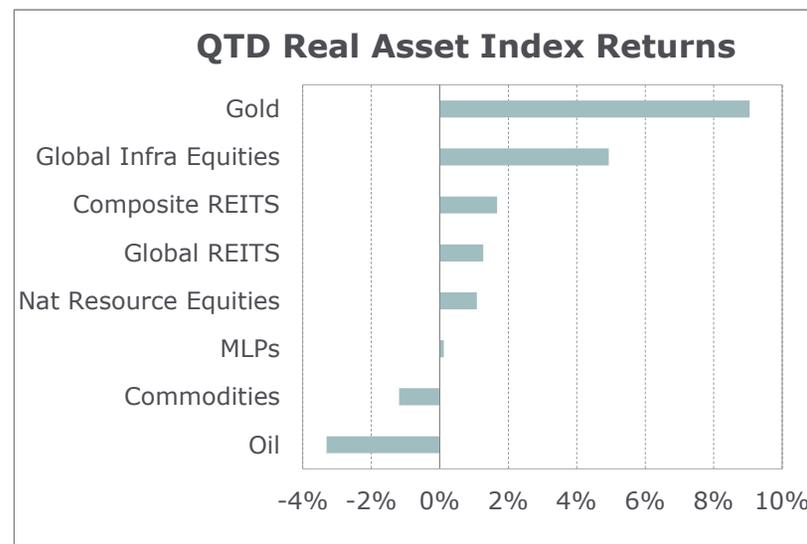
Spot gold prices increased 9.0% during the quarter as a result of escalating trade tensions and a weaker global economic outlook

The US inflation outlook weakened to its lowest level since Q3 2016

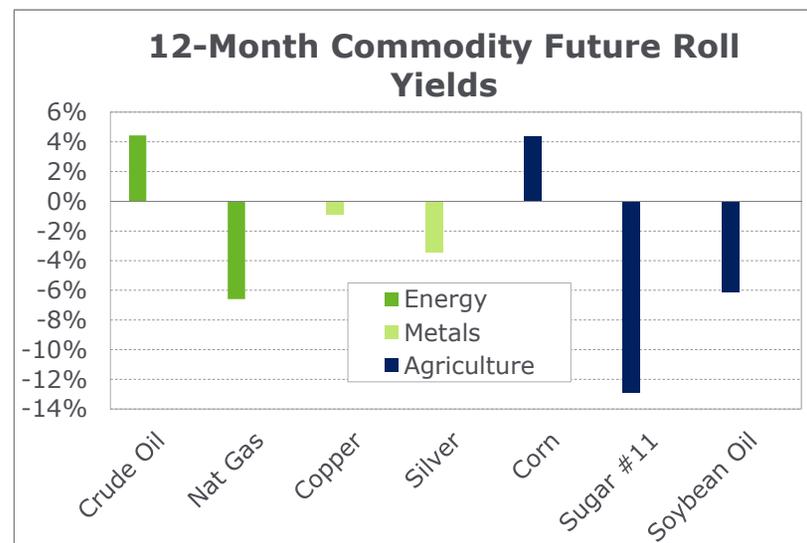
Midstream equities continue to offer favorable yields with positive industry trends

Real Asset Yields	3/31/19	6/30/19
MLPs	7.0%	7.7%
Core Real Estate	4.5%	4.4%
Composite REITs	4.1%	4.2%
Global REITs	4.2%	4.2%
Global Infrastructure Equities	4.4%	4.3%
Natural Resource Equities	4.2%	4.2%
US 10-Year Breakeven Inflation	1.97%	1.69%
Commodity Index Roll Yield	-2.7%	-2.0%
10-Year TIPS Real Yield	0.5%	0.3%

Source: FactSet



Source: FactSet



Source: FactSet



CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	18.5%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	18.8%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	17.0%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	19.2%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	14.0%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	10.6%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	16.2%
Private Equity*	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	5.7%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	6.2%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	5.1%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	6.7%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	9.9%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	6.1%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	5.6%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	11.0%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	15.4%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	14.7%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	8.7%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	11.3%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	4.3%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	5.1%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	17.0%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	17.8%

Source: FactSet, Thomson One

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag



RETURNS FOR KEY INDICES RANKED IN ORDER OF PERFORMANCE

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
MSCI EMERGING MARKETS 32.17	MSCI EMERGING MARKETS 39.39	BC AGGREGATE 5.24	MSCI EMERGING MARKETS 78.51	RUSSELL 2000 GROWTH 29.09	BC AGGREGATE 7.84	MSCI EMERGING MARKETS 18.22	RUSSELL 2000 GROWTH 43.30	S&P 500 13.69	RUSSELL 1000 GROWTH 5.67	RUSSELL 2000 VALUE 31.74	MSCI EMERGING MARKETS 37.28	BC AGGREGATE 0.01
MSCI EAFE 26.34	RUSSELL 1000 GROWTH 11.81	RUSSELL 2000 VALUE -28.92	RUSSELL 1000 GROWTH 37.21	RUSSELL 2000 26.85	RUSSELL 1000 GROWTH 2.64	RUSSELL 2000 VALUE 18.05	RUSSELL 2000 38.82	RUSSELL 1000 VALUE 13.45	S&P 500 1.38	RUSSELL 2000 21.31	RUSSELL 1000 GROWTH 30.21	RUSSELL 1000 GROWTH -1.51
RUSSELL 1000 VALUE 22.25	MSCI EAFE 11.17	RUSSELL 2000 -33.79	RUSSELL 2000 GROWTH 34.47	RUSSELL 2000 VALUE 24.5	S&P 500 2.11	RUSSELL 1000 VALUE 17.51	RUSSELL 2000 VALUE 34.52	RUSSELL 1000 13.24	RUSSELL 1000 0.92	RUSSELL 1000 VALUE 17.34	MSCI EAFE 25.03	S&P 500 -4.38
RUSSELL 2000 VALUE 23.48	RUSSELL 2000 GROWTH 7.06	RUSSELL 1000 VALUE -36.85	MSCI EAFE 31.78	MSCI EMERGING MARKETS 18.88	RUSSELL 1000 1.50	MSCI EAFE 17.32	RUSSELL 1000 GROWTH 33.48	RUSSELL 1000 GROWTH 13.05	BC AGGREGATE 0.55	RUSSELL 1000 12.05	RUSSELL 2000 GROWTH 22.17	RUSSELL 1000 -4.78
RUSSELL 2000 18.37	BC AGGREGATE 6.97	S&P 500 -37.0	RUSSELL 1000 28.43	RUSSELL 1000 GROWTH 16.71	RUSSELL 1000 VALUE 0.39	RUSSELL 1000 16.42	RUSSELL 1000 33.11	BC AGGREGATE 5.97	MSCI EAFE -0.81	S&P 500 11.96	S&P 500 21.83	RUSSELL 1000 VALUE -8.27
S&P 500 15.8	RUSSELL 1000 5.77	RUSSELL 1000 -37.6	RUSSELL 2000 27.16	RUSSELL 1000 16.10	RUSSELL 2000 GROWTH -2.91	RUSSELL 2000 16.35	RUSSELL 1000 VALUE 32.53	RUSSELL 2000 GROWTH 5.60	RUSSELL 2000 GROWTH -1.38	RUSSELL 2000 GROWTH 11.32	RUSSELL 1000 21.69	RUSSELL 2000 GROWTH -9.31
RUSSELL 1000 15.46	S&P 500 5.49	RUSSELL 1000 GROWTH -38.44	S&P 500 26.46	RUSSELL 1000 VALUE 15.51	RUSSELL 2000 -4.18	S&P 500 16.00	S&P 500 32.39	RUSSELL 2000 4.89	RUSSELL 1000 VALUE -3.83	MSCI EMERGING MARKETS 11.19	RUSSELL 2000 14.65	RUSSELL 2000 -11.01
RUSSELL 2000 GROWTH 13.35	RUSSELL 1000 VALUE -0.17	RUSSELL 2000 GROWTH -38.54	RUSSELL 2000 VALUE 20.58	S&P 500 15.06	RUSSELL 2000 VALUE -5.50	RUSSELL 1000 GROWTH 15.26	MSCI EAFE 22.78	RUSSELL 2000 VALUE 4.22	RUSSELL 2000 -4.41	RUSSELL 1000 GROWTH 7.08	RUSSELL 1000 VALUE 13.66	RUSSELL 2000 VALUE -12.86
RUSSELL 1000 GROWTH 9.07	RUSSELL 2000 -1.56	MSCI EAFE -43.38	RUSSELL 1000 VALUE 19.69	MSCI EAFE 7.75	MSCI EAFE -12.14	RUSSELL 2000 GROWTH 14.59	BC AGGREGATE -2.02	MSCI EMERGING MARKETS -2.19	RUSSELL 2000 VALUE -7.46	BC AGGREGATE 2.65	RUSSELL 2000 VALUE 7.84	MSCI EAFE -13.79
BC AGGREGATE 4.33	RUSSELL 2000 VALUE -9.78	MSCI EMERGING MARKETS -53.33	BC AGGREGATE 5.93	BC AGGREGATE 6.54	MSCI EMERGING MARKETS -18.42	BC AGGREGATE 4.21	MSCI EMERGING MARKETS -2.60	MSCI EAFE -4.90	MSCI EMERGING MARKETS -14.93	MSCI EAFE 1.00	BC AGGREGATE 3.54	MSCI EMERGING MARKETS -14.58

QTD	1 Year	3 year	5 Year	10 Year
RUSSELL 1000 GROWTH 4.64	RUSSELL 1000 GROWTH 11.56	RUSSELL 1000 GROWTH 18.07	RUSSELL 1000 GROWTH 13.39	RUSSELL 1000 GROWTH 16.28
S&P 500 4.30	S&P 500 10.42	RUSSELL 2000 GROWTH 14.69	S&P 500 10.71	RUSSELL 1000 GROWTH 14.77
RUSSELL 1000 4.25	RUSSELL 1000 10.02	S&P 500 14.19	RUSSELL 1000 10.45	S&P 500 14.70
RUSSELL 1000 VALUE 3.84	RUSSELL 1000 VALUE 8.46	RUSSELL 1000 14.15	RUSSELL 2000 GROWTH 8.63	RUSSELL 2000 GROWTH 14.41
MSCI EAFE 3.68	BC AGGREGATE 7.87	RUSSELL 2000 12.30	RUSSELL 1000 VALUE 7.46	RUSSELL 2000 13.45
BC AGGREGATE 3.08	MSCI EAFE 1.08	MSCI EMERGING MARKETS 10.66	RUSSELL 2000 7.06	RUSSELL 1000 VALUE 13.19
RUSSELL 2000 GROWTH 2.75	MSCI EMERGING MARKETS 1.21	RUSSELL 1000 VALUE 10.19	RUSSELL 2000 VALUE 5.39	RUSSELL 2000 VALUE 12.40
RUSSELL 2000 2.10	RUSSELL 2000 GROWTH -0.49	RUSSELL 2000 VALUE 9.81	BC AGGREGATE 2.95	MSCI EAFE 6.90
RUSSELL 2000 VALUE 1.37	RUSSELL 2000 -3.31	MSCI EAFE 9.11	MSCI EMERGING MARKETS 2.49	MSCI EMERGING MARKETS 5.81
MSCI EMERGING MARKETS 0.61	RUSSELL 2000 VALUE -6.24	BC AGGREGATE 2.31	MSCI EAFE 2.25	BC AGGREGATE 3.90



TOTAL FUND PERFORMANCE

NEPC, LLC

EXECUTIVE SUMMARY

- **Asset Allocation**

- The assets of the Plan totaled \$1.09 billion as of June 30, 2019. The Plan had an investment gain of \$37.2 million during the quarter and \$473 thousand in net withdrawals.

- **Performance**

- The Plan gained 3.5% (gross) in the second quarter as the market continued to rally, despite a sharp pullback in May
 - The quarterly return ranked in the 21st percentile of the Public DB peer group
 - The Plan's return outperformed the IF Public DB > \$1B Gross Median return of 3.0%
- For the trailing one year, the fund was up 7.5%, which placed it above the IF Public DB > \$1B Gross Median return of 5.4%
- In aggregate, the US Equity Composite was up 4.3% for the quarter, which outperformed both the Russell 3000 benchmark return of 4.1% and the eV All US Equity Gross Median return of 3.9%
 - Large Cap Equity contributed 3.8% for the quarter, underperforming the eV US Large Cap Equity Gross Median by 40 basis points
 - The Small/Mid Cap Equity composite gained 5.7% for the quarter, ranking in the 26th percentile and outperforming both the Russell 2500 benchmark and eV US Small-Mid Cap Equity Gross Median return by 270 and 160 basis points, respectively
- The International Equity Composite was up 4.2%, which outperformed the MSCI ACWI ex USA return of 3.0% and the eV ACWI ex-US All Cap Equity Gross universe median return of 3.4%
 - International Developed Equity was ahead of the median by 90 bps, returning 4.0%
 - International Emerging Equity outperformed the median by 310 bps, returning 4.5%
- The Fixed Income Composite gained 3.4% in the second quarter, outperforming the Barclays Aggregate by 30 basis points, and ahead of the All US Fixed Income Gross Median return of 2.5%



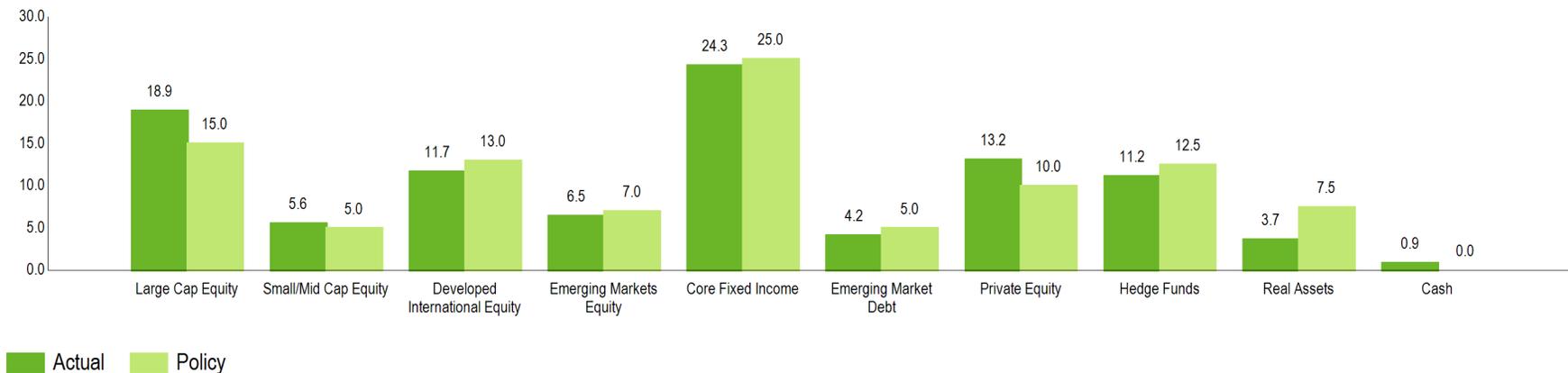
Howard County Retirement Plans

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

Ending June 30, 2019

	Market Value	3 Mo Rank	YTD Rank	Fiscal YTD Rank	1 Yr Rank	3 Yrs Rank	5 Yrs Rank	10 Yrs Rank	Inception	Inception Date							
Total Fund Composite	\$1,092,689,233	3.5%	21	10.6%	45	7.5%	9	7.5%	9	9.7%	18	6.7%	11	9.4%	33	7.4%	Apr-97
<i>Policy Index</i>		3.1%	43	9.9%	69	7.2%	14	7.2%	14	8.3%	74	6.1%	34	8.6%	65	7.3%	Apr-97
<i>InvMetrics Public DB > \$1B Gross Median</i>		3.0%		10.4%		5.4%		5.4%		8.9%		5.8%		9.0%		7.1%	Apr-97

Actual vs Target Allocation (%)

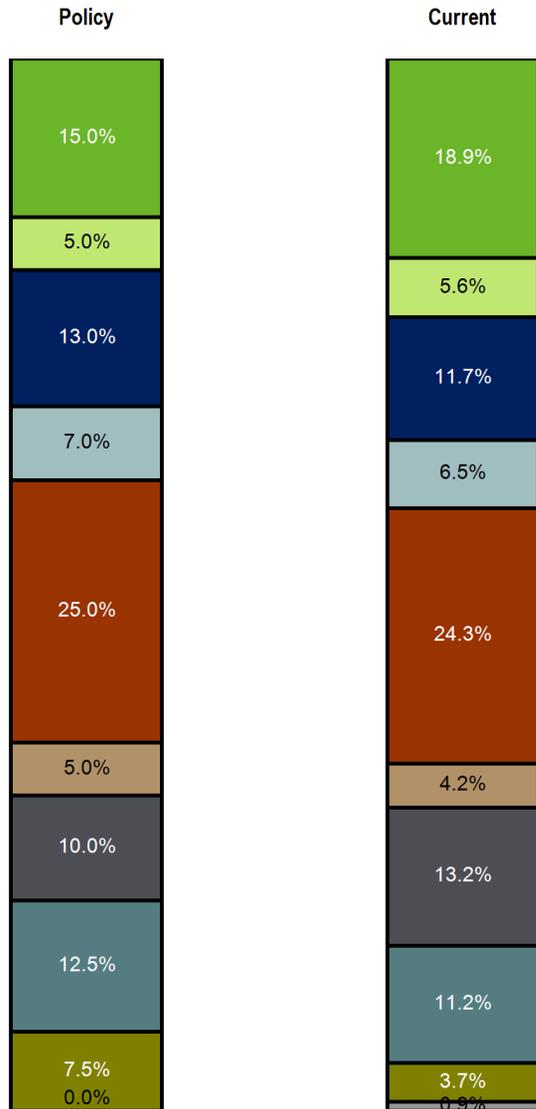


Fiscal year end 6/30.



Howard County Retirement Plans

ASSET ALLOCATION VS. POLICY TARGETS



Asset Allocation vs. Target				
	Current	Policy	Current	Difference*
Large Cap Equity	\$206,474,491	15.0%	18.9%	3.9%
Small/Mid Cap Equity	\$61,185,844	5.0%	5.6%	0.6%
Developed International Equity	\$127,922,995	13.0%	11.7%	-1.3%
Emerging Markets Equity	\$70,544,248	7.0%	6.5%	-0.5%
Core Fixed Income	\$265,634,167	25.0%	24.3%	-0.7%
Emerging Market Debt	\$45,609,054	5.0%	4.2%	-0.8%
Private Equity	\$143,721,599	10.0%	13.2%	3.2%
Hedge Funds	\$121,975,562	12.5%	11.2%	-1.3%
Real Assets	\$40,196,816	7.5%	3.7%	-3.8%
Cash	\$9,424,455	0.0%	0.9%	0.9%
Total	\$1,092,689,233	100.0%	100.0%	

*Difference between Policy and Current Allocation



Howard County Retirement Plans

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

	Ending June 30, 2019											
	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	1,092,689,233	100.0	100.0	3.5	10.6	7.5	7.5	9.7	6.7	9.4	7.4	Apr-97
<i>Policy Index</i>				3.1	9.9	7.2	7.2	8.3	6.1	8.6	7.3	Apr-97
Total US Equity Composite	267,660,335	24.5	20.0	4.3	19.1	6.8	6.8	15.5	10.7	15.3	8.6	Jul-97
<i>Russell 3000</i>				4.1	18.7	9.0	9.0	14.0	10.2	14.7	7.8	Jul-97
<i>US Equity Allocation Index</i>				3.9	18.8	7.6	7.6	14.0	9.9	14.9	--	Jul-97
Total International Equity	198,467,243	18.2	20.0	4.2	15.3	4.5	4.5	10.6	3.1	7.2	4.8	Jul-97
<i>MSCI ACWI ex USA</i>				3.0	13.6	1.3	1.3	9.4	2.2	6.5	--	Jul-97
Total Fixed Income Composite	311,243,221	28.5	30.0	3.4	6.7	7.8	7.8	3.8	3.9	5.8	5.5	Jul-97
<i>Fixed Income Policy Index</i>				3.1	6.1	7.9	7.9	2.3	2.9	3.9	5.2	Jul-97
Total Real Assets Composite	40,196,816	3.7	7.5	2.0	-0.3	3.8	3.8	10.2	9.5	4.3	7.4	Jul-03
<i>NCREIF Property Index 1 Qtr. Lag</i>				1.8	3.2	6.8	6.8	7.1	9.1	8.5	8.9	Jul-03
Cash Composite	9,424,455	0.9		0.5	1.2	2.3	2.3	1.1	0.7	0.4	1.4	Dec-03
<i>91 Day T-Bills</i>				0.6	1.2	2.3	2.3	1.4	0.9	0.5	1.3	Dec-03
Hedge Fund Composite	121,975,562	11.2	12.5	2.3	5.5	3.8	3.8	5.1	4.4	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				1.5	4.6	2.0	2.0	3.8	2.1	3.1	2.5	Jan-11
Private Equity Composite	143,721,599	13.2	10.0	3.0	6.8	17.8	17.8	16.6	15.9	14.2	13.0	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	4.8	7.0	7.0	13.2	10.2	13.3	9.4	Jul-08

Fiscal year end 6/30.

All history prior to 3/1/2019 was provided by AndCo



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%) Rank	YTD (%) Rank	Fiscal YTD (%) Rank	1 Yr (%) Rank	3 Yrs (%) Rank	5 Yrs (%) Rank	10 Yrs (%) Rank	Inception (%)	Inception Date
Total Fund Composite	1,092,689,233	100.0	100.0	3.5 21	10.6 45	7.5 9	7.5 9	9.7 18	6.7 11	9.4 33	7.4	Apr-97
Policy Index				3.1 43	9.9 69	7.2 14	7.2 14	8.3 74	6.1 34	8.6 65	7.3	Apr-97
InvMetrics Public DB > \$1B Gross Median				3.0	10.4	5.4	5.4	8.9	5.8	9.0	7.1	Apr-97
Total US Equity Composite	267,660,335	24.5	20.0	4.3 43	19.1 42	6.8 50	6.8 50	15.5 29	10.7 30	15.3 36	8.6	Jul-97
Russell 3000				4.1 46	18.7 45	9.0 38	9.0 38	14.0 41	10.2 38	14.7 51	7.8	Jul-97
eV All US Equity Gross Median				3.9	18.3	6.7	6.7	13.0	9.2	14.7	9.5	Jul-97
Large Cap Composite	206,474,491	18.9	15.0	3.8 62	17.8 51	7.4 63	7.4 63	14.8 37	10.1 47	14.7 43	8.5	Apr-01
Russell 1000				4.2 50	18.8 42	10.0 43	10.0 43	14.1 42	10.5 42	14.8 40	7.6	Apr-01
eV US Large Cap Equity Gross Median				4.2	17.9	9.0	9.0	13.5	9.9	14.4	8.2	Apr-01
Invesco IQS – US Enhanced 1% Risk SMA	68,756,224	6.3		3.9 60	16.6 63	8.0 59	8.0 59	13.6 49	9.7 53	14.4 51	7.7	Apr-01
S&P 500				4.3 49	18.5 45	10.4 40	10.4 40	14.2 42	10.7 38	14.7 42	7.3	Apr-01
eV US Large Cap Equity Gross Median				4.2	17.9	9.0	9.0	13.5	9.9	14.4	8.2	Apr-01
LSV Asset Management SMA	62,531,824	5.7		2.2 83	13.7 81	2.8 81	2.8 81	11.4 47	7.8 54	14.4 20	9.7	May-00
Russell 1000 Value				3.8 49	16.2 40	8.5 34	8.5 34	10.2 71	7.5 60	13.2 57	6.9	May-00
eV US Large Cap Value Equity Gross Median				3.8	15.6	6.7	6.7	11.2	7.9	13.4	8.2	May-00
Westfield Capital Management SMA	75,186,443	6.9		5.2 50	22.7 40	11.2 60	11.2 60	19.1 35	12.6 54	-- --	16.0	Jul-10
Russell 1000 Growth				4.6 62	21.5 53	11.6 55	11.6 55	18.1 49	13.4 41	16.3 40	16.6	Jul-10
eV US Large Cap Growth Equity Gross Median				5.2	21.7	12.0	12.0	18.0	12.9	15.9	16.1	Jul-10
Small/Mid Cap Composite	61,185,844	5.6	5.0	5.7 26	23.5 28	4.6 45	4.6 45	17.8 18	12.9 12	16.5 19	12.3	Apr-93
Russell 2500				3.0 66	19.2 53	1.8 56	1.8 56	12.3 57	7.7 60	14.4 59	10.3	Apr-93
eV US Small-Mid Cap Equity Gross Median				4.1	19.4	3.1	3.1	12.9	8.2	14.9	11.5	Apr-93
William Blair SMA	20,179,695	1.8		6.6 35	25.1 49	11.1 33	11.1 33	19.7 35	14.6 9	17.8 18	12.4	Jun-06
Russell 2500 Growth				4.1 72	23.9 61	6.1 66	6.1 66	16.1 63	10.0 58	15.7 65	9.7	Jun-06
eV US Small-Mid Cap Growth Equity Gross Median				5.6	25.0	8.4	8.4	17.4	10.5	16.1	10.8	Jun-06
ICM Small Company - ICSCX	22,809,550	2.1		3.1 33	17.9 24	-5.0 52	-5.0 52	12.7 16	8.5 13	14.4 37	11.8	Apr-93
Russell 2000 Value				1.4 68	13.5 72	-6.2 61	-6.2 61	9.8 51	5.4 63	12.4 84	9.8	Apr-93
eV US Small Cap Value Equity Gross Median				2.2	15.1	-4.8	-4.8	9.9	6.0	13.9	12.2	Apr-93
Brown Capital Small Company Strategy SMA	18,196,599	1.7		8.2 15	29.4 25	11.4 27	11.4 27	22.9 20	17.0 7	-- --	19.2	Aug-11
Russell 2000 Growth				2.7 80	20.4 65	-0.5 80	-0.5 80	14.7 76	8.6 80	14.4 85	11.5	Aug-11
eV US Small Cap Growth Equity Gross Median				4.5	22.9	5.5	5.5	18.3	10.7	16.4	13.2	Aug-11



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%) Rank	YTD (%) Rank	Fiscal YTD (%) Rank	1 Yr (%) Rank	3 Yrs (%) Rank	5 Yrs (%) Rank	10 Yrs (%) Rank	Inception (%)	Inception Date
Total International Equity	198,467,243	18.2	20.0	4.2 37	15.3 48	4.5 13	4.5 13	10.6 36	3.1 68	7.2 86	4.8	Jul-97
MSCI ACWI ex USA				3.0 60	13.6 64	1.3 43	1.3 43	9.4 66	2.2 83	6.5 89	--	Jul-97
eV ACWI ex-US All Cap Equity Gross Median				3.4	15.2	0.4	0.4	10.0	3.9	9.2	6.8	Jul-97
International Developed Markets Composite	127,922,995	11.7	13.0	4.0 31	15.5 30	1.5 32	1.5 32	8.5 65	2.6 70	7.5 77	3.1	Mar-08
MSCI EAFE				3.7 40	14.0 49	1.1 37	1.1 37	9.1 54	2.2 80	6.9 89	2.3	Mar-08
eV All EAFE Equity Gross Median				3.1	13.9	-0.7	-0.7	9.3	3.6	8.7	3.9	Mar-08
Mondrian International Equity Fund, L.P.	60,521,468	5.5		1.5 84	10.7 88	2.0 29	2.0 29	7.6 81	1.8 88	7.0 89	1.8	Dec-07
MSCI EAFE				3.7 40	14.0 49	1.1 37	1.1 37	9.1 54	2.2 80	6.9 89	1.3	Dec-07
eV All EAFE Equity Gross Median				3.1	13.9	-0.7	-0.7	9.3	3.6	8.7	2.9	Dec-07
Baillie Gifford EAFE Pure K - BGPX	67,401,527	6.2		6.5 7	20.3 6	1.4 33	1.4 33	-- --	-- --	-- --	2.1	May-18
MSCI EAFE				3.7 40	14.0 49	1.1 37	1.1 37	9.1 54	2.2 80	6.9 89	-2.1	May-18
eV All EAFE Equity Gross Median				3.1	13.9	-0.7	-0.7	9.3	3.6	8.7	-3.1	May-18
International Emerging Markets Composite	70,544,248	6.5	7.0	4.5 7	14.9 23	10.5 3	10.5 3	14.7 9	4.1 36	6.6 72	6.3	Feb-06
MSCI Emerging Markets				0.6 76	10.6 66	1.2 59	1.2 59	10.7 52	2.5 74	5.8 95	4.7	Feb-06
eV Emg Mkts Equity Gross Median				1.4	12.0	1.8	1.8	10.7	3.4	7.5	6.0	Feb-06
DFA Emerging Markets Value Portfolio Institutional - DFEVX	27,874,978	2.6		0.4 80	7.8 90	1.4 55	1.4 55	11.5 41	2.4 78	5.7 95	5.8	Feb-06
MSCI Emerging Markets				0.6 76	10.6 66	1.2 59	1.2 59	10.7 52	2.5 74	5.8 95	4.7	Feb-06
eV Emg Mkts Equity Gross Median				1.4	12.0	1.8	1.8	10.7	3.4	7.5	6.0	Feb-06
GQG Partners Emerging Markets Equity Fund	42,669,270	3.9		7.4 1	20.2 3	-- --	-- --	-- --	-- --	-- --	19.9	Dec-18
MSCI Emerging Markets				0.6 76	10.6 66	1.2 59	1.2 59	10.7 52	2.5 74	5.8 95	7.7	Dec-18
eV Emg Mkts Equity Gross Median				1.4	12.0	1.8	1.8	10.7	3.4	7.5	9.3	Dec-18



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%) Rank	YTD (%) Rank	Fiscal YTD (%) Rank	1 Yr (%) Rank	3 Yrs (%) Rank	5 Yrs (%) Rank	10 Yrs (%) Rank	Inception (%)	Inception Date
Total Fixed Income Composite	311,243,221	28.5	30.0	3.4 21	6.7 36	7.8 37	7.8 37	3.8 36	3.9 34	5.8 34	5.5	Jul-97
BBgBarc US Aggregate TR				3.1 33	6.1 48	7.9 37	7.9 37	2.3 68	2.9 60	3.9 62	5.1	Jul-97
eV All US Fixed Inc Gross Median				2.5	5.9	6.9	6.9	2.9	3.3	4.6	5.2	Jul-97
Core Fixed Income Composite	265,634,167	24.3	25.0	3.0 --	-- --	-- --	-- --	-- --	-- --	-- --	4.7	Mar-19
BBgBarc US Aggregate TR				3.1 --	6.1 --	7.9 --	7.9 --	2.3 --	2.9 --	3.9 --	5.1	Mar-19
Dodge & Cox SMA	126,807,696	11.6		2.9 40	6.6 38	7.9 35	7.9 35	4.0 34	3.7 38	-- --	4.6	May-10
BBgBarc US Aggregate TR				3.1 33	6.1 48	7.9 37	7.9 37	2.3 68	2.9 60	3.9 62	3.5	May-10
eV All US Fixed Inc Gross Median				2.5	5.9	6.9	6.9	2.9	3.3	4.6	4.0	May-10
PIMCO Total Return	116,290,446	10.6		3.1 33	6.2 46	7.7 38	7.7 38	3.3 43	3.2 53	-- --	4.0	May-10
BBgBarc US Aggregate TR				3.1 33	6.1 48	7.9 37	7.9 37	2.3 68	2.9 60	3.9 62	3.5	May-10
eV All US Fixed Inc Gross Median				2.5	5.9	6.9	6.9	2.9	3.3	4.6	4.0	May-10
State Street Global Advisors TIPS	22,536,026	2.1		2.8 49	6.1 65	4.8 58	4.8 58	2.1 83	1.7 66	-- --	3.3	Nov-09
BBgBarc US TIPS TR				2.9 38	6.2 62	4.8 54	4.8 54	2.1 82	1.8 61	3.6 77	3.3	Nov-09
eV US TIPS / Inflation Fixed Inc Gross Median				2.8	6.2	4.8	4.8	2.3	1.9	3.8	3.4	Nov-09
Emerging Markets Debt Composite	45,609,054	4.2	5.0	5.9 --	-- --	-- --	-- --	-- --	-- --	-- --	4.3	Mar-19
JP Morgan GBI EM Global Diversified TR USD				5.6 --	8.7 --	9.0 --	9.0 --	4.2 --	-0.5 --	3.4 --	4.2	Mar-19
Colchester Local Markets Debt Fund	45,609,054	4.2		5.9 10	8.8 80	9.6 65	9.6 65	5.9 47	-- --	-- --	9.3	Oct-15
JP Morgan GBI EM Global Diversified TR USD				5.6 16	8.7 81	9.0 74	9.0 74	4.2 84	-0.5 90	3.4 91	7.1	Oct-15
eV All Emg Mkts Fixed Inc Gross Median				4.3	10.0	10.6	10.6	5.7	3.9	7.5	7.7	Oct-15
Total Real Assets Composite	40,196,816	3.7	7.5	2.0 62	-0.3 99	3.8 95	3.8 95	10.2 1	9.5 32	4.3 99	7.4	Jul-03
NCREIF Property Index 1 Qtr. Lag				1.8 69	3.2 99	6.8 89	6.8 89	7.1 20	9.1 41	8.5 99	8.9	Jul-03
eV US REIT Gross Median				2.3	19.4	12.2	12.2	5.3	8.7	16.2	10.9	Jul-03
Real Estate Composite	28,560,399	2.6		-1.0 --	-- --	-- --	-- --	-- --	-- --	-- --	0.0	Mar-19
NCREIF Property Index 1 Qtr. Lag				1.8 --	3.2 --	6.8 --	6.8 --	7.1 --	9.1 --	8.5 --	3.2	Mar-19
Realty Associates Fund VIII L.P.	25,689	0.0		0.0 --	-15.2 --	-6.6 --	-6.6 --	2.4 --	6.7 --	1.9 --	1.1	Jul-07
Realty Associates Fund IX L.P.	5,396	0.0		0.0 --	-56.8 --	-58.5 --	-58.5 --	-24.8 --	-11.3 --	-- --	-2.5	Apr-10
Partners Group Global RE 2011	5,460,448	0.5		-6.5 --	-10.8 --	-16.8 --	-16.8 --	1.7 --	2.8 --	-- --	4.0	Mar-12
Partners Group Global RE 2014	19,416,226	1.8		-0.2 --	1.0 --	4.1 --	4.1 --	11.7 --	-- --	-- --	9.1	Dec-14
Partners Group Global RE 2017	3,652,641	0.3		3.5 --	18.4 --	-- --	-- --	-- --	-- --	-- --	18.4	Dec-18
NCREIF Property Index 1 Qtr. Lag				1.8 --	3.2 --	6.8 --	6.8 --	7.1 --	9.1 --	8.5 --	4.9	Dec-18



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	Fiscal YTD Rank (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Real Assets Composite	11,636,417	1.1		10.3	--	--	--	--	--	--	--	--	--	--	--	--	--	-4.3	Mar-19
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				1.9	--	-5.1	--	0.5	--	0.5	--	9.0	--	-0.3	--	5.5	--	-5.1	Mar-19
Commonfund Natural Resources X	5,090,643	0.5		7.9	--	5.4	--	14.3	--	14.3	--	41.5	--	--	--	--	--	20.9	Apr-16
Commonfund Natural Resources XI	115,700	0.0		-11.3	--	-22.9	--	--	--	--	--	--	--	--	--	--	--	-22.9	Oct-18
Aether Real Assets IV	5,295,530	0.5		8.8	--	-0.1	--	10.9	--	10.9	--	4.9	--	--	--	--	--	4.7	Jun-16
Aether Real Assets V	1,134,544	0.1		36.0	--	-69.3	--	--	--	--	--	--	--	--	--	--	--	-45.0	Aug-18
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				1.9	--	-5.1	--	0.5	--	0.5	--	9.0	--	-0.3	--	5.5	--	0.5	Aug-18
Cash Composite	9,424,455	0.9	0.0	0.5	--	1.2	--	2.3	--	2.3	--	1.1	--	0.7	--	0.4	--	1.4	Dec-03
<i>91 Day T-Bills</i>				0.6	--	1.2	--	2.3	--	2.3	--	1.4	--	0.9	--	0.5	--	1.3	Dec-03
Hedge Fund Composite	121,975,562	11.2	12.5	2.3	--	5.5	--	3.8	--	3.8	--	5.1	--	4.4	--	--	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				1.5	--	4.6	--	2.0	--	2.0	--	3.8	--	2.1	--	3.1	--	2.5	Jan-11
Magnitude International Class A Eligible	60,318,662	5.5		2.4	--	5.7	--	3.0	--	3.0	--	4.2	--	4.4	--	--	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				1.5	--	4.6	--	2.0	--	2.0	--	3.8	--	2.1	--	3.1	--	2.5	Jan-11
Blackstone Partners Offshore Fund LTD	61,656,901	5.6		2.2	--	5.3	--	4.7	--	4.7	--	6.0	--	4.4	--	--	--	4.8	Mar-11
<i>HFRI FOF: Conservative Index</i>				1.5	--	4.6	--	2.0	--	2.0	--	3.8	--	2.1	--	3.1	--	2.4	Mar-11
Private Equity Composite	143,721,599	13.2	10.0	3.0	--	6.8	--	17.8	--	17.8	--	16.6	--	15.9	--	14.2	--	13.0	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	--	4.8	--	7.0	--	7.0	--	13.2	--	10.2	--	13.3	--	9.4	Jul-08

Fiscal year ends 6/30.

Core Fixed Income Composite, Emerging Markets Debt, Real Estate Composite, and Real Assets Composite performance is calculated by NEPC as of 3/31/2019.

All history prior to 3/1/2019 was provided by AndCo.

Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

Policy index consists of: 15% S&P 500 / 5% Russell 2500 / 13% MSCI EAFE / 7% MSCI Emerging Markets / 25% BBgBarc US Aggregate TR / 5% JP Morgan GBI EM Global Diversified TR USD / 7.5% NCREIF Property Index 1 Qtr. Lag / 12.5% HFRI FOF: Conservative Index / 10% Private Equity Composite.



Howard County Retirement Plans

ASSET ALLOCATION VS. POLICY TARGETS

Allocation vs. Targets and Policy				
As Of March 31, 2019				
	Current Balance	Current Allocation	Target	Difference
Large Cap Equity	\$198,955,261	18.8%	15.0%	3.8%
Small/Mid Cap Equity	\$58,035,765	5.5%	5.0%	0.5%
Developed International Equity	\$123,030,769	11.7%	13.0%	-1.3%
Emerging Markets Equity	\$67,618,590	6.4%	7.0%	-0.6%
Core Fixed Income	\$258,091,674	24.4%	25.0%	-0.6%
Emerging Market Debt	\$43,124,239	4.1%	5.0%	-0.9%
Private Equity	\$141,479,477	13.4%	10.0%	3.4%
Hedge Funds	\$119,356,868	11.3%	12.5%	-1.2%
Real Assets	\$38,305,024	3.6%	7.5%	-3.9%
Cash	\$8,009,588	0.8%	0.0%	0.8%
Total	\$1,056,007,254	100.0%	100.0%	

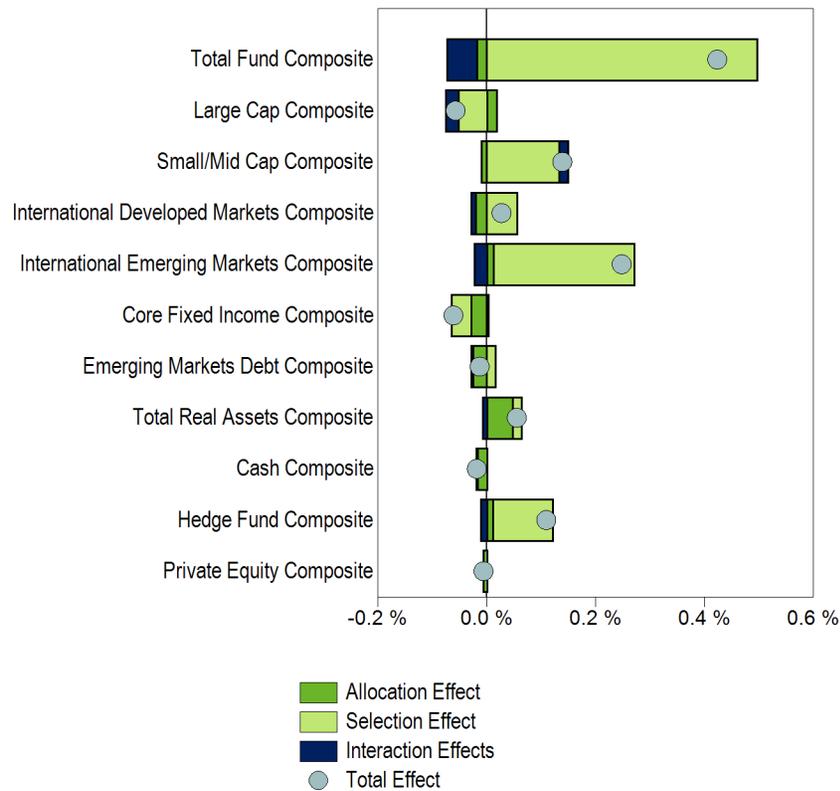
Allocation vs. Targets and Policy				
As Of June 30, 2019				
	Current Balance	Current Allocation	Target	Difference
Large Cap Equity	\$206,474,491	18.9%	15.0%	3.9%
Small/Mid Cap Equity	\$61,185,844	5.6%	5.0%	0.6%
Developed International Equity	\$127,922,995	11.7%	13.0%	-1.3%
Emerging Markets Equity	\$70,544,248	6.5%	7.0%	-0.5%
Core Fixed Income	\$265,634,167	24.3%	25.0%	-0.7%
Emerging Market Debt	\$45,609,054	4.2%	5.0%	-0.8%
Private Equity	\$143,721,599	13.2%	10.0%	3.2%
Hedge Funds	\$121,975,562	11.2%	12.5%	-1.3%
Real Assets	\$40,196,816	3.7%	7.5%	-3.8%
Cash	\$9,424,455	0.9%	0.0%	0.9%
Total	\$1,092,689,233	100.0%	100.0%	



Howard County Retirement Plans

TOTAL FUND ATTRIBUTION ANALYSIS (GROSS)

Attribution Effects
3 Months Ending June 30, 2019



Attribution Summary
3 Months Ending June 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Large Cap Composite	3.8%	4.3%	-0.5%	-0.1%	0.0%	0.0%	-0.1%
Small/Mid Cap Composite	5.7%	3.0%	2.8%	0.1%	0.0%	0.0%	0.1%
International Developed Markets Composite	4.0%	3.7%	0.3%	0.1%	0.0%	0.0%	0.0%
International Emerging Markets Composite	4.5%	0.6%	3.9%	0.3%	0.0%	0.0%	0.2%
Core Fixed Income Composite	3.0%	3.1%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Emerging Markets Debt Composite	5.9%	5.6%	0.3%	0.0%	0.0%	0.0%	0.0%
Total Real Assets Composite	2.0%	1.8%	0.2%	0.0%	0.0%	0.0%	0.1%
Cash Composite	0.5%	0.6%	-0.1%	0.0%	0.0%	0.0%	0.0%
Hedge Fund Composite	2.3%	1.5%	0.9%	0.1%	0.0%	0.0%	0.1%
Private Equity Composite	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	3.5%	3.1%	0.4%	0.5%	0.0%	-0.1%	0.4%



ANALYTICS DEFINITIONS

Asset Allocation Effect - Measures the ability to effectively allocate their portfolio's assets to various asset classes. The allocation effect determines whether the overweighting or underweighting of asset classes relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is overweighted in an asset class that outperforms the benchmark. Negative allocation occurs when the portfolio is overweighted in an asset class that underperforms the benchmark and underweighted in an asset class that outperforms the benchmark.

Selection Effect - Measures the ability to select managers within a given asset class relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by plan's allocation to the asset class. The weight of the manager in the portfolio determines the size of the effect -- the larger the manager, the larger the effect is, positive or negative.

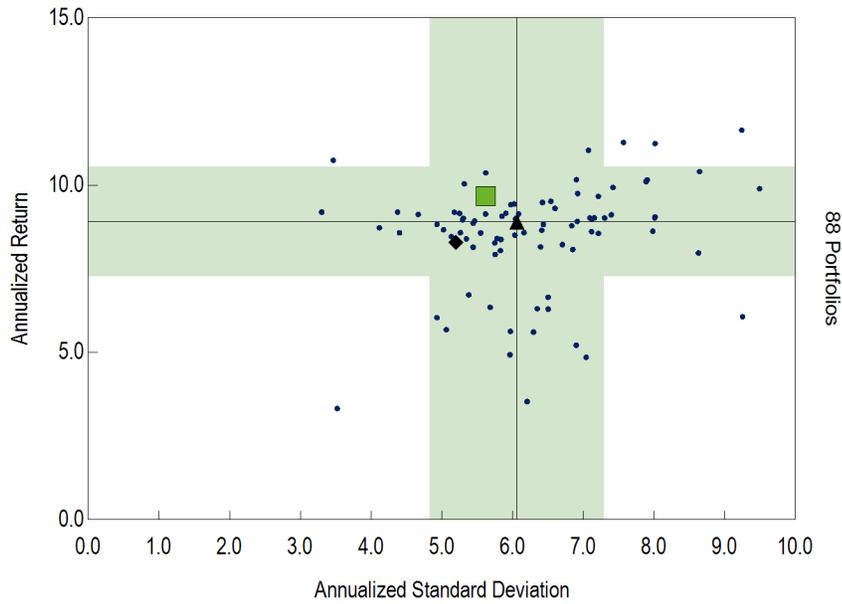
Interaction Effect - The interaction effect measures the combined impact of manager selection and manager allocation decisions within an asset class. For example, if client had superior manager selection and overweighted that particular asset class, the interaction effect is positive. If client had superior manager selection, but underweighted that asset class, the interaction effect is negative. In this case, client did not take advantage of the superior manager selection by allocating more assets to that asset class.



Howard County Retirement Plans

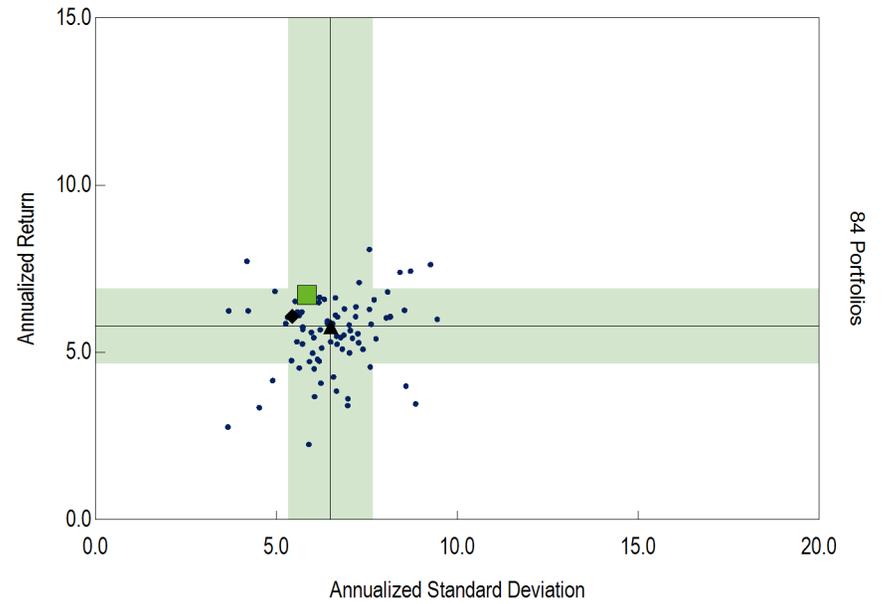
TOTAL FUND RISK/RETURN (GROSS)

3 Years Ending June 30, 2019



- Total Fund Composite
- ◆ Policy Index
- Allocation Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

5 Years Ending June 30, 2019



- Total Fund Composite
- ◆ Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

3 Years Ending June 30, 2019

	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio	Sortino Ratio
Total Fund Composite	9.66%	5.63%	1.47	1.97
Policy Index	8.30%	5.20%	1.33	2.07

5 Years Ending June 30, 2019

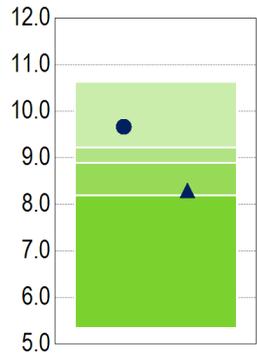
	Anlzd Ret	Anlzd Std Dev	Sharpe Ratio	Sortino Ratio
Total Fund Composite	6.72%	5.83%	1.00	1.66
Policy Index	6.08%	5.43%	0.96	1.69



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross
3 Years

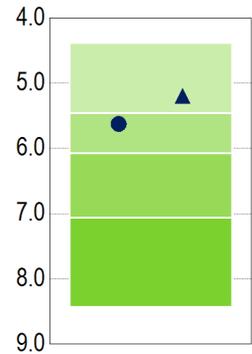
Anlzd Return



● Total Fund Composite	
Value	9.66
Rank	18
▲ Policy Index	
Value	8.30
Rank	74

Universe	
5th %tile	10.63
25th %tile	9.23
Median	8.91
75th %tile	8.20
95th %tile	5.35

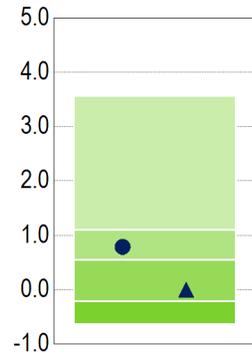
Anlzd Standard Deviation



● Total Fund Composite	
Value	5.63
Rank	32
▲ Policy Index	
Value	5.20
Rank	16

Universe	
5th %tile	4.39
25th %tile	5.44
Median	6.06
75th %tile	7.05
95th %tile	8.42

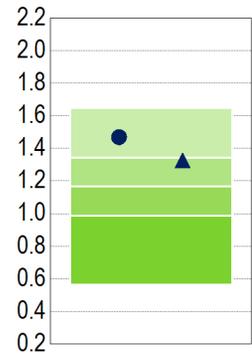
Anlzd Alpha



● Total Fund Composite	
Value	0.79
Rank	36
▲ Policy Index	
Value	0.00
Rank	70

Universe	
5th %tile	3.57
25th %tile	1.11
Median	0.56
75th %tile	-0.21
95th %tile	-0.63

Sharpe Ratio



● Total Fund Composite	
Value	1.47
Rank	15
▲ Policy Index	
Value	1.33
Rank	27

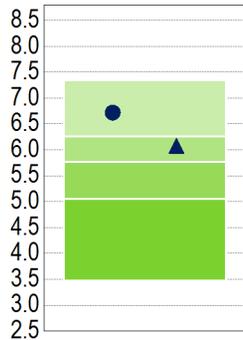
Universe	
5th %tile	1.65
25th %tile	1.35
Median	1.17
75th %tile	0.99
95th %tile	0.57



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross 5 Years

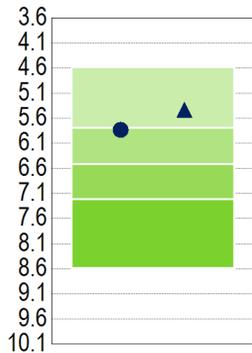
Anlzd Return



● Total Fund Composite	
Value	6.72
Rank	11
▲ Policy Index	
Value	6.08
Rank	34

Universe	
5th %tile	7.35
25th %tile	6.27
Median	5.78
75th %tile	5.07
95th %tile	3.48

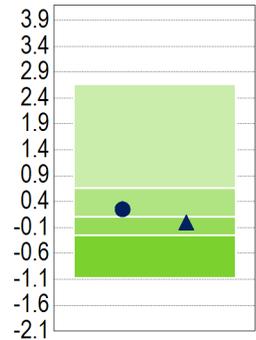
Anlzd Standard Deviation



● Total Fund Composite	
Value	5.83
Rank	26
▲ Policy Index	
Value	5.43
Rank	12

Universe	
5th %tile	4.58
25th %tile	5.78
Median	6.50
75th %tile	7.20
95th %tile	8.57

Anlzd Alpha



● Total Fund Composite	
Value	0.25
Rank	44
▲ Policy Index	
Value	0.00
Rank	63

Universe	
5th %tile	2.67
25th %tile	0.67
Median	0.12
75th %tile	-0.24
95th %tile	-1.07

Sharpe Ratio



● Total Fund Composite	
Value	1.00
Rank	8
▲ Policy Index	
Value	0.96
Rank	13

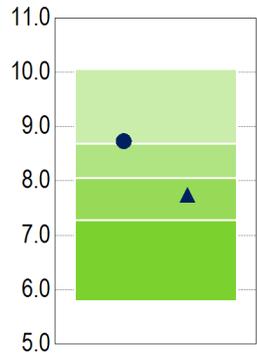
Universe	
5th %tile	1.02
25th %tile	0.85
Median	0.72
75th %tile	0.64
95th %tile	0.40



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross 7 Years

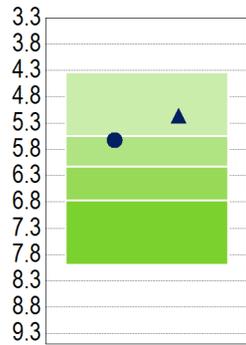
Anlzd Return



● Total Fund Composite
Value 8.73
Rank 22
▲ Policy Index
Value 7.75
Rank 60

Universe
5th %tile 10.06
25th %tile 8.69
Median 8.07
75th %tile 7.29
95th %tile 5.80

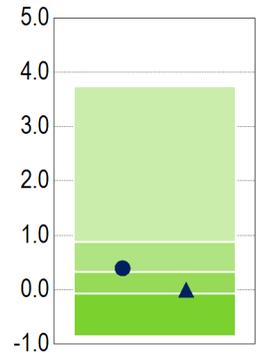
Anlzd Standard Deviation



● Total Fund Composite
Value 5.62
Rank 30
▲ Policy Index
Value 5.16
Rank 11

Universe
5th %tile 4.33
25th %tile 5.54
Median 6.12
75th %tile 6.76
95th %tile 7.99

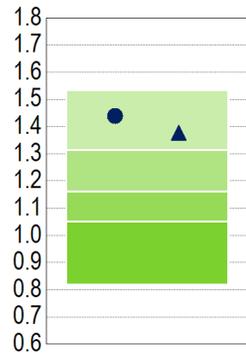
Anlzd Alpha



● Total Fund Composite
Value 0.39
Rank 49
▲ Policy Index
Value 0.00
Rank 74

Universe
5th %tile 3.75
25th %tile 0.90
Median 0.33
75th %tile -0.06
95th %tile -0.84

Sharpe Ratio



● Total Fund Composite
Value 1.44
Rank 12
▲ Policy Index
Value 1.38
Rank 17

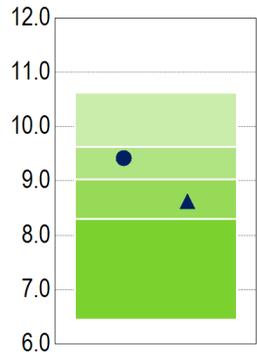
Universe
5th %tile 1.53
25th %tile 1.31
Median 1.16
75th %tile 1.05
95th %tile 0.82



TOTAL FUND RISK STATISTICS VS. PEER UNIVERSE

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross 10 Years

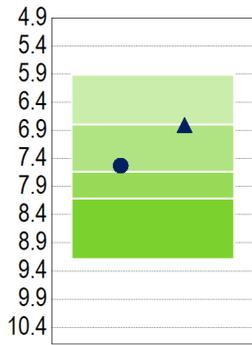
Anlzd Return



● Total Fund Composite
Value 9.42
Rank 33
▲ Policy Index
Value 8.63
Rank 65

Universe
5th %tile 10.62
25th %tile 9.64
Median 9.04
75th %tile 8.31
95th %tile 6.46

Anlzd Standard Deviation



● Total Fund Composite
Value 7.53
Rank 48
▲ Policy Index
Value 6.80
Rank 26

Universe
5th %tile 5.91
25th %tile 6.78
Median 7.63
75th %tile 8.10
95th %tile 9.18

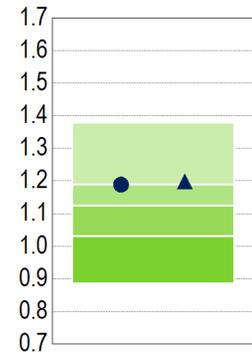
Anlzd Alpha



● Total Fund Composite
Value -0.03
Rank 73
▲ Policy Index
Value 0.00
Rank 72

Universe
5th %tile 3.46
25th %tile 1.02
Median 0.41
75th %tile -0.04
95th %tile -0.48

Sharpe Ratio



● Total Fund Composite
Value 1.19
Rank 26
▲ Policy Index
Value 1.20
Rank 23

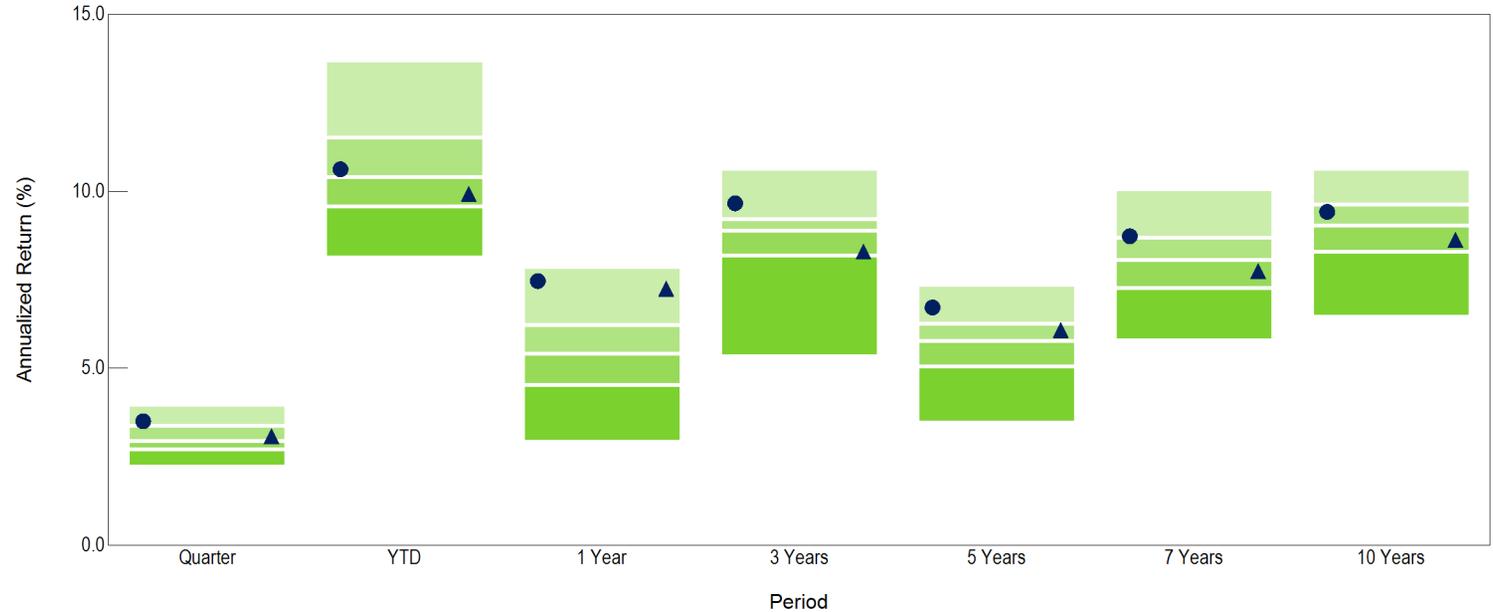
Universe
5th %tile 1.38
25th %tile 1.19
Median 1.13
75th %tile 1.03
95th %tile 0.89



Howard County Retirement Plans

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE (GROSS)

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross



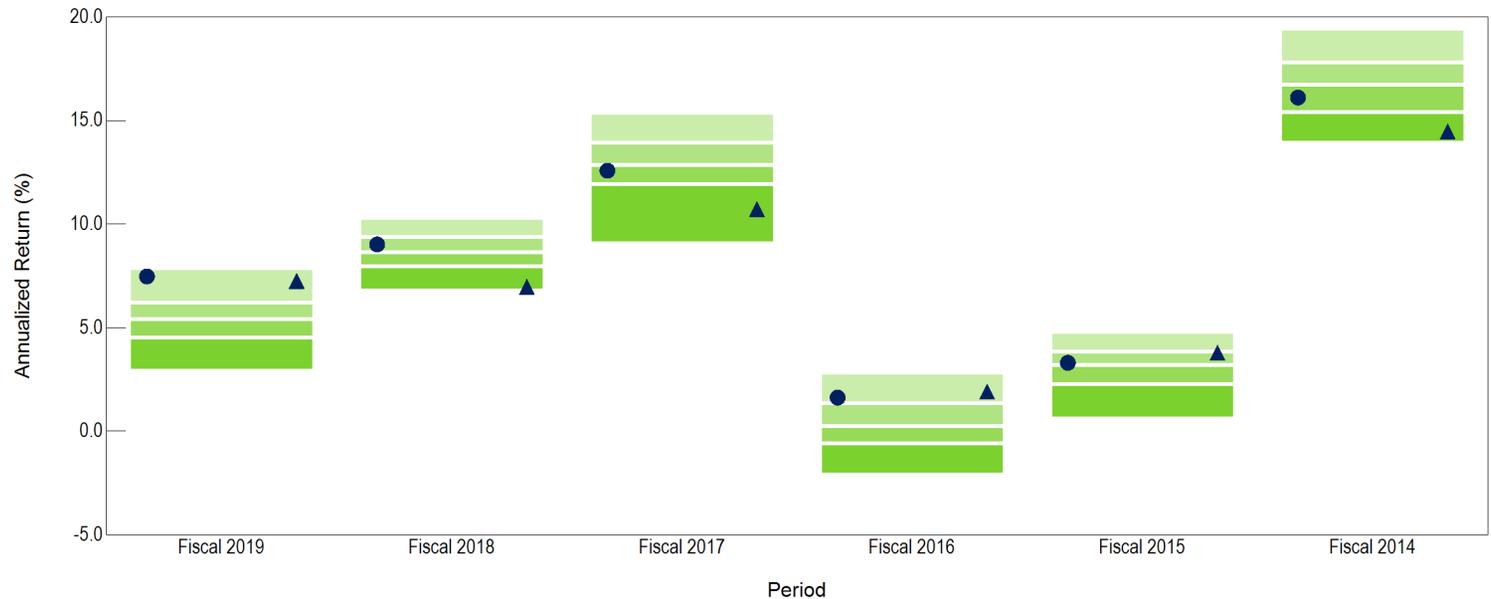
	Return (Rank)		Quarter		YTD		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	4.0		13.7		7.9		10.6		7.3		10.1		10.6			
25th Percentile	3.4		11.5		6.2		9.2		6.3		8.7		9.6			
Median	3.0		10.4		5.4		8.9		5.8		8.1		9.0			
75th Percentile	2.7		9.6		4.5		8.2		5.1		7.3		8.3			
95th Percentile	2.2		8.1		2.9		5.4		3.5		5.8		6.5			
# of Portfolios	88		88		88		88		84		82		77			
● Total Fund Composite	3.5	(21)	10.6	(45)	7.5	(9)	9.7	(18)	6.7	(11)	8.7	(22)	9.4	(33)		
▲ Policy Index	3.1	(43)	9.9	(69)	7.2	(14)	8.3	(74)	6.1	(34)	7.7	(60)	8.6	(65)		



Howard County Retirement Plans

FISCAL RETURN SUMMARY VS. PEER UNIVERSE (GROSS)

Total Fund Composite vs. InvMetrics Public DB > \$1B Gross



	Fiscal 2019		Fiscal 2018		Fiscal 2017		Fiscal 2016		Fiscal 2015		Fiscal 2014	
	Return	(Rank)										
5th Percentile	7.9		10.3		15.3		2.8		4.8		19.4	
25th Percentile	6.2		9.4		14.0		1.4		3.9		17.8	
Median	5.4		8.7		12.9		0.3		3.2		16.7	
75th Percentile	4.5		8.0		11.9		-0.6		2.3		15.4	
95th Percentile	2.9		6.8		9.1		-2.1		0.6		13.9	
# of Portfolios	88		62		108		91		92		65	
● Total Fund Composite	7.5	(9)	9.0	(35)	12.6	(61)	1.6	(22)	3.3	(48)	16.1	(62)
▲ Policy Index	7.2	(14)	7.0	(91)	10.7	(91)	1.9	(15)	3.8	(30)	14.5	(86)

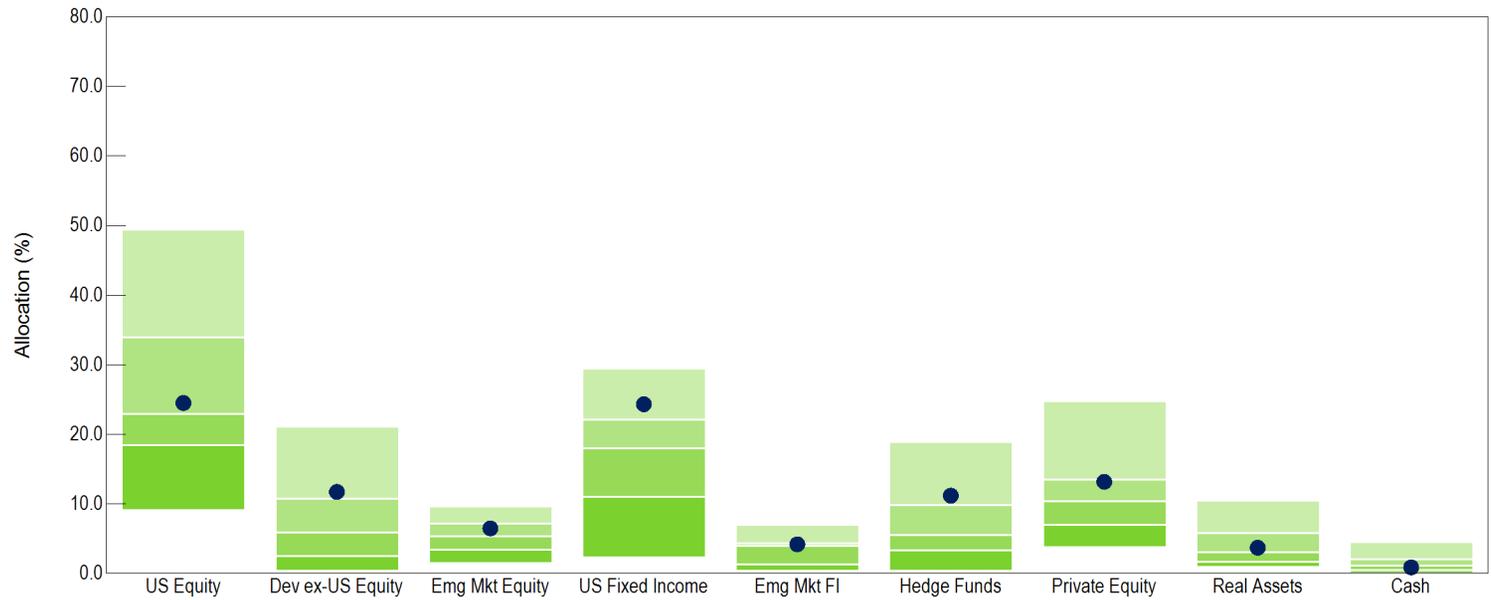
Fiscal year ends 6/30.



Howard County Retirement Plans

TOTAL FUND ALLOCATIONS VS. PEER UNIVERSE

Total Plan Allocation vs. InvMetrics Public DB > \$1B Gross



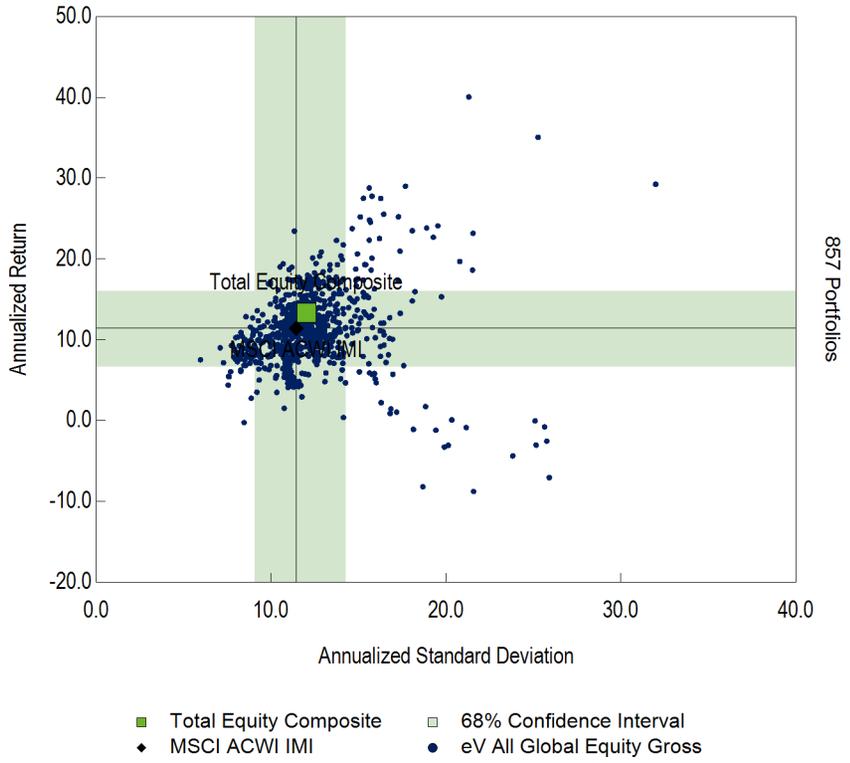
	Allocation (Rank)																		
5th Percentile	49.4	21.1	9.6	29.4	7.0	18.8	24.8	10.5	4.5										
25th Percentile	34.1	10.9	7.2	22.2	4.4	9.9	13.6	5.9	2.1										
Median	23.0	6.0	5.4	18.1	4.0	5.6	10.5	3.2	1.2										
75th Percentile	18.5	2.6	3.5	11.1	1.4	3.4	7.0	1.7	0.6										
95th Percentile	9.1	0.4	1.6	2.4	0.5	0.4	3.9	1.0	0.1										
# of Portfolios	59	30	42	59	24	39	48	32	65										
● Total Fund Composite	24.5	(48)	11.7	(25)	6.5	(35)	24.3	(21)	4.2	(36)	11.2	(14)	13.2	(30)	3.7	(47)	0.9	(66)	



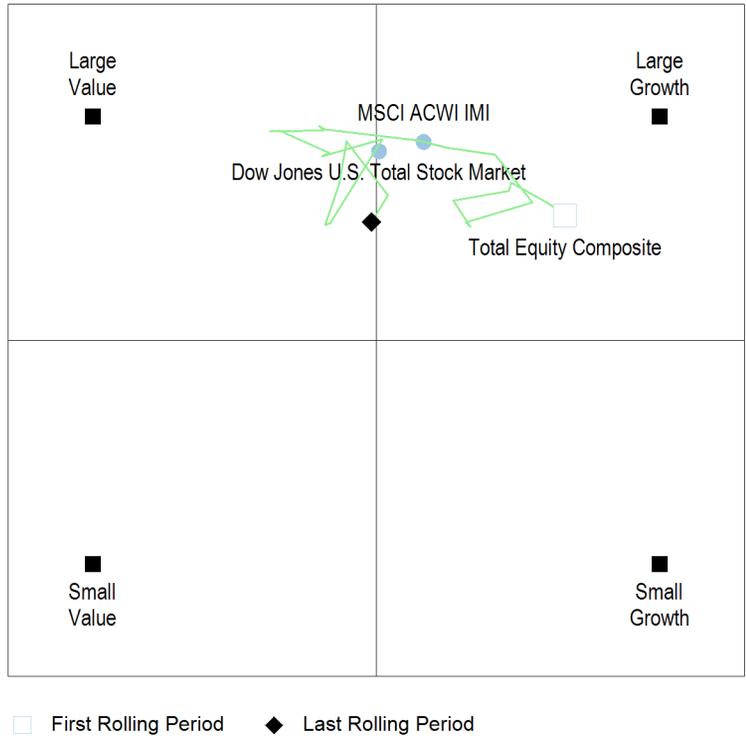
Howard County Retirement Plans

TOTAL EQUITY COMPOSITE

3 Year Risk Return



3 Year Style Analysis



Howard County Retirement Plans

ANALYSIS BY FUND - PRIVATE EQUITY

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Private Equity												
57 Stars Global Opportunity Fund 4 (US), L.P.	2015	\$7,000,000	\$2,176,344	\$4,823,656	-\$15,283	\$0	\$5,574,663	\$5,574,663	\$766,290	0.00	1.16	8.36%
Aberdeen U.S. Private Equity V, L.P.	2013	\$15,000,000	\$600,000	\$14,400,000	\$0	\$7,815,912	\$15,466,387	\$23,282,299	\$8,882,299	0.54	1.62	19.67%
Aberdeen U.S. Private Equity VI, L.P.	2014	\$15,000,000	\$3,150,000	\$11,850,000	\$0	\$2,636,498	\$13,667,427	\$16,303,925	\$4,453,925	0.22	1.38	19.98%
Aberdeen U.S. Private Equity VII, L.P.	2017	\$5,000,000	\$3,000,000	\$2,000,000	\$0	\$95,385	\$2,322,499	\$2,417,884	\$417,884	0.05	1.21	28.61%
Crown Asia-Pacific Private Equity II PLC	2011	\$14,000,000	\$1,316,000	\$12,684,000	\$0	\$5,964,000	\$14,329,526	\$20,293,526	\$7,609,526	0.47	1.60	12.16%
Crown Asia-Pacific Private Equity III PLC	2014	\$5,000,000	\$1,315,000	\$3,685,000	\$0	\$340,000	\$5,454,715	\$5,794,715	\$2,109,715	0.09	1.57	25.31%
Crown Global Secondaries III PLC, L.P.	2012	\$10,000,000	\$2,980,000	\$7,020,000	\$0	\$5,260,000	\$4,793,189	\$10,053,189	\$3,033,189	0.75	1.43	13.75%
Greenspring Global Partners IV, L.P.	2008	\$4,000,000	\$160,000	\$3,840,000	\$36,255	\$4,900,032	\$4,816,052	\$9,716,084	\$5,839,829	1.26	2.51	17.88%
Greenspring Global Partners IX-B, L.P.	2019	\$7,250,000	\$6,380,000	\$870,000	\$0	\$0	\$882,964	\$882,964	\$12,964	0.00	1.01	2.54%
Greenspring Global Partners V-B, L.P.	2011	\$7,000,000	\$630,000	\$6,370,000	-\$16,154	\$6,191,500	\$8,847,032	\$15,038,532	\$8,684,686	0.97	2.37	21.59%
Greenspring Global Partners VI, L.P.	2014	\$7,500,000	\$900,000	\$6,600,000	\$1,152	\$1,818,750	\$10,906,004	\$12,724,754	\$6,123,602	0.28	1.93	22.87%
Greenspring Global Partners VIII-B, L.P.	2017	\$5,000,000	\$2,750,000	\$2,250,000	\$0	\$0	\$2,473,744	\$2,473,744	\$223,744	0.00	1.10	14.01%
Greenspring Secondaries Fund I, L.P.	2014	\$2,500,000	\$100,000	\$2,400,000	-\$903	\$1,192,914	\$4,084,651	\$5,277,565	\$2,878,468	0.50	2.20	27.26%
HarbourVest 2013 Direct Fund, L.P.	2013	\$15,000,000	\$484,349	\$14,515,651	\$108,146	\$10,288,547	\$17,019,509	\$27,308,056	\$12,684,259	0.70	1.87	21.54%
HarbourVest Partners Co-Investment Fund IV AIV, L.P.	2018	\$574,142	\$312,689	\$261,453	\$0	\$0	\$200,566	\$200,566	-\$60,887	0.00	0.77	-23.29%
HarbourVest Partners Co-Investment Fund IV, L.P.	2017	\$9,425,858	\$2,276,694	\$7,149,164	\$0	\$578,885	\$8,357,409	\$8,936,294	\$1,787,130	0.08	1.25	14.39%
NB Crossroads Fund XXI, L.P.	2015	\$15,000,000	\$6,150,000	\$8,850,000	\$0	\$0	\$11,783,793	\$11,783,793	\$2,933,793	0.00	1.33	17.42%
NB Crossroads Fund XXII, L.P.	2019	\$15,000,000										
Pantheon Global Secondary Fund IV, L.P.	2010	\$3,000,000	\$1,008,000	\$1,992,000	\$0	\$2,490,001	\$664,642	\$3,154,643	\$1,162,643	1.25	1.58	13.87%
Schroder Adveq Europe Direct II S.C.S.	2018	\$1,014,843	\$616,802	\$398,042	\$0	\$0	\$386,841	\$386,841	-\$11,201	0.00	0.97	-6.74%
Schroder Adveq Europe V, L.P.	2012	\$9,089,273	\$1,280,790	\$7,808,483	\$0	\$3,989,250	\$7,003,050	\$10,992,301	\$3,183,817	0.51	1.41	11.04%
Schroder Adveq Europe VI, L.P.	2015	\$6,793,608	\$2,731,488	\$4,062,120	\$0	\$626,240	\$4,214,485	\$4,840,725	\$778,605	0.15	1.19	11.56%
Schroder Adveq Europe VII S.C.S.	2018	\$833,578	\$98,306	\$735,271	\$0	\$0	\$758,403	\$758,403	\$23,132	0.00	1.03	4.28%
Siguler Guff Distressed Opportunities Fund III, L.P.	2007	\$10,000,000	\$300,000	\$9,700,000	\$0	\$13,818,322	\$1,645,614	\$15,463,936	\$5,763,936	1.42	1.59	10.39%
Total Private Equity		\$189,981,302	\$40,716,462	\$134,264,840	\$113,213	\$68,006,236	\$145,653,166	\$213,659,402	\$79,281,349	0.51	1.59	16.15%
Total		\$189,981,302	\$40,716,462	\$134,264,840	\$113,213	\$68,006,236	\$145,653,166	\$213,659,402	\$79,281,349	0.51	1.59	16.15%



Howard County Retirement Plans

ANALYSIS BY FUND - REAL ESTATE

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Real Estate												
Partners Group Global Real Estate 2011, L.P.	2011	\$14,670,705	\$1,589,419	\$13,081,287	\$65,873	\$11,421,924	\$5,492,689	\$16,914,613	\$3,767,454	0.87	1.29	6.03%
Partners Group Global Real Estate 2014 (USD) A, L.P. Inc.	2014	\$25,000,000	\$11,202,286	\$13,797,714	\$35,548	\$2,955,223	\$17,299,857	\$20,255,080	\$6,421,818	0.21	1.46	12.29%
Partners Group Real Estate Secondary 2017 (USD) A, L.P.	2018	\$10,000,000	\$7,784,176	\$2,215,824	\$50,032	\$0	\$3,255,964	\$3,255,964	\$990,108	0.00	1.44	43.70%
TA Associates Realty Fund IX, L.P.	2008	\$10,000,000	\$0	\$10,000,000	\$0	\$16,015,604	\$0	\$16,015,604	\$6,015,604	1.60	1.60	10.42%
TA Associates Realty Fund VI, L.P.	2002	\$10,000,000	\$0	\$10,000,000	\$0	\$15,172,037	\$0	\$15,172,037	\$5,172,037	1.52	1.52	8.55%
TA Associates Realty Fund VII, L.P.	2005	\$5,000,000	\$0	\$5,000,000	\$0	\$5,119,609	\$0	\$5,119,609	\$119,609	1.02	1.02	0.34%
TA Associates Realty Fund VIII, L.P.	2006	\$10,000,000	\$0	\$10,000,000	\$0	\$9,854,909	\$25,689	\$9,880,598	-\$119,402	0.99	0.99	-0.14%
Total Real Estate		\$84,670,705	\$20,575,881	\$64,094,825	\$151,453	\$60,539,306	\$26,074,199	\$86,613,506	\$22,367,228	0.94	1.35	5.98%
Total		\$84,670,705	\$20,575,881	\$64,094,825	\$151,453	\$60,539,306	\$26,074,199	\$86,613,506	\$22,367,228	0.94	1.35	5.98%



Howard County Retirement Plans

ANALYSIS BY FUND - REAL ASSETS

Investments		Commitments		Contributions & Distributions			Valuations			Performance		
Investment Name	Vintage Year	Commitment	Unfunded Commitment	Paid In Capital	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	DPI	TVPI	IRR
Real Assets												
Aether Real Assets IV, L.P.	2015	\$7,500,000	\$3,696,682	\$3,803,318	-\$906	\$0	\$4,634,969	\$4,634,969	\$832,557	0.00	1.22	12.78%
Aether Real Assets V, L.P.	2018	\$7,500,000	\$6,857,202	\$642,798	-\$4,941	\$0	\$562,482	\$562,482	-\$75,375	0.00	0.88	-12.37%
Commonfund Capital Natural Resources Partners XI, L.P.	2018	\$7,500,000	\$7,350,000	\$150,000	\$0	\$0	\$115,700	\$115,700	-\$34,300	0.00	0.77	-22.87%
Commonfund Capital Natural Resources Partners X, L.P.	2015	\$7,500,000	\$3,150,000	\$4,350,000	\$0	\$985,123	\$4,988,037	\$5,973,160	\$1,623,160	0.23	1.37	30.43%
Total Real Assets		\$30,000,000	\$21,053,884	\$8,946,116	-\$5,847	\$985,123	\$10,301,188	\$11,286,311	\$2,346,042	0.11	1.26	19.15%
Total		\$30,000,000	\$21,053,884	\$8,946,116	-\$5,847	\$985,123	\$10,301,188	\$11,286,311	\$2,346,042	0.11	1.26	19.15%



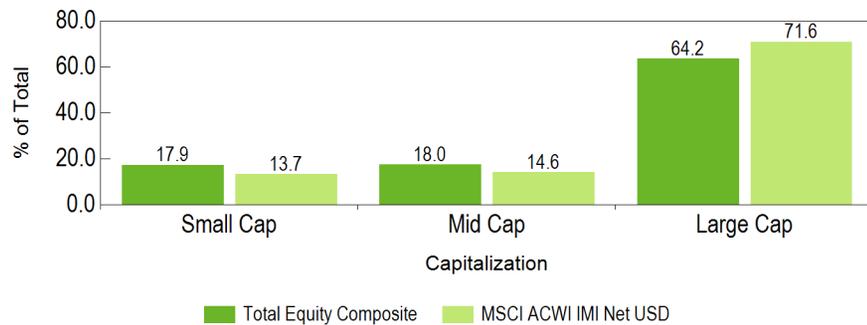
Howard County Retirement Plans

TOTAL EQUITY COMPOSITE

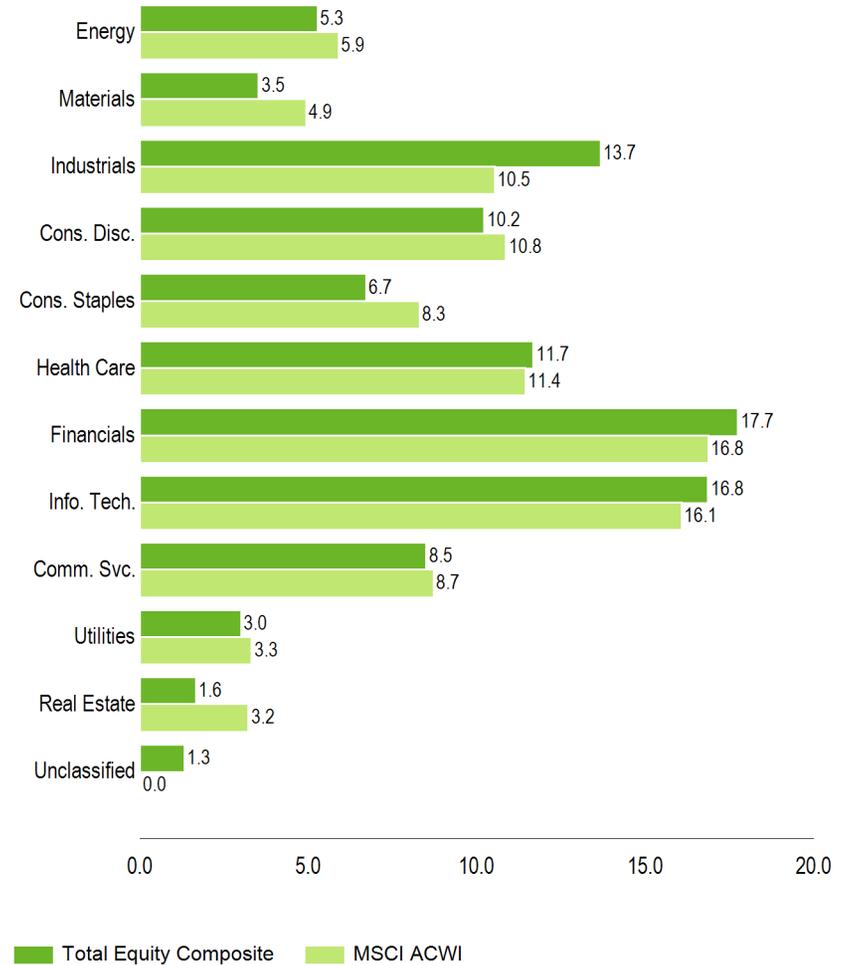
Characteristics		
	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	3,197	8,834
Weighted Avg. Market Cap. (\$B)	107.5	129.8
Median Market Cap. (\$B)	0.7	1.8
Price To Earnings	17.5	17.5
Price To Book	2.8	2.9
Price To Sales	1.3	1.4
Return on Equity (%)	17.6	18.4
Yield (%)	2.2	2.4
Beta	1.0	1.0
R-Squared	1.0	1.0

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	60.32	99.58
Europe	17.30	0.42
Asia/Pacific	21.82	--
Other	0.55	--

Market Capitalization As of June 30, 2019



Equity Sector Allocation



Howard County Retirement Plans

TOTAL EQUITY COMPOSITE

Top Ten Holdings	
AMAZON.COM	1.5%
APPLE	1.4%
MICROSOFT	1.3%
CASH - USD	1.2%
AIA GROUP	0.9%
VISA 'A'	0.9%
FACEBOOK CLASS A	0.9%
METTLER TOLEDO INTL.	0.8%
BANK OF AMERICA	0.8%
UNITED OVERSEAS BANK	0.7%

Top Positive Contributors		
	Relative Contribution %	Return %
METTLER TOLEDO INTL.	0.1%	16.2%
ADIDAS	0.1%	28.1%
VEEVA SYSTEMS CL.A	0.1%	27.8%
AIA GROUP	0.1%	9.7%
COCHLEAR	0.1%	17.9%
HDFC BANK ADR 1:3	0.1%	12.8%
PROS HOLDINGS	0.1%	49.8%
HOUSING DEVELOPMENT FINANCE CORPORATION	0.1%	11.8%
INGERSOLL-RAND	0.1%	17.8%
ATLAS COPCO A	0.0%	20.1%

Top Negative Contributors		
	Relative Contribution %	Return %
MICROSOFT	-0.1%	14.0%
FACEBOOK CLASS A	-0.1%	15.8%
KOHL'S	0.0%	-29.9%
INOGEN	0.0%	-30.0%
ASOS	0.0%	-22.2%
WOOD GROUP (JOHN)	0.0%	-9.9%
TAKEDA PHARMACEUTICAL	0.0%	-13.1%
WALMART	0.0%	13.9%
FOOT LOCKER	0.0%	-30.4%
INFINEON TECHNOLOGIES	0.0%	-10.2%

Equity Sector Attribution											
	Total Effects	Selection Effect	Attribution Effects			Returns		Sector Weights			
			Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.2%	0.0%	-0.2%	0.0%	-2.8%	-2.8%	5.6%	2.5%			
Materials	-0.2%	-0.2%	0.1%	-0.1%	2.7%	11.2%	3.7%	2.1%			
Industrials	0.6%	0.5%	-0.1%	0.3%	6.8%	1.3%	13.0%	8.9%			
Consumer Discretionary	-0.3%	-0.4%	-0.1%	0.2%	4.0%	5.8%	10.7%	16.0%			
Consumer Staples	-0.1%	-0.1%	0.0%	0.0%	1.9%	2.7%	6.3%	3.9%			
Health Care	0.2%	0.2%	0.0%	0.0%	4.1%	2.1%	12.0%	11.1%			
Financials	0.3%	0.0%	0.3%	0.0%	6.6%	6.9%	17.4%	3.4%			
Information Technology	-0.7%	-0.7%	-0.4%	0.4%	5.2%	7.0%	16.6%	33.1%			
Communication Services	0.1%	0.1%	0.1%	0.0%	4.2%	3.8%	8.0%	14.1%			
Utilities	0.0%	0.0%	-0.7%	0.6%	3.9%	-17.3%	3.1%	0.0%			
Real Estate	0.0%	0.0%	0.0%	0.0%	2.0%	2.8%	2.2%	4.7%			
Cash	-0.1%	0.0%	-0.1%	0.0%	0.6%	--	1.4%	0.0%			
Portfolio	-0.4%	=	-0.6%	+	-1.1%	+	1.3%	4.4%	4.8%	100.0%	100.0%

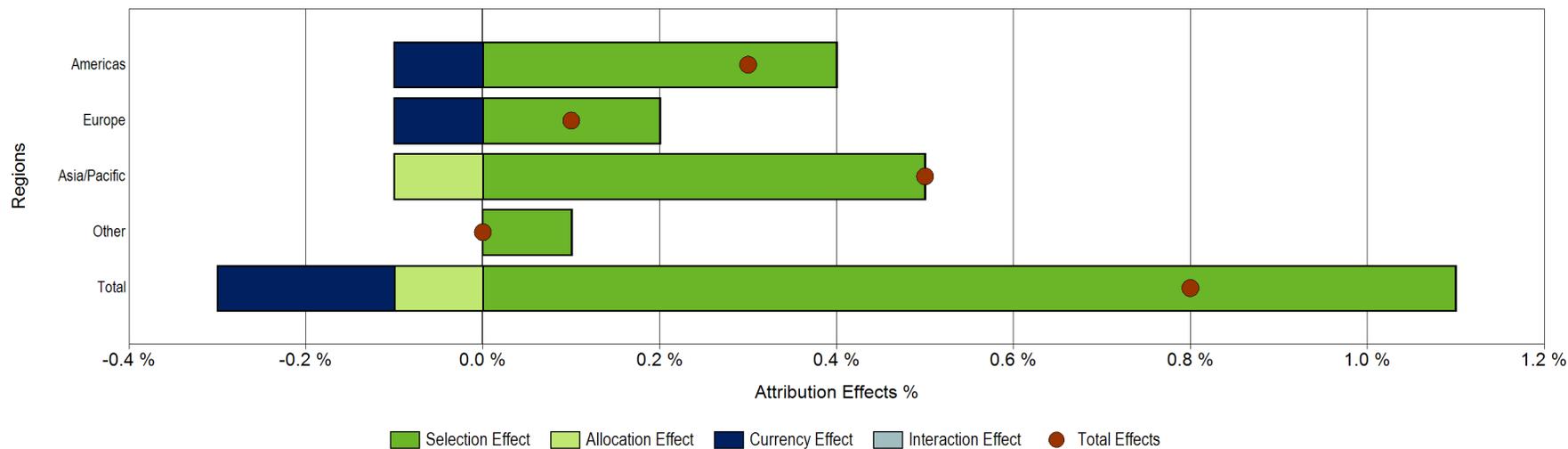
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



Howard County Retirement Plans

TOTAL EQUITY COMPOSITE

Total Equity Composite Performance Attribution vs. MSCI ACWI IMI Net USD



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Totals									
Americas	4.6%	4.1%	58.9%	59.1%	0.4%	0.0%	-0.1%	0.0%	0.3%
Europe	5.6%	4.9%	17.2%	19.6%	0.2%	0.0%	-0.1%	0.0%	0.1%
Asia/Pacific	2.9%	0.6%	22.0%	20.1%	0.5%	-0.1%	0.0%	0.0%	0.5%
Other	9.9%	4.1%	0.6%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	4.4%	3.6%	100.0%	100.0%	1.1%	-0.1%	-0.2%	0.0%	0.8%
Totals									
Developed	4.4%	3.9%	86.9%	88.6%	0.5%	0.0%	-0.1%	0.0%	0.3%
Emerging*	5.1%	0.6%	11.6%	11.4%	0.5%	0.0%	0.0%	0.0%	0.5%
Cash	0.6%	--	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Howard County Retirement Plans

TOTAL EQUITY COMPOSITE

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
Americas				
Brazil*	0.9%	0.8%	9.4%	7.6%
Canada	0.2%	3.1%	2.9%	4.8%
Chile*	0.1%	0.1%	-4.7%	-3.8%
Colombia*	0.0%	0.1%	-3.0%	-1.7%
Mexico*	0.4%	0.3%	2.6%	1.5%
United States	57.3%	54.7%	4.6%	4.0%
Total-Americas	58.9%	59.1%	4.6%	4.1%
Europe				
Czech Republic*	0.0%	0.0%	2.9%	4.0%
Denmark	0.6%	0.6%	2.1%	1.4%
Finland	0.2%	0.3%	17.1%	1.6%
France	1.2%	3.1%	6.7%	7.3%
Germany	2.5%	2.5%	11.0%	7.5%
Greece*	0.0%	0.0%	21.9%	23.3%
Hungary*	0.0%	0.0%	-0.3%	-4.0%
Ireland	0.2%	0.2%	17.4%	3.7%
Italy	0.8%	0.8%	3.3%	3.2%
Luxembourg	0.0%	0.0%	-20.5%	3.6%
Netherlands	1.0%	1.1%	5.6%	6.3%
Poland*	0.1%	0.1%	1.3%	4.0%
Portugal	0.3%	0.1%	11.8%	3.3%
Russia*	0.3%	0.4%	18.3%	16.6%
Spain	1.1%	0.9%	5.7%	2.6%
Sweden	1.5%	0.9%	5.2%	5.6%
Switzerland	1.5%	2.5%	11.0%	8.9%
United Kingdom	5.8%	5.3%	0.7%	0.8%
Total-Europe	17.2%	19.6%	5.6%	4.9%

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
AsiaPacific				
Australia	1.0%	2.2%	8.9%	6.8%
China*	1.8%	3.5%	8.5%	-3.8%
Hong Kong	3.6%	1.2%	1.5%	0.6%
India*	3.1%	1.1%	3.8%	-0.2%
Indonesia*	0.8%	0.3%	6.3%	3.2%
Japan	6.3%	7.7%	-0.3%	0.7%
Korea*	1.3%	1.6%	-0.8%	-2.3%
Malaysia*	0.3%	0.3%	1.2%	1.5%
Philippines*	0.1%	0.1%	5.5%	4.5%
Singapore	1.8%	0.4%	6.7%	6.6%
Taiwan*	1.3%	1.4%	1.4%	0.9%
Thailand*	0.7%	0.3%	9.4%	10.1%
Total-AsiaPacific	22.0%	20.1%	2.9%	0.6%
Other				
Israel	0.0%	0.2%	11.8%	1.0%
South Africa*	0.4%	0.7%	10.8%	6.3%
Turkey*	0.1%	0.1%	2.7%	3.0%
Total-Other	0.6%	1.2%	9.9%	4.1%
Totals				
Developed	86.9%	88.6%	4.4%	3.9%
Emerging*	11.6%	11.4%	5.1%	0.6%
Cash	1.4%		0.6%	

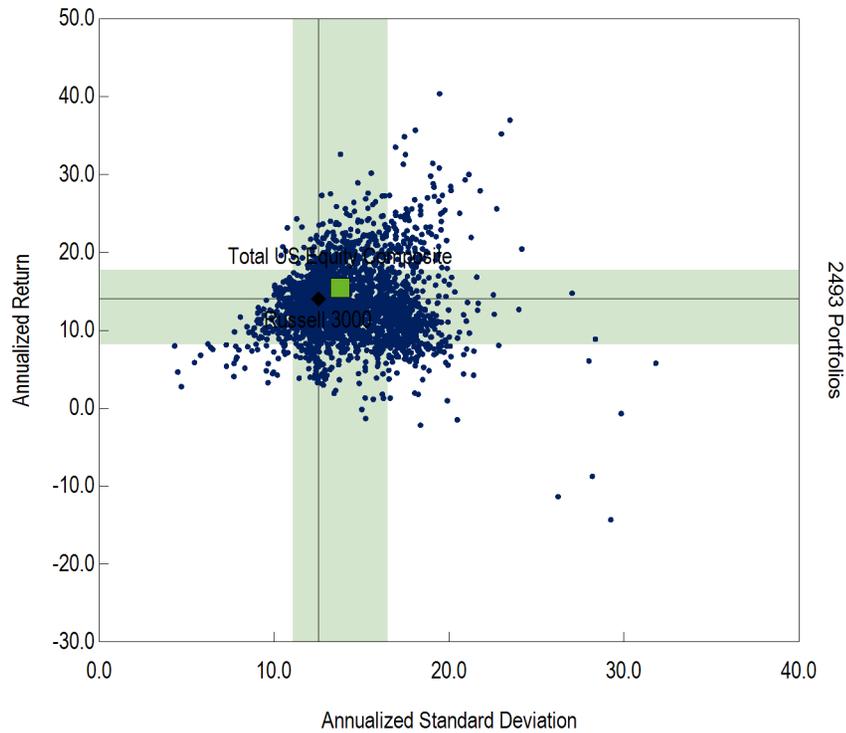
Country* = Emerging Markets



Howard County Retirement Plans

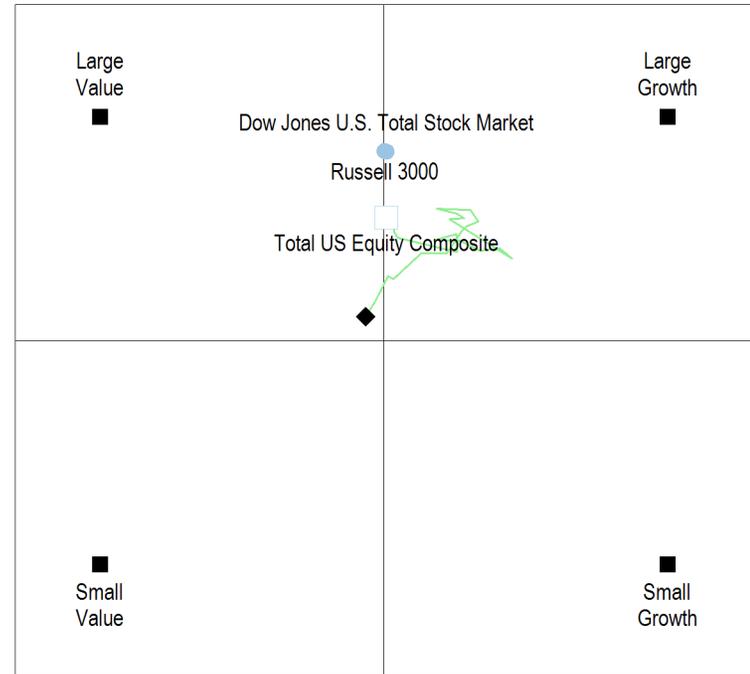
TOTAL US EQUITY COMPOSITE

3 Year Risk Return



- Total US Equity Composite
- ◆ Russell 3000
- 68% Confidence Interval
- eV All US Equity Gross

3 Year Style Analysis



- First Rolling Period
- ◆ Last Rolling Period

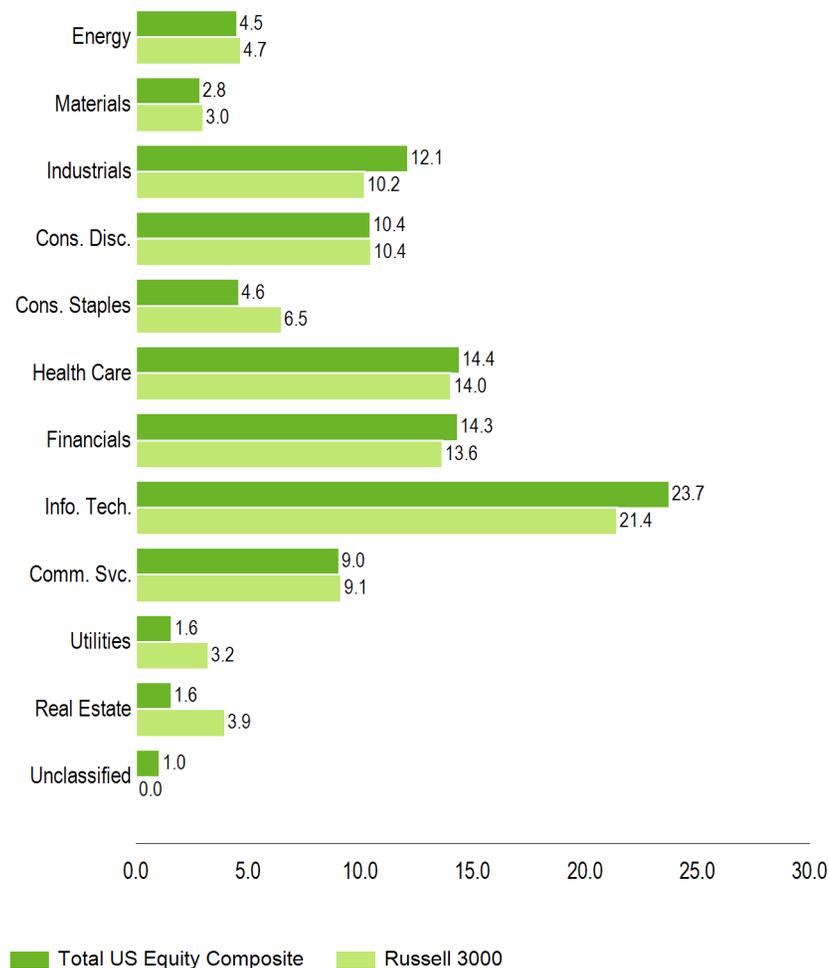


Howard County Retirement Plans

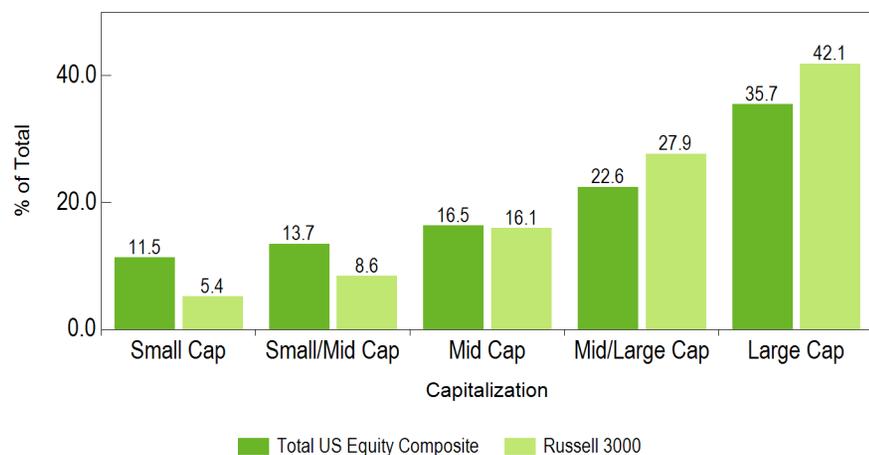
TOTAL US EQUITY COMPOSITE

Characteristics		
	Portfolio	Russell 3000
Number of Holdings	537	2,954
Weighted Avg. Market Cap. (\$B)	155.3	190.7
Median Market Cap. (\$B)	12.9	1.6
Price To Earnings	18.6	20.5
Price To Book	3.3	3.4
Price To Sales	1.6	1.9
Return on Equity (%)	23.4	21.8
Yield (%)	1.7	1.9
Beta	1.1	1.0
R-Squared	1.0	1.0

Equity Sector Allocation



Market Capitalization As of June 30, 2019



Howard County Retirement Plans

TOTAL US EQUITY COMPOSITE

Top Ten Holdings	
AMAZON.COM	2.6%
APPLE	2.4%
MICROSOFT	2.3%
VISA 'A'	1.5%
FACEBOOK CLASS A	1.5%
BANK OF AMERICA	1.3%
JP MORGAN CHASE & CO.	1.2%
ALPHABET 'C'	1.1%
ALPHABET A	1.1%
HOME DEPOT	1.1%

Top Positive Contributors		
	Relative Contribution %	Return %
VEEVA SYSTEMS CL.A	0.1%	27.8%
PROS HOLDINGS	0.1%	49.8%
INGERSOLL-RAND	0.1%	17.8%
METTLER TOLEDO INTL.	0.1%	16.2%
MANHATTAN ASSOCS.	0.1%	25.8%
PAYCOM SOFTWARE	0.1%	19.9%
COOPER COS.	0.1%	13.7%
APPLIED MATS.	0.1%	13.8%
SERVICENOW	0.1%	11.4%
MARRIOTT INTL.'A'	0.1%	12.6%

Top Negative Contributors		
	Relative Contribution %	Return %
MICROSOFT	-0.2%	14.0%
FACEBOOK CLASS A	-0.1%	15.8%
KOHL'S	-0.1%	-29.9%
INOGEN	-0.1%	-30.0%
BERKSHIRE HATHAWAY 'B'	-0.1%	6.1%
WALMART	-0.1%	13.9%
FOOT LOCKER	-0.1%	-30.4%
QUALCOMM	0.0%	34.6%
PURE STORAGE CL.A	0.0%	-29.9%
LINDE	0.0%	14.7%

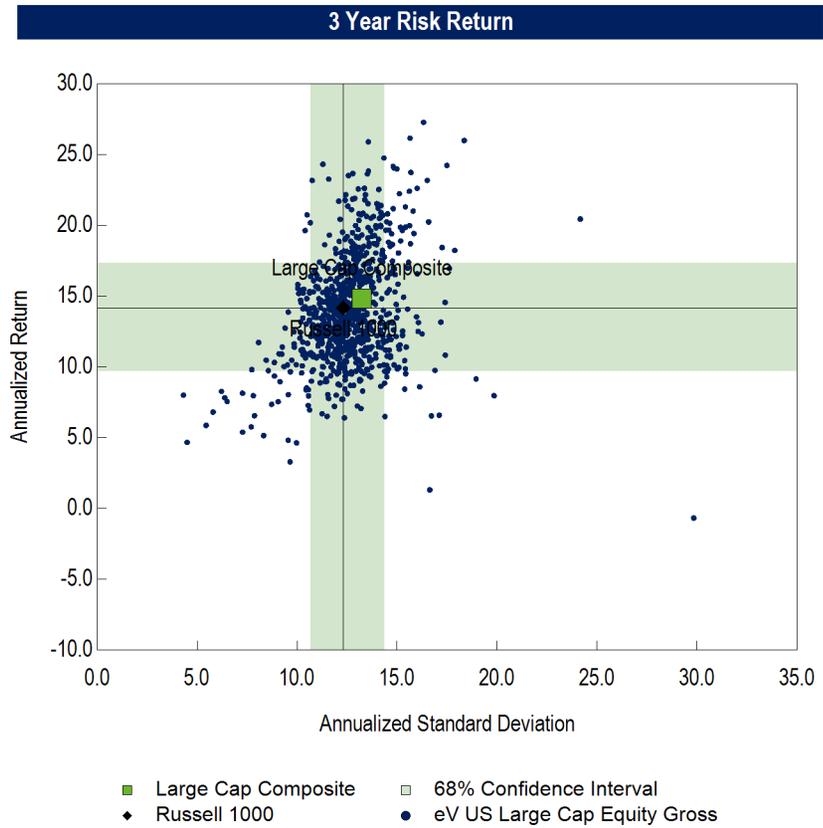
Equity Sector Attribution									
	Attribution Effects				Returns		Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark	
Energy	0.1%	0.1%	0.0%	0.0%	-2.5%	-3.8%	4.7%	5.1%	
Materials	-0.1%	-0.1%	0.0%	0.0%	2.8%	5.0%	3.1%	2.9%	
Industrials	0.1%	0.1%	0.0%	0.0%	5.7%	4.6%	11.9%	10.1%	
Consumer Discretionary	0.0%	0.0%	0.0%	0.0%	4.4%	4.6%	10.9%	10.4%	
Consumer Staples	-0.2%	-0.3%	0.0%	0.1%	-1.6%	3.3%	4.0%	6.5%	
Health Care	0.3%	0.3%	0.0%	0.0%	3.7%	1.5%	15.1%	14.4%	
Financials	0.1%	0.1%	0.0%	0.0%	8.2%	7.6%	13.1%	13.2%	
Information Technology	0.0%	0.0%	0.0%	0.0%	5.7%	5.7%	23.7%	21.1%	
Communication Services	0.0%	0.0%	0.0%	0.0%	4.8%	4.4%	8.3%	9.1%	
Utilities	0.0%	-0.1%	0.0%	0.0%	1.2%	3.6%	1.6%	3.2%	
Real Estate	0.0%	-0.1%	0.0%	0.0%	-0.3%	1.7%	2.5%	4.0%	
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.2%	0.0%	
Portfolio	0.3%	=	0.0%	+	0.1%	+	0.2%	4.4%	4.1%
								100.0%	100.0%

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



Howard County Retirement Plans

LARGE CAP COMPOSITE

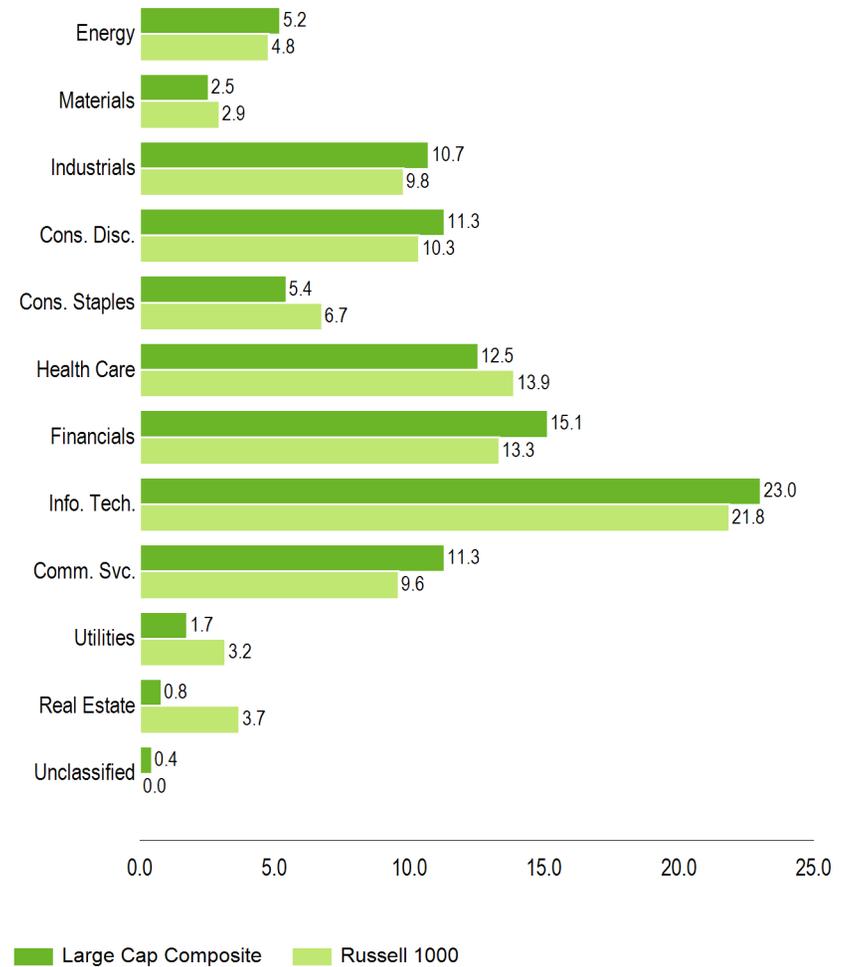


Howard County Retirement Plans

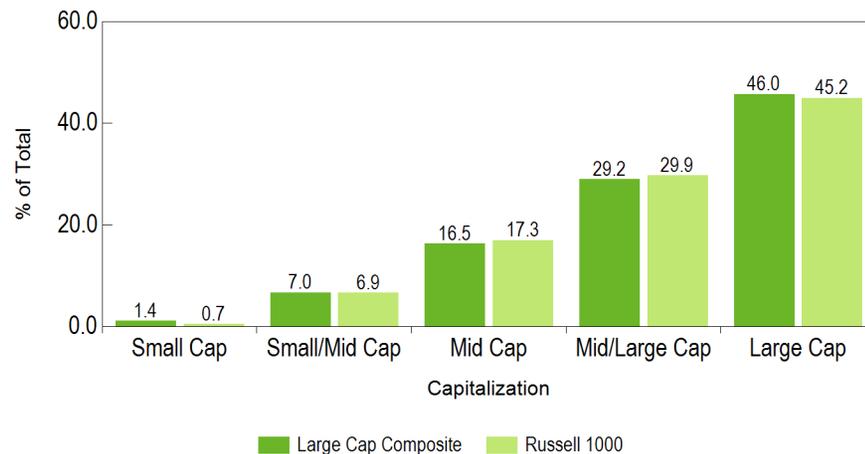
LARGE CAP COMPOSITE

Characteristics		
	Portfolio	Russell 1000
Number of Holdings	332	977
Weighted Avg. Market Cap. (\$B)	198.6	204.6
Median Market Cap. (\$B)	29.6	10.3
Price To Earnings	17.4	20.6
Price To Book	3.3	3.5
Price To Sales	1.5	2.0
Return on Equity (%)	25.8	24.9
Yield (%)	2.0	1.9
Beta	1.1	1.0
R-Squared	1.0	1.0

Equity Sector Allocation



Market Capitalization As of June 30, 2019



Howard County Retirement Plans

LARGE CAP COMPOSITE

Top Ten Holdings	
AMAZON.COM	3.3%
APPLE	3.1%
MICROSOFT	3.0%
VISA 'A'	2.0%
FACEBOOK CLASS A	1.9%
BANK OF AMERICA	1.7%
JP MORGAN CHASE & CO.	1.5%
ALPHABET 'C'	1.4%
ALPHABET A	1.4%
HOME DEPOT	1.4%

Top Positive Contributors		
	Relative Contribution %	Return %
INGERSOLL-RAND	0.1%	17.8%
METTLER TOLEDO INTL.	0.1%	16.2%
COOPER COS.	0.1%	13.7%
APPLIED MATS.	0.1%	13.8%
SERVICENOW	0.1%	11.4%
VISA 'A'	0.1%	11.3%
MARRIOTT INTL.'A'	0.1%	12.6%
CHARTER COMMS.CLA	0.1%	13.9%
AMETEK	0.1%	9.7%
PROGRESSIVE OHIO	0.1%	11.0%

Top Negative Contributors		
	Relative Contribution %	Return %
KOHL'S	-0.1%	-29.9%
MICROSOFT	-0.1%	14.0%
FACEBOOK CLASS A	-0.1%	15.8%
FOOT LOCKER	-0.1%	-30.4%
BERKSHIRE HATHAWAY 'B'	-0.1%	6.1%
WALMART	-0.1%	13.9%
WALGREENS BOOTS ALLIANCE	-0.1%	-12.9%
MARATHON PETROLEUM	0.0%	-5.7%
LINDE	0.0%	14.7%
QUALCOMM	0.0%	34.6%

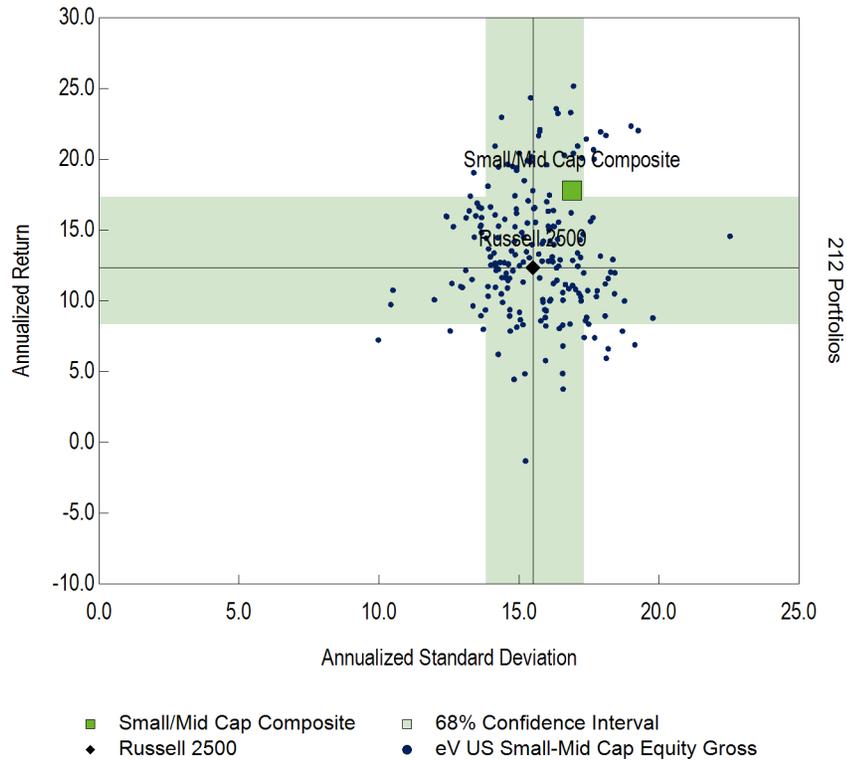
Equity Sector Attribution											
	Total Effects	Selection Effect	Attribution Effects				Returns		Sector Weights		
			Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.0%	0.0%	0.0%	-2.9%	-3.6%	5.5%	5.2%			
Materials	-0.2%	-0.2%	0.0%	0.0%	-0.4%	5.6%	2.6%	2.9%			
Industrials	0.0%	0.0%	0.0%	0.0%	3.9%	4.2%	10.3%	9.8%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	4.3%	5.0%	11.8%	10.3%			
Consumer Staples	-0.2%	-0.2%	0.0%	0.1%	-0.1%	3.5%	4.6%	6.8%			
Health Care	0.1%	0.1%	0.0%	0.0%	2.0%	1.6%	13.6%	14.2%			
Financials	0.1%	0.1%	0.0%	0.0%	8.6%	7.9%	13.6%	12.9%			
Information Technology	-0.1%	-0.1%	0.0%	0.0%	5.4%	5.9%	22.9%	21.5%			
Communication Services	0.0%	0.0%	0.0%	0.0%	4.8%	4.6%	10.3%	9.5%			
Utilities	0.0%	-0.1%	0.0%	0.0%	0.4%	3.4%	1.8%	3.2%			
Real Estate	0.0%	-0.1%	0.0%	0.0%	0.5%	1.8%	2.0%	3.8%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.1%	0.0%			
Portfolio	-0.3%	=	-0.6%	+	0.1%	+	0.1%	3.9%	4.3%	100.0%	100.0%

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.

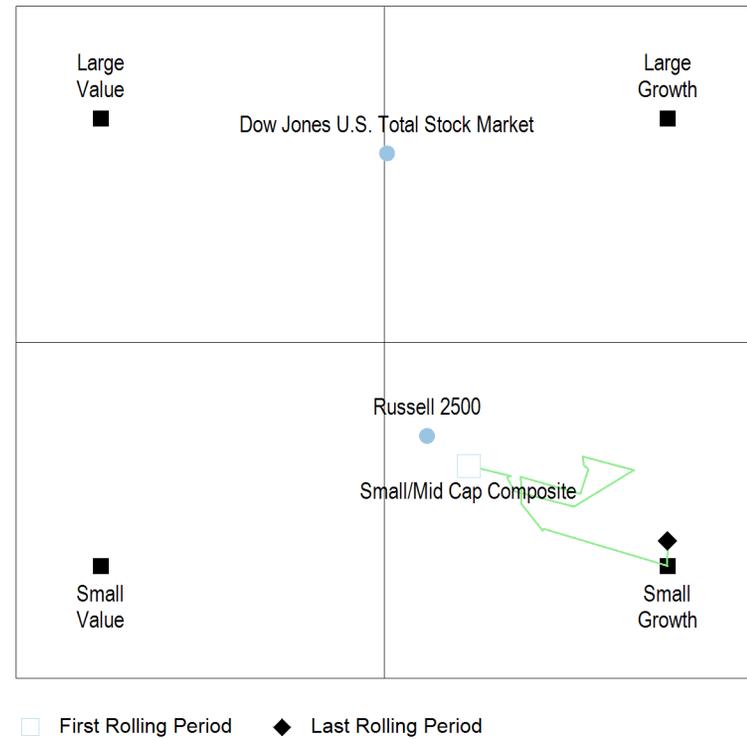


SMALL/MID CAP COMPOSITE

3 Year Risk Return



3 Year Style Analysis

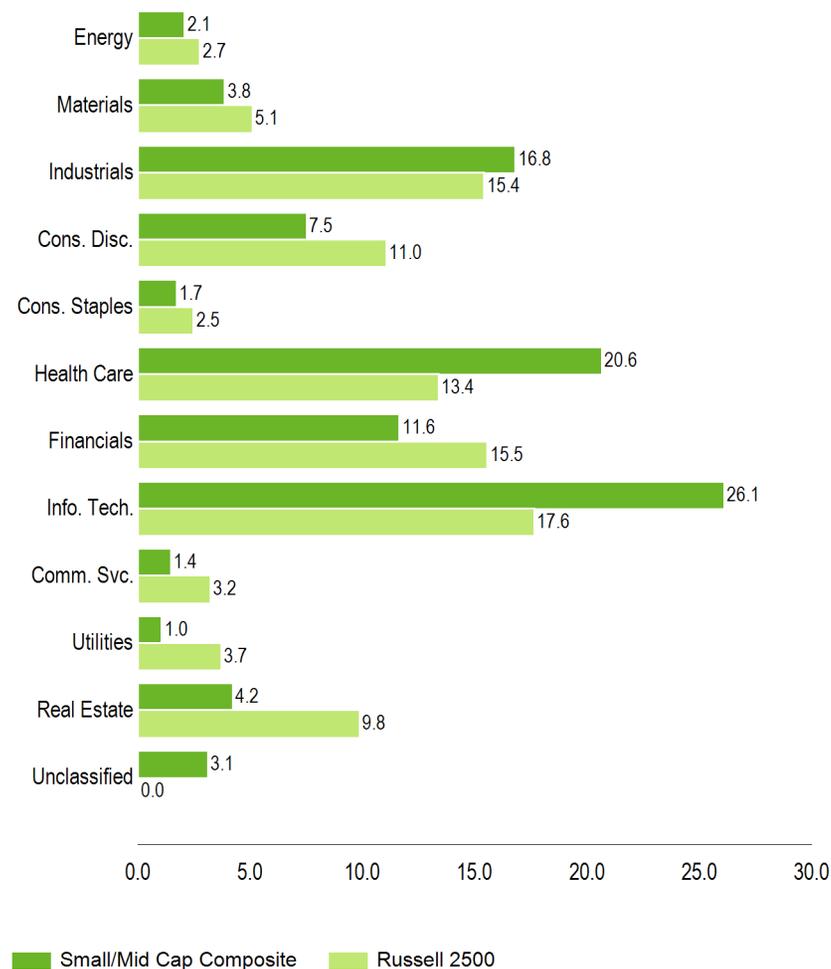


Howard County Retirement Plans

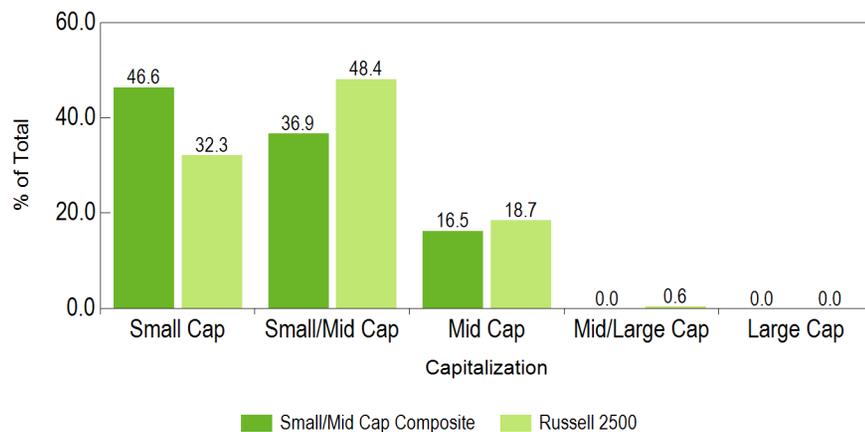
SMALL/MID CAP COMPOSITE

Characteristics		
	Portfolio	Russell 2500
Number of Holdings	211	2,448
Weighted Avg. Market Cap. (\$B)	5.2	5.7
Median Market Cap. (\$B)	2.4	1.1
Price To Earnings	26.0	20.3
Price To Book	3.3	2.7
Price To Sales	1.7	1.3
Return on Equity (%)	13.8	8.8
Yield (%)	0.9	1.6
Beta	1.1	1.0
R-Squared	1.0	1.0

Equity Sector Allocation



Market Capitalization As of June 30, 2019



Howard County Retirement Plans

SMALL/MID CAP COMPOSITE

Top Ten Holdings	
CASH - USD	3.1%
PAYCOM SOFTWARE	1.6%
VEEVA SYSTEMS CL.A	1.6%
ABIOMED	1.4%
TYLER TECHNOLOGIES	1.3%
GUIDEWIRE SOFTWARE	1.3%
PROS HOLDINGS	1.3%
ANSYS	1.3%
MANHATTAN ASSOCS.	1.3%
PROTO LABS	1.3%

Top Positive Contributors		
	Relative Contribution %	Return %
VEEVA SYSTEMS CL.A	0.6%	27.8%
PROS HOLDINGS	0.4%	49.8%
MANHATTAN ASSOCS.	0.3%	25.8%
PAYCOM SOFTWARE	0.3%	19.9%
COPART	0.2%	23.4%
COSTAR GP.	0.2%	18.8%
BALL	0.2%	21.3%
MEDIDATA SOLUTIONS	0.2%	23.6%
ALTERYX 'A'	0.2%	30.1%
NEXTGEN HEALTHCARE	0.2%	18.2%

Top Negative Contributors		
	Relative Contribution %	Return %
INOGEN	-0.3%	-30.0%
PURE STORAGE CL.A	-0.2%	-29.9%
CONDUENT	-0.1%	-30.7%
2U	-0.1%	-46.9%
QUIDEL	-0.1%	-9.4%
ABIOMED	-0.1%	-8.8%
ALARMCOM HOLDINGS	-0.1%	-17.6%
EDGEWELL PERSONAL CARE	-0.1%	-38.6%
NETSCOUT SYSTEMS	-0.1%	-9.5%
WHITING PETROLEUM	-0.1%	-28.5%

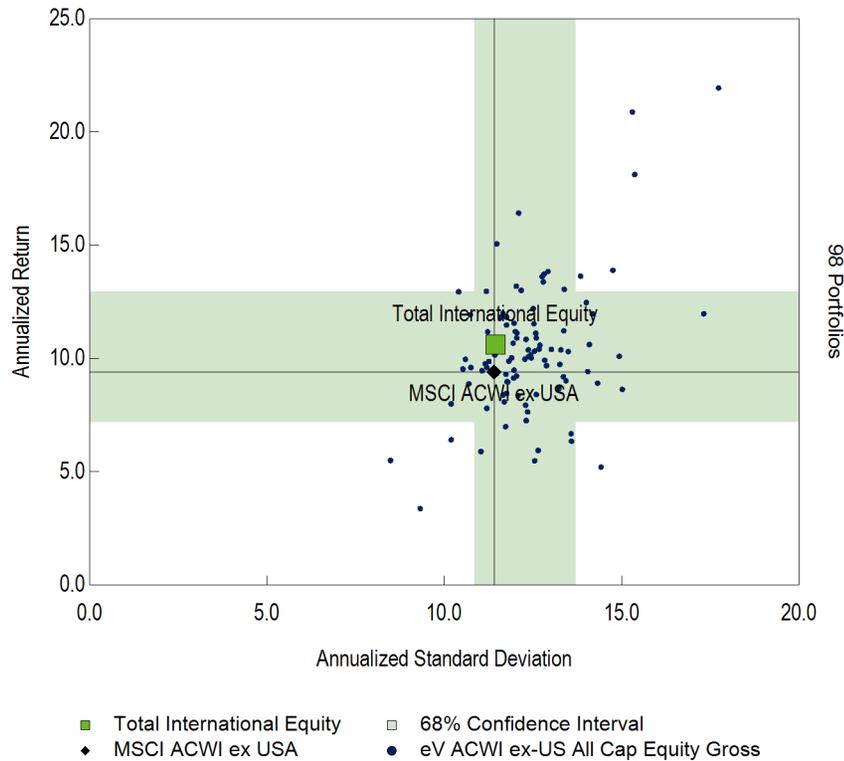
Equity Sector Attribution											
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.4%	0.4%	0.2%	-0.1%		0.3%	-11.7%	2.2%	3.2%		
Materials	0.4%	0.4%	0.0%	0.0%		8.8%	0.6%	4.8%	5.2%		
Industrials	0.4%	0.3%	0.1%	0.0%		9.2%	7.4%	17.3%	14.9%		
Consumer Discretionary	0.3%	0.3%	0.1%	-0.1%		4.5%	1.5%	7.5%	11.2%		
Consumer Staples	-0.1%	-0.2%	0.0%	0.1%		-13.7%	-4.4%	2.0%	2.6%		
Health Care	1.0%	0.7%	0.0%	0.4%		7.7%	2.4%	20.4%	13.4%		
Financials	-0.1%	0.0%	-0.1%	0.0%		6.5%	6.3%	11.4%	15.1%		
Information Technology	0.6%	0.3%	0.2%	0.1%		6.5%	4.9%	26.4%	17.2%		
Communication Services	0.1%	0.2%	0.0%	-0.1%		7.4%	1.1%	1.2%	3.3%		
Utilities	0.1%	0.2%	0.1%	-0.1%		5.8%	1.0%	1.1%	3.7%		
Real Estate	0.1%	-0.2%	0.2%	0.1%		-1.5%	0.0%	4.3%	10.1%		
Cash	0.0%	0.0%	0.0%	0.0%		0.6%	--	1.5%	0.0%		
Portfolio	3.2%	=	2.4%	+	0.6%	+	0.2%	6.2%	3.0%	100.0%	100.0%

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



TOTAL INTERNATIONAL EQUITY

3 Year Risk Return



3 Year Style Analysis



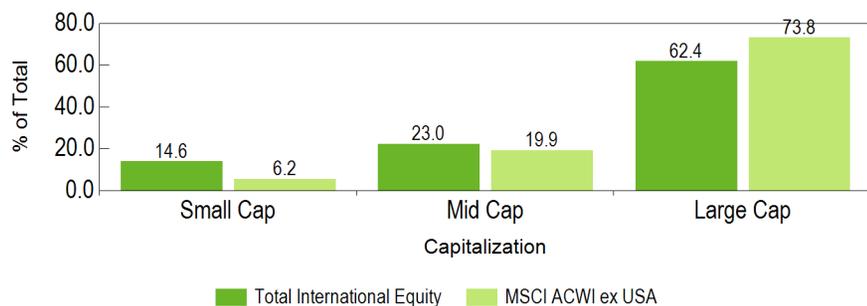
Howard County Retirement Plans

TOTAL INTERNATIONAL EQUITY

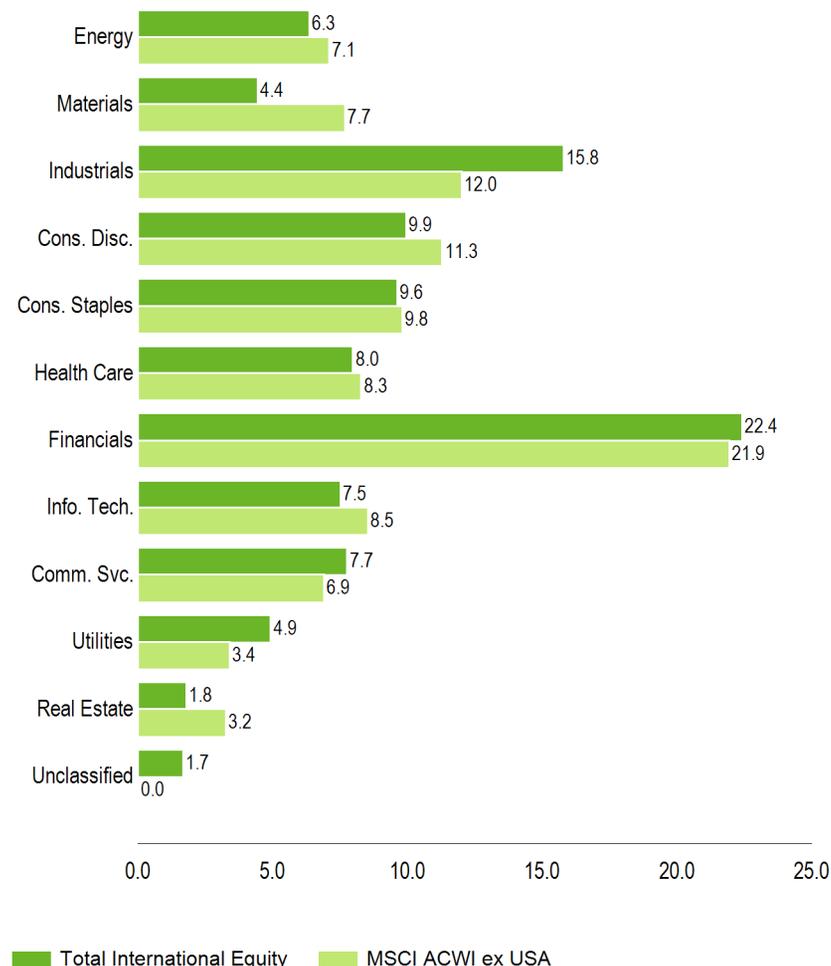
Characteristics		
	Portfolio	MSCI ACWI ex USA
Number of Holdings	2,663	2,204
Weighted Avg. Market Cap. (\$B)	41.7	65.4
Median Market Cap. (\$B)	0.4	7.6
Price To Earnings	16.5	15.0
Price To Book	2.3	2.3
Price To Sales	1.1	1.2
Return on Equity (%)	14.1	15.3
Yield (%)	2.9	3.2
Beta	1.0	1.0
R-Squared	1.0	1.0

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	6.65	10.59
Europe	40.71	43.33
Asia/Pacific	51.50	43.24
Other	1.15	2.84

**Market Capitalization
As of June 30, 2019**



Equity Sector Allocation



Howard County Retirement Plans

TOTAL INTERNATIONAL EQUITY

Top Ten Holdings	
AIA GROUP	2.1%
UNITED OVERSEAS BANK	1.7%
CASH - USD	1.5%
HOUSING DEVELOPMENT FINANCE CORPORATION	1.4%
HDFC BANK ADR 1:3	1.2%
METTLER TOLEDO INTL.	1.2%
HARGREAVES LANSDOWN	1.1%
BANK CENTRAL ASIA	1.0%
COCHLEAR	0.9%
RELIANCE INDUSTRIES	0.9%

Top Positive Contributors		
	Relative Contribution %	Return %
ADIDAS	0.2%	28.1%
METTLER TOLEDO INTL.	0.2%	16.2%
COCHLEAR	0.1%	17.9%
AIA GROUP	0.1%	9.7%
HDFC BANK ADR 1:3	0.1%	12.8%
HOUSING DEVELOPMENT FINANCE CORPORATION	0.1%	11.8%
SARTORIUS SHS.PREF.	0.1%	19.0%
ATLAS COPCO A	0.1%	20.1%
WULIANGYE ORD A	0.1%	23.6%
KWEICHOW MOUTAI 'A'	0.1%	14.4%

Top Negative Contributors		
	Relative Contribution %	Return %
ASOS	-0.1%	-22.2%
WOOD GROUP (JOHN)	-0.1%	-9.9%
TAKEDA PHARMACEUTICAL	-0.1%	-13.1%
INFINEON TECHNOLOGIES	-0.1%	-10.2%
SHIMANO	-0.1%	-8.1%
RELIANCE INDUSTRIES	-0.1%	-7.8%
LLOYDS BANKING GROUP	-0.1%	-8.0%
SSE	0.0%	-7.7%
SAMSUNG FIRE & MAR.IN.	0.0%	-12.5%
CHINA MOBILE	0.0%	-8.9%

	Equity Sector Attribution										
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	-0.2%	-0.2%	0.0%	0.0%		-3.1%	0.7%	6.8%	7.4%		
Materials	0.0%	0.0%	0.0%	0.0%		2.7%	3.1%	4.5%	7.6%		
Industrials	0.5%	0.4%	0.1%	0.0%		8.0%	5.4%	14.5%	11.8%		
Consumer Discretionary	-0.1%	0.0%	0.0%	0.0%		3.4%	4.0%	10.4%	11.0%		
Consumer Staples	0.1%	0.1%	0.0%	0.0%		3.9%	2.4%	9.3%	9.9%		
Health Care	0.3%	0.3%	0.0%	0.0%		5.2%	1.3%	7.7%	8.4%		
Financials	0.2%	0.2%	0.0%	-0.1%		5.5%	4.7%	23.3%	21.7%		
Information Technology	-0.1%	-0.1%	0.0%	0.0%		2.8%	4.1%	7.0%	8.4%		
Communication Services	0.2%	0.2%	0.0%	0.0%		3.3%	1.0%	7.7%	7.0%		
Utilities	0.1%	0.1%	0.0%	0.1%		5.1%	2.3%	5.1%	3.4%		
Real Estate	0.2%	0.3%	0.1%	-0.2%		6.1%	-1.6%	1.9%	3.4%		
Cash	0.0%	0.0%	0.0%	0.0%		0.6%	--	1.8%	0.0%		
Portfolio	1.1%	=	1.3%	+	0.1%	+	-0.3%	4.3%	3.2%	100.0%	100.0%

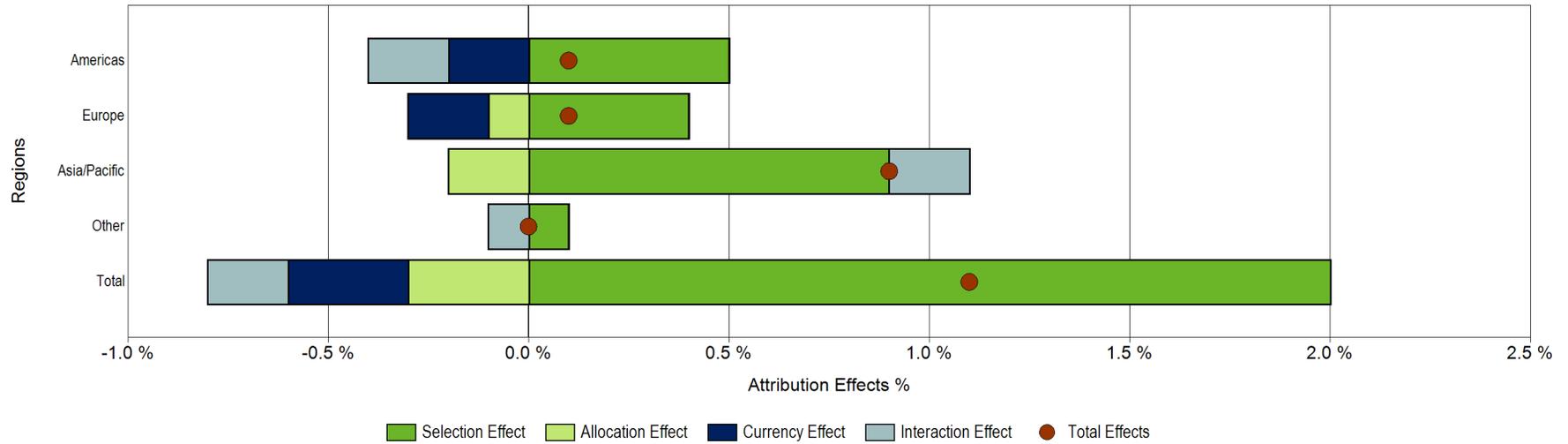
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



Howard County Retirement Plans

TOTAL INTERNATIONAL EQUITY

Total International Equity Performance Attribution vs. MSCI ACWI ex USA



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Totals									
Americas	8.4%	4.7%	4.9%	9.8%	0.5%	0.0%	-0.2%	-0.2%	0.1%
Europe	5.6%	5.1%	40.4%	43.7%	0.4%	-0.1%	-0.2%	0.0%	0.1%
Asia/Pacific	2.9%	0.9%	51.8%	44.0%	0.9%	-0.2%	0.0%	0.2%	0.9%
Other	9.7%	3.9%	1.2%	2.5%	0.1%	0.0%	0.0%	-0.1%	0.0%
Cash	0.6%	--	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	4.3%	3.2%	100.0%	100.0%	2.0%	-0.3%	-0.3%	-0.2%	1.1%
Totals									
Developed	4.1%	4.0%	70.8%	74.0%	0.3%	0.0%	-0.3%	0.0%	0.0%
Emerging*	5.1%	0.8%	27.4%	26.0%	1.2%	0.0%	0.0%	0.1%	1.2%
Cash	0.6%	--	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Howard County Retirement Plans

TOTAL INTERNATIONAL EQUITY

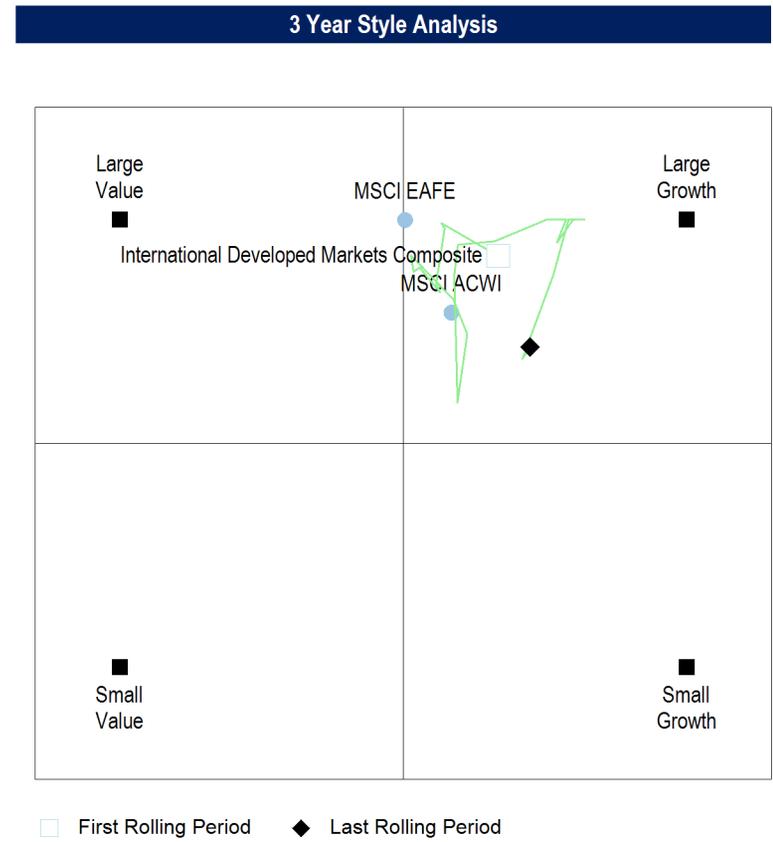
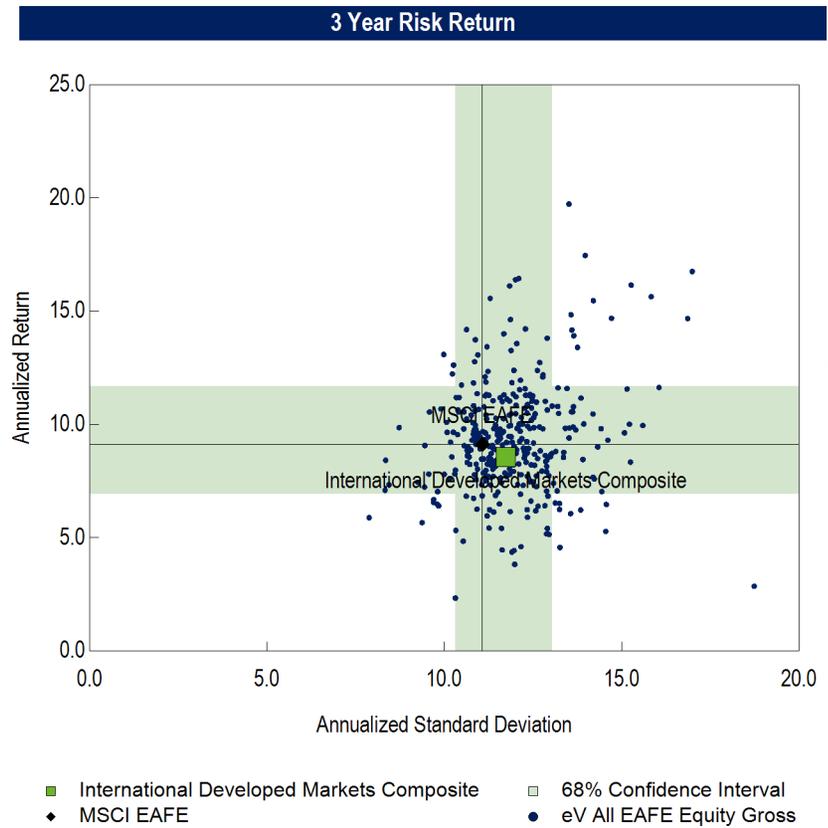
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
Americas				
Brazil*	2.0%	1.8%	9.4%	7.2%
Chile*	0.2%	0.3%	-4.7%	-4.7%
Colombia*	0.0%	0.1%	-3.0%	-2.3%
Mexico*	0.9%	0.7%	2.6%	1.4%
United States	1.7%	0.0%	12.4%	4.2%
Total-Americas	4.9%	9.8%	8.4%	4.7%
Europe				
Czech Republic*	0.0%	0.0%	2.9%	3.9%
Denmark	1.4%	1.2%	2.1%	1.9%
Finland	0.5%	0.7%	17.1%	1.0%
France	2.8%	7.5%	6.7%	7.3%
Germany	5.8%	5.7%	10.9%	7.8%
Greece*	0.0%	0.1%	21.9%	16.9%
Hungary*	0.0%	0.1%	-0.3%	-4.2%
Ireland	0.5%	0.4%	17.4%	4.7%
Italy	2.0%	1.6%	3.3%	3.5%
Luxembourg	0.0%	0.0%	-20.5%	3.2%
Netherlands	2.3%	2.4%	5.6%	6.0%
Poland*	0.2%	0.3%	1.3%	3.6%
Portugal	0.6%	0.1%	11.8%	2.6%
Russia*	0.8%	1.0%	18.3%	16.7%
Spain	2.5%	2.0%	5.7%	2.5%
Sweden	3.6%	1.8%	5.2%	5.4%
Switzerland	3.6%	6.0%	11.0%	8.9%
United Kingdom	13.8%	11.5%	0.7%	0.9%
Total-Europe	40.4%	43.7%	5.6%	5.1%

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
AsiaPacific				
Australia	2.3%	4.7%	8.9%	7.4%
China*	4.2%	8.5%	8.5%	-3.8%
Hong Kong	8.5%	2.8%	1.5%	1.0%
India*	7.4%	2.4%	3.8%	0.5%
Indonesia*	1.9%	0.6%	6.3%	3.7%
Japan	14.8%	16.1%	-0.3%	1.0%
Korea*	3.1%	3.4%	-0.8%	-1.2%
Malaysia*	0.6%	0.6%	1.2%	1.3%
Philippines*	0.2%	0.3%	5.5%	4.6%
Singapore	4.1%	0.9%	6.7%	6.9%
Taiwan*	3.1%	3.0%	1.4%	1.1%
Thailand*	1.6%	0.6%	9.4%	9.8%
Total-AsiaPacific	51.8%	44.0%	2.9%	0.9%
Other				
South Africa*	1.0%	1.5%	10.8%	6.8%
Turkey*	0.2%	0.1%	2.7%	2.9%
Total-Other	1.2%	2.5%	9.7%	3.9%
Totals				
Developed	70.8%	74.0%	4.1%	4.0%
Emerging*	27.4%	26.0%	5.1%	0.8%
Cash	1.8%		0.6%	

Country* = Emerging Markets



INTERNATIONAL DEVELOPED MARKETS COMPOSITE



Howard County Retirement Plans

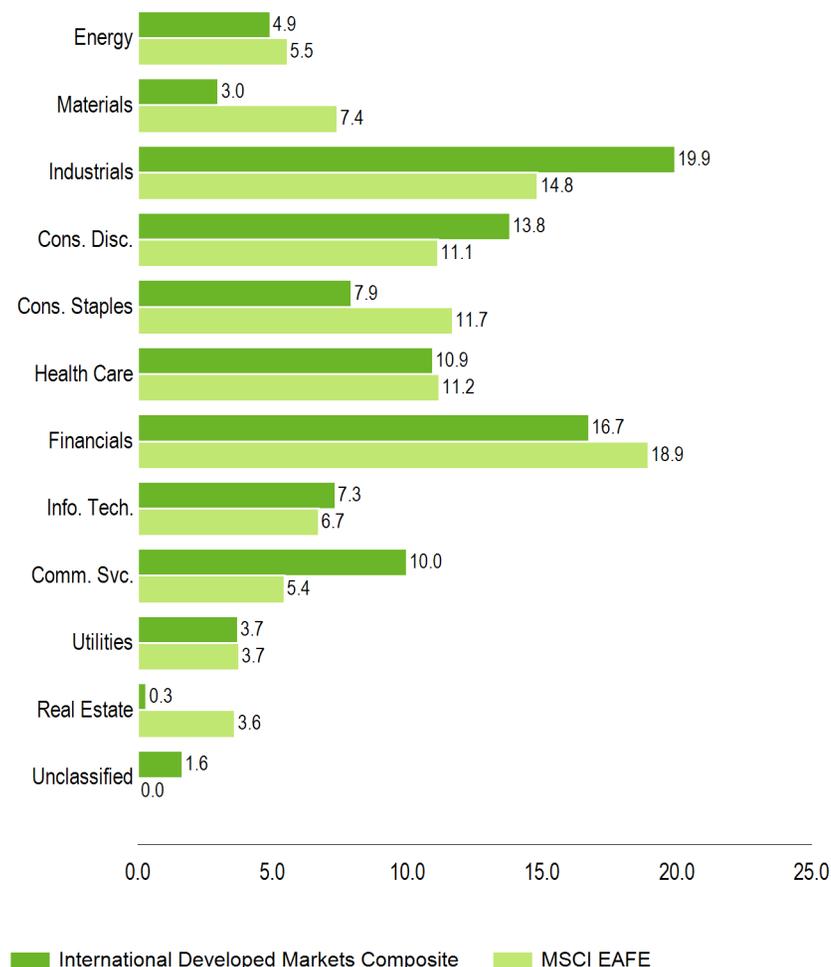
INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Characteristics		
	Portfolio	MSCI EAFE
Number of Holdings	120	922
Weighted Avg. Market Cap. (\$B)	39.9	61.2
Median Market Cap. (\$B)	20.5	10.1
Price To Earnings	17.6	15.5
Price To Book	2.4	2.3
Price To Sales	1.1	1.1
Return on Equity (%)	17.1	14.6
Yield (%)	3.0	3.4
Beta	1.0	1.0
R-Squared	1.0	1.0

Region Weighting		
	Portfolio Q2-19	Index Q2-19
Americas	4.05	0.55
Europe	57.86	62.50
Asia/Pacific	38.09	36.52
Other	--	0.42



Equity Sector Allocation



Howard County Retirement Plans

INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Top Ten Holdings	
UNITED OVERSEAS BANK	2.7%
AIA GROUP	1.9%
METTLER TOLEDO INTL.	1.8%
HARGREAVES LANSDOWN	1.6%
COCHLEAR	1.5%
CASH - USD	1.5%
ENEL	1.5%
SHISEIDO	1.5%
ROYAL DUTCH SHELL B	1.4%
SAINT GOBAIN	1.3%

Top Positive Contributors		
	Relative Contribution %	Return %
ADIDAS	0.4%	28.1%
METTLER TOLEDO INTL.	0.3%	16.2%
COCHLEAR	0.2%	17.9%
SARTORIUS SHS.PREF.	0.2%	19.0%
ATLAS COPCO A	0.2%	20.1%
UNITED OVERSEAS BANK	0.2%	6.7%
WPP	0.2%	23.9%
ALLIANZ	0.2%	12.7%
RICHEMONT N	0.1%	16.6%
SAINT GOBAIN	0.1%	12.0%

Top Negative Contributors		
	Relative Contribution %	Return %
ASOS	-0.1%	-22.2%
WOOD GROUP (JOHN)	-0.1%	-9.9%
TAKEDA PHARMACEUTICAL	-0.1%	-13.1%
INFINEON TECHNOLOGIES	-0.1%	-10.2%
SHIMANO	-0.1%	-8.1%
LLOYDS BANKING GROUP	-0.1%	-8.0%
CHINA MOBILE	-0.1%	-8.9%
SSE	-0.1%	-7.7%
SVENSKA HANDBKN.'A'	-0.1%	-6.4%
KINGFISHER	-0.1%	-7.4%

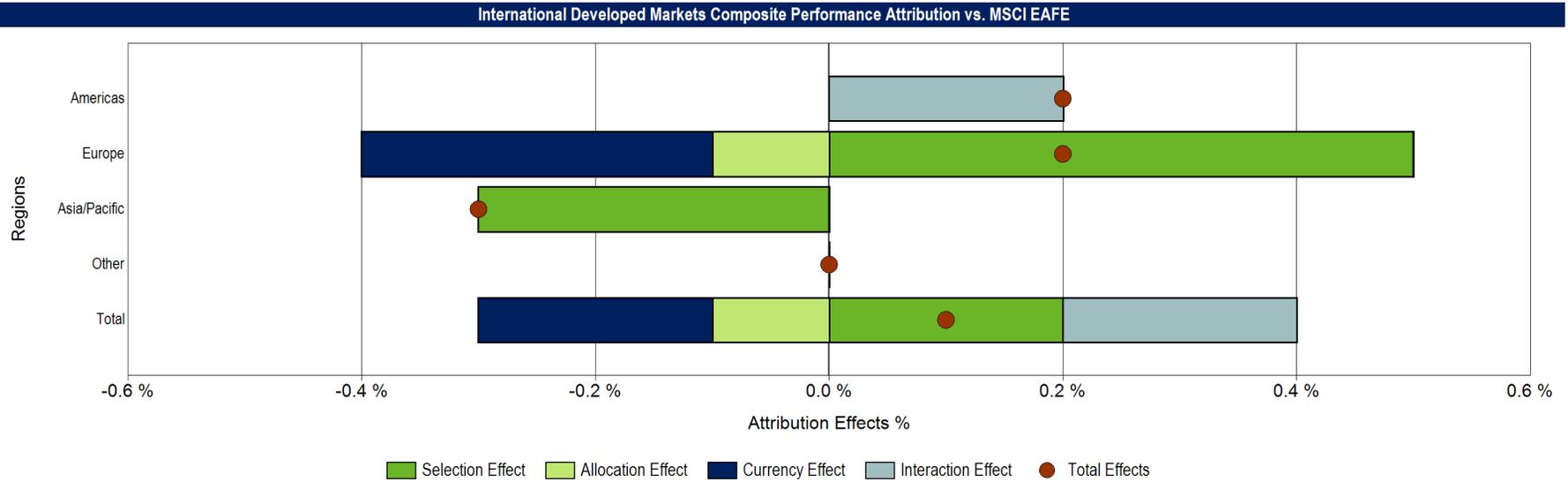
	Equity Sector Attribution										
	Attribution Effects					Returns		Sector Weights			
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	-0.1%	-0.1%	0.0%	0.0%		-2.4%	0.6%	5.4%	5.8%		
Materials	0.0%	0.1%	0.0%	-0.1%		5.4%	4.1%	3.0%	7.4%		
Industrials	0.5%	0.4%	0.1%	0.1%		8.2%	6.1%	18.0%	14.4%		
Consumer Discretionary	-0.4%	-0.4%	0.0%	-0.1%		2.4%	6.2%	13.3%	10.9%		
Consumer Staples	-0.1%	-0.3%	0.1%	0.1%		0.4%	2.3%	8.4%	11.9%		
Health Care	0.4%	0.4%	0.0%	-0.1%		5.7%	2.1%	10.8%	11.3%		
Financials	-0.2%	-0.2%	0.0%	0.0%		3.5%	4.7%	17.5%	18.9%		
Information Technology	-0.2%	-0.2%	0.0%	0.0%		3.5%	6.6%	6.5%	6.3%		
Communication Services	0.0%	0.1%	0.0%	0.0%		3.8%	4.1%	10.3%	5.4%		
Utilities	0.1%	0.1%	0.0%	0.0%		5.1%	1.8%	4.4%	3.8%		
Real Estate	0.2%	0.5%	0.2%	-0.5%		10.3%	-2.2%	0.5%	3.8%		
Cash	0.0%	0.0%	0.0%	0.0%		0.6%	--	1.9%	0.0%		
Portfolio	0.1%	=	0.4%	+	0.3%	+	-0.6%	4.0%	3.9%	100.0%	100.0%

Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



Howard County Retirement Plans

INTERNATIONAL DEVELOPED MARKETS COMPOSITE



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Totals									
Americas	12.6%	--	2.4%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Europe	5.3%	4.8%	58.3%	62.8%	0.5%	-0.1%	-0.3%	0.0%	0.2%
Asia/Pacific	1.6%	2.4%	37.4%	36.6%	-0.3%	0.0%	0.0%	0.0%	-0.3%
Other	--	-3.4%	0.0%	0.5%	--	0.0%	0.0%	--	0.0%
Cash	0.6%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	4.0%	3.9%	100.0%	100.0%	0.2%	-0.1%	-0.2%	0.2%	0.1%
Totals									
Developed	4.1%	3.9%	97.4%	100.0%	0.4%	0.0%	-0.2%	0.0%	0.2%
Emerging*	-0.2%	--	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.6%	--	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Howard County Retirement Plans

INTERNATIONAL DEVELOPED MARKETS COMPOSITE

Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
Americas				
United States	2.4%	0.0%	12.6%	4.2%
Total-Americas	2.4%	0.0%	12.6%	--
Europe				
Denmark	2.1%	1.8%	2.1%	1.9%
Finland	0.8%	1.0%	17.1%	1.0%
France	4.4%	11.2%	6.7%	7.3%
Germany	9.0%	8.5%	10.9%	7.8%
Ireland	0.8%	0.5%	17.4%	4.7%
Italy	3.1%	2.4%	3.3%	3.5%
Netherlands	1.6%	3.6%	4.9%	6.0%
Portugal	1.0%	0.2%	11.8%	2.6%
Spain	3.9%	3.0%	5.7%	2.5%
Sweden	5.5%	2.7%	5.2%	5.4%
Switzerland	5.5%	8.9%	11.0%	8.9%
United Kingdom	20.6%	17.2%	0.4%	0.9%
Total-Europe	58.3%	62.8%	5.3%	4.8%

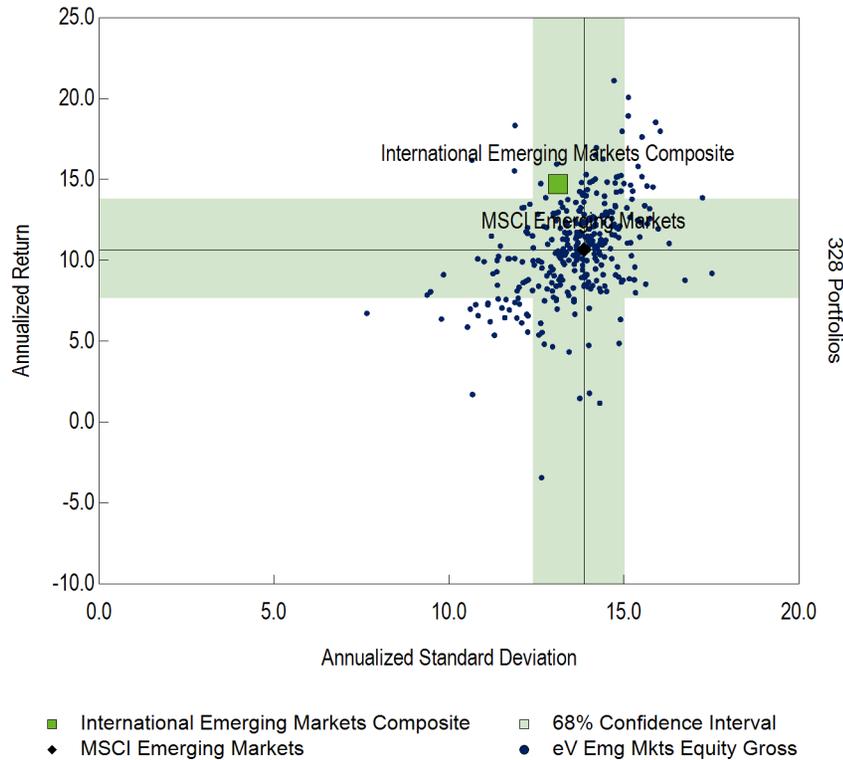
Country Allocation				
	Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
AsiaPacific				
Australia	3.5%	7.0%	8.9%	7.4%
Hong Kong	5.1%	4.1%	0.3%	1.0%
Japan	23.0%	24.0%	-0.3%	1.0%
Singapore	5.2%	1.3%	6.7%	6.9%
Taiwan*	0.7%	0.0%	-0.2%	1.1%
Total-AsiaPacific	37.4%	36.6%	1.6%	2.4%
Totals				
Developed	97.4%	100.0%	4.1%	3.9%
Emerging*	0.7%	0.0%	-0.2%	--
Cash	1.9%		0.6%	

Country* = Emerging Markets

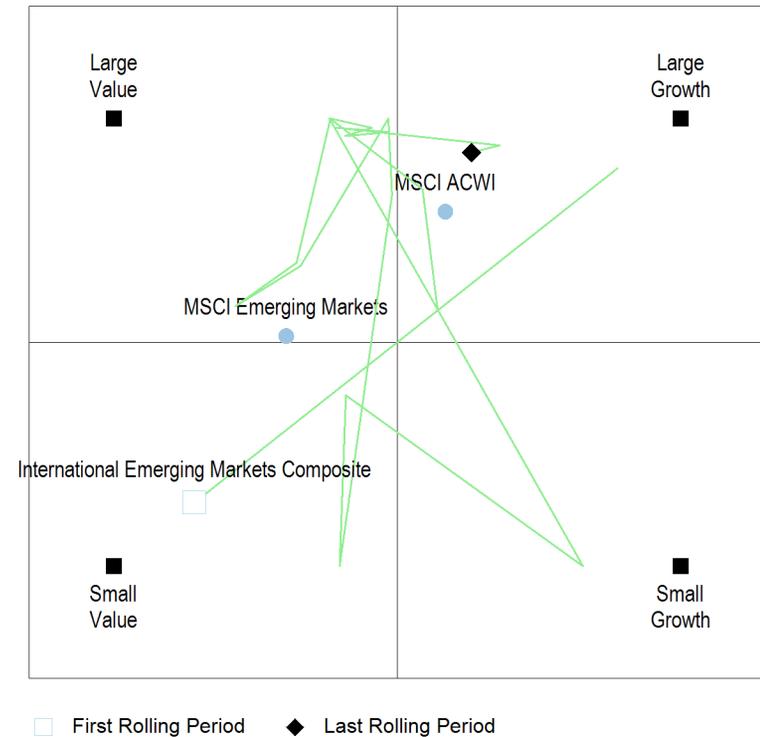


INTERNATIONAL EMERGING MARKETS COMPOSITE

3 Year Risk Return



3 Year Style Analysis

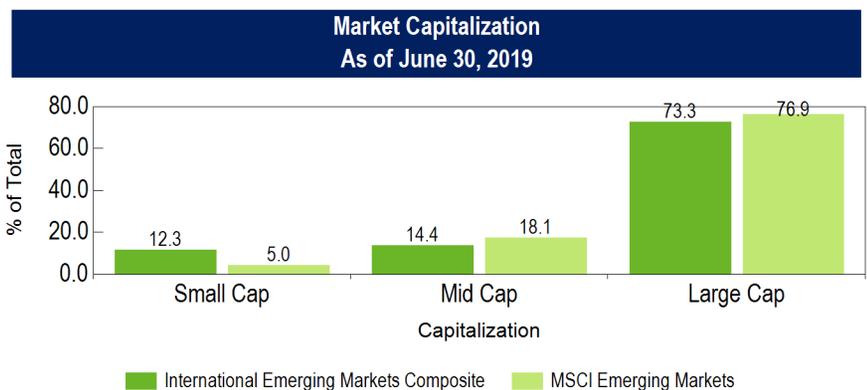


Howard County Retirement Plans

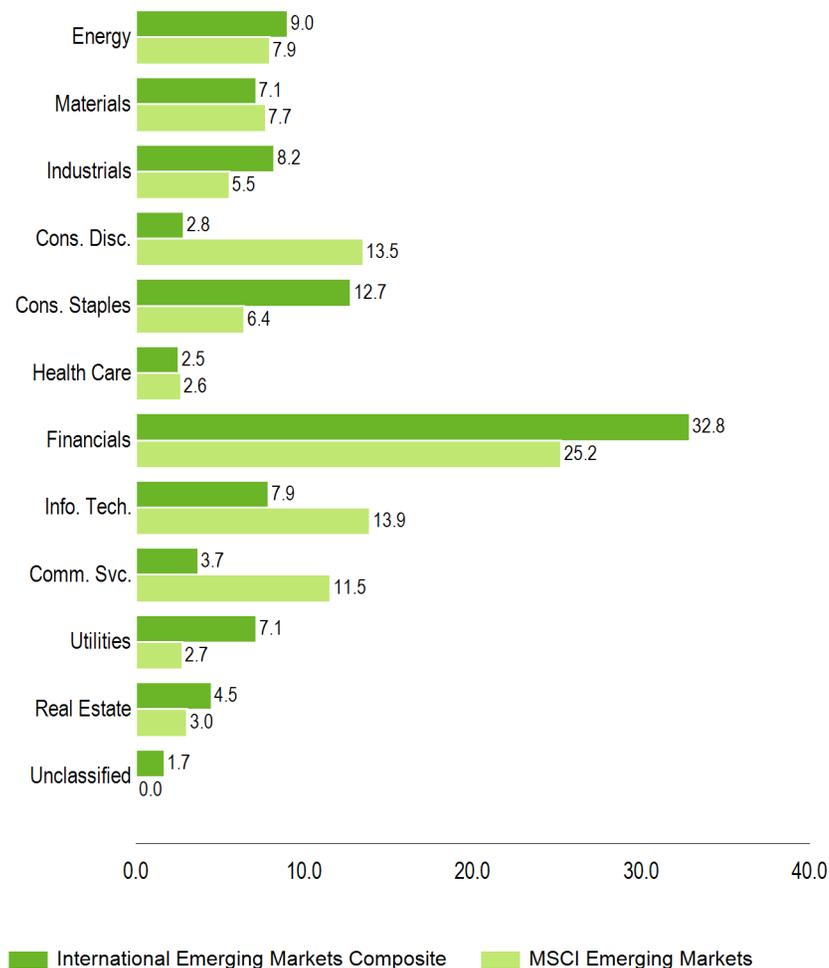
INTERNATIONAL EMERGING MARKETS COMPOSITE

Characteristics		
	Portfolio	MSCI Emerging Markets
Number of Holdings	2,548	1,193
Weighted Avg. Market Cap. (\$B)	45.1	81.7
Median Market Cap. (\$B)	0.4	5.6
Price To Earnings	15.0	14.1
Price To Book	2.3	2.4
Price To Sales	1.1	1.2
Return on Equity (%)	14.0	17.0
Yield (%)	2.7	2.8
Beta	0.9	1.0
R-Squared	0.9	1.0

	Portfolio Q2-19	Index Q2-19
Region Weighting		
Americas	11.43	12.98
Europe	9.17	6.10
Asia/Pacific	76.15	71.25
Other	3.25	9.66



Equity Sector Allocation



Howard County Retirement Plans

INTERNATIONAL EMERGING MARKETS COMPOSITE

Characteristics	MSCI Emerging Markets	
	Portfolio	MSCI Emerging Markets
Number of Holdings	2,548	1,193
Weighted Avg. Market Cap. (\$B)	45.1	81.7
Median Market Cap. (\$B)	0.4	5.6
Price To Earnings	15.0	14.1
Price To Book	2.3	2.4
Price To Sales	1.1	1.2
Return on Equity (%)	14.0	17.0
Yield (%)	2.7	2.8
Beta	0.9	1.0
R-Squared	0.9	1.0

Top Positive Contributors	Relative	
	Contribution %	Return %
HDFC BANK ADR 1:3	0.4%	12.8%
HOUSING DEVELOPMENT FINANCE CORPORATION	0.3%	11.8%
WULIANGYE ORD A	0.3%	23.6%
KWEICHOW MOUTAI 'A'	0.3%	14.4%
AIA GROUP	0.2%	9.7%
SHANGHAI INTL.ARPT.'A'	0.2%	31.9%
CP ALL FB	0.2%	19.0%
CHINA TOWER 'H'	0.2%	13.3%
BANK CENTRAL ASIA	0.2%	9.9%
PJSC GAZPROM ADR (OTC) CDI 1:2	0.2%	61.9%

Top Negative Contributors	Relative	
	Contribution %	Return %
RELIANCE INDUSTRIES	-0.1%	-7.8%
SAMSUNG FIRE & MAR.IN.	-0.1%	-12.5%
RELIANCE INDS.GDR 144A	-0.1%	-9.9%
BANCO BRADESCO PN	0.0%	7.3%
SARANA MENARA NUSANTARA	0.0%	-7.3%
LUKOIL OAO SPN.ADR 1:1	0.0%	-6.0%
PING AN INSURANCE (GROUP) OF CHINA 'H'	0.0%	8.8%
CLP HOLDINGS	0.0%	-4.1%
CNOOC (SZS)	0.0%	-8.7%
CHINA PTL.& CHM. 'H'	0.0%	-8.9%

	Equity Sector Attribution										
	Total Effects	Attribution Effects				Returns		Sector Weights			
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.5%	-0.3%	0.0%	-0.1%	-3.9%	1.3%	9.4%	8.1%			
Materials	0.1%	0.1%	0.0%	0.0%	0.6%	-0.7%	7.2%	7.4%			
Industrials	0.6%	0.4%	0.0%	0.2%	7.5%	0.3%	8.1%	5.6%			
Consumer Discretionary	0.6%	1.5%	0.1%	-1.0%	8.1%	-1.1%	5.0%	13.3%			
Consumer Staples	0.8%	0.4%	0.1%	0.3%	8.8%	2.9%	11.0%	6.4%			
Health Care	0.2%	0.2%	0.0%	0.0%	0.9%	-6.8%	2.2%	2.6%			
Financials	1.3%	0.8%	0.3%	0.3%	7.3%	4.4%	33.8%	24.3%			
Information Technology	0.2%	0.1%	0.0%	0.1%	1.8%	0.0%	8.0%	14.6%			
Communication Services	0.3%	0.2%	0.3%	-0.2%	-0.4%	-2.6%	2.9%	12.1%			
Utilities	0.2%	0.0%	0.1%	0.1%	5.1%	2.7%	6.4%	2.6%			
Real Estate	0.2%	0.2%	0.0%	0.1%	5.2%	-0.2%	4.3%	3.1%			
Cash	0.0%	0.0%	0.0%	0.0%	0.6%	--	1.6%	0.0%			
Portfolio	4.1%	=	3.6%	+	0.9%	+	-0.4%	4.8%	0.8%	100.0%	100.0%

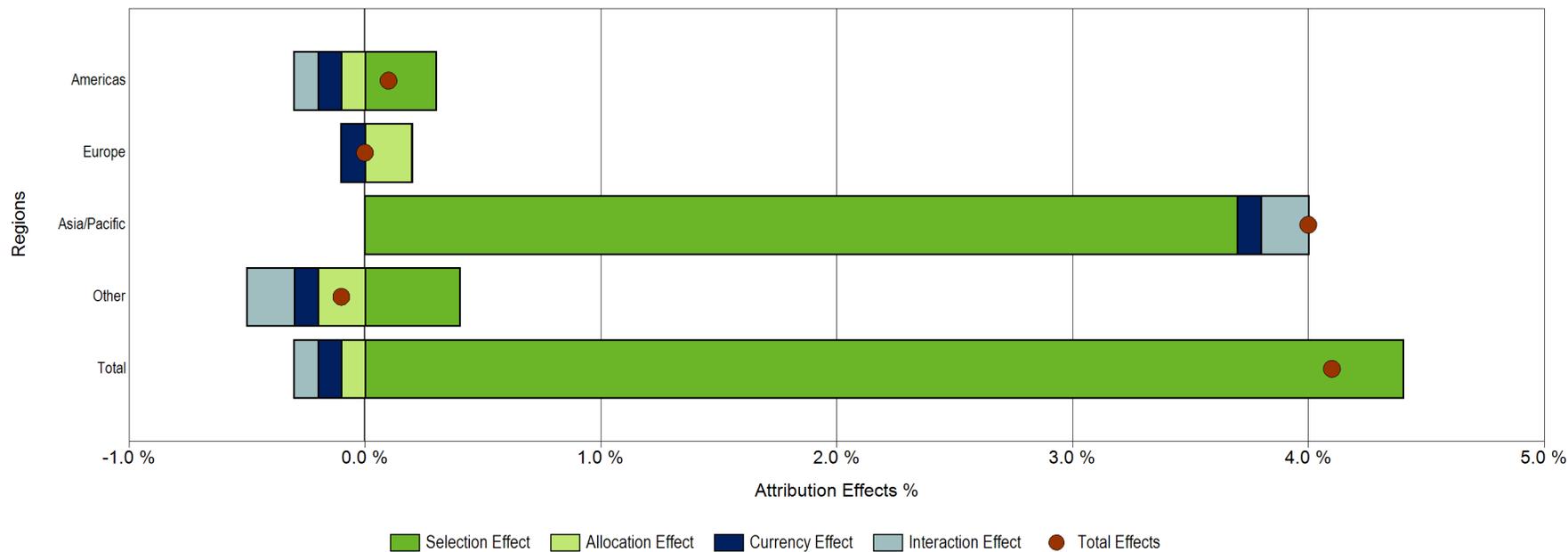
Attribution on manager pages is holdings based, using buy-and-hold assumptions from the beginning of the period portfolio. Results may differ from the flash report.



Howard County Retirement Plans

INTERNATIONAL EMERGING MARKETS COMPOSITE

International Emerging Markets Composite Performance Attribution vs. MSCI Emerging Markets



	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Totals									
Americas	6.5%	4.1%	9.4%	11.7%	0.3%	-0.1%	-0.1%	-0.1%	0.1%
Europe	9.8%	12.5%	7.6%	5.7%	0.0%	0.2%	-0.1%	0.0%	0.0%
Asia/Pacific	4.0%	-1.1%	78.0%	74.5%	3.7%	0.0%	0.1%	0.2%	4.0%
Other	9.7%	5.2%	3.3%	8.2%	0.4%	-0.2%	-0.1%	-0.2%	-0.1%
Cash	0.6%	--	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	4.8%	0.8%	100.0%	100.0%	4.4%	-0.1%	-0.1%	-0.1%	4.1%
Totals									
Developed	4.0%	--	22.1%	0.0%	0.0%	0.0%	0.1%	0.7%	0.8%
Emerging*	5.2%	0.8%	76.3%	100.0%	4.6%	0.0%	-0.2%	-1.1%	3.3%
Cash	0.6%	--	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Howard County Retirement Plans

INTERNATIONAL EMERGING MARKETS COMPOSITE

Country Allocation					Country Allocation				
	Manager	Index	Manager	Index		Manager	Index	Manager	Index
	Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)		Allocation (USD)	Allocation (USD)	Return (USD)	Return (USD)
Americas					AsiaPacific				
Brazil*	5.7%	7.1%	9.4%	7.2%	China*	11.8%	32.8%	8.5%	-3.8%
Chile*	0.6%	1.0%	-4.7%	-4.7%	Hong Kong	14.7%	0.0%	2.3%	1.0%
Colombia*	0.1%	0.5%	-3.0%	-2.3%	India*	20.9%	9.2%	3.8%	0.5%
Mexico*	2.6%	2.7%	2.6%	1.4%	Indonesia*	5.3%	2.2%	6.3%	3.7%
United States	0.4%	0.0%	10.7%	4.2%	Korea*	8.8%	13.1%	-0.8%	-1.2%
Total-Americas	9.4%	11.7%	6.5%	4.1%	Malaysia*	1.8%	2.2%	1.2%	1.3%
Europe					Philippines*	0.5%	1.1%	5.5%	4.6%
Czech Republic*	0.1%	0.2%	2.9%	3.9%	Singapore	2.2%	0.0%	6.8%	6.9%
Greece*	0.0%	0.2%	21.9%	16.9%	Taiwan*	7.4%	11.4%	1.7%	1.1%
Hungary*	0.1%	0.3%	-0.3%	-4.2%	Thailand*	4.5%	2.4%	9.4%	9.8%
Luxembourg	0.0%	0.0%	-20.5%	0.8%	Total-AsiaPacific	78.0%	74.5%	4.0%	-1.1%
Netherlands	3.4%	0.0%	6.2%	6.0%	Other				
Poland*	0.6%	1.2%	1.3%	3.6%	South Africa*	2.9%	5.8%	10.8%	6.8%
Russia*	2.1%	3.8%	18.3%	16.7%	Turkey*	0.5%	0.6%	2.7%	2.9%
United Kingdom	1.3%	0.0%	11.0%	0.9%	Total-Other	3.3%	8.2%	9.7%	5.2%
Total-Europe	7.6%	5.7%	9.8%	12.5%	Totals				
					Developed	22.1%	0.0%	4.0%	--
					Emerging*	76.3%	100.0%	5.2%	0.8%
					Cash	1.6%		0.6%	

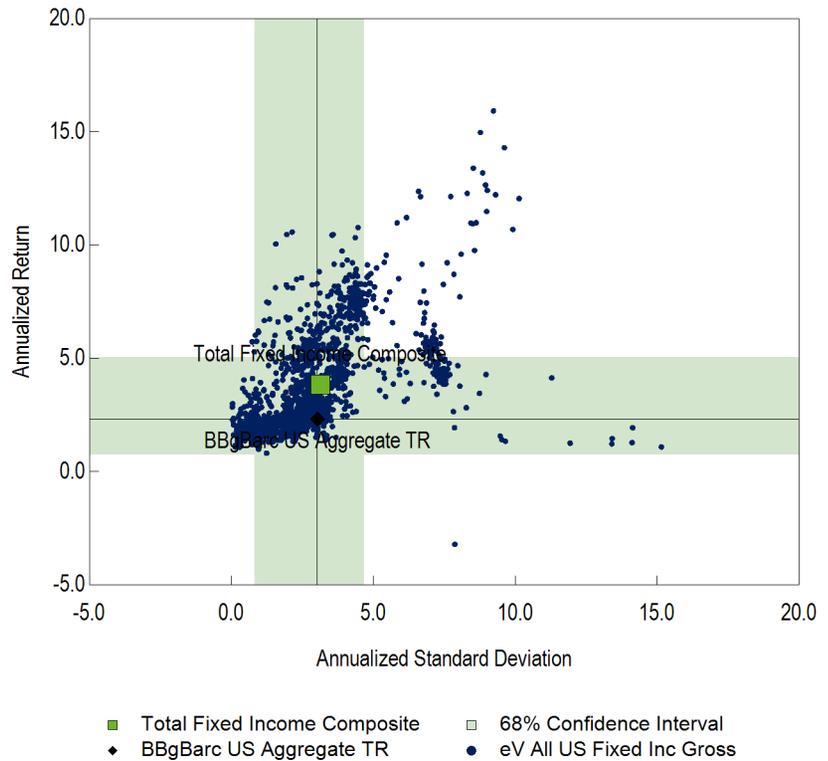
Country* = Emerging Markets



Howard County Retirement Plans

TOTAL FIXED INCOME COMPOSITE

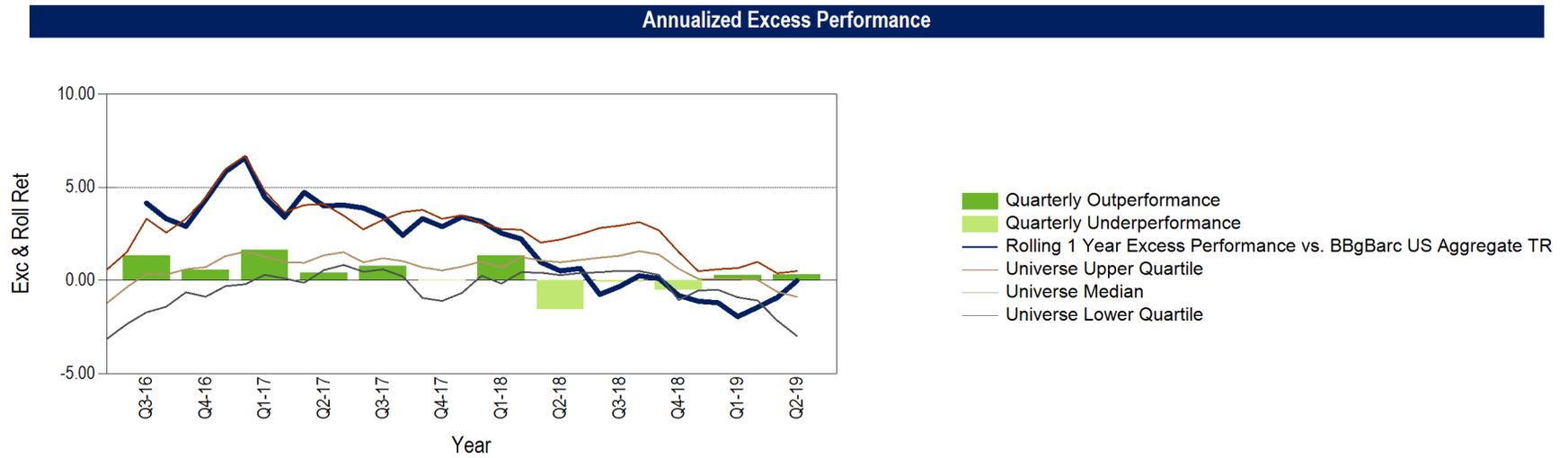
3 Year Risk Return



3 Year Style Analysis



TOTAL FIXED INCOME COMPOSITE



JULY FLASH REPORT

NEPC, LLC

CALENDAR YEAR INDEX PERFORMANCE

	2010	2011	2012	2013	2014	2015	2016	2017	2018	Jul	YTD
S&P 500	15.1%	2.1%	16.0%	32.4%	13.7%	1.4%	12.0%	21.8%	-4.4%	1.4%	20.2%
Russell 1000	16.1%	1.5%	16.4%	33.1%	13.2%	0.9%	12.1%	21.7%	-4.8%	1.6%	20.7%
Russell 2000	26.9%	-4.2%	16.3%	38.8%	4.9%	-4.4%	21.3%	14.6%	-11.0%	0.6%	17.7%
Russell 2500	26.7%	-2.5%	17.9%	36.8%	7.1%	-2.9%	17.6%	16.8%	-10.0%	1.0%	20.5%
MSCI EAFE	7.8%	-12.1%	17.3%	22.8%	-4.9%	-0.8%	1.0%	25.0%	-13.8%	-1.3%	12.6%
MSCI EM	18.9%	-18.4%	18.2%	-2.6%	-2.2%	-14.9%	11.2%	37.3%	-14.6%	-1.2%	9.2%
MSCI ACWI	12.7%	-7.3%	16.1%	22.8%	4.2%	-2.4%	7.9%	24.0%	-9.4%	0.3%	16.6%
Private Equity	19.8%	9.5%	12.6%	22.3%	14.6%	10.4%	10.3%	21.0%	13.1%	-	4.9%
BC TIPS	6.3%	13.6%	7.0%	-8.6%	3.6%	-1.4%	4.7%	3.0%	-1.3%	0.4%	6.5%
BC Municipal	2.4%	10.7%	6.8%	-2.6%	9.1%	3.3%	0.2%	5.4%	1.3%	0.8%	5.9%
BC Muni High Yield	7.8%	9.2%	18.1%	-5.5%	13.8%	1.8%	3.0%	9.7%	4.8%	0.6%	7.3%
BC US Corporate HY	15.1%	5.0%	15.8%	7.4%	2.5%	-4.5%	17.1%	7.5%	-2.1%	0.6%	10.6%
BC US Agg Bond	6.5%	7.8%	4.2%	-2.0%	6.0%	0.5%	2.6%	3.5%	0.0%	0.2%	6.3%
BC Global Agg	5.5%	5.6%	4.3%	-2.6%	0.6%	-3.2%	2.1%	7.4%	-1.2%	-0.3%	5.3%
BC Long Treasuries	9.4%	29.9%	3.6%	-12.7%	25.1%	-1.2%	1.3%	8.5%	-1.8%	0.2%	11.2%
BC US Long Credit	10.7%	17.1%	12.7%	-6.6%	16.4%	-4.6%	10.2%	12.2%	-6.8%	1.2%	16.8%
BC US STRIPS 20+ Yr	10.9%	58.5%	3.0%	-21.0%	46.4%	-3.7%	1.4%	13.7%	-4.1%	0.2%	14.9%
JPM GBI-EM Global Div	15.7%	-1.8%	16.8%	-9.0%	-5.7%	-14.9%	9.9%	15.2%	-6.2%	0.9%	9.7%
JPM EMBI Glob Div	12.2%	7.3%	17.4%	-5.3%	7.4%	1.2%	10.2%	10.3%	-4.3%	1.2%	12.7%
CS Hedge Fund	10.9%	-2.5%	7.7%	9.7%	4.1%	-0.7%	1.2%	7.1%	-3.2%	-	6.4%
BBG Commodity	16.8%	-13.3%	-1.1%	-9.5%	-17.0%	-24.7%	11.8%	1.7%	-11.2%	-0.7%	4.4%
Alerian MLP	35.9%	13.9%	4.8%	27.6%	4.8%	-32.6%	18.3%	-6.5%	-12.4%	-0.2%	16.7%
FTSE NAREIT Equity REITs	28.0%	8.3%	18.1%	2.5%	30.1%	3.2%	8.5%	5.2%	-4.6%	1.3%	19.3%

Source: FactSet, Thomson One

*Private Equity return represents calendar year pooled IRR and is subject to a one quarter lag



TRAILING ANNUAL INDEX PERFORMANCE

Equity						
	1M	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI	0.3%	16.6%	2.9%	10.1%	6.5%	9.2%
S&P 500	1.4%	20.2%	8.0%	13.3%	11.3%	14.0%
Russell 1000	1.6%	20.7%	8.0%	13.3%	11.1%	14.1%
Russell 2000	0.6%	17.7%	-4.4%	10.3%	8.5%	12.4%
Russell 2500	1.0%	20.5%	0.9%	10.8%	9.0%	13.5%
MSCI EAFE	-1.3%	12.6%	-2.6%	6.8%	2.4%	5.8%
MSCI EM	-1.2%	9.2%	-2.2%	8.4%	1.8%	4.5%
Credit						
	1M	YTD	1 YR	3 YR	5 YR	10 YR
BC Global Agg	-0.3%	5.3%	5.7%	1.3%	1.3%	2.6%
BC US Agg	0.2%	6.3%	8.0%	2.2%	3.0%	3.7%
BC Credit	0.5%	9.9%	10.1%	3.5%	4.0%	5.4%
BC US HY	0.6%	10.6%	6.9%	6.7%	5.1%	8.6%
BC Muni	0.8%	5.9%	7.3%	2.8%	3.8%	4.6%
BC Muni HY	0.6%	7.3%	8.1%	5.3%	6.3%	8.1%
BC TIPS	0.4%	6.5%	5.7%	1.9%	1.8%	3.7%
BC 20+ STRIPS	0.2%	14.9%	17.1%	0.1%	7.7%	9.1%
BC Long Treasuries	0.2%	11.2%	14.1%	0.6%	5.6%	6.5%
BC Long Credit	1.2%	16.8%	14.5%	4.8%	6.0%	7.8%
BC Govt/Credit 1-3 Yr	-0.1%	2.6%	4.1%	1.6%	1.5%	1.5%
JPM EMBI Glob Div	1.2%	12.7%	10.9%	5.2%	5.5%	7.6%
JPM GBI-EM Glob Div	0.9%	9.7%	7.9%	4.3%	-0.1%	3.0%
Real Assets						
	1M	YTD	1 YR	3 YR	5 YR	10 YR
BBG Commodity	-0.7%	4.4%	-5.3%	-0.7%	-8.3%	-4.1%
Alerian MLP	-0.2%	16.7%	-3.5%	-0.7%	-6.5%	6.9%
FTSE NAREIT Equity REITs	1.3%	19.3%	11.7%	3.2%	8.2%	14.4%

Source: FactSet



Howard County Retirement Plans

TOTAL FUND PERFORMANCE SUMMARY (GROSS)

	Market Value (\$)	% of Portfolio	Policy %	Ending July 31, 2019							
				1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	1,094,124,532	100.0	100.0	0.2	10.8	5.9	9.0	6.9	8.8	7.3	Apr-97
<i>Policy Index</i>				0.1	10.1	6.0	7.6	6.2	8.1	7.3	Apr-97
<i>Allocation Index</i>				0.2	--	--	--	--	--	--	Apr-97
Total US Equity Composite	271,043,535	24.8	20.0	1.3	20.6	4.7	14.4	11.4	14.6	8.6	Jul-97
<i>Russell 3000</i>				1.5	20.5	7.0	13.1	11.0	14.0	7.9	Jul-97
<i>US Equity Allocation Index</i>				1.4	20.5	5.8	12.9	10.8	14.1	--	Jul-97
Total International Equity	194,931,410	17.8	20.0	-1.7	13.3	-0.5	8.4	3.0	6.0	4.6	Jul-97
<i>MSCI ACWI ex USA</i>				-1.2	12.2	-2.3	7.2	2.1	5.4	--	Jul-97
Total Fixed Income Composite	313,229,507	28.6	30.0	0.4	7.2	7.7	3.6	4.0	5.4	5.5	Jul-97
<i>Fixed Income Policy Index</i>				0.2	6.3	8.1	2.2	3.0	3.8	5.2	Jul-97
Total Real Assets Composite	39,229,889	3.6	7.5	0.0	-0.3	3.6	10.1	9.0	4.2	7.4	Jul-03
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	3.2	6.8	7.1	9.1	8.5	8.8	Jul-03
Cash Composite	8,551,321	0.8		0.2	1.4	2.3	1.2	0.7	0.4	1.4	Dec-03
<i>91 Day T-Bills</i>				0.2	1.3	2.3	1.5	0.9	0.5	1.3	Dec-03
Hedge Fund Composite	122,487,944	11.2	12.5	0.5	6.0	4.2	5.4	4.5	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.1	4.7	2.0	3.5	2.2	3.0	2.5	Jan-11
Private Equity Composite	144,650,926	13.2	10.0	0.0	6.8	17.2	16.6	15.6	14.2	12.9	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	4.8	7.0	13.2	10.2	13.3	9.3	Jul-08

Fiscal year end 6/30.

All history prior to 3/1/2019 was provided by AndCo.



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

	Ending July 31, 2019										
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund Composite	1,094,124,532	100.0	100.0	0.2	10.8	5.9	9.0	6.9	8.8	7.3	Apr-97
Policy Index				0.1	10.1	6.0	7.6	6.2	8.1	7.3	Apr-97
Allocation Index				0.2	--	--	--	--	--	--	Apr-97
Total US Equity Composite	271,043,535	24.8	20.0	1.3	20.6	4.7	14.4	11.4	14.6	8.6	Jul-97
Russell 3000				1.5	20.5	7.0	13.1	11.0	14.0	7.9	Jul-97
US Equity Allocation Index				1.4	20.5	5.8	12.9	10.8	14.1	--	Jul-97
Large Cap Composite	208,534,156	19.1	15.0	1.0	19.0	4.5	13.6	10.5	13.9	8.5	Apr-01
Russell 1000				1.6	20.7	8.0	13.3	11.2	14.1	7.6	Apr-01
Invesco IQS – US Enhanced 1% Risk SMA	69,616,372	6.4		1.3	18.1	5.6	12.8	10.2	13.7	7.7	Apr-01
S&P 500				1.4	20.2	8.0	13.4	11.3	14.0	7.4	Apr-01
LSV Asset Management SMA	62,877,869	5.7		0.6	14.3	-0.8	10.2	8.1	13.4	9.7	May-00
Russell 1000 Value				0.8	17.2	5.2	9.4	8.0	12.4	6.9	May-00
Westfield Capital Management SMA	76,039,915	6.9		1.1	24.1	8.3	17.4	13.2	--	16.0	Jul-10
Russell 1000 Growth				2.3	24.2	10.8	17.1	14.3	15.7	16.7	Jul-10
Small/Mid Cap Composite	62,509,379	5.7	5.0	2.2	26.2	5.4	17.0	14.3	15.8	12.4	Apr-93
Russell 2500				1.0	20.5	0.9	10.8	9.0	13.6	10.3	Apr-93
William Blair SMA	20,726,305	1.9		2.7	28.5	12.3	19.1	15.8	17.3	12.5	Jun-06
Russell 2500 Growth				1.6	25.8	5.8	14.5	11.5	15.0	9.8	Jun-06
ICM Small Company - ICSCX	23,109,355	2.1		1.4	19.5	-5.0	11.5	10.2	13.4	11.9	Apr-93
Russell 2000 Value				0.2	13.6	-7.7	8.0	6.7	11.2	9.7	Apr-93
Brown Capital Small Company Strategy SMA	18,673,718	1.7		2.6	32.8	13.2	22.7	18.4	--	19.4	Aug-11
Russell 2000 Growth				1.0	21.5	-1.2	12.7	10.2	13.7	11.5	Aug-11



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

						Ending July 31, 2019					
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total International Equity	194,931,410	17.8	20.0	-1.7	13.3	-0.5	8.4	3.0	6.0	4.6	Jul-97
<i>MSCI ACWI ex USA</i>				-1.2	12.2	-2.3	7.2	2.1	5.4	--	Jul-97
International Developed Markets Composite	126,120,507	11.5	13.0	-1.4	14.0	-2.2	6.9	2.8	6.4	3.0	Mar-08
<i>MSCI EAFE</i>				-1.3	12.6	-2.6	6.9	2.4	5.8	2.2	Mar-08
Mondrian International Equity Fund, L.P.	59,279,259	5.4		-2.0	8.4	-3.0	5.9	1.9	6.0	1.6	Dec-07
<i>MSCI EAFE</i>				-1.3	12.6	-2.6	6.9	2.4	5.8	1.2	Dec-07
Baillie Gifford EAFE Pure K - BGPKX	66,841,248	6.1		-0.8	19.4	-1.3	--	--	--	1.3	May-18
<i>MSCI EAFE</i>				-1.3	12.6	-2.6	6.9	2.4	5.8	-2.9	May-18
International Emerging Markets Composite	68,810,903	6.3	7.0	-2.4	12.2	3.1	11.5	3.2	5.0	6.1	Feb-06
<i>MSCI Emerging Markets</i>				-1.2	9.2	-2.2	8.4	1.8	4.6	4.6	Feb-06
DFA Emerging Markets Value Portfolio Institutional - DFEVX	26,645,769	2.4		-4.4	3.1	-7.3	7.6	1.1	4.0	5.4	Feb-06
<i>MSCI Emerging Markets</i>				-1.2	9.2	-2.2	8.4	1.8	4.6	4.6	Feb-06
GQG Partners Emerging Markets Equity Fund	42,165,134	3.9		-1.1	18.9	--	--	--	--	18.6	Dec-18
<i>MSCI Emerging Markets</i>				-1.2	9.2	-2.2	8.4	1.8	4.6	6.3	Dec-18
Total Fixed Income Composite	313,229,507	28.6	30.0	0.4	7.2	7.7	3.6	4.0	5.4	5.5	Jul-97
<i>BBgBarc US Aggregate TR</i>				0.2	6.3	8.1	2.2	3.0	3.8	5.1	Jul-97
Core Fixed Income Composite	267,282,265	24.4	25.0	0.4	--	--	--	--	--	5.1	Mar-19
<i>BBgBarc US Aggregate TR</i>				0.2	6.3	8.1	2.2	3.0	3.8	5.3	Mar-19
Dodge & Cox SMA	127,471,449	11.7		0.5	7.2	8.0	3.8	3.9	--	4.6	May-10
<i>BBgBarc US Aggregate TR</i>				0.2	6.3	8.1	2.2	3.0	3.8	3.5	May-10
PIMCO Total Return	117,191,925	10.7		0.2	6.4	7.7	3.0	3.3	--	4.0	May-10
<i>BBgBarc US Aggregate TR</i>				0.2	6.3	8.1	2.2	3.0	3.8	3.5	May-10
State Street Global Advisors TIPS	22,618,891	2.1		0.4	6.5	5.7	1.9	1.8	--	3.3	Nov-09
<i>BBgBarc US TIPS TR</i>				0.4	6.5	5.7	1.9	1.8	3.7	3.3	Nov-09
Emerging Markets Debt Composite	45,947,242	4.2	5.0	0.8	--	--	--	--	--	5.1	Mar-19
<i>JP Morgan GBI EM Global Diversified TR USD</i>				0.9	9.7	8.0	4.4	-0.1	3.0	5.2	Mar-19
Colchester Local Markets Debt Fund	45,947,242	4.2		0.8	9.7	8.2	6.0	--	--	9.4	Oct-15
<i>JP Morgan GBI EM Global Diversified TR USD</i>				0.9	9.7	8.0	4.4	-0.1	3.0	7.2	Oct-15



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL (GROSS)

						Ending July 31, 2019					
	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Assets Composite	39,229,889	3.6	7.5	0.0	-0.3	3.6	10.1	9.0	4.2	7.4	Jul-03
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	3.2	6.8	7.1	9.1	8.5	8.8	Jul-03
Real Estate Composite	26,994,911	2.5		0.0	--	--	--	--	--	0.0	Mar-19
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	3.2	6.8	7.1	9.1	8.5	3.2	Mar-19
Realty Associates Fund VIII L.P.	25,689	0.0		0.0	-15.2	-10.3	2.1	5.8	1.9	1.1	Jul-07
Realty Associates Fund IX L.P.	5,396	0.0		0.0	-56.8	-58.7	-25.3	-11.8	--	-2.5	Apr-10
Partners Group Global RE 2011	5,070,332	0.5		0.0	-10.8	-16.8	1.7	2.8	--	3.9	Mar-12
Partners Group Global RE 2014	18,240,852	1.7		0.0	1.0	4.1	11.7	--	--	9.0	Dec-14
Partners Group Global RE 2017	3,652,641	0.3		0.0	18.4	--	--	--	--	18.4	Dec-18
<i>NCREIF Property Index 1 Qtr. Lag</i>				0.0	3.2	6.8	7.1	9.1	8.5	4.9	Dec-18
Real Assets Composite	12,234,978	1.1		0.0	--	--	--	--	--	-4.3	Mar-19
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				0.0	-5.1	0.5	9.0	-0.3	5.5	-5.1	Mar-19
Commonfund Natural Resources X	5,090,643	0.5		0.0	5.4	14.3	41.5	--	--	20.3	Apr-16
Commonfund Natural Resources XI	115,700	0.0		0.0	-22.9	--	--	--	--	-22.9	Oct-18
Aether Real Assets IV	5,814,863	0.5		0.0	-0.1	10.9	4.9	--	--	4.6	Jun-16
Aether Real Assets V	1,213,772	0.1		0.0	-69.3	-45.0	--	--	--	-45.0	Aug-18
<i>Cambridge Associates Global Natural Resources (1 Qtr Lag)</i>				0.0	-5.1	0.5	9.0	-0.3	5.5	0.5	Aug-18
Cash Composite	8,551,321	0.8	0.0	0.2	1.4	2.3	1.2	0.7	0.4	1.4	Dec-03
<i>91 Day T-Bills</i>				0.2	1.3	2.3	1.5	0.9	0.5	1.3	Dec-03
Hedge Fund Composite	122,487,944	11.2	12.5	0.5	6.0	4.2	5.4	4.5	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.1	4.7	2.0	3.5	2.2	3.0	2.5	Jan-11
Magnitude International Class A Eligible	60,517,713	5.5		0.3	6.0	3.6	4.9	4.4	--	4.8	Jan-11
<i>HFRI FOF: Conservative Index</i>				0.1	4.7	2.0	3.5	2.2	3.0	2.5	Jan-11
Blackstone Partners Offshore Fund LTD	61,970,231	5.7		0.6	5.9	4.8	5.9	4.5	--	4.9	Mar-11
<i>HFRI FOF: Conservative Index</i>				0.1	4.7	2.0	3.5	2.2	3.0	2.4	Mar-11
Private Equity Composite	144,650,926	13.2	10.0	0.0	6.8	17.2	16.6	15.6	14.2	12.9	Jul-08
<i>Cambridge Associates Global All PE</i>				0.0	4.8	7.0	13.2	10.2	13.3	9.3	Jul-08

Magnitude International Class A Eligible market value and performance are estimated.



Howard County Retirement Plans

TOTAL FUND PERFORMANCE DETAIL FOOTNOTES

Fiscal year ends 6/30.

Policy index consists of: 15% S&P 500 / 5% Russell 2500 / 13% MSCI EAFE / 7% MSCI Emerging Markets / 25% BBgBarc US Aggregate TR / 5% JP Morgan GBI EM Global Diversified TR USD / 7.5% NCREIF Property Index 1 Qtr. Lag / 12.5% HFRI FOF: Conservative Index / 10% Private Equity Composite.

Allocation index consists of: Weighted index of underlying managers to their respective benchmark.

Fixed Income Policy index consists of: 100% BBgBarc US Aggregate TR.

Core Fixed Income Composite, Emerging Markets Debt, Real Estate Composite, Real Assets Composite and Allocation Index performance is calculated by NEPC as of 6/30/2019.

Real Estate, Real Assets and Private Equity investments are valued as of 03/31/2019 and adjusted for capital calls and distributions through 07/31/2019.

All history prior to 3/1/2019 was provided by AndCo.



NEPC'S DUE DILIGENCE MONITOR

Investment Options	Manager Changes/ Announcements (Recent Quarter)	NEPC Due Diligence Committee Recommendations
William Blair Smid Cap Growth	Team Update	1. No Action



NEPC'S QUARTERLY DUE DILIGENCE DETAIL

Investment Options	Commentary	NEPC Rating
William Blair Smid Cap Growth	<p>Rob Lanphier has announced an expected retirement date in mid-2021, approximately two years from now. He will remain a portfolio manager through at least September 30, 2020 and become a portfolio advisor from that point until his retirement.</p> <p>Effective September 30, 2019, Jim Jones will join Dan Crowe and Rob Lanphier as a co-portfolio manager on the William Blair Small-Mid Cap Growth and Mid Cap Growth strategies. Mr. Jones has been with William Blair and the team since 2010 as a senior research analyst covering small cap Industrials companies.</p> <p>Simon McGrotty and Paul Galat will take over the research analyst role, covering Industrials, with Mr. McGrotty covering Small Cap stocks and Mr. Galat covering Mid Cap stocks.</p> <p>Mr. Jones has also served as the co-director of research for the past two years with Corey Tobin. He will be giving up that responsibility to focus on his portfolio manager responsibilities. He was put in that role as part of a development plan to give him a broader breadth of sector knowledge as they were grooming him for a PM role. Corey Tobin will remain as the Director of US Growth Research. We are not concerned with Mr. Tobin being the sole Director of Research as William Blair had hired a Research Manager and a Broker Liaison in the past year to take some of the load off the Director of Research.</p> <p>These moves directly affect the SMID Cap Growth and Mid Cap Growth strategies as there will be a new portfolio manager in advance of Mr. Lanphier's retirement and new Industrial sector analysts. It also affects the Small Cap Growth and All Cap Growth strategies as they will have new Industrial analysts.</p> <p>NEPC Research is comfortable with these announcements. We were aware that Mr. Lanphier had retirement plans in his sights for some time now and this announcement now gives us a clearer date. We like that there is a longer transition in place to ensure that there is a smooth transition and the team continues to have experienced professionals in place. The growth team is supported by the research analyst pool which has 17 dedicated analysts and 9 research associates working with the portfolio managers on the strategies. NEPC Research is recommending no client action.</p>	1



LIQUIDITY STUDY

NEPC, LLC

LIQUIDITY ANALYSIS BACKGROUND

- **Investment programs can benefit from a portion of assets in illiquid investments**
 - Capital calls on illiquid investments can be the foundation for future outperformance
 - Correlations can be low to publicly traded assets

- **Investing in illiquid assets, however, adds another dimension to liquidity management**
 - Will there be enough liquidity to manage future cash flows?
 - Will asset losses decrease total asset base to the extent that there is a liquidity problem?
 - What if capital is called more rapidly in the illiquid program?
 - Will there need to be forced sales of distressed assets?
 - Will assets believed to be liquid be less so when liquidity is most needed?

- **Liquidity analysis attempts to imagine a stressed scenario to see how the investment program would respond**



ASSUMPTIONS

- **Base Case**

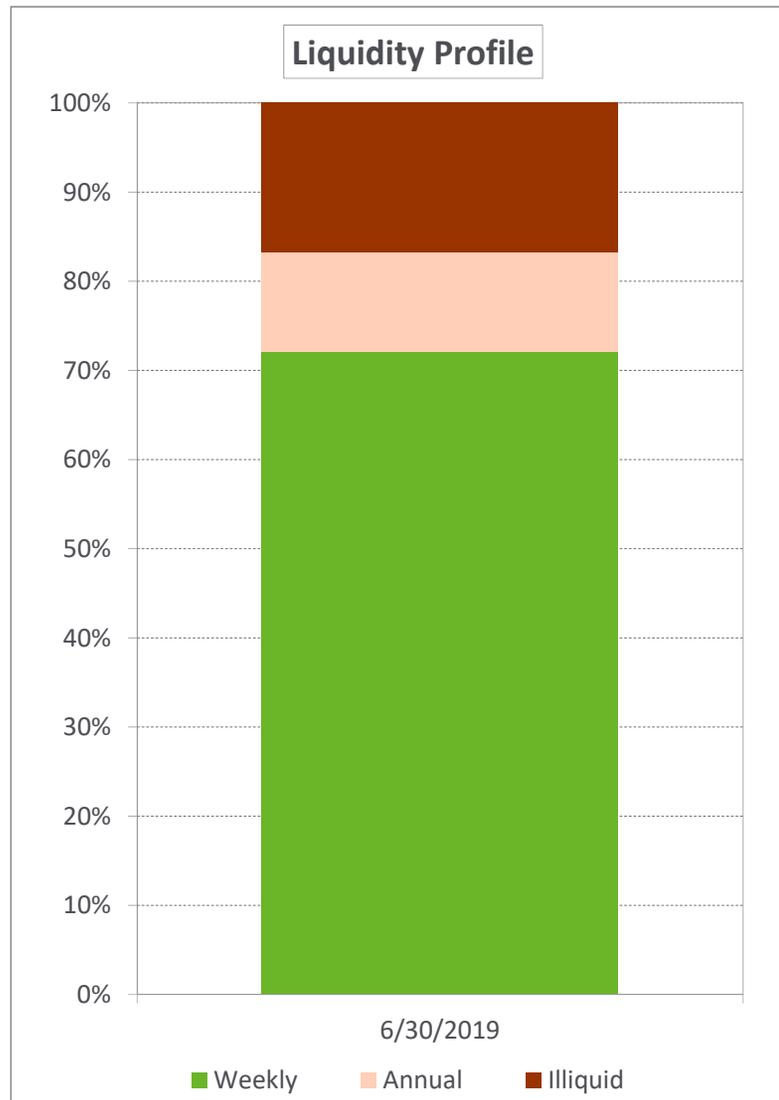
- Returns: NEPC 5-7 year expected returns used
 - Total portfolio expected to return 6.6% per year
- Benefit Payments and Expenses: based on actuarial projections, averaging \$64.2M per year
- Contributions: based on estimated growth rate of 6.6%, averaging \$61.7M per year
- Commitments: based on recent pacing plan
 - Private Equity: averaging \$41M per year for the next five years
 - Private Debt: averaging \$26M per year for the next five years
 - Private Real Estate: averaging \$13M per year for the next five years
 - Private Real Assets: averaging \$5M per year for the next five years
- Capital Calls and Distributions: based on standard industry averages

- **Stressed Case**

- Returns: 0.0% in Year 1, -16.5% in Year 2 (-2 standard deviations), -4.9% in Year 3 (-1 standard deviation), 6.6% in Year 4 (expected return), and -4.9% in Year 5 (-1 standard deviation)
- Benefit Payments: 10% higher per year than base case
- Contributions: Same as base case
- Commitments: Same as base case
- Capital Calls and Distributions: Same as base case except capital calls are doubled in Year 2 and distributions are halved in Year 2 and Year 3

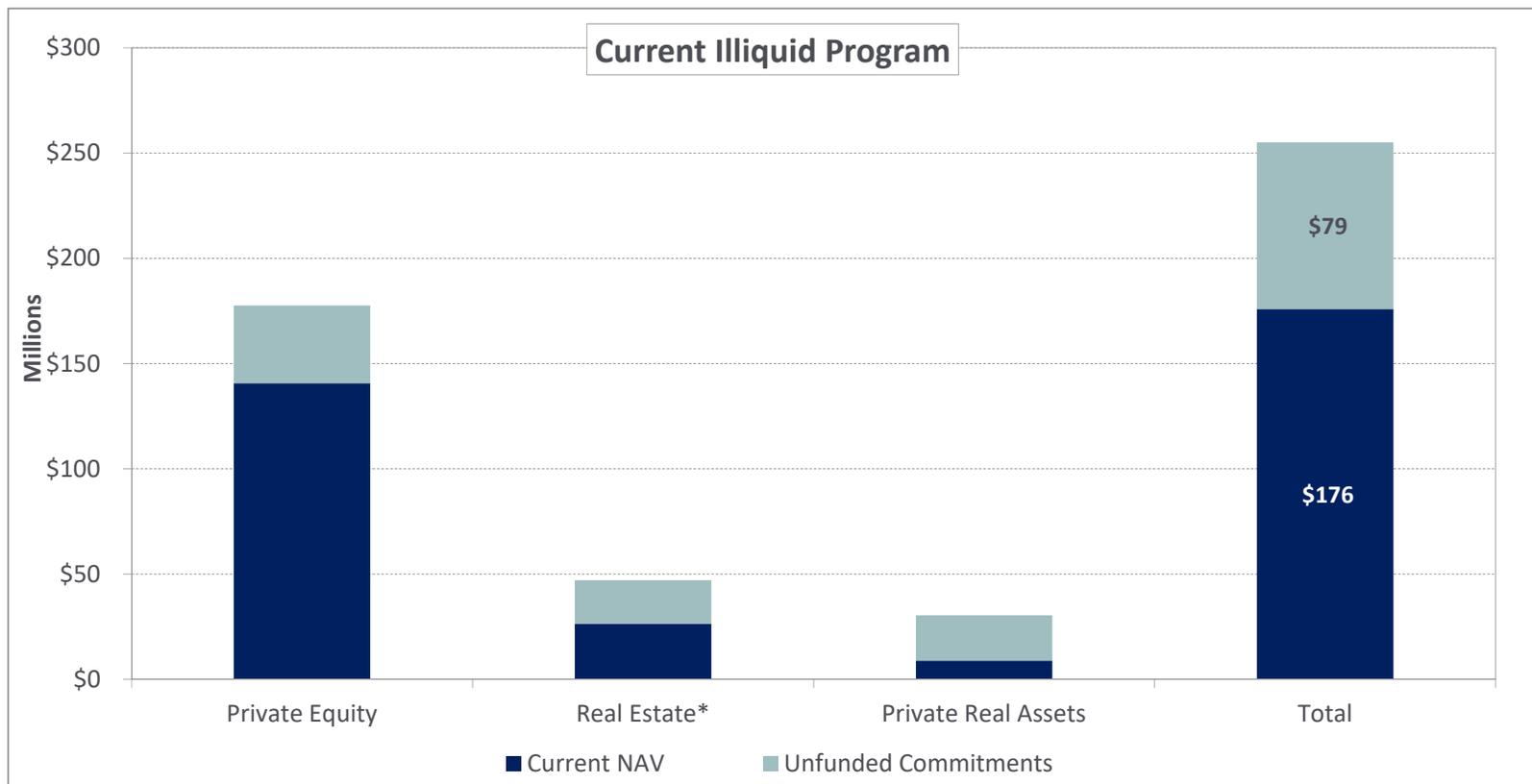


EXISTING LIQUIDITY PROFILE



- **72.1% of total assets are available on weekly basis to meet regular liquidity needs**
 - Benefit payments and expenses
 - Rebalancing
 - Capital calls
- **Additional 11.2% of assets available on at least an annual basis**
 - Can be part of planned rebalancing but much less reliable for regular liquidity needs
- **Remaining 16.8% of assets are relatively illiquid**
 - Intermittent distributions - hard to plan around
 - Could be sold in secondary markets, but likely at steep discount

ILLIQUID PROGRAM SNAPSHOT

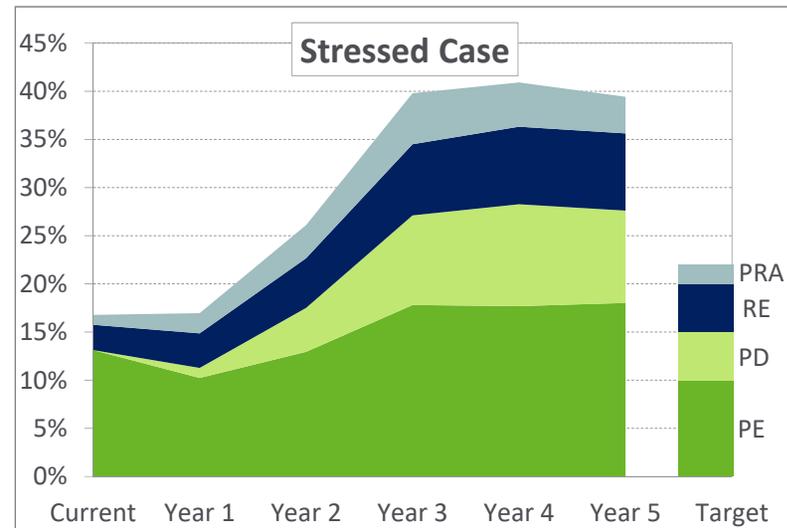
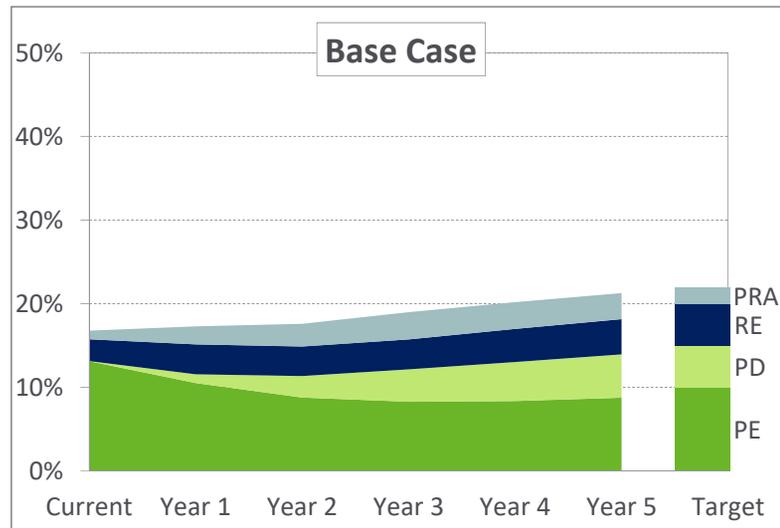


Real Estate includes both Core Real Estate and Non-Core Real Estate
Based on data as of 3/31/2019*

- **Because of uncalled capital commitments the allocation to illiquid investments can rise even without any additional commitments**
 - Currently ≈\$34M in uncalled private market commitments



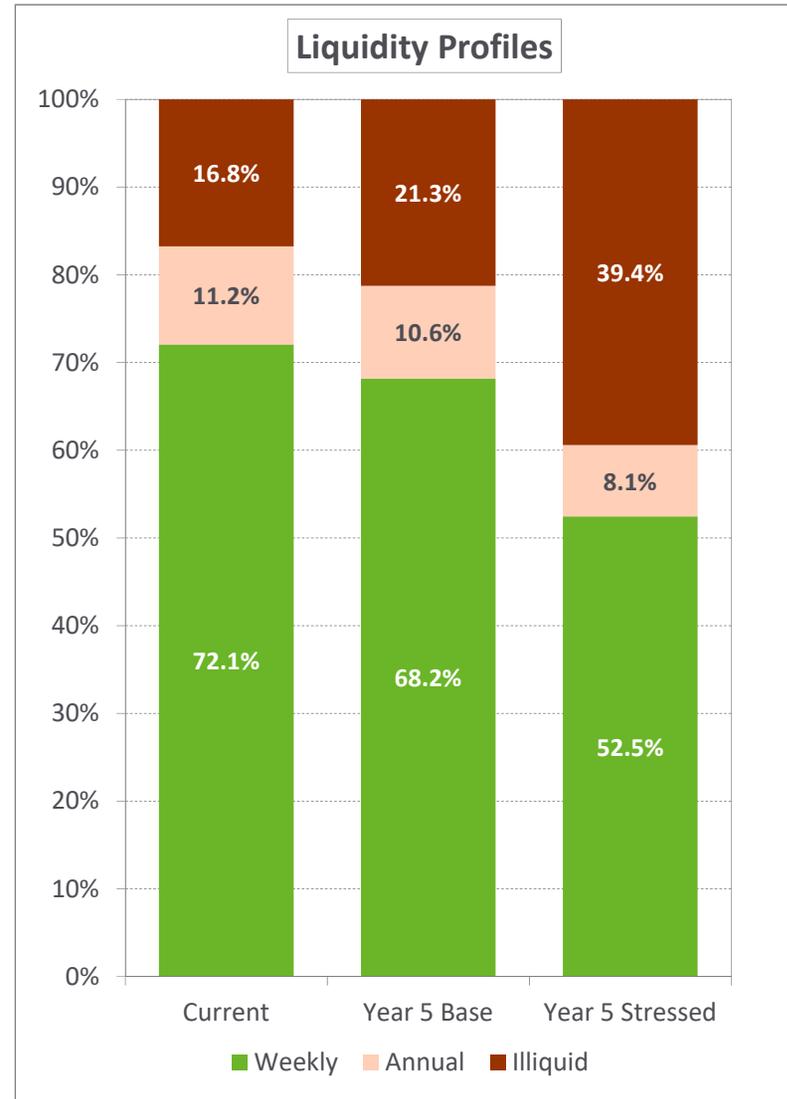
ILLIQUID ALLOCATION



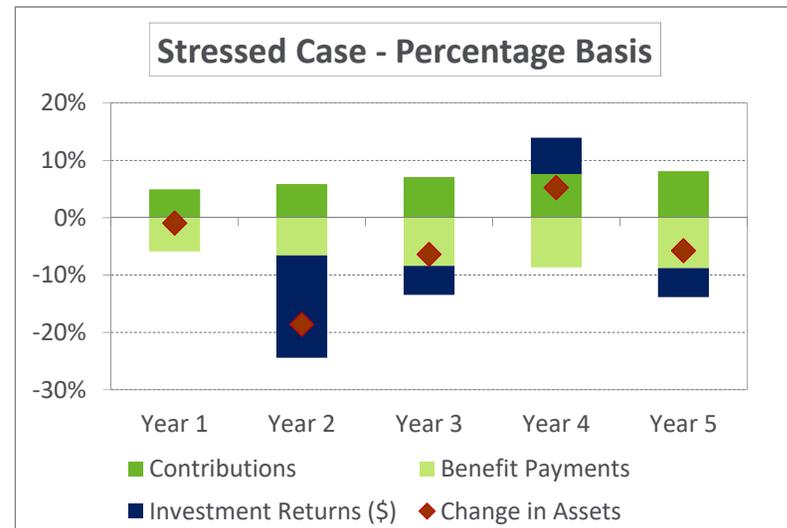
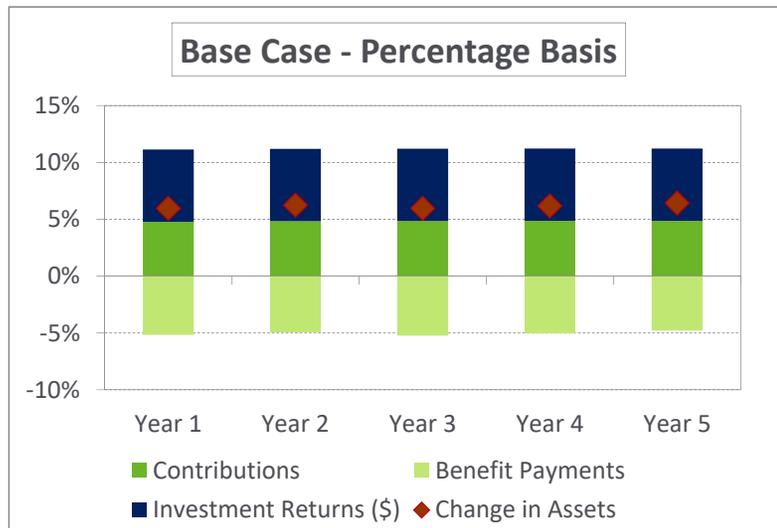
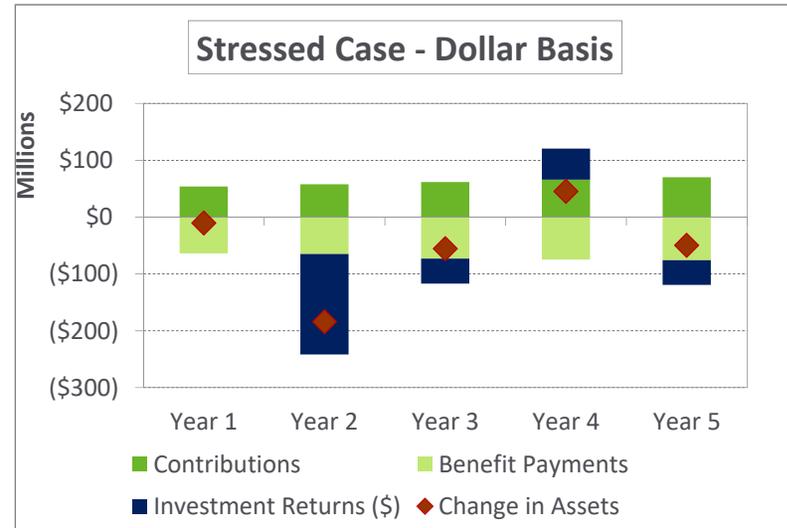
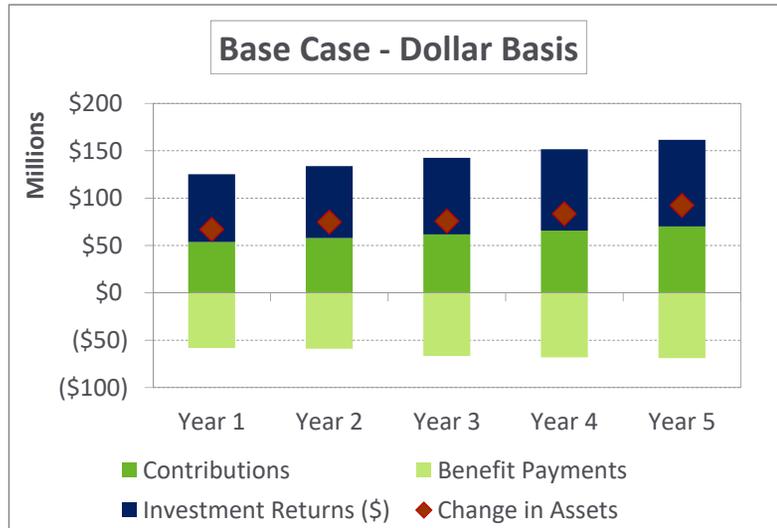
5% Real Estate target represents both Core and Non-Core Real Estate

- **Allocation to illiquid assets is expected to increase over the next five years in base case**
 - Steady growth as the fund makes commitments averaging \$85M per year, per the current pacing plan
- **In the stressed case, an increase in capital calls and a reduction in distributions combine with negative asset returns (denominator effect) to raise allocations to private markets slightly above targets**
 - It is possible to mitigate this issue by slowing pace of future commitments and adjusting the pacing plan

CHANGE IN LIQUIDITY PROFILE



ANNUAL CHANGE IN ASSETS ATTRIBUTION



SUMMARY

- **The plan is projected to run net negative cash flows averaging \$2.5M per year in the base case**
 - Returns are expected to more than offset this imbalance, affording some flexibility
 - Private investments are expected to provide returns in excess of public markets
 - It is important to maintain a robust liquid allocation across all funds to avoid liquidity risks in a market downturn
- **While true that some liquid assets must be sold in a stressed environment...**
 - The plan currently has 72.1% of assets with weekly or better liquidity
 - Mature illiquid programs can provide distributions that are additive to liquidity
- **The plan is likely to benefit from building and maintaining a diversified allocation to illiquid assets and can be flexible in allocating additional capital should opportunities or market conditions dictate**
 - Illiquid investments have an attractive diversification profile with a low correlation to other public asset classes
 - Programs are most effective when implemented with appropriate vintage year diversification



INFORMATION DISCLAIMER

- **Past performance is no guarantee of future results.**
- **The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.**
- **Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.**
- **This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.**



ALTERNATIVE INVESTMENT DISCLOSURES

It is important that investors understand the following characteristics of non-traditional investment strategies including hedge funds and private equity:

- 1. Performance can be volatile and investors could lose all or a substantial portion of their investment**
- 2. Leverage and other speculative practices may increase the risk of loss**
- 3. Past performance may be revised due to the revaluation of investments**
- 4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms**
- 5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value**
- 6. These funds are not subject to the same regulatory requirements as registered investment vehicles**
- 7. Managers may not be required to provide periodic pricing or valuation information to investors**
- 8. These funds may have complex tax structures and delays in distributing important tax information**
- 9. These funds often charge high fees**
- 10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy**



APPENDIX

NEPC, LLC

ABSOLUTE RETURN FIXED INCOME MANAGER SEARCH

NEPC, LLC

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INTRODUCTION

NEPC, LLC

INTRODUCTION TO ASSET CLASS

The use of unconstrained fixed income mandates has grown considerably since 2008, but no consistent definition has taken hold in the marketplace as to what constitutes an unconstrained or absolute return fixed income strategy given their flexible mandate. Many of these strategies have generically been labeled “Nontraditional Bonds”. NEPC Research however has looked beyond broad categorization to focus on specific attributes and investment objectives associated with an unconstrained bond strategy. NEPC Research defines absolute return fixed income as benchmark-agnostic strategies (alternatively benchmarking against cash) that aim to provide a positive total return irrespective of the market environment. We believe these strategies should diversify away from traditional risks of the Bloomberg Barclays Aggregate Index, and maintain low correlations to global interest rates and turbulent equity markets with a strict focus on mitigating downside risks.

The unconstrained nature of these strategies allows for broad implementation across global fixed income markets and includes allocations to global interest rates, global credit sectors, securitized assets, emerging market debt, foreign currencies, and derivative markets. In addition, unconstrained bond strategies make extensive use of relative value trades, often with the use of derivatives, to provide specific exposure to credit risks, liquidity risks, currency risks, or global interest rate curves. This diverse composite of global exposures provides the



INTRODUCTION TO ASSET CLASS

foundation for the sources of return for an unconstrained bond strategy and ensures that no specific risk factor, such as interest rates, dominates the overall risk of a strategy. One of the greatest contrasts between unconstrained bond and traditional fixed income strategies is the active management of interest rate risk. An unconstrained bond approach will have flexibility to manage duration across global rates markets, while a traditional approach will have a duration exposure defined by a benchmark. Overriding the broad guidelines of unconstrained bond strategies is a risk controlled framework that is based both on a qualitative understanding of global macro risks and quantitative tools to ensure proper diversification and the hedging of undesired risk exposures. As defined by NEPC Research, unconstrained bond strategies are a conservative fixed income approach with a flexible investment mandate of high conviction investment themes or ideas managed with a strong focus on risk mitigation.

RESEARCH PROCESS

NEPC's investment manager research process identifies a Focused Placement List of strategies that we expect will provide superior investment performance over time. Our four step process used for identifying our Focused Placement List includes:

1. Universe Screening – Minimum inclusion criteria and screening are used to focus our analysis;
2. Quantitative Scoring – Proprietary quantitative analysis measuring the consistency and quality of alpha-only, net of fees returns;
3. Qualitative Research – Rigorous qualitative analysis of a strategy's key characteristics, focusing on identification of a clear and differentiating investment thesis to develop forward-looking conviction in future performance; and
4. Peer Review – Confirmation through careful peer review of each strategy by senior investment professionals to challenge each investment thesis and raise critical business issues.

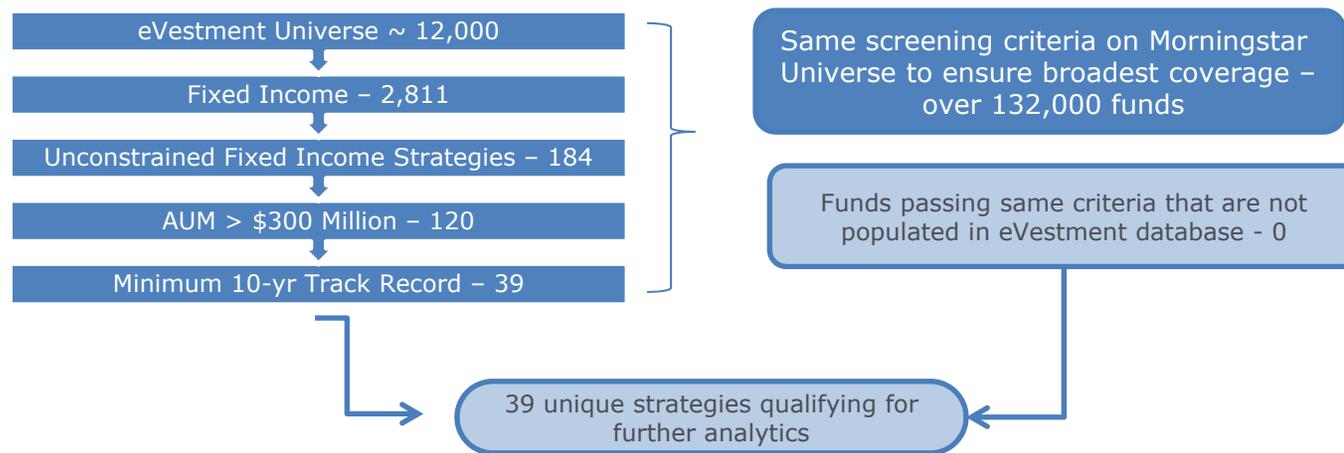
We believe that this exhaustive process leads to identification of strategies with a reasonable probability of delivering consistent, high quality investment results. From time to time, we may include products specifically requested by clients.



RESEARCH PROCESS

1. Universe Screening

- The construction of the Focused Placement List begins with initial universe screening to identify candidates that meet acceptable criteria for further analysis.



The chart above is a stylized example of a universe screen.

RESEARCH PROCESS

2. Quantitative Scoring

- Although we use our proprietary Performance Analytics Statistical Software (PASS) to help us identify potential strategies to research further, multi-sector fixed income is an evolving asset class. Product track records vary in length, and benchmarking products that may employ very different investment styles is challenging.

3. Qualitative Research

- Deep, qualitative research is conducted on a focused set of strategies identified through scoring and supplemented by our research teams' knowledge of strategies that appear compelling for further research.
- Our research efforts are focused on developing a deep understanding of each strategy's people, philosophy, & process, synthesizing those aspects into our interpretation of each strategy's investment thesis – the identification of a particular set of market inefficiencies and the conviction in a portfolio management team's ability to exploit those inefficiencies over the long-term, thereby, adding value over the benchmark.
- By focusing on investment thesis, our research remains forward-looking, supporting this investment view with critical knowledge of each organization, investment team, research support, investment process, performance expectations, and fees/available investment vehicles to identify strategies that we believe will provide quality excess returns above the relevant benchmark.



RESEARCH PROCESS

4. Peer Review

- The research process culminates in exhaustive peer review. The Fixed Income Advisory Group provides feedback and insight to the research team prior to vetting strategies in front of senior research and consulting professionals on NEPC's Due Diligence Committee. The research team presents each Focused Placement List candidate to the Due Diligence Committee. The committee challenges both the soundness of the investment thesis (NEPC's articulation of why the strategy is expected to outperform over the long-term) and all relevant factors that might effect the long-term stability of the strategy, including business factors at the firm level. Candidates approved by the Due Diligence Committee are placed on the Focused Placement List and included in searches conducted for that asset class.



SEARCH CANDIDATES

The following is a list of managers under consideration for this search. Each manager's composite track record has been used for this search.

Firm	Strategy	Comments
Absolute Return Fixed Income		
BlackRock	Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)	Strategy has broad flexibility to invest across global fixed income and derivative markets. Intended to retain the risk profile of conservative fixed income investments, the Strategy looks to control volatility and strictly manage potential tail risks.
Loomis Sayles	Loomis Sayles Strategic Alpha	Strategy is a long/short global fixed income approach with a focus on credit. Intended to be uncorrelated to fixed income markets while utilizing a tactical allocation approach and relative value long/short credit positions.
Payden & Rygel	Payden Absolute Return	PARI is a best-ideas, full-tool-kit portfolio. Strategy has a strong emphasis on income and downside protection, with little interest rate exposure. Portfolio is constructed with a stable core, a tactical trading overlay, and hedging as insurance.



FIRM AND PRODUCT SUMMARY

NEPC, LLC

FIRM AND PRODUCT SUMMARY

Firm/Product	Firm/Team Comments	Investment Style/Strategy	Performance Expectations	Portfolio Positioning	Other Comments
Absolute Return Fixed Income					
BlackRock - Strategic Income Opp	Strategy is led by Fixed Income CIO, Rick Rieder and PM Bob Miller with broad support sourced from sector specialists.	Strategy has broad flexibility to invest across global fixed income and derivative markets. Intended to retain the risk profile of conservative fixed income investments, the Strategy looks to control volatility and strictly manage potential tail risks.	Strategy targets a return of LIBOR plus 3% to 6% with a volatility of 3% to 7%. Designed to generate consistent risk-adjusted returns across all market environments.	Strategy duration range is - 2 years to 7 years, typically 0-3 years. CDOs are limited to 15% of net assets, of which CLOs would be under 10%.	Macro top-down in style, high turnover, complex holdings that are highly diversified.
Loomis - Strategic Alpha	Strategy is a best-ideas portfolio overseen by senior portfolio managers from Loomis Sayles' global asset allocation and credit teams.	Strategy is a long/short global fixed income approach with a focus on credit. Intended to be uncorrelated to fixed income markets while utilizing a tactical allocation approach and relative value long/short credit positions.	Strategy targets a return of LIBOR plus 2% to 4% with an average volatility of 4% to 6%. Drawdown risk is actively managed with extensive use of credit hedges.	Strategy duration range is - 2 years to 5 years. Active long/short exposures to global yield curves, credit, and currencies with extensive tail-risk hedges.	Credit heavy, relative value oriented strategy balanced by extensive hedging.
Payden & Rygel - PARI	Strategy is managed by a stable team of 3 senior portfolio managers Brian Matthews, Scott Weiner and Brad Boyd, and the Investment Policy Committee comprises of Payden's most senior fixed income investors.	PARI is a best-ideas, full-tool-kit portfolio. Strategy has a strong emphasis on income and downside protection, with little interest rate exposure. Portfolio is constructed with a stable core, a tactical trading overlay, and hedging as insurance.	Strategy targets LIBOR +2-3% over a rolling 3 year period, with loss protection being their first priority.	Strategy duration range is - 2 to 5 years. Emerging markets and non-agency positions are limited to 40%, while high yield maximum exposure is 50%. Foreign currency is limited to 10% of the fund.	A majority women-owned firm, though not registered as such.



NEPC INVESTMENT THESIS

Firm/Product	NEPC Investment Thesis
Absolute Return Fixed Income	
BlackRock - Strategic Income Opp	The investment team's ability to identify key drivers in current macro regimes and allocate risk accordingly to specific sectors, alpha opportunities, and tail-risk hedging strategies allow the Strategy to achieve positive returns in most market environments. Central to our investment thesis is BlackRock SIO's macro capabilities, the breadth and depth of their alpha sources, and their sharp focus on risk budgeting and risk management.
Loomis - Strategic Alpha	Strategic Alpha's flexibility to invest across global fixed income markets, a risk-controlled opportunistic approach to credit exposures, and superior security selection leveraging Loomis' expertise in fundamental credit research are key drivers of this Strategy. While the Strategy has a credit bias given their strength in bottom up credit selection, the overall portfolio is constructed to be uncorrelated to fixed income markets due to the extensive use of tail-risk hedging strategies and relative value long/short credit and interest rate positions.
Payden & Rygel - PARI	Sticking to their core strengths of a consistent team-based approach, their deep expertise in low duration, and a history of achieving stable, income-oriented returns, the PARI team builds a defensible income core of a highly diversified and rigorously vetted global portfolio, to which they then add an outer layer of medium-term thematic and shorter-term tactical views, and protect it with tail hedging. Central to the consistency of PARI's alpha add is the balanced, diversified make-up of the core, the conservative nature of the team, and their emphasis on portfolio insurance with an annual budget set aside for macro hedging.



FIRM COMPARISON SUMMARY

Firm Name	Location	Year Firm Founded	Total Assets Under Mgmt (\$MM)	% Employee Owned	% Parent Owned	Parent Company Name	% Publicly Held	% Other Ownership
Absolute Return Fixed Income								
BlackRock Investments, LLC	New York, New York	1988	6,515,345	0	0	NA	78	22
Loomis, Sayles & Company, L.P.	Boston, Massachusetts	1926	263,508	0	100	Natixis Global Asset Management (NGAM)	0	0
Payden & Rygel	Los Angeles, California	1983	114,200	100	0	NA	0	0



PRODUCT COMPARISON

Firm/Product	Inception Date	AUM (\$MM)	# of Portfolio Managers	# of Research Analysts	# of Traders
Absolute Return Fixed Income					
BlackRock - Strategic Income Opp	2010	31,792	3	0	0
Loomis - Strategic Alpha	2011	5,609	3	76	43
Payden & Rygel - PARI	2008	9,934	3	24	10

Firm/Product	PRI Signatory (Y/N)	Strategy is Managed with ESG Considerations (Y/N)
Absolute Return Fixed Income		
BlackRock - Strategic Income Opp	Yes	No
Loomis - Strategic Alpha	Yes	Yes
Payden & Rygel - PARI	Yes	Yes



PRODUCT COMPARISON

Firm/Product	Vehicle Proposed	Liquidity In	Liquidity Out	Reported Fee for \$40.00 mm	Reported Fee in (bps)
Absolute Return Fixed Income					
BlackRock - Strategic Income Opp	Commingled Fund Mutual Fund	Daily Daily	Daily Daily	update	48 53
Loomis - Strategic Alpha	Commingled Fund Mutual Fund	Bi-Weekly Daily	Bi-Weekly Daily		55 70
Payden & Rygel - PARI	Commingled Fund Mutual Fund	Daily Daily	Daily Daily		50 47*

*Reduction in Standard Fees



FIXED INCOME COMPARISON

Firm/Product	Duration Emphasis	Weighted Average Coupon (%)	Yield to Maturity (%)	Average Maturity (Years)	Duration (Years)	Average Quality	Minimum Quality
Absolute Return Fixed Income							
BlackRock - Strategic Income Opp	Core/All Durations	4.1	4.0	5.48	3.59	BBB	NA**
Loomis - Strategic Alpha	Short	3.1	4.0	1.53	0.48	BBB	NA**
Payden & Rygel - PARI	Core/All Durations	4.3	4.1	4.50	2.30	BBB	CC

*Effective Duration Shown
 **No Minimum Quality Issue

Firm/Product	# of Issues	Current Cash (%)	Annual Turnover (%)	Yield to Worst (%)
Absolute Return Fixed Income				
BlackRock - Strategic Income Opp	3,441	NA*	NA*	3.9
Loomis - Strategic Alpha	433	11.1	307.4	4.0
Payden & Rygel - PARI	331	0.0	91.0	4.0

*Not Provided



CURRENT QUALITY ALLOCATIONS

Firm/Product	AAA/Aaa (%)	AA/Aa (%)	A (%)	BBB/Baa (%)	BB/Ba (%)	B (%)	CCC/Caa and Below (%)	Other (%)
Absolute Return Fixed Income								
BlackRock - Strategic Income Opp	4.8	6.0	12.2	19.9	12.1	8.0	3.5	33.5
Loomis - Strategic Alpha	21.1	12.4	19.1	21.5	6.9	4.8	2.0	12.3
Payden & Rygel - PARI	18.0	4.0	13.0	28.0	13.0	9.0	8.0	7.0

Firm/Product	Duration <1 Yr (%)	Duration 1-3 Yrs (%)	Duration 3-5 Yrs (%)	Duration 5-7 Yrs (%)	Duration 7-10 Yrs (%)	Duration 10-20 Yrs (%)	Duration >20 Yrs (%)
Absolute Return Fixed Income							
BlackRock - Strategic Income Opp	49.4	31.5	-3.9	5.5	13.4	4.4	-0.2
Loomis - Strategic Alpha	56.3	37.1	12.9	5.2	-10.5	-1.1	0.0
Payden & Rygel - PARI	48.0	36.0	17.0	2.0	-3.0	0.0	0.0



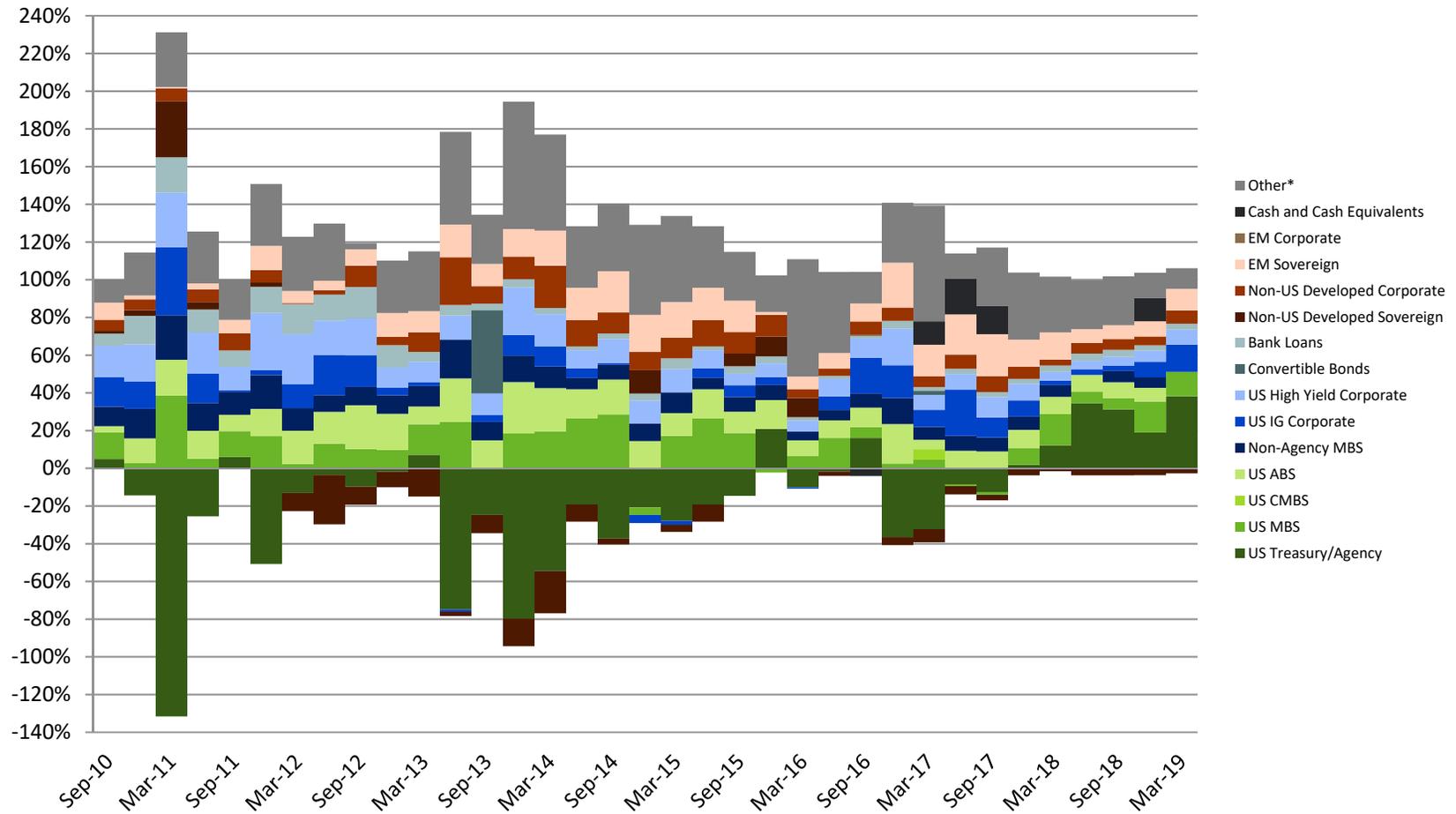
STRATEGY ALLOCATIONS

NEPC, LLC

SECTOR ALLOCATIONS

BlackRock
Strategic Income Opportunities

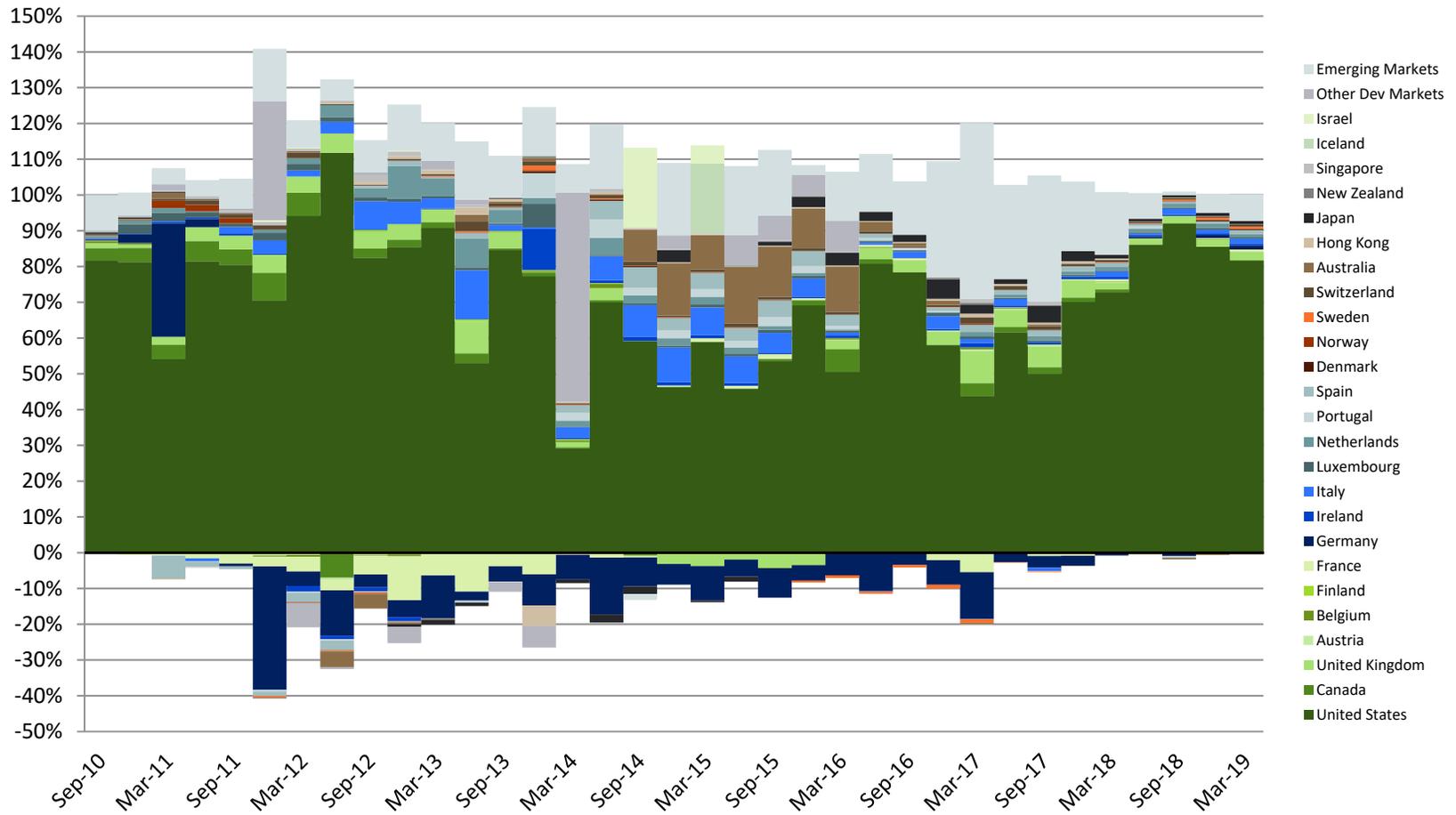
Sector Allocations



COUNTRY ALLOCATIONS

BlackRock Strategic Income Opportunities

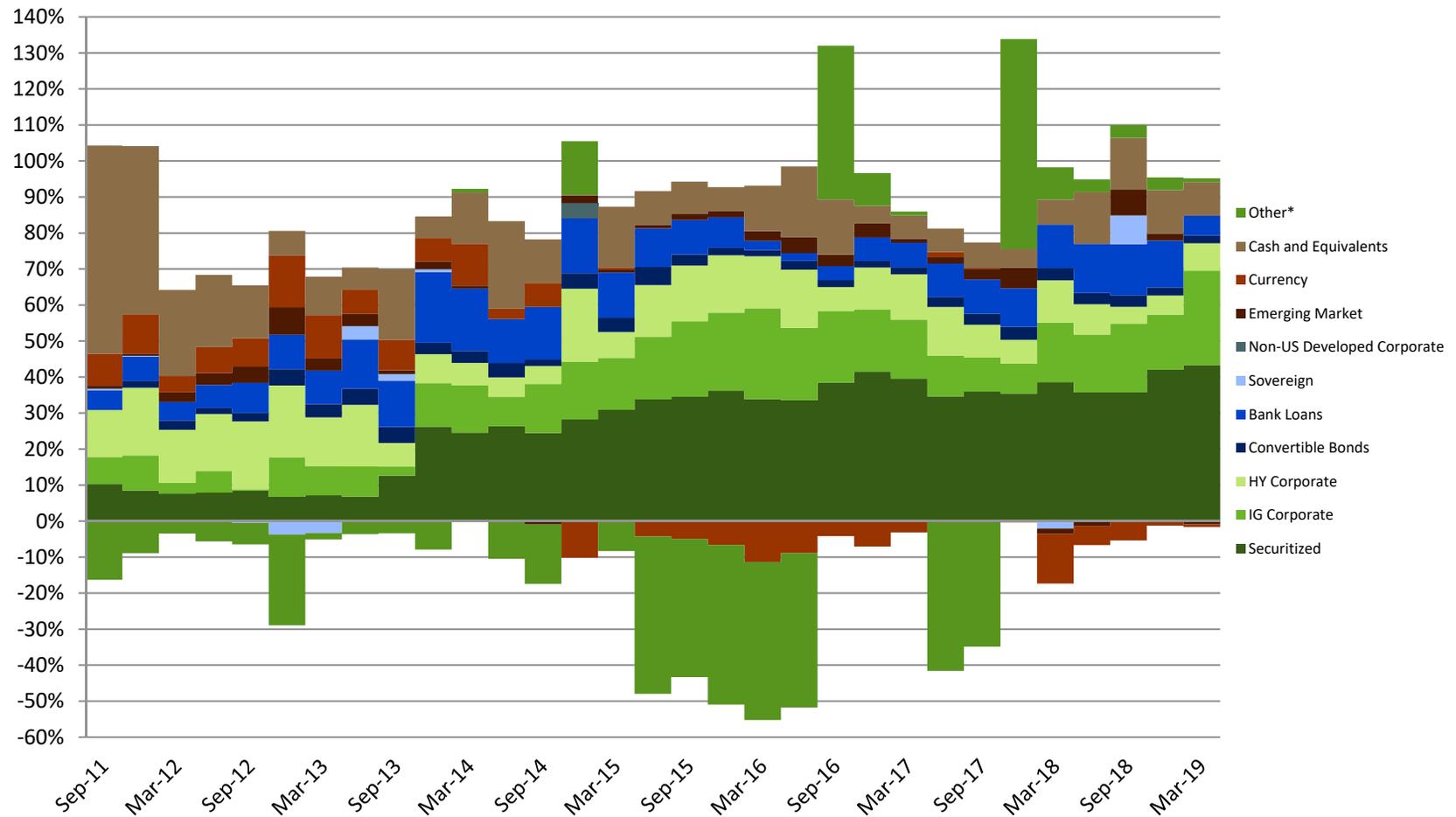
Country Allocations



SECTOR ALLOCATIONS

Loomis, Sayles & Company, L.P.
Strategic Alpha

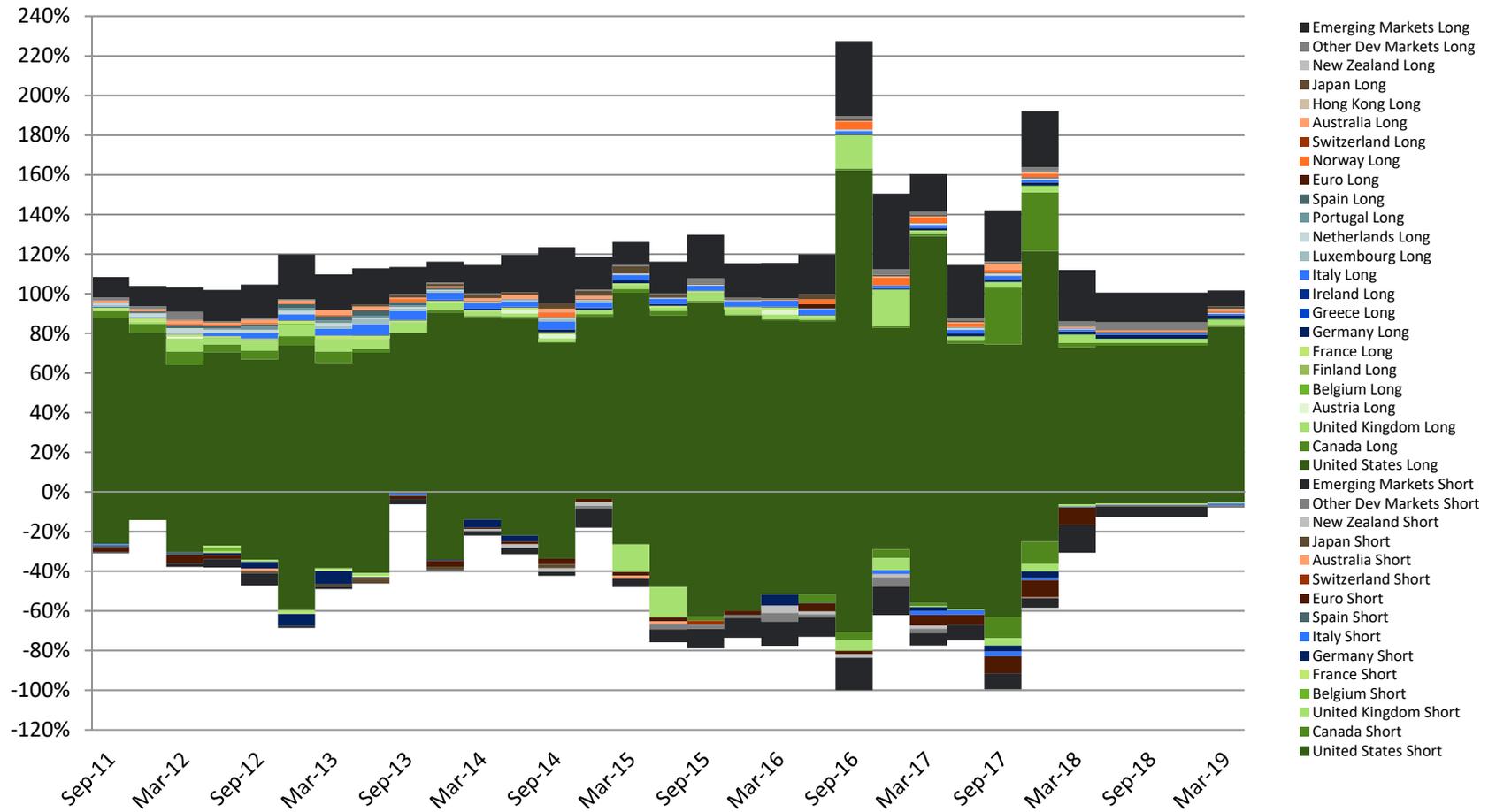
Sector Allocations



COUNTRY ALLOCATIONS

Loomis, Sayles & Company, L.P.
Strategic Alpha

Country Allocations



Long and short exposures shown.

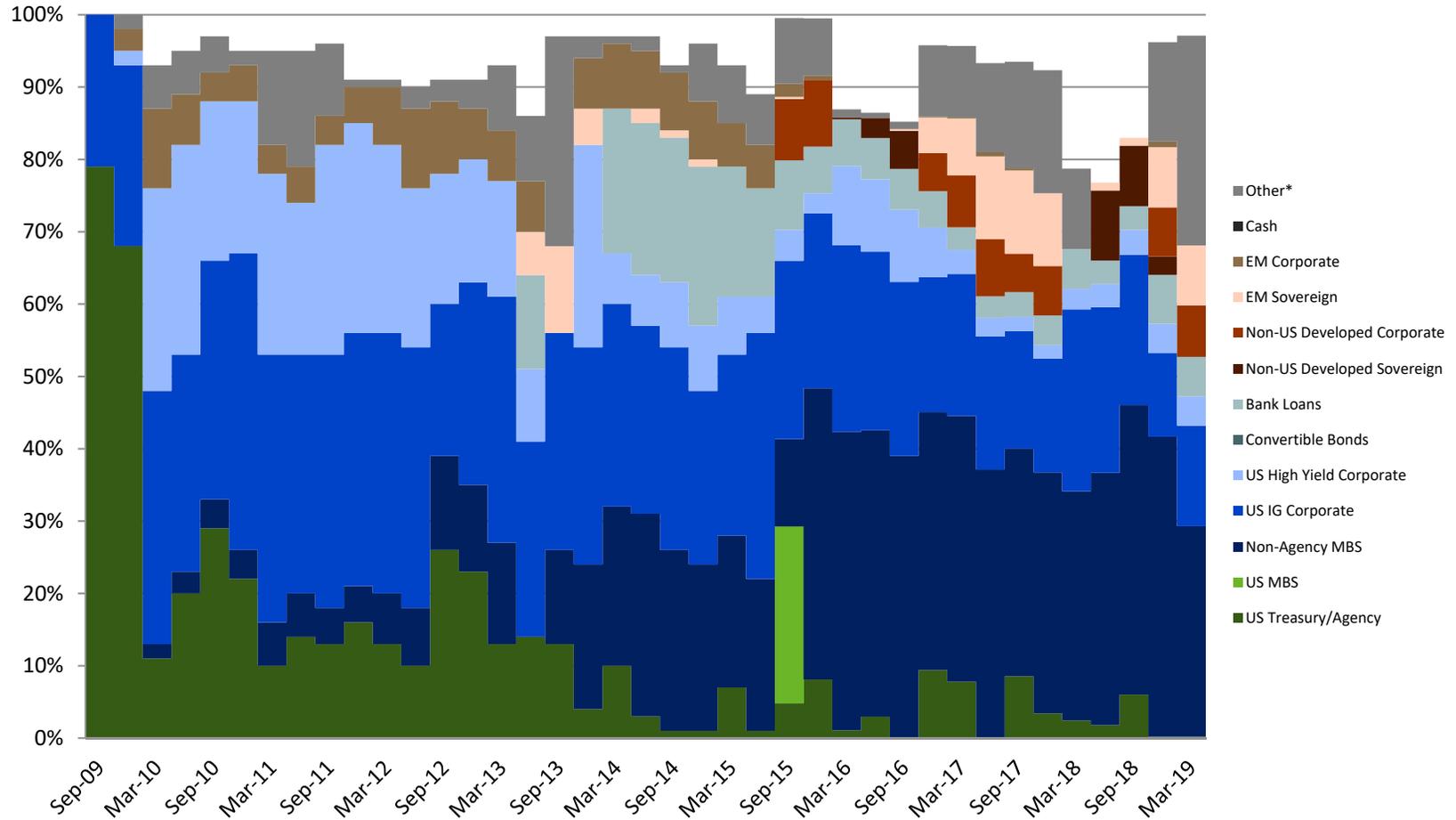
Characteristics as of March 31, 2019



SECTOR ALLOCATIONS

Payden & Rygel
Payden Absolute Return Investing

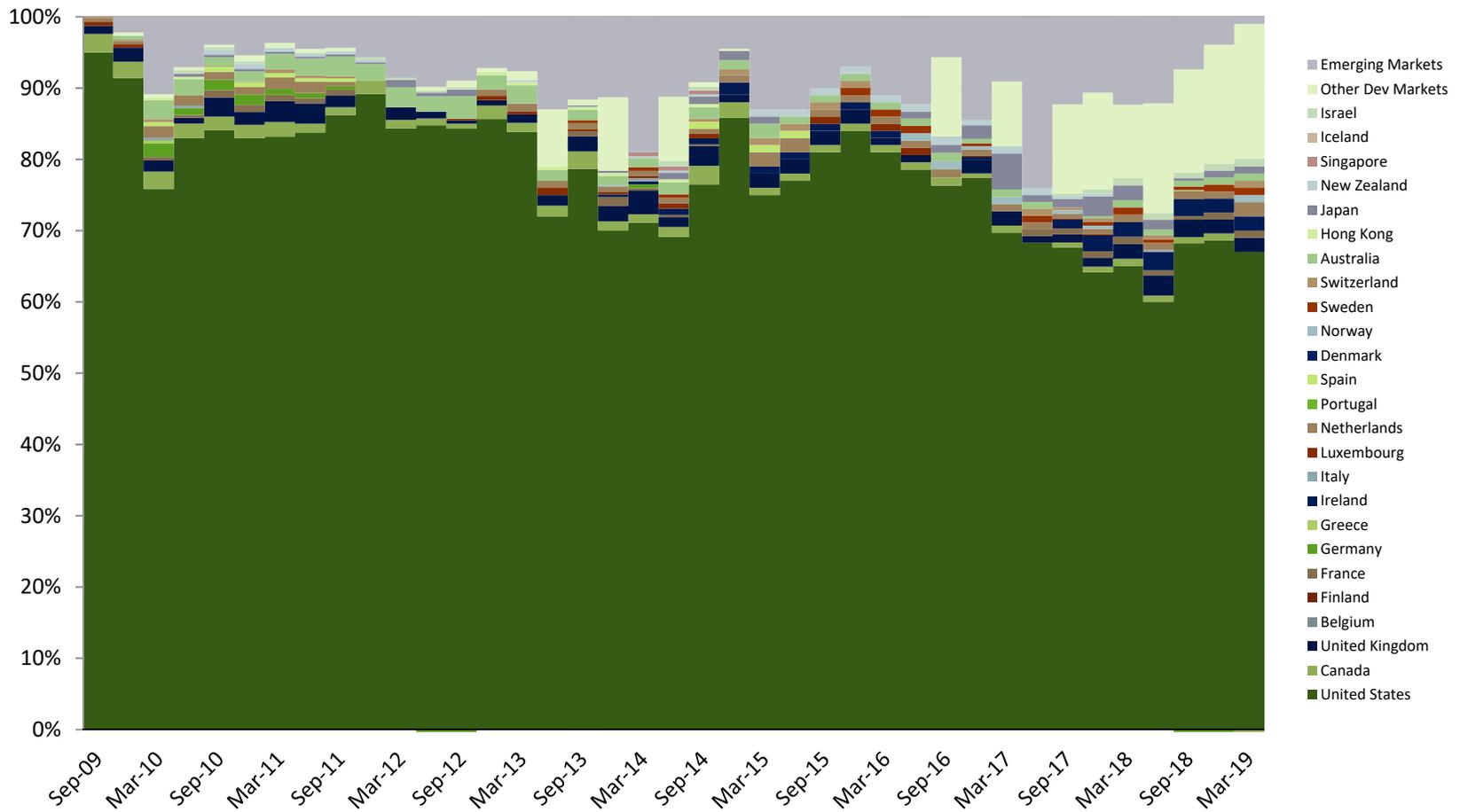
Sector Allocations



COUNTRY ALLOCATIONS

Payden & Rygel Payden Absolute Return Investing

Country Allocations



PERFORMANCE

NEPC, LLC

INTRODUCTION TO PERFORMANCE ANALYSIS

The following performance charts show the historical record for the strategies under consideration. To manage client portfolios, each manager has a range of offerings (separate accounts, commingled funds or mutual funds) that allow all types of clients access to the strategy at reasonable prices.

Trailing Period Returns and Calendar Year Returns:

These pages highlight a manager's performance for quarter, year to date, 1, 3, 5, 7 & 10 year periods as well as calendar year returns.

Performance Summary:

These pages highlight a manager's excess performance over various periods. All managers are also shown from the inception of the shortest record referred to as LCD or Least Common Denominator.

Return Histogram:

These charts display the frequency of a manager's monthly excess performance data.

Rolling One Year and Three Year Excess Returns:

These charts demonstrate the manager's demonstrated relative performance versus the benchmark over time. Using each manager's one year return and subtracting the one year benchmark return shows how each manager has performed relative to the relevant benchmark. The same method is used for the three year charts.

Rolling One Year and Three Year Excess Return Versus Benchmark:

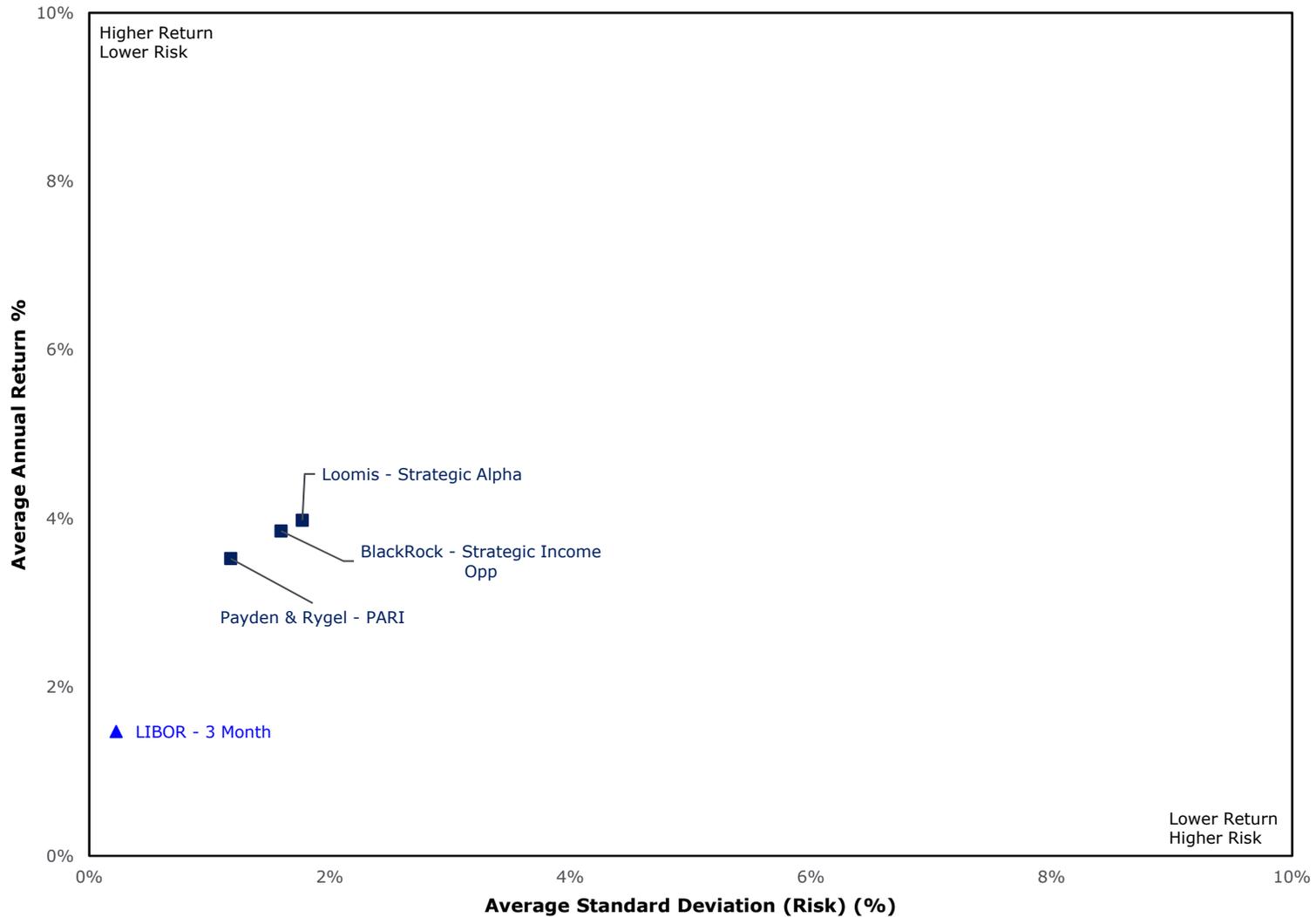
These charts demonstrate the manager's demonstrated relative performance behavior over up and down equity markets. The charts are displayed in order of benchmark performance along the X-Axis rather than chronological order. By looking at the Y-Coordinate you can determine whether or not the manager added or detracted value versus the benchmark over that one year period. Each dot represents the one year excess return versus the relevant benchmark. The same method is used for the three year charts.

Risk/Return Performance Charts:

These charts show the risk and return of the candidates and indicies for 3, 5, 7 & 10 year periods.



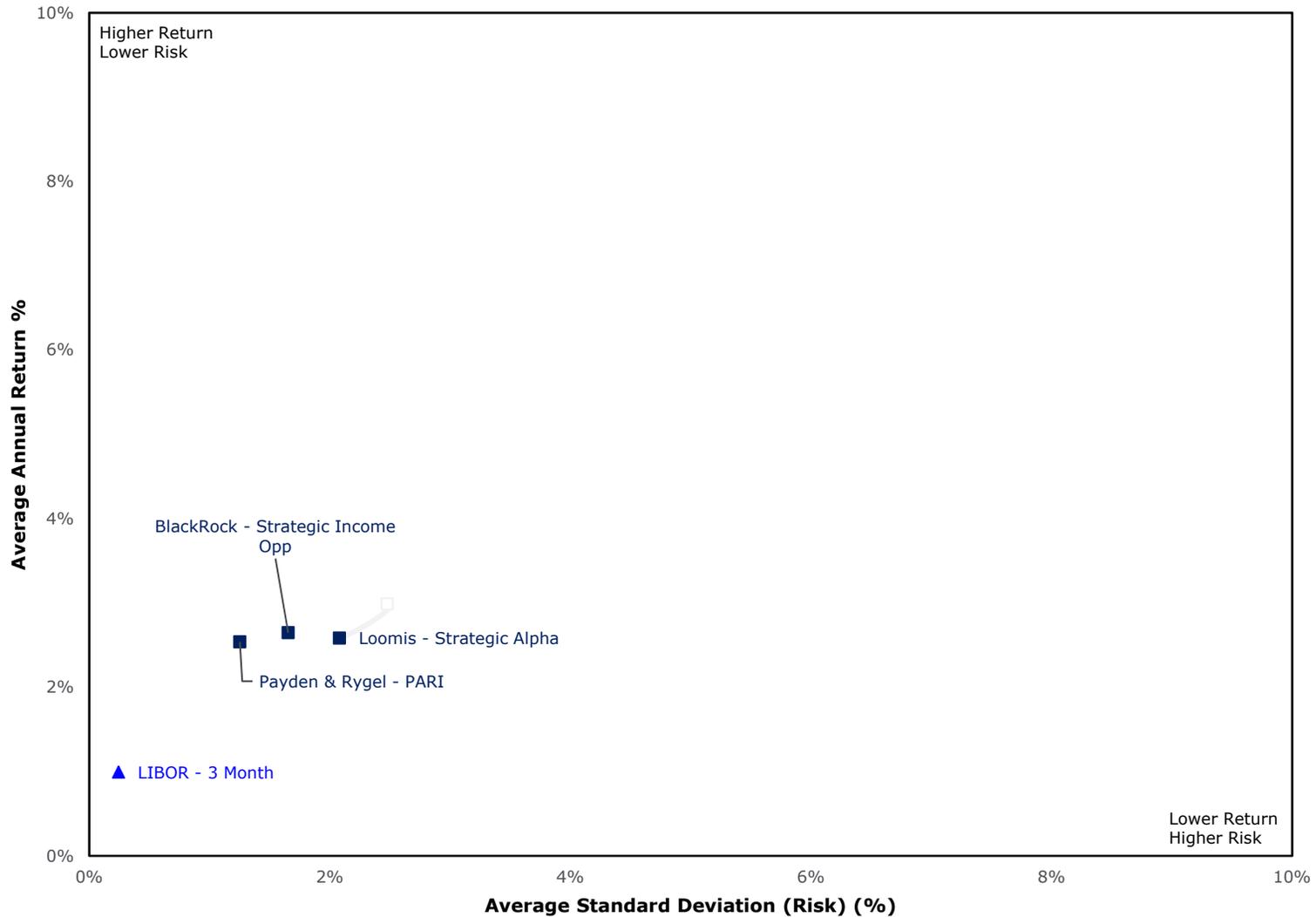
3 YEAR TOTAL RISK/RETURNS COMPARISON - (NET OF FEES)



Past performance is no guarantee of future results

Performance as of March 31, 2019

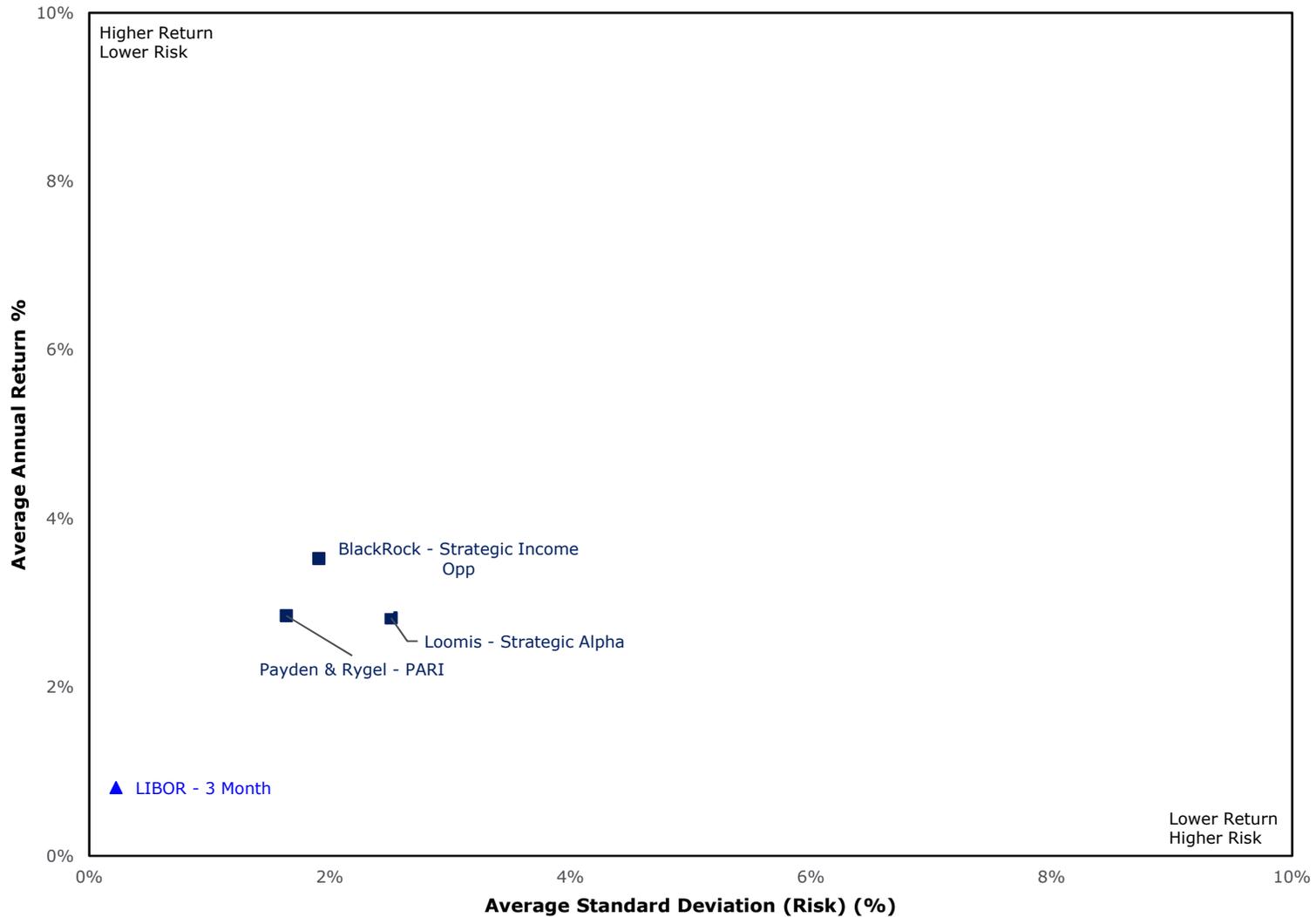
5 YEAR TOTAL RISK/RETURNS COMPARISON - (NET OF FEES)



Past performance is no guarantee of future results

Performance as of March 31, 2019

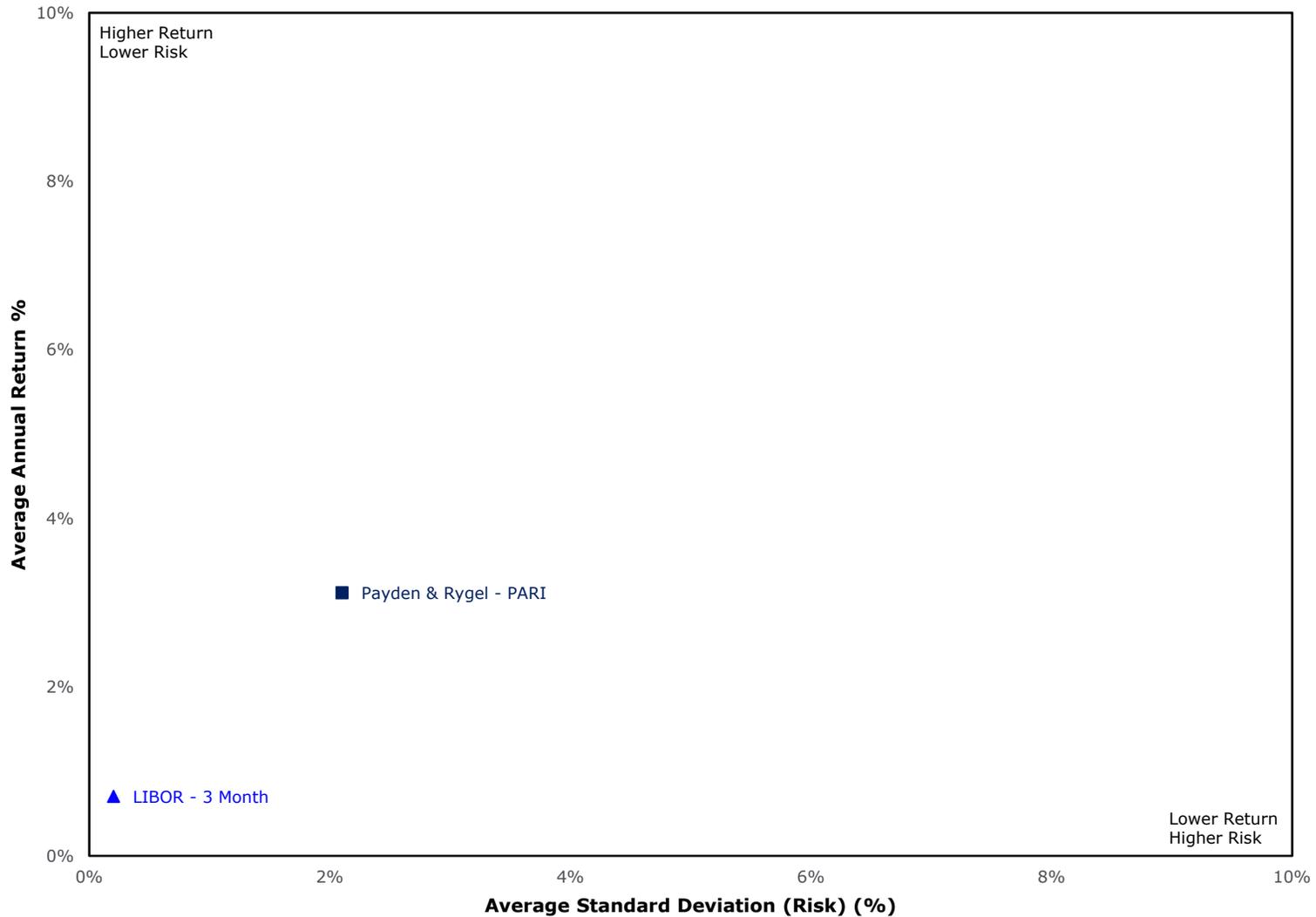
7 YEAR TOTAL RISK/RETURNS COMPARISON - (NET OF FEES)



Past performance is no guarantee of future results

Performance as of March 31, 2019

10 YEAR TOTAL RISK/RETURNS COMPARISON - (NET OF FEES)



Past performance is no guarantee of future results

Performance as of March 31, 2019

TRAILING PERIOD RETURNS - (NET OF FEES)

	Benchmark	Qtr	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
Absolute Return Fixed Income								
BlackRock - Strategic Income Opp	1	2.5%	2.5%	1.8%	3.9%	2.6%	3.5%	NA
Loomis - Strategic Alpha	1	2.0%	2.0%	1.7%	4.0%	2.6%	2.8%	NA
Payden & Rygel - PARI	1	2.4%	2.4%	2.8%	3.5%	2.5%	2.8%	3.1%

Actual Return

1 LIBOR - 3 Month	0.7%	0.7%	2.5%	1.5%	1.0%	0.8%	0.7%
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Past performance is no guarantee of future results

Performance as of March 31, 2019

CALENDAR YEAR RETURNS - (NET OF FEES)

	Bench mark	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Absolute Return Fixed Income											
BlackRock - Strategic Income Opp	1	-0.2%	5.0%	3.8%	-0.1%	4.2%	3.5%	10.2%	-1.0%	NA	NA
Loomis - Strategic Alpha	1	0.6%	3.4%	6.2%	-1.0%	2.4%	0.4%	10.2%	NA	NA	NA
Payden & Rygel - PARI	1	0.9%	3.7%	4.0%	1.2%	1.9%	0.1%	7.4%	0.8%	5.5%	4.5%

Actual Index Return

1 LIBOR - 3 Month	2.1%	1.1%	0.7%	0.2%	0.2%	0.3%	0.5%	0.3%	0.3%	1.0%
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Past performance is no guarantee of future results

Performance as of March 31, 2019

TOTAL RETURN PERFORMANCE SUMMARY - (NET OF FEES)

	# of Months (Track Record)	% Positive (Mo.)	% Negative (Mo.)	High (Mo.)	Low (Mo.)	Total Return				
						1 Yr.	3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.
Absolute Return Fixed Income										
BlackRock - Strategic Income Opp	108	73%	27%	2.6%	(1.9%)	1.8%	3.9%	2.6%	3.5%	NA
Loomis - Strategic Alpha	95	64%	36%	2.6%	(3.1%)	1.7%	4.0%	2.6%	2.8%	NA
Payden & Rygel - PARI	126	77%	23%	1.8%	(2.2%)	2.8%	3.5%	2.5%	2.8%	3.1%

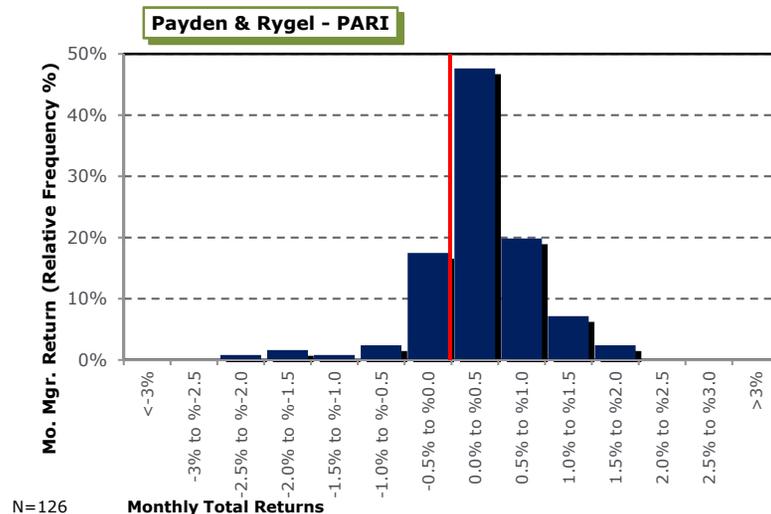
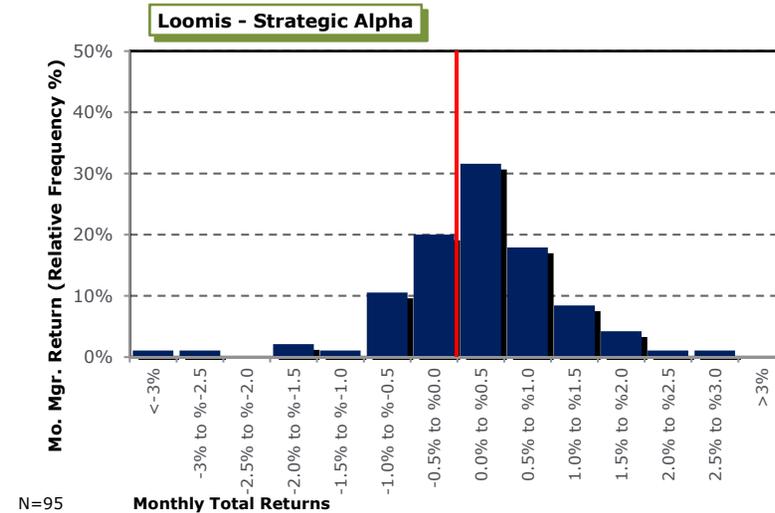
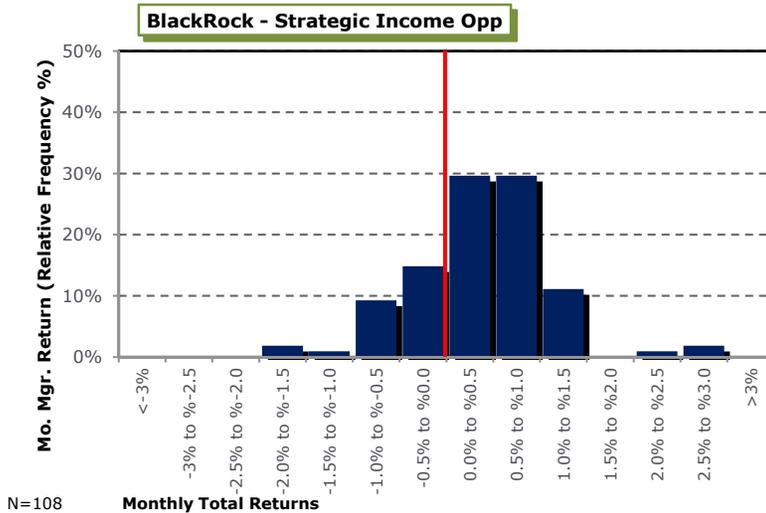


TOTAL RETURN PERFORMANCE SUMMARY - (NET OF FEES)

	# of Months (Track Record)	Standard Deviation				Sharpe Ratio			
		3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.	3 Yrs.	5 Yrs.	7 Yrs.	10 Yrs.
Absolute Return Fixed Income									
BlackRock - Strategic Income Opp	108	1.6%	1.7%	1.9%	NA	1.25	0.42	0.75	NA
Loomis - Strategic Alpha	95	1.8%	2.1%	2.5%	NA	1.20	0.30	0.29	NA
Payden & Rygel - PARI	126	1.2%	1.3%	1.6%	2.1%	1.42	0.46	0.46	0.33



TOTAL MONTHLY RETURNS HISTOGRAM - (NET OF FEES)



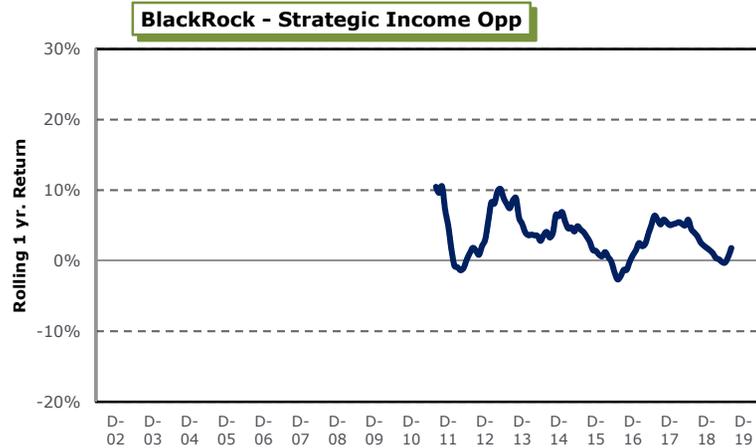
 Absolute Return Fixed Income



Past performance is no guarantee of future results

Performance as of March 31, 2019

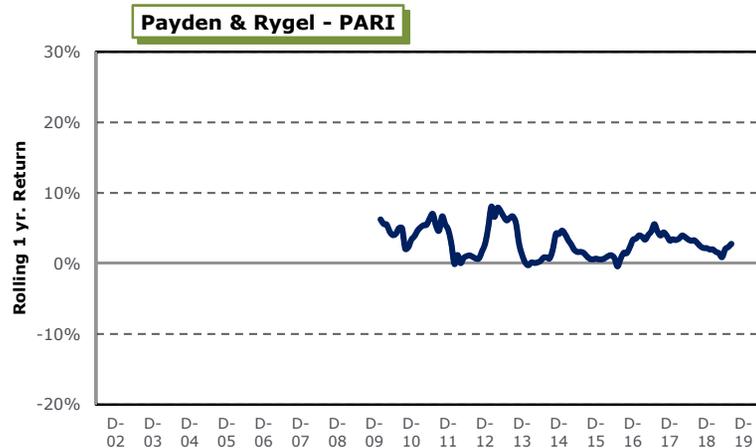
ROLLING 1 YEAR TOTAL RETURNS - (NET OF FEES)



Total Returns



Total Returns



Total Returns

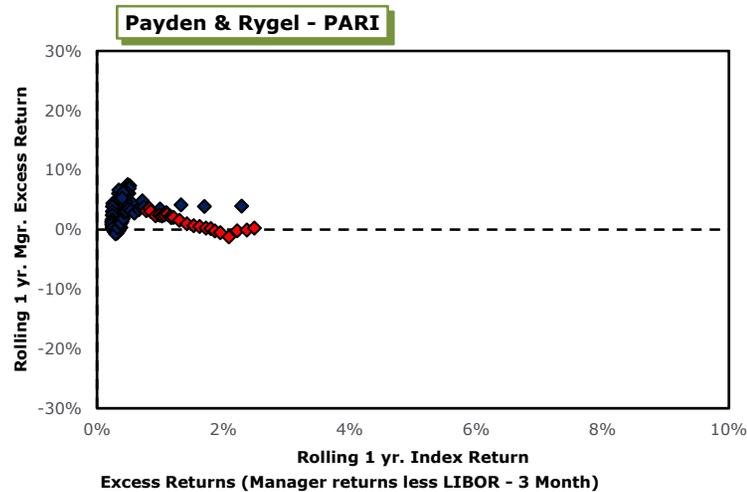
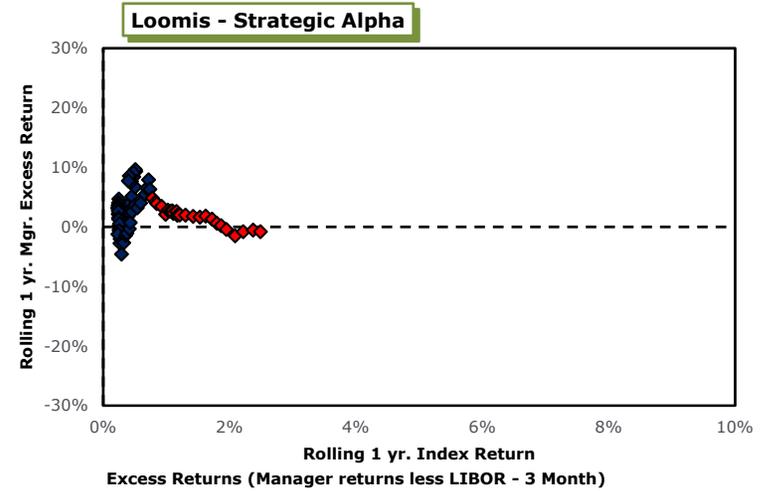
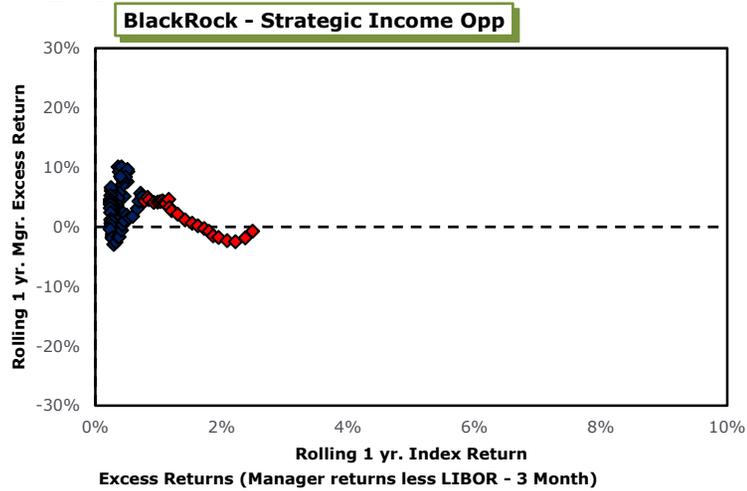
 Absolute Return Fixed Income



Past performance is no guarantee of future results

Performance as of March 31, 2019

ROLLING 1 YEAR TOTAL RETURNS - (NET OF FEES)



◆ = Rolling 1 year periods; ◆ = Last 24 rolling 1 year periods

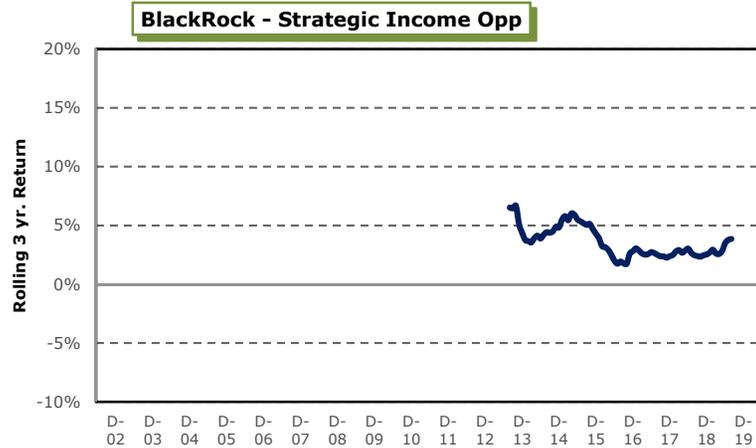
□ Absolute Return Fixed Income



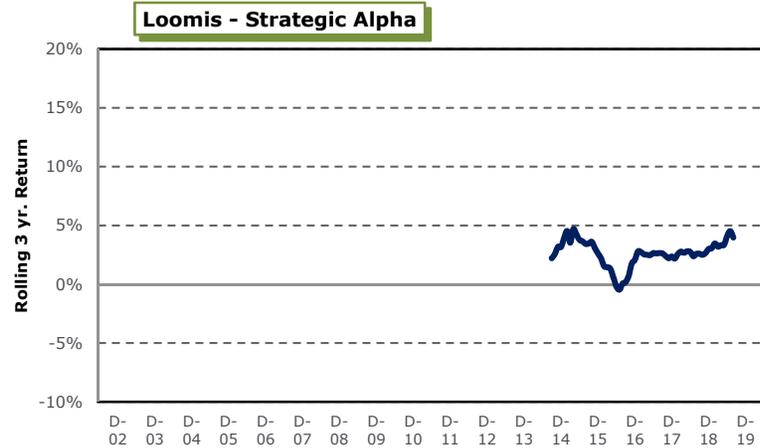
Past performance is no guarantee of future results

Performance as of March 31, 2019

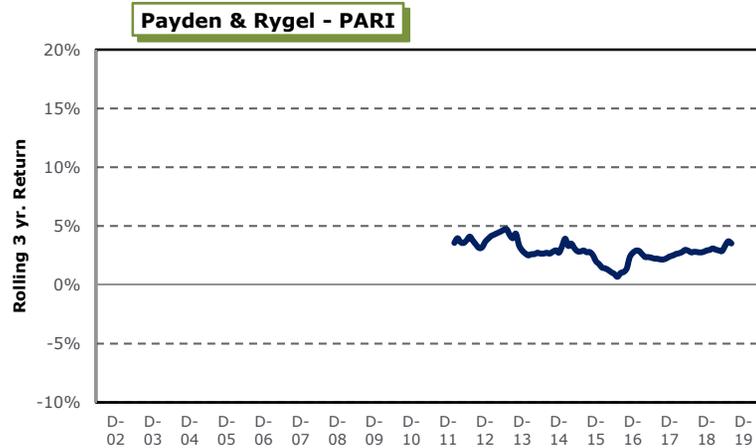
ROLLING 3 YEAR TOTAL RETURNS - (NET OF FEES)



Total Returns



Total Returns



Total Returns

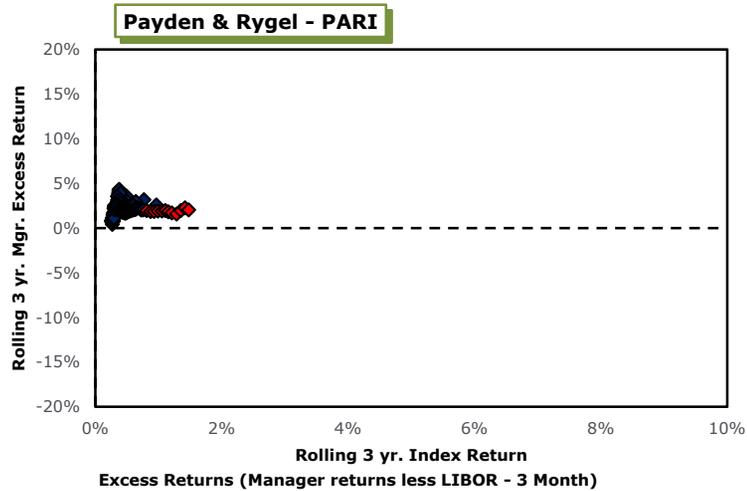
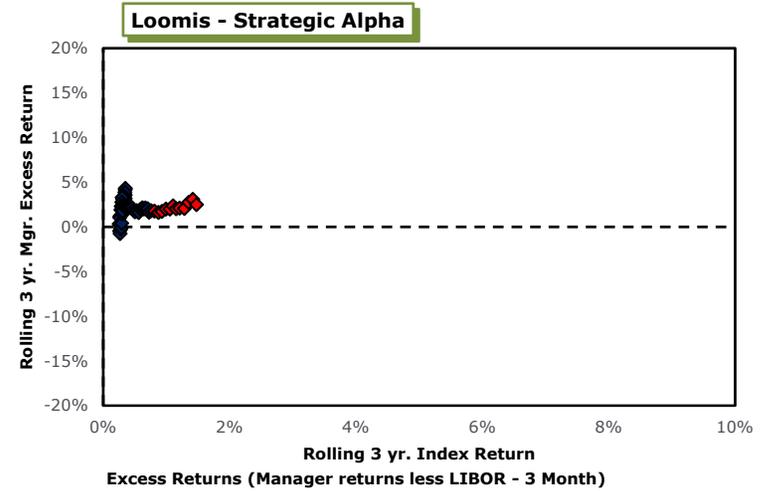
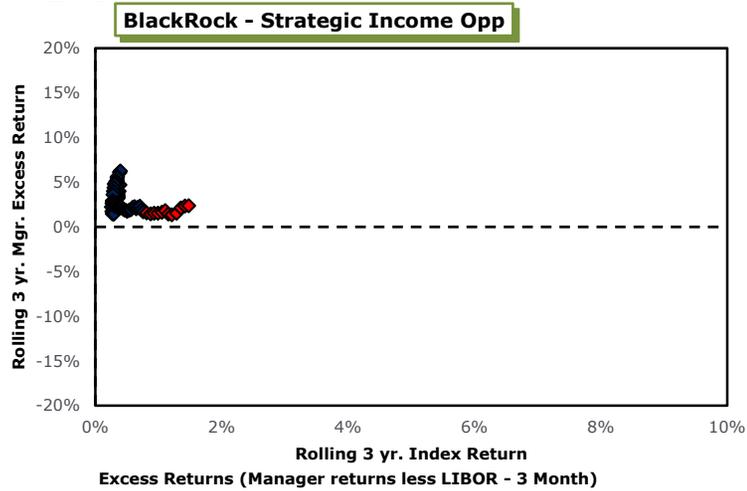
 Absolute Return Fixed Income



Past performance is no guarantee of future results

Performance as of March 31, 2019

ROLLING 3 YEAR TOTAL RETURNS - (NET OF FEES)



◆ = Rolling 3 year periods; ◆ = Last 12 rolling 3 year periods

□ Absolute Return Fixed Income



Past performance is no guarantee of future results

Performance as of March 31, 2019

PROFILES

NEPC, LLC

INVESTMENT FIRM/PRODUCT PROFILE

BlackRock Investments, LLC Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Firm Description

BlackRock, Inc. is an independent, publicly traded company, with no single majority shareholder and over two-thirds of its Board of Directors consisting of independent directors. BlackRock was founded in 1988 by a group of investment professionals with a unique skill set in securitized bonds. In addition, some of the founders of BlackRock were early developers of CMOs and other mortgage derivatives. The firm has since grown to be one of the largest fixed income managers in the world through a series of mergers and acquisitions and organic growth of existing product lines. Most recently, BlackRock acquired Barclays Global Investors (BGI) and merged the investment management divisions. BGI brought with them a significant presence in ETF markets and model-based strategies. Roughly one third of the firm's total assets under management is equity, one third fixed income, with the remaining portion split among cash, alternatives and multi-asset. The firm is also known for its development of BlackRock Solutions, a widely used analytical and risk management advisory tool.

NEPC Investment Thesis

The investment team's ability to identify key drivers in current macro regimes and allocate risk accordingly to specific sectors, alpha opportunities, and tail-risk hedging strategies allow the Strategy to achieve positive returns in most market environments. Central to our investment thesis is BlackRock SIO's macro capabilities, the breadth and depth of their alpha sources, and their sharp focus on risk budgeting and risk management.

People

BlackRock's Fixed Income CIO, Rick Rieder and Managing Director, Bob Miller, oversee the Strategic Income Opportunities Fund with broad support from over 100 fixed income investment specialists. The Strategy is broadly segmented into three groups; portfolio management, sector specialists, and risk management, who respectively direct the top-down asset allocation framework, bottom-up alpha generation, and risk analysis. The sector specialists constitute the members of BlackRock's global fixed income platform and are responsible for global rates strategies, securitized assets, corporate credit, and emerging markets.



INVESTMENT FIRM/PRODUCT PROFILE

BlackRock Investments, LLC Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Philosophy

BlackRock's Strategic Income Opportunities Fund has broad flexibility to invest across global fixed income and derivative markets, while retaining the general risk profile of conservative fixed income investments. The Strategy is designed to generate consistent risk-adjusted returns across all market environments with a diversified portfolio of market risk and alpha exposures with low correlations to traditional fixed income indices. The Strategy tactically adjusts risk exposures based upon the market environment and alpha opportunities but with a keen focus on controlling volatility and mitigating potential tail risks.

Investment Strategy

The Strategic Income Opportunities Strategy was designed to be benchmark agnostic and includes all global fixed income assets and financial instruments that meet the Strategy's liquidity criteria. The Strategy is intended to retain the risk profile of a conservative fixed income investment while offering a risk balanced exposure to interest rate risk, credit risk, and alpha opportunities. The process begins with the co-heads of the Strategy, BlackRock's Fixed Income CIO, Rick Rieder and Managing Director, Bob Miller, who define the characteristics and profile of the macro investment regime. Mr. Rieder and Mr. Miller review broad global economic trends, financial trends, and structural investment themes to provide a global perspective on the macro investment risk regime. This macro risk budget provides an investment framework that informs the top-down asset allocation and the scaling of active risks while ensuring that the investment team is cognizant of the risk/return profile of the Strategy.



INVESTMENT FIRM/PRODUCT PROFILE

BlackRock Investments, LLC Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Upon defining the macro investment regime, Mr. Rieder and Mr. Miller look to identify risk exposures and assets that may perform well in the current regime based upon historical relationships and current valuations. These risk exposures include but are not limited to equity risk, currency, real interest rates, inflation, credit spread, liquidity risk, and beta neutral/relative value opportunities. Mr. Rieder and Mr. Miller then optimally allocate risk budgets to underlying fixed income sector specialists based on their conviction and alpha opportunity. While the Strategy is an unconstrained fixed income allocation approach, risk-based constraints are applied to investment themes and allocations to ensure consistent liquidity and diversification through multiple risk scenarios. Mr. Rieder and Mr. Miller seek to exploit these market inefficiencies and alpha opportunities in such a manner that the Strategy collectively responds positively in a variety of economic conditions and scenarios.

Following the identification of the macro investment regime and the assignment of risk budgets, the sector specialists target bottom-up alpha opportunities. More constrained limitations are in place at the underlying sector allocation level as sector specialists have explicit guidelines within their sectors and manage according to a predefined risk budget. Security and instrument selection is based upon both macro and fundamental views and opportunities are sourced across an array of risk exposures such as duration, yield curve, country exposure, credit spreads, and relative value opportunities. The sector specialist teams include Global Rates Strategy, Securitized Assets, US Investment-Grade Credit, Agency MBS, Leveraged Finance, Municipals, European Credit, and Emerging Markets.



INVESTMENT FIRM/PRODUCT PROFILE

BlackRock Investments, LLC Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Integral to the management of the Strategy is an understanding of the risk interaction of the macro top-down views and bottom-up security selection. BlackRock and the investment team are focused on quantifying both the security level active risk and macro risk exposures to ensure the risk/return characteristics of the Strategy are well balanced. The investment team has leveraged the resources of BlackRock to develop a detailed risk management matrix that provides a daily active risk profile. The investment team utilizes these tools to manage the liquidity profile of active positions and the overall portfolio while also quantifying the systematic and non-systematic risks within the Fund. This detailed risk focus allows the investment team to quantify the interaction of risks associated with all active positions and to quickly reduce or hedge undesired security or market risk factors. In addition, the investment team actively monitors the stability of the current investment risk regimes and utilizes custom market stress scenarios to mitigate the Strategy tail and downside risks.

Portfolio

The Strategy duration will range from -2 years to 7 years at the portfolio level and may also include negative duration positions within specific developed bond markets. Sector weights are unconstrained across geography and credit but risk allocations are carefully monitored to maintain portfolio risk targets and high levels of liquidity. Allocation and risk exposures are sourced from traditional US fixed income sectors such as government bonds and credit, global fixed income sectors, macro-themed allocations across global yield curves and currency, and non-traditional exposures such as relative value trades, capital structure arbitrage, and beta neutral alpha exposures.

Performance Expectations

The Strategic Income Opportunities Strategy targets a return of LIBOR plus 3% to 6% with a volatility range of 3% to 7%. The Strategy is designed to generate consistent risk-adjusted returns across all market environments. The fixed income team seeks to add value by defining the current macro investment regime, identifying sectors likely to perform well in the current regime with compelling valuations, and then allocating risk to sector specialists to generate bottom-up alpha opportunities. The Strategy is intended to retain the risk profile of conservative fixed income investments and looks to control volatility and strictly manage potential tail risk.



BIOGRAPHIES OF KEY PROFESSIONALS

BlackRock Investments, LLC

Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Rick Rieder, Managing Director, Chief Investment Officer of Fundamental Fixed Income

Mr. Rieder, Managing Director, is BlackRock's Chief Investment Officer of Fundamental Fixed Income, co-head of Americas Fixed Income and a member of the Executive Committee of the firm-wide Alpha Strategy business. He is a portfolio manager for BlackRock's Strategic Income Opportunities for US investors, and Fixed Income Global Opportunities for non-US investors; he's also a portfolio manager for BlackRock's Total Return and Core Bond funds. Additionally, Mr. Rieder is a member of BlackRock's firm-wide Operating, Leadership, and Philanthropy Committees. Before joining BlackRock in 2009, Mr. Rieder was President and Chief Executive Officer of R3 Capital Partners. He served as Vice Chairman and member of the Borrowing Committee for the U.S. Treasury. Mr. Rieder is currently a member of the Federal Reserve Bank of New York's Investment Advisory Committee on Financial Markets, and was recently elected as the 2013 inductee into the Fixed Income Analysts Society Fixed Income Hall of Fame. From 1987 to 2008, Mr. Rieder was with Lehman Brothers, most recently as head of the firm's Global Principal Strategies team, a global proprietary investment platform. He was also global head of the firm's credit businesses, Chairman of the Corporate Bond and Loan Capital Commitment Committee, and a member of the Board of Trustees for the corporate pension fund. Before joining Lehman Brothers, Mr. Rieder was a credit analyst at SunTrust Banks in Atlanta. Mr. Rieder earned a BBA degree in finance from Emory University in 1983 and an MBA degree from The Wharton School of the University of Pennsylvania in 1987.



BIOGRAPHIES OF KEY PROFESSIONALS

BlackRock Investments, LLC Strategic Income Opportunities (SIO) (Unconstrained US Domiciled)

Bob Miller, Managing Director, Portfolio Manager

Bob Miller, Managing Director, is a member of the Multi-Sector Mutual Fund team within BlackRock Fundamental Fixed Income Portfolio Management Group. He is a portfolio manager for BlackRock's Strategic Income Opportunities for US investors, and Fixed Income Global Opportunities for non-US investors; he's also a portfolio manager for BlackRock's Total Return and Core Bond funds. Prior to joining BlackRock in 2011, Mr. Miller was a co-founder and partner at the Round Table Investment Management Company, a multi-strategy, research-based investment company, where he managed a global macro strategy. Previously, Mr. Miller spent 20 years at Bank of America, where he served in a variety of roles, most recently as senior portfolio manager for the bank's proprietary multi-asset class investment portfolio. Mr. Miller managed global equity and credit, global interest rate derivative, and sovereign debt portfolios during his tenure at Bank of America. He earned a BA degree in economics from Davidson College in 1984.



INVESTMENT FIRM/PRODUCT PROFILE

Loomis, Sayles & Company, L.P. **Loomis Sayles Strategic Alpha**

Firm Description

Loomis, Sayles & Company was founded as an investment management company in 1926. Throughout its history, the firm has grown to become a primarily institutional investment manager with specialized products in domestic/international fixed income, equities and alternatives. Currently, the firm is a wholly owned subsidiary of NATIXIS Global Asset Management. Loomis has built a strong organizational culture around proprietary research and fundamental analysis, and has applied this approach to investing across all of its products. The firm manages strategies across multiple asset classes, with a majority in domestic and international fixed income.

NEPC Investment Thesis

Strategic Alpha's flexibility to invest across global fixed income markets, a risk-controlled opportunistic approach to credit exposures, and superior security selection leveraging Loomis' expertise in fundamental credit research are key drivers of this Strategy. While the Strategy has a credit bias given their strength in bottom up credit selection, the overall portfolio is constructed to be uncorrelated to fixed income markets due to the extensive use of tail-risk hedging strategies and relative value long/short credit and interest rate positions.

People

The portfolio management team consists of Kevin Kearns, Matthew Eagan and Todd Vandam. Kevin Kearns also manages Loomis' Long/Short credit strategy and will bring many of the derivatives and relative value views on credit to Strategic Alpha. Matthew Eagan is a member of the Full Discretion team, which is the group responsible for Loomis' core plus and multi-sector fixed income strategies. Todd Vandam is a senior credit strategist working with the high yield and investment grade sector teams. The Macro Sector team which includes Loomis' Chief Economist, Senior Global Macro Strategist and team analysts, and the Credit Research team will also factor heavily into the process.



INVESTMENT FIRM/PRODUCT PROFILE

Loomis, Sayles & Company, L.P. **Loomis Sayles Strategic Alpha**

Philosophy

Loomis believes that added value can come from multiple sources within the various global fixed income sectors. The best way to add incremental value over time is through an unconstrained and flexible approach that allows for the expression of top-down macroeconomic views and bottom-up security specific opportunities. The strategy seeks to take advantage of short-term tactical opportunities and longer-term structural opportunities within the broad fixed income market.

Investment Strategy

Strategic Alpha is an opportunistic global fixed income strategy with flexible guidelines that invests across multiple fixed income sectors. The return target for the strategy is LIBOR plus 2-4% over a full market cycle. Volatility of returns (standard deviation) is targeted at 4-6%. Thus the objectives of the strategy are to deliver returns in excess of short-term LIBOR, with expected volatility similar to core fixed income (the BC Aggregate Index). Duration may range from -2 to 5 years. Strategies related to interest rates will generally be defensive in nature and may include term structure, yield curve, and average duration positions. Strategic Alpha will use shorting strategies through derivative instruments. The maximum gross long or short position for the fund is 100% (of total capital) on a notional basis. Short positions may be reflected in government bond markets through futures, in credit markets through CDX or CDS contracts, and in currencies through forward/options contracts. The strategy will also incorporate options as a way to hedge the portfolio. Investment strategies will focus on three primary areas: credit (both corporate and sovereign), currency, and yield curve. Up to 50% of the portfolio may be below investment grade and up to 20% may be invested in emerging markets. Maximum non-government issuer size is 5%.

The strategy is designed to capture some of Loomis' best credit ideas, with the ability to short the indexes, single-name exposures, and rates and currencies as a way to diversify risks and to lower certain beta exposures. Opportunities may be short-term and tactical in nature, or long-term structural themes. Investment opportunities are continually resized based on the team's risk objective to maintain volatility in the 4-6% range. Similar to other Loomis strategies, we expect a large amount of the value-add to come from credit investments and selection.



INVESTMENT FIRM/PRODUCT PROFILE

Loomis, Sayles & Company, L.P. **Loomis Sayles Strategic Alpha**

The strategy will leverage input from Loomis' sector teams, providing a top-down framework for allocating risk, and bottom-up security selection from the various research specialists. Sector teams identify and assess value in their respective market segment, and identify the best security opportunities. The team of portfolio managers (Matthew Eagan, Kevin Kearns, Todd Vandam) will synthesize portfolio strategy (utilizing inputs from the macro team). Loomis maintains a large credit research effort with their in-house staff, which generates approximately 90% of the research used. The Fixed Income Research Group, based in the Boston office, covers a universe of 1,500 credit issuers, assigning investment ratings based on their internal rating system. Strategic Alpha will utilize input from Loomis' investment grade credit team, high yield, leveraged loans and global credit.

The fixed income investment process employed by Loomis seeks to uncover mis-priced bonds, which have the potential to be upgraded. When considering credit selection, analysts evaluate a number of factors including cash flow projections, market position, management strength, industry developments and trends, company developments and trends, political climate, and economic forecasts. They screen all sectors for unrecognized value, assessing the potential for credit improvement, but do not believe in using a large number of mortgages in their portfolios. The investment process is initiated within the Sector Teams, composed of credit analysts, traders and portfolio managers. Analysts offer fundamental analysis on securities and industry developments. Traders identify liquidity, relative value and opportunity within the market. Portfolio managers focus on portfolio strategy, cross sector analysis and the macro-economic environment.

Portfolio

Active positions and trade ideas are evaluated based on contribution to risk (which measures the estimated volatility using factor risks and issuer-specific risks). Scenario analysis examines hypothetical portfolio impacts using a series of historical market events and forward looking events. Risk management is fully integrated into the investment process. The contribution-to-risk of each security and position is decomposed into contributing factors. Nominal risk controls include gross long/short exposure, maximum sector and industry exposures, interest rate exposures, and maximum issuer limits.



INVESTMENT FIRM/PRODUCT PROFILE

Loomis, Sayles & Company, L.P.
Loomis Sayles Strategic Alpha

Performance Expectations

The Strategy targets a return of LIBOR plus 2% to 4% with an average volatility of 4% to 6%. Drawdown risk is actively managed with extensive use of credit and interest rate hedges to ensure the Strategy is uncorrelated to fixed income markets over time.



BIOGRAPHIES OF KEY PROFESSIONALS

Loomis, Sayles & Company, L.P. Loomis Sayles Strategic Alpha

Kevin P. Kearns, Vice President, Portfolio Manager, Senior Derivatives Strategist

Kevin Kearns is a vice president of Loomis, Sayles & Company, and is a Senior Derivatives Strategist for the fixed income group. Mr. Kearns is responsible for leading the firm's efforts in the development and implementation of investment strategies which incorporate credit default swaps (CDS) and other related derivative instruments. Mr. Kearns works closely with the investment grade and high yield sector teams, credit research, the trading desk and product teams to assist in the development of CDS capabilities. Before joining Loomis Sayles in 2007, Mr. Kearns was the director of derivatives, quantitative analysis and risk management at Boldwater Capital Management in Boston, where he was responsible for the development and implementation of a credit-focused relative value hedge fund. Mr. Kearns managed derivative-based strategies focused on capital structure arbitrage, event driven, risk arbitrage and relative value strategies. Prior to that, he spent 14 years with Fleet Boston as managing director, group head, credit derivatives. He previously held positions with Cooper & Lybrand and Federal Home Loan Bank. Mr. Kearns holds a degree in physics from Bridgewater State College and earned his MBA from Bryant College.

Matthew Eagan, CFA, Fixed Income Portfolio Manager

Mr. Eagan started his investment career in 1990 and joined Loomis Sayles in 1997. During his tenure, he has also served as part of the medium grade fixed income team and as a fixed income Research Analyst, and is currently a key member of the Full Discretion team. Prior to Loomis Sayles, he worked for Liberty Mutual Insurance Company as a Senior Fixed Income Analyst and for BancBoston Financial Company as a Senior Credit Analyst. Previously, Mr. Eagan had served as a Fixed Income Analyst at Loomis Sayles as well as at Liberty Mutual Insurance Company. He earned a BA from Northeastern University and an MBA from Boston University.



BIOGRAPHIES OF KEY PROFESSIONALS

Loomis, Sayles & Company, L.P. Loomis Sayles Strategic Alpha

Todd Vandam, CFA, Fixed Income Portfolio Manager

Todd Vandam is a Vice President of Loomis, Sayles & Company, and Co-Portfolio Manager of the Loomis Sayles Absolute Strategies Fund. He is also Senior Credit Strategist for the firm, where he works with the fixed income high yield and investment grade teams. Prior to joining Loomis Sayles in 1994, Mr. Vandam worked as a Field Artillery Officer in the United States Army, most recently working as a Fire Support Officer stationed at Fort Davis, Panama. Mr. Vandam is a member of the Boston Security Analysts Society. He earned a BA in business and economics from Brown University.



INVESTMENT FIRM/PRODUCT PROFILE

Payden & Rygel **Payden Absolute Return**

Firm Description

Payden & Rygel is an employee-owned firm founded in 1983. The firm is headquartered in Los Angeles, with offices in Boston, London and Paris. Payden & Rygel advises institutional investors through segregated accounts and mutual funds with over 350 relationships in more than 30 countries. The company runs a wide range of fixed income and equity mandates, researching, monitoring and trading markets in most developed and emerging markets.

NEPC Investment Thesis

Sticking to their core strengths of a consistent team-based approach, their deep expertise in low duration, and a history of achieving stable, income-oriented returns, the PARI team builds a defensible income core of a highly diversified and rigorously vetted global portfolio, to which they then add an outer layer of medium-term thematic and shorter-term tactical views, and protect it with tail hedging. Central to the consistency of PARI's alpha add is the balanced, diversified make-up of the core, the conservative nature of the team, and their emphasis on portfolio insurance with an annual budget set aside for macro hedging.

People

Payden Absolute Return Investing (PARI) strategy is co-managed by three senior portfolio managers Brian W. Matthews, Scott J. Weiner and Brad Boyd with a broader team of over 20 analysts. All of the senior members of the PARI team have been involved with the strategy since its inception in 2008. The most senior fixed income investment professionals form Payden's Investment Policy Committee (IPC). The role of the IPC is to guide the firm's broad market views and maintain oversight of all strategies. Brian W. Matthews and Scott J. Weiner represent the PARI team on the IPC.



INVESTMENT FIRM/PRODUCT PROFILE

Payden & Rygel

Payden Absolute Return

Philosophy

Payden believes that by adopting a dynamic approach free from benchmarks, and by accepting risks that are often avoided due to credit quality limitations, liquidity concerns or lack of resources for proper analysis and valuation, the team can allocate assets to sectors and securities that offer the most attractive value and obtain incremental returns with limited downside and reduced correlations with traditional asset classes. Being unanchored from traditional benchmarks gives them the flexibility to search for cheap assets globally. Experienced analysts scrutinize each opportunity and assigning their own ratings to each issuer based on an internal list of criteria. The focus is not on base case, but rather on the likelihood of exceptional events and how to mitigate downside in those scenarios. The result is a Payden best-ideas portfolio that reflects the most promising risk-adjusted opportunities around the world.

Investment Strategy

PARI team employs a three step process. Firstly, Payden's Absolute Return portfolio is built with a multi-sector income core. The team then builds a tactical overlay consists of high conviction ideas, and adds tail hedges on top to protect the portfolio against extreme events.

The process starts with an assessment of the macro environment. The firm's Investment Policy Committee's (IPC) is responsible for the formation of Payden's broad-based and long term macro views including growth, inflation and political risks, the ongoing review and determination of Payden's broad risk management parameters, and the regular monitoring and review of investment results for consistency with their fundamental views. The PARI strategy team incorporates the macro view of the IPC in determining the broad asset allocation for the portfolio. These macro asset allocation decisions then serve as the fundamental guiding backdrop for analysts, traders and strategists in their search for opportunities in their respective areas of expertise. Rigorous risk management process helps the team monitor key exposures as well as gauge the potential downside effects of extreme market environments, enabling them to build robust portfolios by understanding portfolio breaking points and thereby establishing risk exposure limitations. The Portfolio Architecture and Compliance Teams are responsible for monitoring the risk management process and are in regular communication with the PARI strategy team to ensure adherence to the risk limits of the portfolio.



INVESTMENT FIRM/PRODUCT PROFILE

Payden & Rygel

Payden Absolute Return

Portfolio

The Strategy duration will range from -2 years to 5 years at the portfolio level. Emerging markets and non-agency positions are limited to 40%, while high yield maximum exposure is 50%. Foreign currency is limited to 10% of the fund.

Performance Expectations

The PARI strategy aims to achieve a return of 200-300 basis points above 1-month LIBOR after fees over a 3-year period, while seeking preservation of capital. The PARI team generates alpha by combining the firm's long term macro views with the most compelling value opportunities uncovered by their fundamental research analysts. Consistency is achieved by balancing opportunities with acceptable level of risks. Historical volatility ranges from 1-4%, averaging out over the 8 years since inception at just over 2%. The team budgets 50bps annually for embedding tail hedges as portfolio insurance against extreme macro moves.



BIOGRAPHIES OF KEY PROFESSIONALS

Payden & Rygel **Payden Absolute Return**

Scott Weiner, PhD, Managing Principal

Dr. Weiner is a managing principal at Payden & Rygel and a member of the Executive Committee that manages the firm. He is also a member of the firm's Investment Policy Committee which directs investment strategy and monitors the risk controls for the firm and its clients. Prior to joining Payden & Rygel in 1993, Dr. Weiner was a senior strategy member of the investment arm at First Interstate. More previously, he was with Goldman Sachs in New York as one of the strategists in the 1980s developing expertise in the mortgage market. He earned a PhD in Pharmaceutical Chemistry from the University of California, San Francisco and an AB degree in Mathematics from Occidental College in Los Angeles.

Brian Matthews, CFA, Managing Principal and Chief Financial Officer

Mr. Matthews is a managing principal and the chief financial officer at Payden & Rygel, and is a member of the Executive Committee of the board of directors. He is a member of the firm's Investment Policy Committee and serves as a senior portfolio manager advising institutional clients, including corporations, pension funds, insurance companies, and foundations and endowments. Prior to joining Payden & Rygel in 1986, Mr. Matthews was an investment officer at Brown Brothers Harriman & Company in New York. He holds the Chartered Financial Analyst designation and earned a BS in Economics at the University of Notre Dame.

Brad Boyd, CFA, Senior Vice President

Mr. Boyd is a senior vice president and a senior strategist on the global unconstrained fixed income team with a focus on absolute return strategies. He is responsible for strategy implementation, risk management, and performance attribution. He also helped with the development of models and processes used for efficient and robust portfolio risk assessment. Prior to joining Payden & Rygel in 2002, Mr. Boyd worked on the bond trading desk at Standish, Ayer & Wood in Boston. He holds the Chartered Financial Analyst designation and received a BA degree in Finance from the University of Utah.



APPENDIX

NEPC, LLC

FIRM COMPARISON SUMMARY

Firm Name	Registered Investment Advisor	GIPS Compliant	Past or Pending Litigation	Firm uses Placement Agent
Absolute Return Fixed Income				
BlackRock Investments, LLC	Yes	Yes	Yes	No
Loomis, Sayles & Company, L.P.	Yes	Yes	Yes	Yes
Payden & Rygel	Yes	Yes	No	No



PRODUCT COMPARISON

Firm/Product	Internal ESG Research Utilized (Y/N)	Third Party ESG Research Utilized (Y/N)	Manager Explanation of Research Methodologies Used
Absolute Return Fixed Income			
BlackRock - Strategic Income Opp	Yes	Yes	<p>The BlackRock Sustainable Investing team houses a dedicated ESG research function, which seeks to produce specific insights from ESG materiality to portfolio implementation methodologies to share across our investment teams in order to further drive our ESG integration efforts to enhance risk-adjusted return. We begin from the view that, to be effective sustainable investors, we must deeply understand the ways in which environmental, social and governance issues do and do not affect long-term return. We are leveraging the scale of our investment platform, our proprietary technology, and our direct, private engagement with companies through our investment stewardship activities to create sophisticated approaches to measuring and assessing sustainability-related risks and opportunities. Our Sustainable Investing team analyzes sustainability-related data, examines questions about causation and performance, and generates insights for portfolios firm-wide. Currently, BlackRock leverages third-party ESG data in addition to in-house research in order to gather company-level information on key ESG indicators. We have integrated issuer level ESG information into the firm's investment and risk management system, Aladdin, which BlackRock investors use to make investment decisions and monitor portfolios. As a result, BlackRock's global investors have access to ESG metrics that can inform their investment processes by flagging long-term risks and value drivers and enabling portfolio reporting and analytics. Our third-party sources include MSCI, ISS-Ethix, RepRisk, Sustainalytics, Thomson Reuters, Bloomberg, and others listed below. We continue to build out our reporting and analytics capabilities, which will leverage multiple data providers, and provide insights beyond topline ESG scores and carbon emissions stats. We routinely engage with investment research providers about our views on emerging issues and the type of research we would find useful.</p>



PRODUCT COMPARISON

Firm/Product	Internal ESG Research Utilized (Y/N)	Third Party ESG Research Utilized (Y/N)	Manager Explanation of Research Methodologies Used
Absolute Return Fixed Income			
Loomis - Strategic Alpha	No	No	NA
Payden & Rygel - PARI	Yes	Yes	As a firm, we embed ESG considerations in all aspects of our investment process and consider it an important part of fundamental analysis. In particular, we use the Sustainable Accounting Standards Board's (SASB) "industry standards" as a touchstone for organizing our ESG thinking at the issuer level. Our analysts and portfolio managers consider ESG issues whenever they depend on or undertake fundamental analysis. In particular, we focus on factors such as: *Transparency of management *Board independence *Executive compensation *Reputation *Employee-employer relations *Employee safety *Pollution impact *Climate change In addition, we utilize the services of third-party ESG related data providers to further aid to our research process.



TOTAL FIRM ASSETS

Firm	YTD		2018		2017		2016	
	\$MM	# of accounts						
Absolute Return Fixed Income								
BlackRock Investments, LLC	6,515,345	28,213	5,975,818	28,113	6,288,195	29,424	5,147,852	26,577
Loomis, Sayles & Company, L.P.	263,508	1,531	249,718	1,525	268,086	1,560	240,193	1,554
Payden & Rygel	114,200	387	111,501	385	117,100	377	106,000	369



TOTAL PRODUCT ASSETS

Firm/Product	YTD		2018		2017		2016	
	\$MM	# of accounts						
Absolute Return Fixed Income								
BlackRock - Strategic Income Opp	31,792	10	33,092	9	30,213	8	25,356	7
Loomis - Strategic Alpha	5,609	54	5,309	53	4,492	48	4,451	54
Payden & Rygel - PARI	9,934	16	8,491	13	5,700	12	2,985	14

Firm/Product	Separate Account		Commingled Fund		Inst. Mutual Fund	Retail Mutual Fund
	\$MM	# of accounts	\$MM	# of accounts	\$MM	\$MM
Absolute Return Fixed Income						
BlackRock - Strategic Income Opp	0	0	593	9	0	31,198
Loomis - Strategic Alpha	652	3	2,152	44	907	1,898
Payden & Rygel - PARI	6,949	14	2,496	1	490	0



ACCOUNT MINIMUMS AND FEE SCHEDULES

Firm/Product	Separate Account Min. (\$MM)	Commingled Fund Min. (\$MM)	Mutual Fund Min. (\$MM)	Separate Account Fee Schedule	Commingled Fund Fee Schedule	Mutual Fund Ticker and Fee
Absolute Return Fixed Income						
BlackRock - Strategic Income Opp	300	5	2	All Assets at 0.60%	All Assets at 0.48%**	BSIKX - 0.74%
Loomis - Strategic Alpha	100	5	0	First \$100 million - 0.47% Balance - 0.40%	First \$20 million - 0.60% Next \$30 million - 0.50% Balance - 0.40%	LASNX - 0.70%
Payden & Rygel - PARI	50	1	1*	First \$100 million - 0.40% Balance - 0.35%	All Assets at 0.50%	PYAIX - 0.47%**

*Reduced Minimum

**Reduction in Standard Fees



LITIGATION

Firm	Manager's explanation of Prior or Pending Litigation
Absolute Return Fixed Income	
BlackRock Investments, LLC	<p>BlackRock, Inc. and its various subsidiaries have been subject to certain business litigation that has arisen in the normal course of its business. Our litigation has included a variety of claims, some of which are investment-related. None of BlackRock's prior litigation has been, and none of its pending litigation currently is expected to be, material to BlackRock's business.</p> <p>In no instance has BlackRock been found to have violated its fiduciary duty.</p> <p>In the past years, BlackRock has acquired organizations that provide investment-related services, including, but not limited to, State Street Research & Management Company, Merrill Lynch Investment Managers, the fund of funds business of Quellos Group, LLC, and Barclays Global Investors. This response does not address litigation that arose out of conduct within the acquired organizations prior to their acquisition by BlackRock.</p>



LITIGATION

Firm	Manager's explanation of Prior or Pending Litigation
Absolute Return Fixed Income	
Loomis, Sayles & Company, L.P.	<p>Pending Firm Litigation In July 2011, the Loomis Sayles Credit Alpha Fund was named as a defendant along with all former shareholders of the Tribune Corporation (the Company) that received cash in exchange for shares of the Company in a public-to-private leveraged buyout in 2007 (the LBO). The Fund received \$1,190,000 for the shares it owned at the time of the LBO. Within one year of the LBO, the company filed for Chapter 11 bankruptcy.</p> <p>Pre-bankruptcy bondholders and unsecured creditors seek to recover all amounts paid to the shareholder defendants (Defendants) in connection with the LBO, with pre-bankruptcy interest, alleging that the LBO constituted a fraudulent conveyance by the Company.</p> <p>The entirety of this litigation has been consolidated in federal district court in New York. A settlement offer, which would have involved Defendants agreeing to repay 57.2% of the proceeds received, was rejected on the advice of counsel as premature, at the high end of the range of reasonableness, and not in the best interests of the Fund.</p> <p>In May 2014, Ropes & Gray, on behalf of shareholder defendants (including Loomis) filed a Global Motion to Dismiss in the federal district court.</p> <p>In March 2016, the United States Court of Appeals for the Second Circuit upheld the federal district court's dismissal of the plaintiffs' claim of constructive fraudulent conveyance.</p> <p>The plaintiffs have appealed this decision to the Supreme Court of the United States, which has not yet decided whether it will hear the case.</p> <p>In January 2017, the federal district court dismissed the plaintiffs' second claim, for intentional fraudulent conveyance.</p> <p>This decision is subject to appeal.</p> <p>A recent decision on the constructive fraudulent conveyance issue in another circuit, which differs from the Second Circuit decision in Tribune, is scheduled to be heard by the U.S. Supreme Court in the spring of 2018.</p> <p>Loomis, Sayles & Company, L.P. is defendant in a civil complaint initially filed in April 2014.</p> <p>The complaint alleges that Loomis Sayles misclassified a software engineer as an independent contractor, when he should have been an employee of Loomis Sayles under applicable Massachusetts statute.</p> <p>The complaint purports to represent a class of unnamed technology contractors the plaintiff claims were misclassified as contractors.</p> <p>In its answer, Loomis denied all the allegations. Loomis believes the plaintiff's case has no merit, and intends to vigorously defend its position in this matter.</p> <p>The plaintiff represented and certified that he was an employee in fact of a sub vendor, and his employer represented and certified to Loomis Sayles that it complied with all state and federal tax and employment laws applicable to the employment of this individual.</p> <p>Depositions began in January 2015.</p> <p>Discovery ended in late May 2015 and dispositive motions, including a motion for class certification by the plaintiff and a motion for summary judgment by Loomis Sayles, were filed at the end of June 2015.</p> <p>A hearing on various motions was held in September 2016.</p> <p>The judge denied plaintiff's motion for class certification and Loomis Sayles' motion for summary judgment.</p> <p>The parties are now preparing for trial. A trial date has been set for April 2018.</p>



LITIGATION

Firm	Manager's explanation of Prior or Pending Litigation
Absolute Return Fixed Income	
Payden & Rygel	There is no prior or pending litigation.



DISCLOSURE

Data Disclosure:

- Investment fees can have a significant effect on total returns. The results profiled herein reflect the deduction of management fees and other expenses, except where specifically noted.

Footnotes:

- Firm Ownership:
 - BlackRock is an independent, publicly traded company, with no single majority shareholder and over two-thirds of its Board of Directors consisting of independent directors. As of June 30, 2018, The PNC Financial Services Group, Inc. ("PNC") owned 21.7% of BlackRock and institutional investors, employees and the public held economic interest of 78.3%. With regard to voting common stock, PNC owned 21.2% and institutional investors, employees and the public owned 78.8% of voting shares.
- Fees:
 - Payden & Rygel: The mutual fund represents a reduction in standard fee and the minimum investment has been reduced to \$1 million.



GLOSSARY OF TERMS

- **Beta:** A measure of volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. Beta can be thought of as the tendency of a security's returns to respond to swings in the market. A beta of 1 indicates that the security's price will move with the market.
- **Correlation:** A statistical measure of how two securities move in relation to each other. Correlation is computed into a correlation coefficient which ranges between -1 to +1. A perfect positive correlations (+1) implies that as one security moves either up or down, the other security will move in the same direction. Alternatively, a perfect negative correlation (-1) means that if one security moves in either direction, the security that is perfectly negatively correlated will move by an equal amount in the opposite direction.
- **Information Ratio:** A measure of portfolio management's performance against risk and return relative to a benchmark or alternative measure.
- **Kurtosis:** A statistical measure used to describe the distribution of observed data around the mean. Kurtosis describes trends in charts. A high kurtosis portrays a chart with fat tails and a low, even distribution, whereas a low kurtosis portrays a chart with skinny tails and a distribution concentrated toward the mean.
- **Skewness:** A statistical term used to describe a situation's asymmetry in relation to a normal distribution. A positive skew describes a distribution favoring the right tail, whereas a negative skew describes a distribution favoring the left tail.
- **Tracking Error:** A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark. Tracking errors are reported as a "standard deviation percentage" difference. It represents the difference between the return of a fund and that of the benchmark the fund was trying to copy.



DISCLAIMER

- **This report contains summary information regarding the investment management approaches described herein but is not a complete description of the investment objectives, policies or portfolio management and research that supports these approaches. This analysis does not constitute a recommendation to implement any of the aforementioned approaches.**
- **Past performance is no guarantee of future results.**
- **Information on market indices was provided by sources external to NEPC, and other data used to prepare this report was obtained directly from the investment manager(s). While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.**
- **This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.**



HIGHLIGHTS OF 2019 SECOND QUARTER HAPPENINGS AT NEPC

NEPC INSIGHTS

- NEPC's Investor Governance Pulse: Data Show Investors Value Collaborative, Long-Term Consultant Relationship
- Direct Investing (Part II): What Do the Numbers Say?
- Taking Stock: An Overview of the 2019 Indian Election
- Taking Stock: A Sneak Preview of NEPC's 24th Annual Investment Conference
- NEPC's 2019 Q1 Endowments & Foundations Survey Results and Infographic
- Defined Contribution: My Guide to Retirement
- Direct Investing (Part III): Tips for Setting a Program up for Success
- 2019 First Quarter Market Thoughts
- Taking Stock: Updates to Corporate Pension Plan Rules and Q1 Liability Performance
- NEPC's 24th Annual Investment Conference Recap: Infographics
- Taking Stock: One Corporate Plan's Journey of Terminating its Pension
- Taking Stock: A Recap of NEPC's 24th Annual Investment Conference
- The ABC of Family Partnerships
- Not So Taxing: Tax Reform and Giving

WEBINAR REPLAYS

- NEPC's 2019 Q1 Quarterly Market Thoughts Call
- 9th Annual Investment Manager Webinar Replay
- Insurance Asset Management: Insurance Companies Transitioning Into Asset Management Webinar Replay

To download NEPC's recent insights and webinar replays, visit: www.NEPC.com/insights



HIGHLIGHTS OF 2019 SECOND QUARTER HAPPENINGS AT NEPC

RECENT UPDATES

- NEPC’s 24th Annual Investment Conference in May 2019 at Boston’s iconic Park Plaza Hotel — with a record turnout of over 200 attendees — saw some industry heavyweights come together. The event featured speakers such as Larry Fink, founder, chairman and CEO of BlackRock, the world’s largest asset manager, Karen Karniol-Tambour, head of investment research at Bridgewater Associates, and Jonathan Karl, chief White House correspondent for ABC News.
- As we draw the curtain on yet another successful conference, we thank everyone who attended and look forward to seeing you next year! Be sure to mark your calendars for NEPC’s 25th annual conference on May 20-21, 2020 at the Renaissance Boston Waterfront Hotel.

NEPC TRANSITIONS TAKEAWAYS FROM NEPC'S 24TH ANNUAL INVESTMENT CONFERENCE
MAY 7-8, 2019 | BOSTON PARK PLAZA | #NEPC_CONFERENCE

OUR ATTENDEES
204 (Compared to 181 in 2018)

22% Endowments & Foundations	5% Healthcare	13% Private Wealth	25% Public Funds
13% Corporate	5% Other	8% Taft-Hartley	8% Prospects

WHAT THEY SAID

Every company in the world has to face two major trends that society is demanding, not expecting. Society is demanding transparency... and governance from every company they work with.
— Lawrence D. Fink, Chairman & Chief Executive Officer, BlackRock

A free press is not the enemy or the opponent. A free press is what makes America great.
— Jonathan Karl, ABC News

We are well into the late cycle today, but that doesn't mean it won't last for three more years. I think what we are all worried about is the period after the late cycle, which isn't a transition at all. Late cycle to recession is an inflection point. It is a shift in markets to capital and economic contraction.
— Tim McCookler, Chief Investment Officer & Partner, NEPC

TOP ATTENDED BREAKOUT SESSIONS

- 87 Emerging Market Transition Stories
- 83 Impacts on Fixed Income: Tightening Global Liquidity and Sinking Credit Quality
- 70 Retail Me Not: The Impact of Index Funds and ETFs on the Market

CONFERENCE APP RESULTS

- 142 mobile app users
- 9.56K interactions (engagement with content, attendees, speakers, etc)
- 12 LIVE POLLS

LINKEDIN CONNECTIONS

- 4% INCREASE IN FOLLOWERS
- 2,535 IMPRESSIONS REACHED

Article mention: BlackRock CEO Larry Fink Warns on Alternative Investments
For more coverage, search #NEPC_conference

Did you hear about NEPC's new ClientHUB?
Register and join our new client portal to receive updated investment notes, plan documents and current whitepapers at your convenience. [Go to https://clienthub.nepc.com/](https://clienthub.nepc.com/)

SAVE THE DATE FOR OUR 25TH ANNIVERSARY: MAY 20-21, 2020 AT THE RENAISSANCE BOSTON WATERFRONT HOTEL

About NEPC, LLC: NEPC is an independent, full-service investment consulting firm, providing asset allocation, manager search, performance evaluation, and investment policy services. We work with discerning investors on both an advisory and discretionary basis. We service over 300 retailer clients with total assets of over \$1 billion, from our offices in Boston, Atlanta, Charlotte, Chicago, Detroit, Las Vegas, Portland and San Francisco.
nepc.com Statistics as of 5/13/2019

To view materials from NEPC’s 24th Annual Investment Conference visit:
<https://info.nepc.com/2019-client-conference-follow-up>



INVESTMENT MANAGER - DUE DILIGENCE KEY

NEPC Due Diligence Status Key	
No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
Hold	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
Client Review	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.

NEPC Due Diligence Rating Key	
1	A high conviction investment product. Product has a clear and economically-grounded investment thesis, and is managed by an investment team that is sufficiently resourced and incented to execute on the thesis.
2	NEPC has a positive view of the strategy. Strategy has a compelling and sound investment thesis. The manager is sufficiently resourced and incented to execute on the thesis. Strengths outweigh the weaknesses, but the strategy does not meet all requirements for a 1 rating.
3	A satisfactory investment product. The strategy lacks a compelling investment thesis, however there are no significant concerns around the manager's viability.
4	The strategy may have an unclear or ambiguous investment thesis or the manager may lack the ability to execute on the stated thesis. The strategy likely has strengths and weaknesses and the weaknesses may outweigh the strengths.
5	A strategy that lacks an investment thesis or NEPC has no confidence in the manager's ability to execute on the thesis, and/or the investment firm may not be viable. Serious issues have been identified with an investment manager or product. This rating aligns with a Terminate Due Diligence status for client-owned products.
NR	Due diligence has not been sufficiently completed on the product or manager.



Information Disclaimer

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank. Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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Reporting Methodology

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.

