2019 Q1 INVESTMENT SUMMARY: BOARD REPORT

MODOT & PATROL EMPLOYEES' RETIREMENT SYSTEM

June, 2019

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NEPC, LLC

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

MARKET THOUGHTS & EDUCATION

NEPC, LLC

PERFORMANCE OVERVIEW

Q1 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%	-11.7	-27 bps	13.6%	10.0%	9.9%	2.9%	7.3%	7.0%	33.3%	0.8%	16.7%

Global equities rallied during the quarter as sentiment improved from easing US-China trade tensions and a dovish pivot by the Fed

The spread between the 10-year Treasury Note and 3-month Treasury Bill temporarily inverted after the Fed held interest rates constant and announced adjustments to their balance sheet normalization process

Spot crude oil prices rose significantly due to geopolitical concerns in major oil-producing regions

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).

MACRO PERFORMANCE OVERVIEW

Q1 Macro Market Summary

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

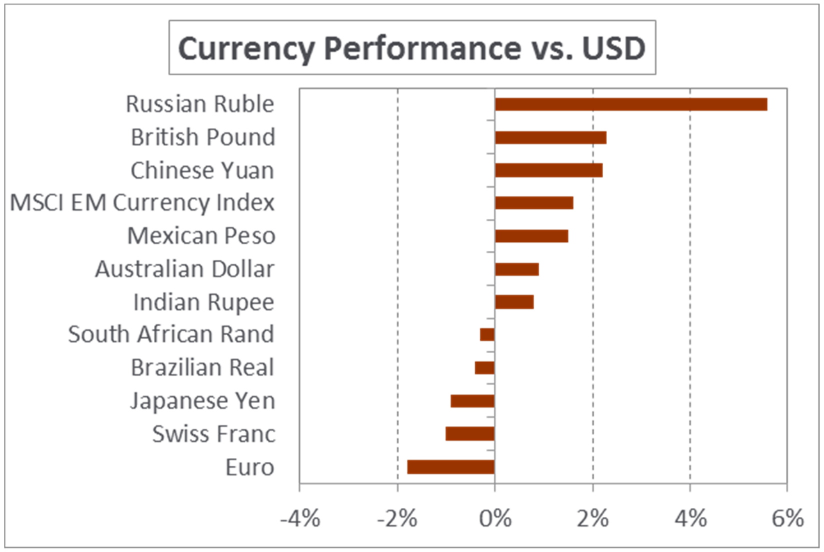
The Fed pivoted toward a more dovish policy stance signaling no additional rate hikes this year

Global bond yields declined with the 10-year German and Japanese yields ending in negative territory

	Yield 12/31/18	Yield 3/31/19	|Δ|
US 10-Yr	2.68%	2.42%	-0.27%
US 30-Yr	3.01%	2.82%	-0.19%
US Real 10-Yr	0.97%	0.53%	-0.44%
German 10-Yr	0.24%	-0.07%	-0.31%
Japan 10-Yr	-0.01%	-0.09%	-0.09%
China 10-Yr	3.31%	3.07%	-0.24%
EM Local Debt	6.46%	6.16%	-0.30%

Source: Bloomberg

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	2.25% - 2.50%	2.2%	The Fed held its benchmark interest rate at 2.25% - 2.50% in March and signaled no additional rate hikes are likely in 2019
European Central Bank	0.0%	1.4%	The ECB maintained its current benchmark interest rate and announced plans to boost commercial lending
Bank of Japan	-0.1%	0.8%	The BoJ will continue its ultra-easy QE program with inflation remaining well below target



Source: Bloomberg

EQUITY PERFORMANCE OVERVIEW

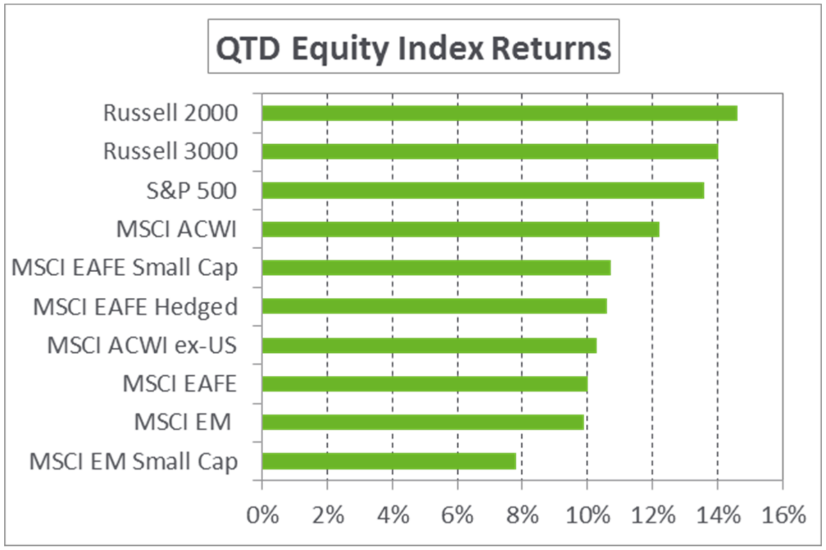
Q1 Equity Market Summary

Global equities made a strong comeback this quarter following a dovish pivot from the Fed

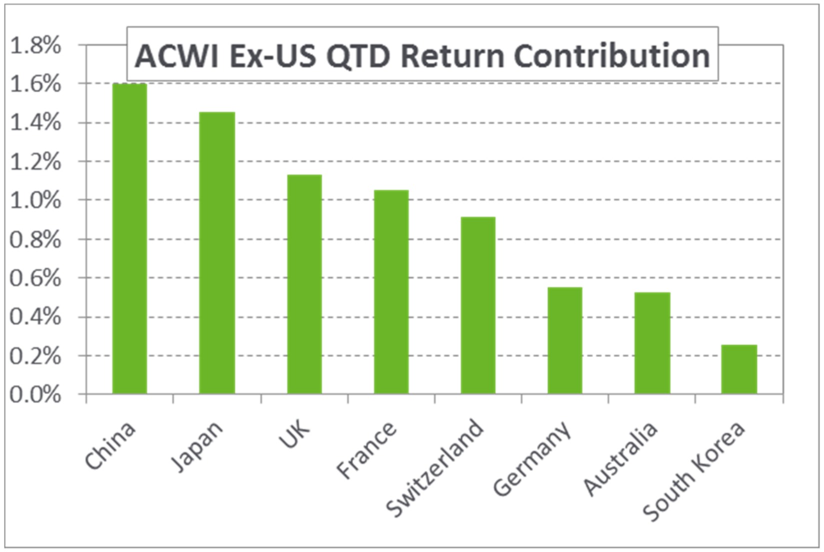
US and Chinese equities led the way as hopes for a trade deal provided a tailwind for local equity markets

Russell 3000 QTD Sector Return Contribution	
Information Technology	3.6%
Consumer Discretionary	2.6%
Financials	1.6%
Industrials	0.8%
Consumer Staples	1.1%
Energy	0.7%
Materials	0.4%
Health Care	1.3%
Real Estate	0.6%
Communication Services	1.9%
Utilities	0.3%

Source: Russell, Bloomberg



Source: MSCI, Russell, S&P, Bloomberg



Source: MSCI, Bloomberg. QTD top country contributors to index return

CREDIT PERFORMANCE OVERVIEW

Q1 Credit Market Summary

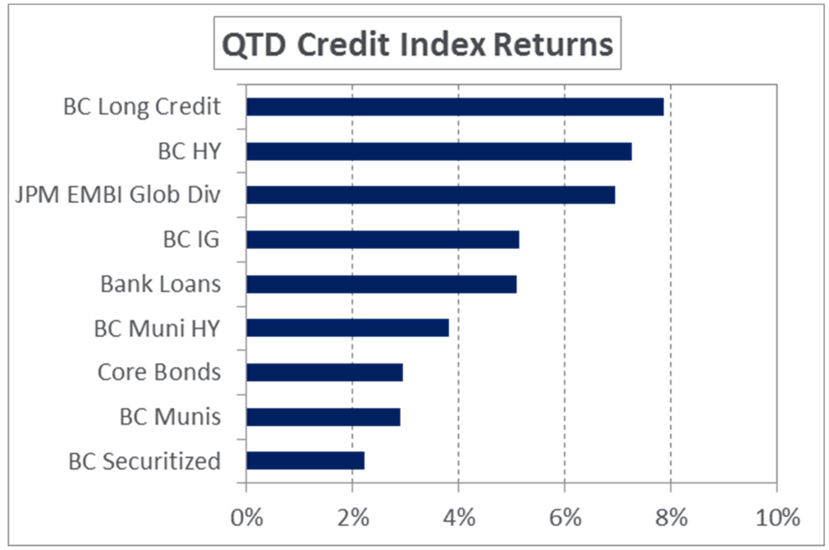
Global yields declined significantly – reflecting concerns over the global growth outlook

Credit spreads broadly declined off of highs at the end of 2018

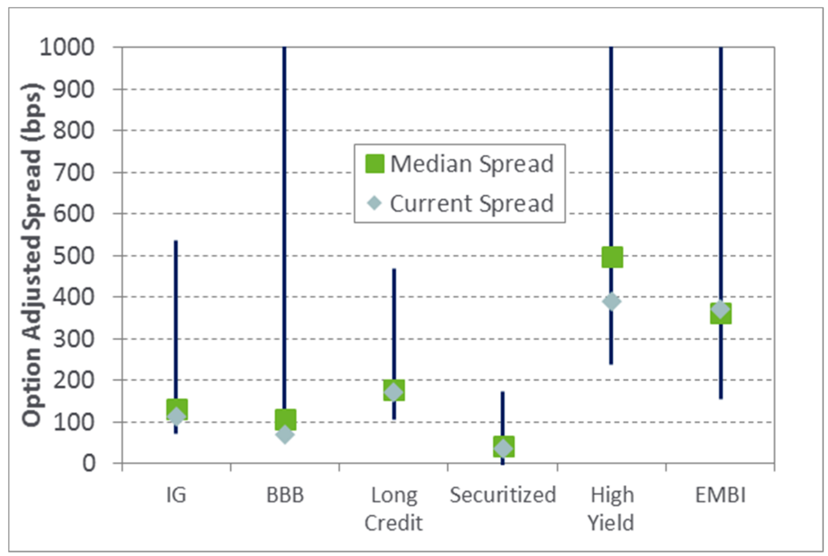
US high yield spreads experienced one of the largest movements – falling 135 basis points, supporting a return of 7.3%

Credit Spread (Basis Points)	12/31/18	3/31/19	|Δ|
BC IG Credit	153	119	-34
BC Long Credit	200	172	-28
BC Securitized	35	35	0
BC High Yield	526	391	-135
Muni HY	236	230	-6
JPM EMBI	435	373	-62
Bank Loans - Libor	414	354	-60

Source: Barclays, Merrill Lynch, JPM, Bloomberg, NEPC



Source: Barclays, JPM, S&P, Bloomberg



Source: Barclays, JPM, S&P, Bloomberg; Calculated since 01/31/2000

REAL ASSETS PERFORMANCE OVERVIEW

Q1 Real Assets Market Summary

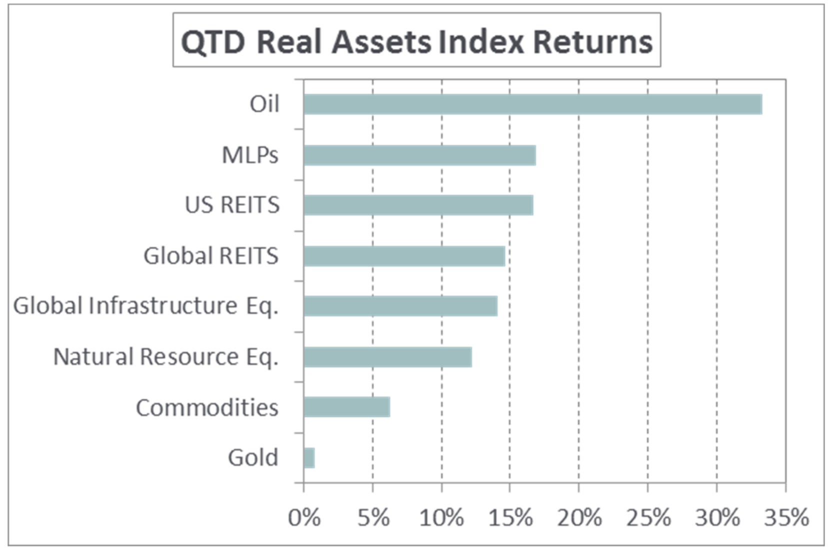
WTI crude oil increased 33.3% as a result of OPEC production cuts and concerns surrounding Venezuela

Midstream energy increased 22.2% following strong earnings and a tailwind from higher oil prices

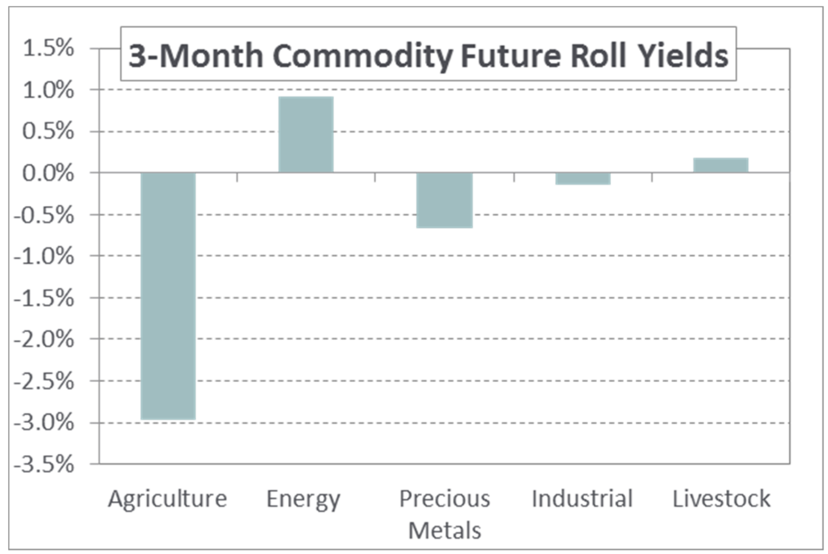
US REITs increased 16.3% during the quarter with the Fed signaling a pause to monetary policy

Real Asset Yields	12/31/18	3/31/19
MLPs	8.9%	8.0%
Core Real Estate	4.5%	4.5%
US REITs	4.6%	4.1%
Global REITs	3.9%	3.4%
Global Infrastructure Equities	4.6%	4.4%
Natural Resource Equities	4.5%	4.2%
US 10-Yr Breakeven Inflation	1.7%	1.9%
Commodity Index Roll Yield	-2.7%	-2.7%

Source: NCREIF, Alerian, NAREIT, S&P, Bloomberg



Source: S&P, NAREIT, Alerian, Bloomberg

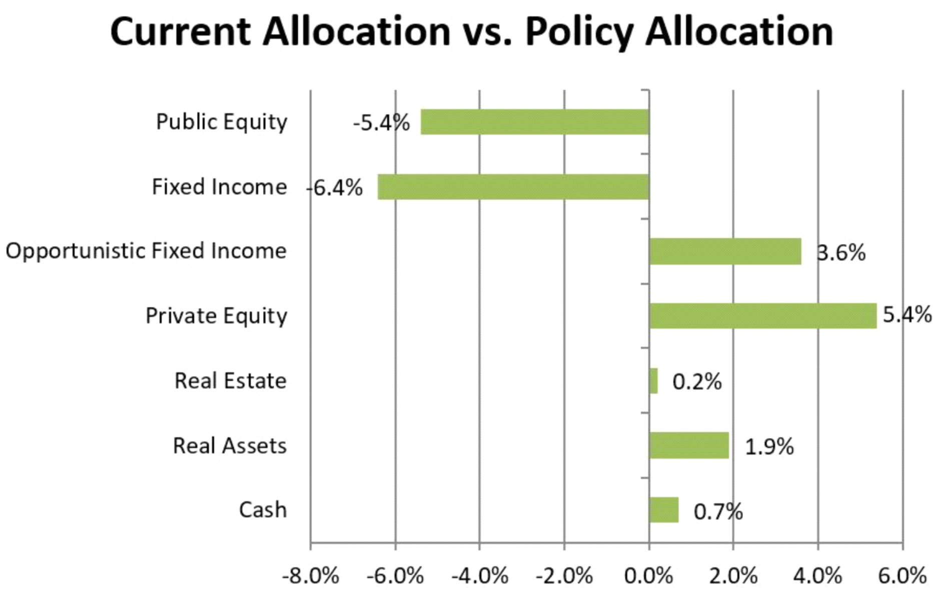


Source: Bloomberg, NEPC Calculated as of 09/28/2018

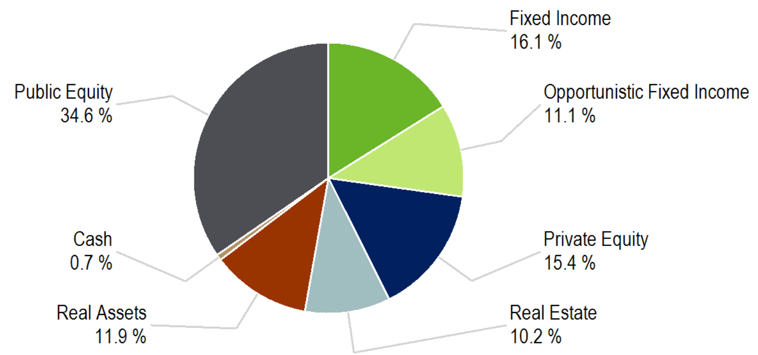
EXECUTIVE SUMMARY

NEPC, LLC

ASSET ALLOCATION VS. CURRENT ALLOCATION



Current Asset Allocation

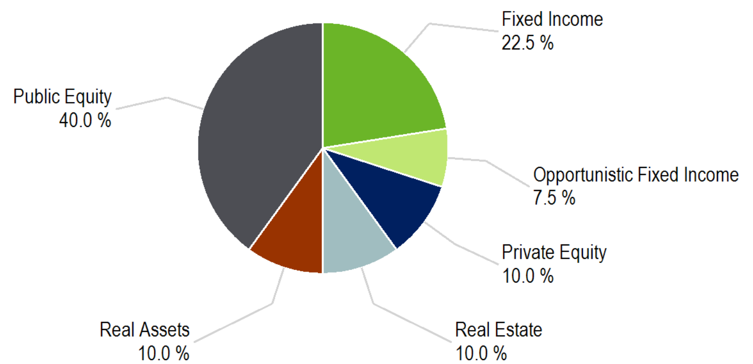


Current Asset Allocation vs. Policy Asset Allocation

	Current	Policy	Current	Difference*
Fixed Income	$382,103,608	22.5%	16.1%	-6.4%
Opportunistic Fixed Income	$261,568,931	7.5%	11.1%	3.6%
Private Equity	$365,438,624	10.0%	15.4%	5.4%
Real Estate	$240,218,240	10.0%	10.2%	0.2%
Real Assets	$281,795,582	10.0%	11.9%	1.9%
Cash	$16,214,494	--	0.7%	0.7%
Public Equity	$819,083,705	40.0%	34.6%	-5.4%
Total	**$2,366,423,184**	**100.0%**	**100.0%**	

*Difference between Policy and Current Allocation

Policy Asset Allocation



Allocations may not add to 100% due to rounding.

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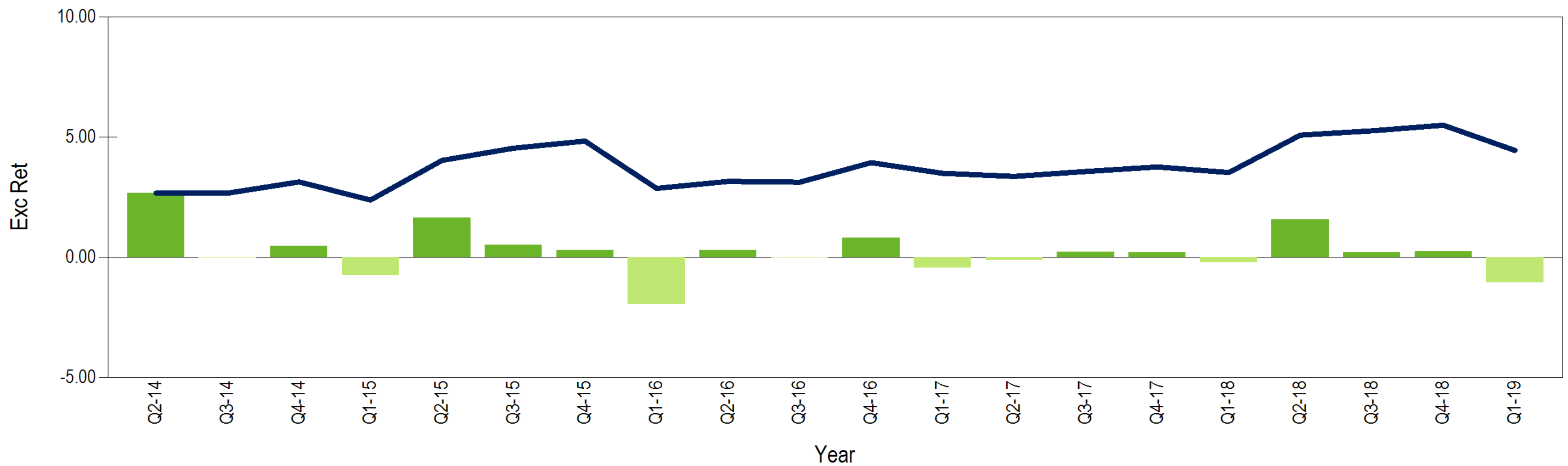
TOTAL FUND PERFORMANCE SUMMARY

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Composite	**$2,366,423,184**	**4.07%**	**6.02%**	**8.81%**	**7.54%**	**10.79%**
Policy Index		*5.12%*	*5.02%*	*8.23%*	*6.60%*	*9.72%*
InvestorForce Public DB Net Median		*8.73%*	*4.13%*	*8.21%*	*5.86%*	*9.59%*

Quarterly and Cumulative Excess Performance



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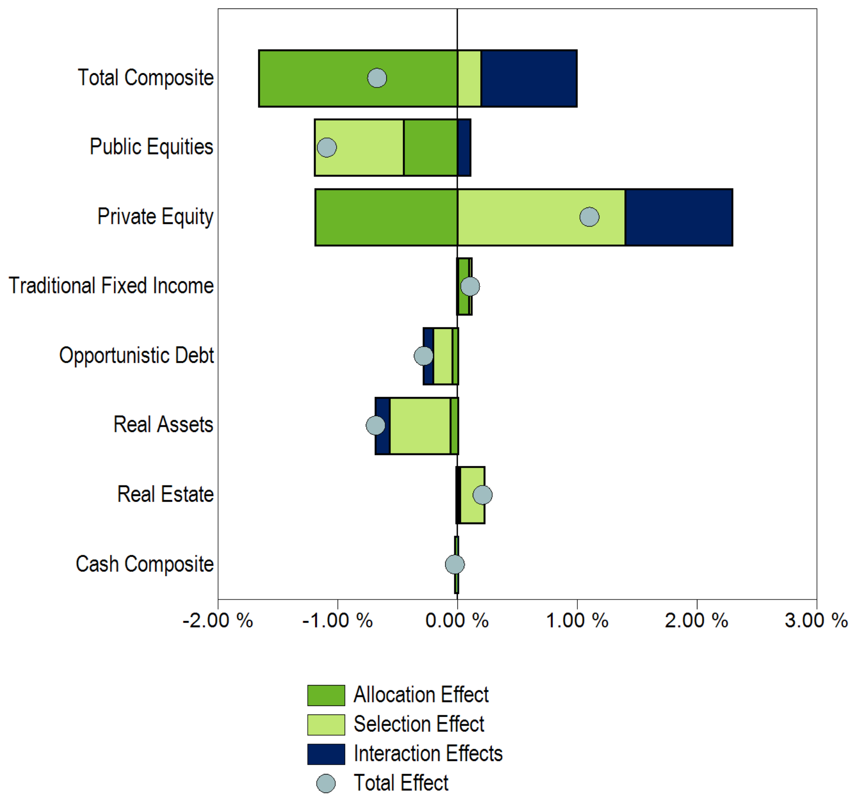
TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
3 Months Ending March 31, 2019



Attribution Summary
3 Months Ending March 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equities	10.2%	12.2%	-2.0%	-0.7%	-0.5%	0.1%	-1.1%
Private Equity	0.5%	-12.8%	13.4%	1.4%	-1.2%	0.9%	1.1%
Traditional Fixed Income	3.3%	3.3%	0.1%	0.0%	0.1%	0.0%	0.1%
Opportunistic Debt	1.2%	3.3%	-2.1%	-0.2%	0.0%	-0.1%	-0.3%
Real Assets	-2.8%	2.2%	-5.0%	-0.5%	-0.1%	-0.1%	-0.7%
Real Estate	3.4%	1.5%	1.9%	0.2%	0.0%	0.0%	0.2%
Cash Composite	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**4.1%**	**4.8%**	**-0.7%**	**0.2%**	**-1.7%**	**0.8%**	**-0.7%**

Note: Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result, the total returns shown may vary from the calculated return shown on the performance summary.

The target return shown for each composite is a custom index, based on aggregated policy indices. This policy index asset weights the underlying policy indices of each option in the plan and the respective benchmark return.

The allocation, selection, and interaction effects are calculated using the custom index described above along with the policy or target weight of each composite.

May not add due to rounding

Allocation Effect - The return attributable to the asset allocation of the portfolio

Selection Effect - The return attributable to the managers' security selection

Interaction Effect - The return attributable to the interaction between the Allocation and Sele

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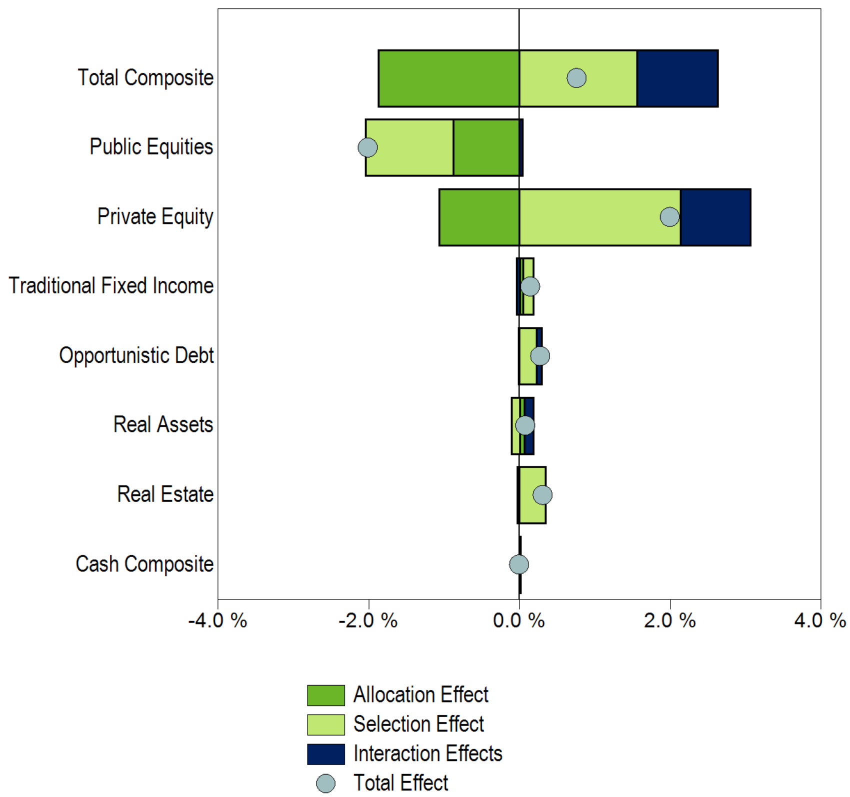
TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects Relative to Policy Index
1 Year Ending March 31, 2019



Attribution Summary
1 Year Ending March 31, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equities	-0.4%	2.6%	-3.0%	-1.2%	-0.9%	0.0%	-2.0%
Private Equity	19.0%	-1.5%	20.6%	2.1%	-1.1%	0.9%	2.0%
Traditional Fixed Income	5.0%	4.5%	0.6%	0.1%	0.0%	0.0%	0.1%
Opportunistic Debt	7.6%	4.5%	3.1%	0.2%	0.0%	0.1%	0.3%
Real Assets	6.2%	5.9%	0.3%	-0.1%	0.1%	0.1%	0.1%
Real Estate	10.2%	6.8%	3.4%	0.3%	0.0%	0.0%	0.3%
Cash Composite	2.0%	2.1%	-0.1%	0.0%	0.0%	0.0%	0.0%
Total	**6.1%**	**5.3%**	**0.8%**	**1.6%**	**-1.9%**	**1.1%**	**0.8%**

Note: Plan attribution calculations are returns based and the results shown reflect the composites shown. As a result, the total returns shown may vary from the calculated return shown on the performance summary.

The target return shown for each composite is a custom index, based on aggregated policy indices. This policy index asset weights the underlying policy indices of each option in the plan and the respective benchmark return.

The allocation, selection, and interaction effects are calculated using the custom indexdescribed above along with the policy or target weight of each composite.

May not add due to rounding

Allocation Effect - The return attributable to the asset allocation of the portfolio

Selection Effect - The return attributable to the managers' security selection

Interaction Effect - The return attributable to the interaction between the Allocation and Selection Effects

TOTAL COMPOSITE

	Policy %	% of Portfolio	Market Value ($)	3 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Composite	**100.00**	**100.00**	**2,366,423,184**	**4.07**	**99**	**6.02**	**10**	**8.81**	**25**	**7.54**	**2**	**10.79**	**9**
Policy Index				*5.12*	*99*	*5.02*	*27*	*8.23*	*49*	*6.60*	*19*	*9.72*	*43*
Equity Beta	**50.00**	**50.06**	**1,184,522,329**	**6.92**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Public Equities	**40.00**	**34.61**	**819,083,705**	**10.22**	**73**	**-0.37**	**66**	**9.33**	**49**	**5.58**	**54**	**12.49**	**35**
MSCI ACWI				*12.18*	*48*	*2.60*	*42*	*10.67*	*34*	*6.45*	*37*	*11.98*	*43*
Private Equity	**10.00**	**15.44**	**365,438,624**	**0.52**	**--**	**19.05**	**--**	**13.42**	**--**	**14.34**	**--**	**11.38**	**--**
MO Hwy Priv. Equ. Index - Lagged				*-12.85*	*--*	*-1.50*	*--*	*12.51*	*--*	*11.73*	*--*	*16.62*	*--*
Rates and Credit Beta	**30.00**	**27.20**	**643,672,539**	**2.45**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Traditional Fixed Income	**22.50**	**16.15**	**382,103,608**	**3.33**	**55**	**5.05**	**9**	**4.47**	**43**	**5.46**	**2**	**8.67**	**17**
Fixed Income Custom Benchmark				*3.26*	*56*	*4.48*	*17*	*2.54*	*65*	*2.93*	*44*	*4.32*	*64*
Opportunistic Debt	**7.50**	**11.05**	**261,568,931**	**1.19**	**99**	**7.59**	**1**	**--**	**--**	**--**	**--**	**--**	**--**
BBgBarc US High Yield TR				*7.26*	*34*	*5.93*	*20*	*8.56*	*17*	*4.68*	*22*	*11.26*	*13*
Real Assets Beta	**20.00**	**22.06**	**522,013,822**	**-0.14**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Real Assets	**10.00**	**11.91**	**281,795,582**	**-2.79**	**--**	**6.21**	**--**	**8.10**	**--**	**3.15**	**--**	**--**	**--**
CPI + 4% (Unadjusted)				*2.17*	*--*	*5.93*	*--*	*6.28*	*--*	*5.53*	*--*	*5.86*	*--*
Real Estate	**10.00**	**10.15**	**240,218,240**	**3.43**	**--**	**10.23**	**--**	**9.61**	**--**	**11.25**	**--**	**8.97**	**--**
NFI-ODCE Eq Wtd Net Non Lag				*1.48*	*--*	*6.81*	*--*	*7.27*	*--*	*9.43*	*--*	*7.52*	*--*
Cash Composite	**--**	**0.69**	**16,214,494**	**0.57**	**--**	**2.03**	**--**	**1.07**	**--**	**0.66**	**--**	**0.37**	**--**
91 Day T-Bills				*0.59*	*--*	*2.15*	*--*	*1.23*	*--*	*0.76*	*--*	*0.42*	*--*

Total Composite is ranked in the IFx Public DB (peer) Net + Universe

Global Equity Composite is ranked in the eV Global All Cap Equity Net Universe

Fixed Income Composite is ranked in the eV All Global Fixed Inc Net Universe

Opportunistic Debt Composite is ranked in the eV US High Yield Fixed Inc Net Universe

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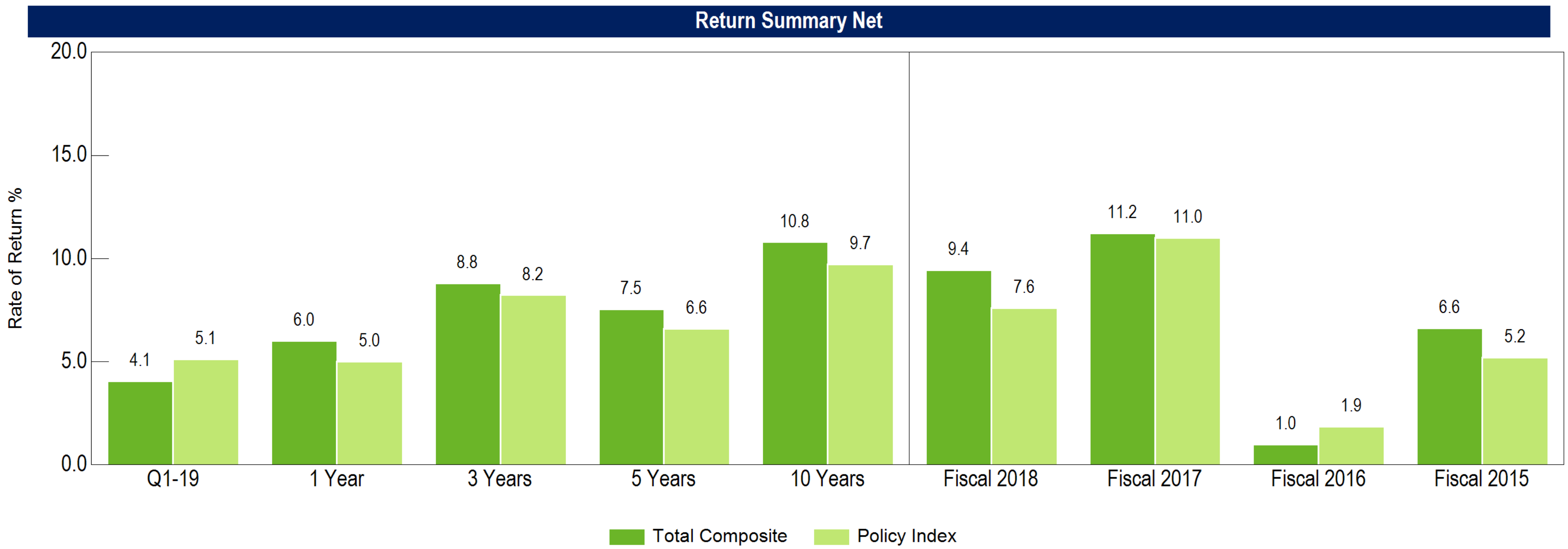
TOTAL FUND RETURN SUMMARY



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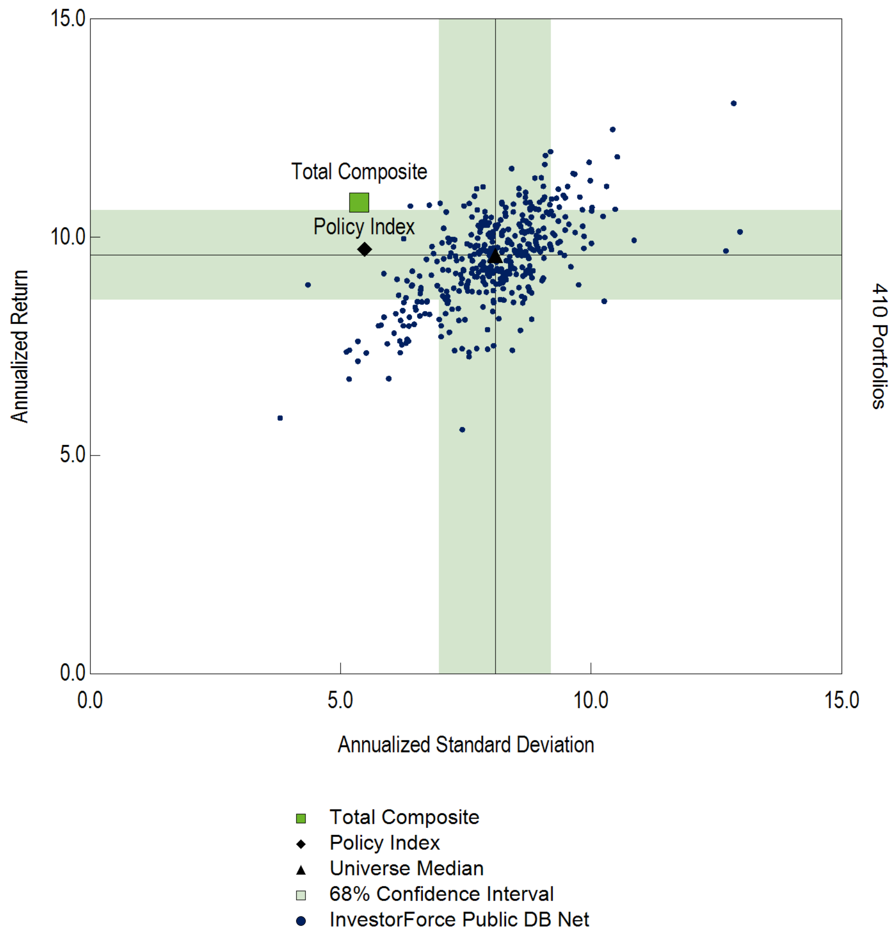
TOTAL FUND RISK/RETURN - 10 YEARS

10 Years Ending March 31, 2019



Statistics Summary
10 Years Ending March 31, 2019

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Composite	10.79%	9	5.37%	2
Policy Index	9.72%	43	5.48%	2

Statistics Summary
10 Years Ending March 31, 2019

	Sharpe Ratio	Rank
Total Composite	1.93	1
Policy Index	1.70	1

TOTAL FUND PERFORMANCE

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Composite	**2,366,423,184**	**100.00**	**100.00**	**4.07**	**6.02**	**8.81**	**7.54**	**10.79**
Policy Index				*5.12*	*5.02*	*8.23*	*6.60*	*9.72*
Equity Beta	**1,184,522,329**	**50.06**	**50.00**	**6.92**	**--**	**--**	**--**	**--**
Public Equities	**819,083,705**	**34.61**	**40.00**	**10.22**	**-0.37**	**9.33**	**5.58**	**12.49**
MSCI ACWI				*12.18*	*2.60*	*10.67*	*6.45*	*11.98*
Global Public Equities w/ MLPs	**698,559,569**	**29.52**	**--**	**11.40**	**-0.80**	**10.13**	**6.08**	**--**
MLPS	**70,561,869**	**2.98**	**--**	**18.25**	**13.56**	**6.58**	**-2.55**	**--**
Alerian MLP Index				*16.82*	*15.11*	*5.69*	*-4.73*	*10.12*
Tortoise	70,561,869	2.98		18.25	13.56	6.58	-2.55	--
Global Public Equities	**627,997,700**	**26.54**	**--**	**10.68**	**-2.18**	**10.61**	**6.97**	**--**
International Public Equities	**228,329,850**	**9.65**	**--**	**8.07**	**-9.45**	**8.25**	**3.96**	**9.99**
MSCI ACWI ex USA				*10.31*	*-4.22*	*8.09*	*2.57*	*8.85*
Acadian Int'l Small Cap	40,031,406	1.69		9.76	-12.12	7.93	5.21	--
MSCI EAFE				*9.98*	*-3.71*	*7.27*	*2.33*	*8.96*
Acadian Non-US Microcap	29,551,524	1.25		10.41	-12.23	--	--	--
GMO EM	23,340,534	0.99		9.47	-12.38	7.08	3.05	--
MSCI Emerging Markets				*9.93*	*-7.41*	*10.68*	*3.68*	*8.94*
Silchester	134,056,676	5.66		6.84	-7.47	7.65	4.12	11.87
Transition Account	1,349,710	0.06						
Domestic Equity Composite	**399,667,850**	**16.89**	**--**	**12.23**	**2.79**	**12.26**	**9.30**	**16.20**
Russell 3000				*14.04*	*8.77*	*13.48*	*10.35*	*16.00*
Large Cap US Public Equities	**341,382,361**	**14.43**	**--**	**12.73**	**4.57**	**12.60**	**10.10**	**15.63**
Cash/S&P Futures	341,382,361	14.43		12.73	4.57	12.83	9.48	--
S&P 500				*13.65*	*9.50*	*13.51*	*10.91*	*15.92*
Small Cap US Public Equities	**58,285,489**	**2.46**	**--**	**9.39**	**-6.09**	**10.44**	**6.68**	**15.45**
Kennedy Capital	31,342,359	1.32		9.93	0.65	12.98	--	--
Russell Microcap				*13.10*	*-2.36*	*12.29*	*5.03*	*14.97*
Kennedy Small-Cap Banking	26,943,130	1.14		8.75	-10.42	--	--	--
Russell 2000 Value				*11.93*	*0.17*	*10.86*	*5.59*	*14.12*

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Equity Hedge Funds	**120,524,136**	**5.09**	**--**	**4.30**	**1.13**	**4.97**	**2.77**	**5.30**
HFRI Fund of Funds Composite Index				*4.63*	*0.16*	*3.94*	*2.20*	*3.55*
Alpstone Capital	11,859,276	0.50		3.36	8.24	--	--	--
Bridgewater Pure Alpha	19,925,321	0.84		-5.90	2.60	6.47	3.58	9.09
Cevian	13,944,962	0.59		6.16	-4.11	6.59	2.55	--
Indus Pacific Opp. Fund	12,862,255	0.54		11.51	-12.06	4.62	--	--
Metacapital	12,145,452	0.51		2.79	5.26	4.84	3.44	--
Millenium USA LP	20,158,124	0.85		2.50	4.14	7.45	--	--
Pentwater	14,449,565	0.61		8.28	16.64	18.36	--	--
ValueAct	15,179,181	0.64		18.47	2.33	10.30	5.84	--
HFRI Fund of Funds Composite Index				*4.63*	*0.16*	*3.94*	*2.20*	*3.55*
Private Equity	**365,438,624**	**15.44**	**10.00**	**0.52**	**19.05**	**13.42**	**14.34**	**11.38**
MO Hwy Priv. Equ. Index - Lagged				*-12.85*	*-1.50*	*12.51*	*11.73*	*16.62*
PE Fund of Funds	**265,700,438**	**11.23**	**--**	**-0.03**	**19.07**	**12.73**	**13.87**	**--**
Grove Street - MP Ventures	70,253,598	2.97		-0.03	21.35	9.11	10.44	9.05
Grove Street - MP Ventures II	187,081,468	7.91		-0.03	17.83	14.34	16.41	8.95
Vectis H & L II	8,365,372	0.35		0.00	26.08	27.51	22.28	9.00
PE Direct Funds	**99,738,186**	**4.21**	**--**	**2.06**	**18.27**	**18.25**	**20.13**	**--**
Abry Partners VI	182,025	0.01		2.84	78.07	45.65	42.34	30.44
Abry Partners VII	1,731,597	0.07		-3.84	-7.49	9.29	11.96	--
Aisling	6,775,690	0.29		-11.65	0.52	--	--	--
Arrowroot Capital III	14,795,848	0.63		0.03	39.68	--	--	--
Arrowroot Capital IV	3,400,000	0.14		-1.78	--	--	--	--
BLACKSTONE ASIA	1,253,441	0.05		43.42	15.08	--	--	--
Capital Partners II	13,684,637	0.58		-2.69	10.59	19.40	30.81	--
Capital Partners III	4,709,456	0.20		-0.90	-12.38	--	--	--
DC Capital Partners	2,939,505	0.12		23.31	20.25	--	--	--
DYAL IV	656,153	0.03		-1.02	--	--	--	--
KPS IV	3,889,089	0.16		0.34	11.51	--	--	--
Long Ridge II	8,635,572	0.36		5.44	27.44	--	--	--
Monomoy Capital Partners III	1,574,679	0.07		2.19	-27.20	--	--	--
Newquest Fund	5,763,111	0.24		1.56	19.88	--	--	--
Nexus	1,404,383	0.06		-7.25	--	--	--	--

Fixed Income Custom Benchmark was BBgBarc US Universal TR preceding 01/01/2017. As of 01/01/2017 the benchmark is BBgBarc US Agg Govt/Credit.

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Opengate Capital Partners	9,664,608	0.41		2.64	21.46	--	--	--
Pfingsten Fund V	4,703,107	0.20		9.63	2.63	--	--	--
Shore Capital Partners GP I LP	10,103,150	0.43		16.92	64.81	43.52	--	--
Shoreline China Valu III	3,872,135	0.16		-2.52	-3.57	5.69	--	--
Rates and Credit Beta	**643,672,539**	**27.20**	**30.00**	**2.45**	**--**	**--**	**--**	**--**
Traditional Fixed Income	**382,103,608**	**16.15**	**22.50**	**3.33**	**5.05**	**4.47**	**5.46**	**8.67**
Fixed Income Custom Benchmark				*3.26*	*4.48*	*2.54*	*2.93*	*4.32*
Core Fixed Income	**152,567,682**	**6.45**	**10.00**	**2.39**	**4.02**	**2.53**	**3.64**	**7.20**
Aberdeen	12,013,575	0.51		2.15	3.85	7.00	5.91	8.23
BBgBarc US Aggregate TR				*2.94*	*4.48*	*2.03*	*2.74*	*3.77*
Internal Fixed - Core	102,412,876	4.33		2.25	4.25	0.95	2.96	--
BBgBarc US Govt/Credit TR				*3.26*	*4.48*	*2.12*	*2.78*	*3.92*
Octagon Senior Debt	28,179,749	1.19		3.09	1.49	3.62	--	--
BBgBarc US Aggregate TR				*2.94*	*4.48*	*2.03*	*2.74*	*3.77*
Principal CMBS Fixed	9,961,482	0.42		2.20	8.26	5.21	4.41	--
BBgBarc US CMBS Investment Grade				*3.22*	*5.54*	*2.56*	*2.99*	*8.04*
Long Duration	**193,084,104**	**8.16**	**7.50**	**4.02**	**6.34**	**3.30**	**5.80**	**--**
Internal Fixed - Long Duration	193,084,104	8.16		4.02	6.34	3.30	5.80	6.46
BBgBarc US Aggregate TR				*2.94*	*4.48*	*2.03*	*2.74*	*3.77*
US TIPS	**36,451,822**	**1.54**	**5.00**	**3.66**	**2.38**	**2.04**	**2.31**	**--**
Internal US TIPS	36,451,822	1.54		3.66	2.38	2.04	2.31	--
BBgBarc US TIPS TR				*3.19*	*2.70*	*1.70*	*1.94*	*3.41*
Opportunistic Debt	**261,568,931**	**11.05**	**7.50**	**1.19**	**7.59**	**--**	**--**	**--**
BBgBarc US High Yield TR				*7.26*	*5.93*	*8.56*	*4.68*	*11.26*
Direct Lending	**261,568,931**	**11.05**	**--**	**1.19**	**7.74**	**11.54**	**10.65**	**--**
Core Direct Lending	**76,038,600**	**3.21**	**--**	**2.29**	**8.87**	**8.47**	**7.07**	**--**
GOLUB Capital	27,059,966	1.14		1.46	10.93	10.00	8.52	--
Internal Fixed - Nonrated	12,429,937	0.53		3.03	8.66	6.29	--	--
M&G III	3,938,156	0.17		4.01	0.64	4.57	-0.37	--
MGG	9,166,536	0.39		2.61	--	--	--	--
Owl Rock	23,444,005	0.99		2.35	8.67	--	--	--
Opportunistic Direct Lending	**94,792,546**	**4.01**	**--**	**1.80**	**11.80**	**11.56**	**11.68**	**--**
Audax Mezzanine II	2,377	0.00						
GSO Energy II	531,512	0.02		--	--	--	--	--

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
GSO Energy Select Opps	5,875,522	0.25		-1.78	5.22	18.62	--	--
GSO I	244,815	0.01		-21.54	-38.94	-21.68	-9.94	4.45
GSO II	3,281,835	0.14		-0.90	6.88	9.50	8.81	--
GSO III	9,043,256	0.38		0.90	9.43	--	--	--
Northern Shipping II	8,759,557	0.37		1.57	10.13	8.25	--	--
Northern Shipping III	13,622,783	0.58		1.49	9.43	6.52	--	--
OCP Asia	26,582,049	1.12		3.61	13.09	14.76	15.30	--
Riverstone Credit Partners	16,092,130	0.68		2.28	15.08	15.74	--	--
Riverstone Credit Partners II	10,756,710	0.45		1.38	--	--	--	--
Distressed /Special Sits	**50,071,257**	**2.12**	**--**	**-3.08**	**5.53**	**9.95**	**11.24**	**--**
Anchorage Capital III	1,641,838	0.07		0.00	8.83	7.53	9.37	--
Anchorage Illiquid Opps V	14,814,877	0.63		0.00	6.14	8.96	--	--
CVI Credit Value	865,103	0.04		0.68	10.06	11.39	12.52	--
CVI Credit Value Fund III	14,267,857	0.60		3.31	3.51	11.15	--	--
CVI Global Value	1,160,498	0.05		0.16	6.25	0.35	5.06	10.99
Longford II	5,001,863	0.21		4.12	--	--	--	--
Miravast ILS Credit Opp	10,995,339	0.46		0.00	--	--	--	--
Siguler Guff Sec Opps	1	0.00						
Varde Asia Credit Fund	1,323,881	0.06		1.30	--	--	--	--
Liquid Credit	**40,666,528**	**1.72**	**--**	**3.61**	**1.60**	**13.21**	**8.88**	**--**
ABRY ASF	150,660	0.01		11.31	-18.37	-1.54	6.33	19.67
GSO Credit Alpha Fund	13,141,792	0.56		-0.76	3.23	13.89	--	--
Och-Ziff Struct Products II	1,780,215	0.08		2.55	6.52	27.95	17.71	--
Octagon Opportunistic	25,593,861	1.08		6.06	0.67	12.54	--	--
Real Assets Beta	**522,013,822**	**22.06**	**20.00**	**-0.14**	**--**	**--**	**--**	**--**
Real Assets	**281,795,582**	**11.91**	**10.00**	**-2.79**	**6.21**	**8.10**	**3.15**	**--**
CPI + 4% (Unadjusted)				*2.17*	*5.93*	*6.28*	*5.53*	*5.86*
Natural Resources	**157,088,818**	**6.64**	**--**	**-5.17**	**4.39**	**10.95**	**5.40**	**--**
Ares Energy	7,901,648	0.33		-6.52	--	--	--	--
Blue Road	7,081,072	0.30		0.00	7.40	10.24	--	--
EMG I	5,026,065	0.21		-11.39	-9.26	-3.93	-10.05	--
EMG II	8,805,699	0.37		-8.20	-2.27	8.83	8.95	--
EMG III	20,798,567	0.88		-5.34	-1.90	5.63	-1.50	--
EMG IV	20,541,256	0.87		-7.31	18.74	19.46	--	--

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Grey Rock Energy Fund II	10,197,060	0.43		0.00	15.78	--	--	--
Grey Rock Energy Fund III	4,228,671	0.18		-1.68	--	--	--	--
NGP IX	286,438	0.01		18.05	227.67	55.97	21.26	--
NGP X	4,242,663	0.18		-24.50	-18.17	3.47	0.08	--
NGP XI	14,124,137	0.60		-6.16	3.59	19.39	--	--
Orion II	12,148,229	0.51		9.52	6.76	--	--	--
Orion Mine Finance Fund I	9,618,921	0.41		-1.53	-3.62	15.46	--	--
Orion Mineral Royalty	1,595,078	0.07		--	--	--	--	--
Quantum VII	6,034,691	0.26		0.00	4.46	--	--	--
Ridgewood Energy	10,186,829	0.43		-14.72	15.80	12.25	5.35	--
Ridgewood III	3,349,117	0.14		-3.43	-4.42	-6.61	--	--
Turnbridge Capital Partners I	10,922,677	0.46		0.12	--	--	--	--
MO Hwy Priv. Equ. Index - Lagged				*-12.85*	*-1.50*	*12.51*	*11.73*	*16.62*
Infrastructure & Transport	**43,817,458**	**1.85**	**--**	**1.86**	**10.97**	**7.09**	**1.96**	**--**
American Infrastructure I MLP	10,485,440	0.44		10.79	14.59	10.69	5.21	--
American Infrastructure II MLP	8,293,448	0.35		-4.00	23.92	4.01	4.96	--
Apollo Aviation III	5,132,323	0.22		13.58	33.44	20.29	--	--
CIM INFRA FUND II	3,873,487	0.16		-2.46	--	--	--	--
Corrum Capital Aviation	8,893,042	0.38		2.93	4.17	--	--	--
EIF - US Power III	2,828,472	0.12		-16.98	-13.10	-6.59	2.62	--
Sciens Marine Investments	4,311,246	0.18		-2.01	14.27	9.93	--	--
CPI + 4% (Unadjusted)				*2.17*	*5.93*	*6.28*	*5.53*	*5.86*
Timber	**80,889,306**	**3.42**	**--**	**-0.72**	**6.53**	**4.24**	**-0.28**	**--**
MP Timber	37,152,596	1.57		0.00	10.41	5.47	--	--
MPATC	29,469,135	1.25		-1.96	-2.95	--	--	--
MPCTT	4,819,975	0.20		2.14	41.97	--	--	--
MPMCB	8,422,407	0.36		-1.44	-1.50	--	--	--
RUSSELLVILLE LAND TIMBER	1,025,193	0.04		0.00	-0.93	--	--	--
NCREIF Timberland 1 Qtr. Lag				*0.75*	*3.21*	*3.18*	*4.96*	*3.82*
Real Estate	**240,218,240**	**10.15**	**10.00**	**3.43**	**10.23**	**9.61**	**11.25**	**8.97**
NFI-ODCE Eq Wtd Net Non Lag				*1.48*	*6.81*	*7.27*	*9.43*	*7.52*
REITS	**17,786,153**	**0.75**	**--**	**15.62**	**11.31**	**4.22**	**4.35**	**11.83**
CBRE Investors	17,786,153	0.75		15.62	11.31	4.22	4.35	11.83
FTSE NAREIT Developed				*14.59*	*13.27*	*5.68*	*6.42*	*14.00*

TOTAL FUND PERFORMANCE DETAIL

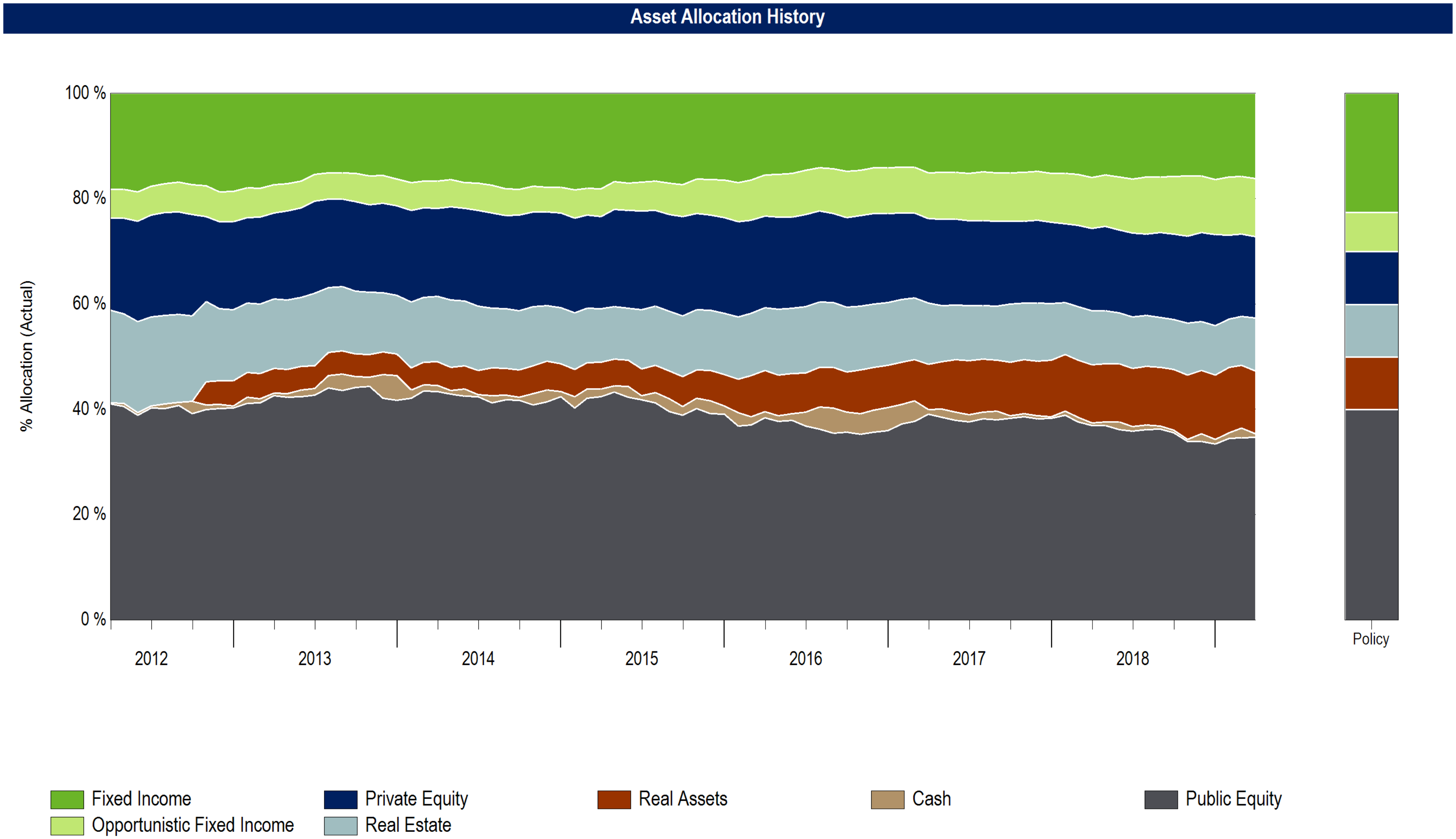
	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Core	**110,705,188**	**4.68**	**--**	**1.31**	**9.25**	**8.96**	**11.57**	**8.57**
NCREIF Property Index				*1.80*	*6.82*	*7.07*	*9.12*	*8.50*
Clarion Partners Lion Prop Fd	25,471,095	1.08		1.73	7.91	8.53	10.47	7.71
Principal CMBS	2,607,714	0.11		16.07	56.05	17.50	15.42	27.91
Principal Enhanced Property	53,915,650	2.28		0.00	6.60	9.80	12.96	6.14
NCREIF Property Index				*1.80*	*6.82*	*7.07*	*9.12*	*8.50*
Principal U.S. Property Fund	28,710,729	1.21		1.66	7.84	8.32	10.17	8.17
NCREIF ODCE				*1.42*	*7.52*	*7.97*	*10.17*	*8.73*
Non-Core	**111,726,899**	**4.72**	**--**	**4.18**	**11.33**	**11.19**	**11.40**	**7.39**
Value-Add	**101,230,099**	**4.28**	**--**	**4.08**	**10.24**	**11.42**	**13.65**	**--**
Centersquare III	39,436,771	1.67		14.38	27.04	19.38	--	--
Centersquare IV	13,388,694	0.57		-2.28	--	--	--	--
NCREIF Property Index				*1.80*	*6.82*	*7.07*	*9.12*	*8.50*
M&G II	5,236,531	0.22		4.70	3.50	6.91	3.72	--
New Mountain	3,475,909	0.15		6.61	--	--	--	--
Oak Street IV	4,337,975	0.18		0.69	7.98	--	--	--
Och Ziff RE Credit FD LP	2,424,337	0.10		1.88	9.94	--	--	--
Torchlight Debt Opp II	220,523	0.01		0.00	48.48	14.29	15.42	--
Torchlight Debt Opp III	36,983	0.00		-20.29	-34.56	-4.09	22.10	--
Torchlight Debt Opps V	11,571,541	0.49		-0.82	13.62	12.78	--	--
Tristan EPISO	1,937,482	0.08		-19.10	-35.06	-10.59	-0.90	1.87
Tristan EPISO 3	6,626,139	0.28		-7.60	-9.63	17.96	6.68	--
Tristan EPISO 4	12,537,214	0.53		4.04	1.59	4.13	--	--
Opportunistic	**10,496,800**	**0.44**	**--**	**6.66**	**23.26**	**12.24**	**9.75**	**--**
Apollo European III	171,514	0.01		-22.83	-60.70	-35.38	-24.66	-9.47
Apollo Real Estate	4,874,140	0.21		13.13	36.72	12.77	14.92	6.46
Clarion Part Lion Mexico Fund	1,087,860	0.05		-16.71	-19.90	-19.89	-18.55	-10.72
Colony Capital VIII	221,800	0.01		-7.66	-19.17	-2.42	-4.29	-0.18
Och-Ziff	430,879	0.02		97.20	233.18	87.06	55.39	38.30
Och-Ziff RE III	3,674,480	0.16		3.85	20.39	22.14	-0.29	--
Cash Composite	**16,214,494**	**0.69**	**--**	**0.57**	**2.03**	**1.07**	**0.66**	**0.37**
91 Day T-Bills				*0.59*	*2.15*	*1.23*	*0.76*	*0.42*

APPENDIX

NEPC, LLC

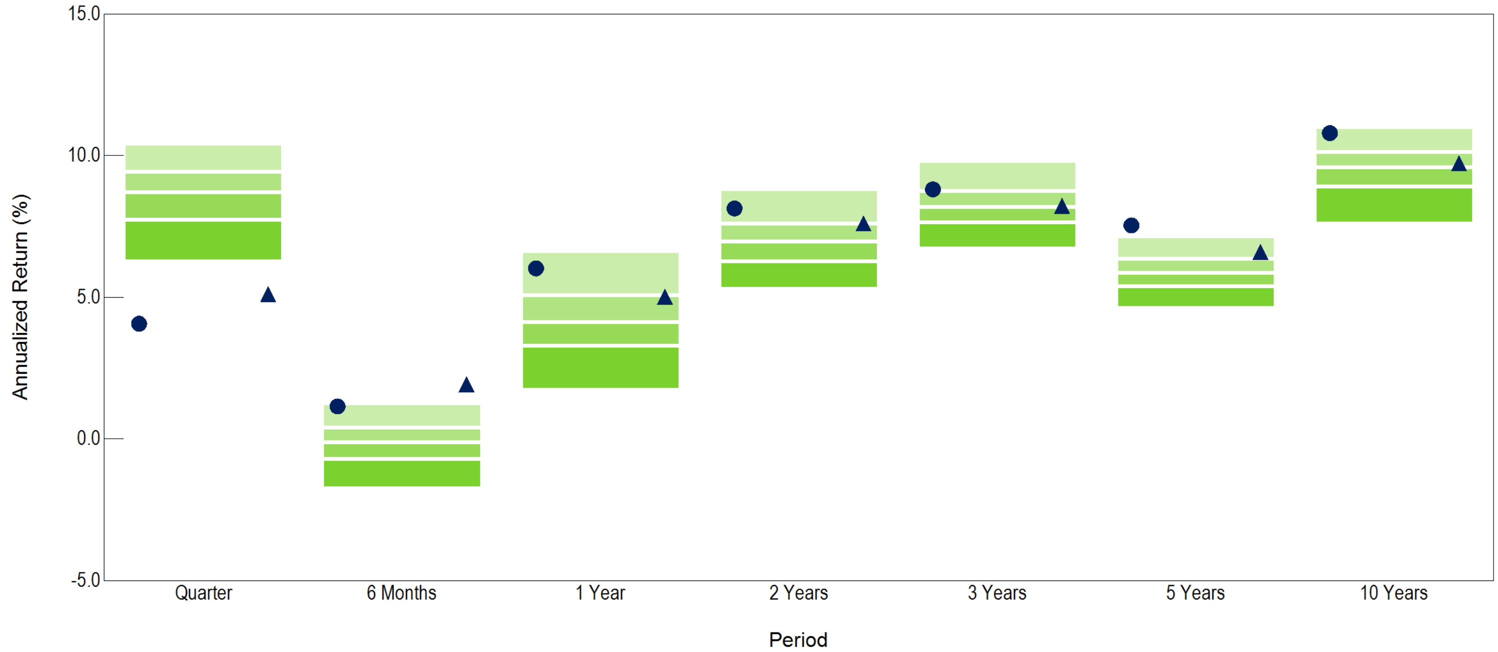
MPERS

TOTAL FUND ASSET ALLOCATION HISTORY



TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Total Composite vs. InvestorForce Public DB Net

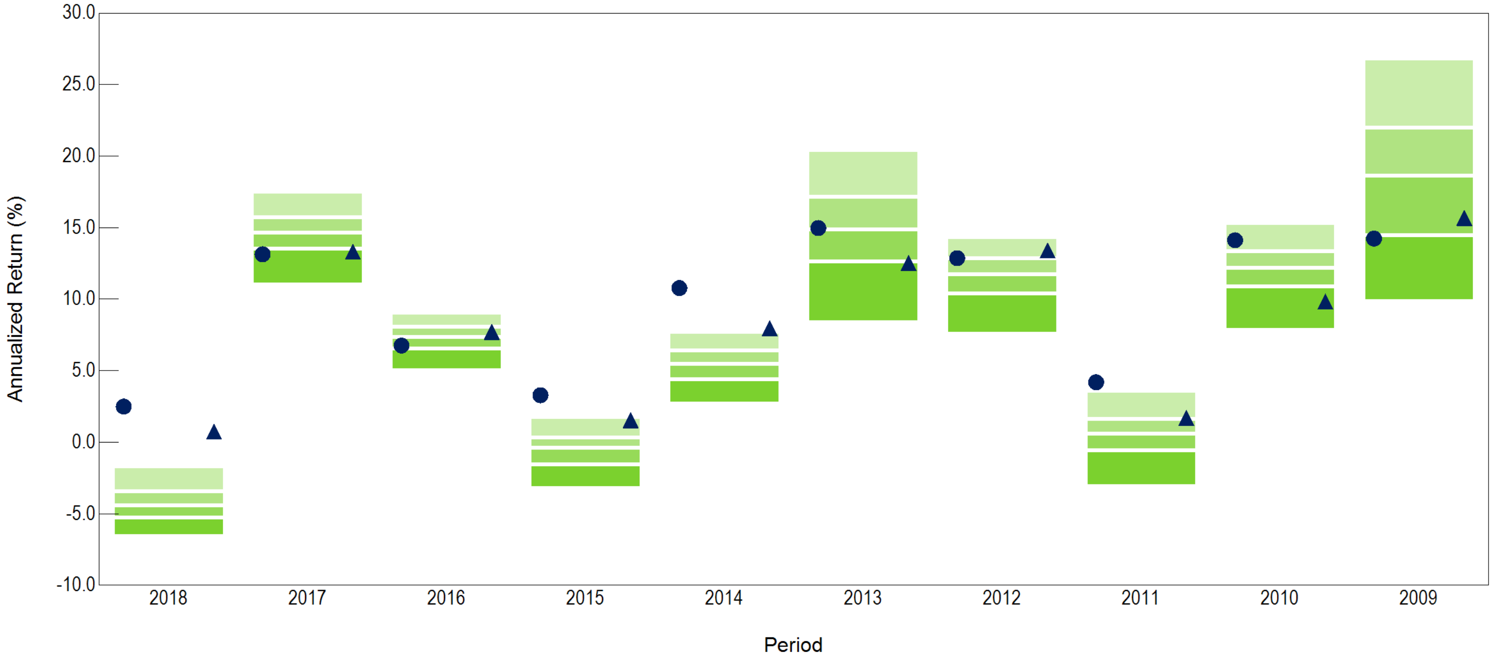


	Return (Rank)													
5th Percentile	10.4		1.3		6.6		8.8		9.8		7.1		11.0	
25th Percentile	9.4		0.4		5.1		7.6		8.8		6.4		10.1	
Median	8.7		-0.1		4.1		7.0		8.2		5.9		9.6	
75th Percentile	7.7		-0.7		3.3		6.3		7.6		5.4		8.9	
95th Percentile	6.3		-1.7		1.7		5.3		6.7		4.6		7.6	
# of Portfolios	555		551		550		541		536		490		410	
● Total Composite	4.1	(99)	1.1	(6)	6.0	(10)	8.1	(13)	8.8	(25)	7.5	(2)	10.8	(9)
▲ Policy Index	5.1	(99)	1.9	(2)	5.0	(27)	7.6	(26)	8.2	(49)	6.6	(19)	9.7	(43)

MPERS

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Total Composite vs. InvestorForce Public DB Net



Return (Rank)	2018		2017		2016		2015		2014		2013		2012		2011		2010		2009	
5th Percentile	-1.7		17.5		9.0		1.7		7.7		20.4		14.3		3.6		15.3		26.8	
25th Percentile	-3.4		15.8		8.1		0.4		6.4		17.2		12.9		1.6		13.4		22.0	
Median	-4.4		14.7		7.4		-0.4		5.5		14.9		11.8		0.6		12.2		18.6	
75th Percentile	-5.2		13.6		6.6		-1.5		4.4		12.7		10.4		-0.5		10.9		14.5	
95th Percentile	-6.5		11.1		5.0		-3.2		2.7		8.4		7.6		-3.1		7.9		9.9	
# of Portfolios	496		269		269		262		210		191		159		137		131		128	
● Total Composite	2.5	(1)	13.1	(83)	6.8	(70)	3.3	(1)	10.8	(1)	15.0	(49)	12.9	(26)	4.2	(3)	14.1	(14)	14.2	(77)
▲ Policy Index	0.7	(1)	13.3	(81)	7.7	(39)	1.5	(7)	8.0	(4)	12.5	(76)	13.4	(15)	1.7	(24)	9.8	(88)	15.7	(68)

GLOSSARY OF INVESTMENT TERMINOLOGY

Alpha - Measures the relationship between the fund performance and the performance of another fund or benchmark index and equals the excess return while the other fund or benchmark index is zero.

Alpha Jensen - The average return on a portfolio over and above that predicted by the capital asset pricing model (CAPM), given the portfolio's beta and the average market return. Also known as the abnormal return or the risk adjusted excess return.

Annualized Excess Return over Benchmark - Annualized fund return minus the annualized benchmark return for the calculated return.

Annualized Return - A statistical technique whereby returns covering periods greater than one year are converted to cover a 12 month time span.

Beta - Measures the volatility or systematic risk and is equal to the change in the fund's performance in relation to the change in the assigned index's performance.

Information Ratio - A measure of the risk adjusted return of a financial security, asset, or portfolio.

Formula:
(Annualized Return of Portfolio - Annualized Return of Benchmark)/Annualized Standard Deviation(Period Portfolio Return – Period Benchmark Return). To annualize standard deviation, multiply the deviation by the square root of the number of periods per year where monthly returns per year equals 12 and quarterly returns is four periods per year.

R-Squared – Represents the percentage of a fund's movements that can be explained by movements in an index. R-Squared values range from 0 to 100. An R-Squared of 100 denotes that all movements of a fund are completely explained by movements in the index.

Sharpe Ratio - A measure of the excess return or risk premium per unit of risk in an investment asset or trading strategy.

Sortino Ratio - A method to differentiate between good and bad volatility in the Sharpe Ratio. The differentiation of up and down volatility allows the calculation to provide a risk adjusted measure of a security or fund's performance without upward price change penalties.

Formula:
*Calculation Average (X-Y)/Downside Deviation (X-Y) * 2*
Where X=Return Series X Y = Return Series Y which is the risk free return (91 day T-bills)

Standard Deviation - The standard deviation is a statistical term that describes the distribution of results. It is a commonly used measure of volatility of returns of a portfolio, asset class, or security. The higher the standard deviation the more volatile the returns are.

Formula:
(Annualized Return of Portfolio – Annualized Return of Risk Free) / Annualized Standard Deviation (Portfolio Returns)

Tracking Error - Tracking error, also known as residual risk, is a measure of the degree to which a portfolio tracks its benchmark. It is also a measure of consistency of excess returns. Tracking error is computed as the annualized standard deviation of the difference between a portfolio's return and that of its benchmark.

Formula:
*Tracking Error = Standard Deviation (X-Y) * √(# of periods per year)*
Where X = periods portfolio return and Y = the period's benchmark return
For monthly returns, the periods per year = 12
For quarterly returns, the periods per year = 4

Treynor Ratio - A risk-adjusted measure of return based on systematic risk. Similar to the Sharpe ratio with the difference being the Treynor ratio uses beta as the measurement of volatility.

Formula:
(Portfolio Average Return - Average Return of Risk-Free Rate)/Portfolio Beta

Up/Down Capture Ratio - A measure of what percentage of a market's returns is "captured" by a portfolio. For example, if the market declines 10% over some period, and the manager declines only 9%, then his or her capture ratio is 90%. In down markets, it is advantageous for a manager to have as low a capture ratio as possible. For up markets, the higher the capture ratio the better. Looking at capture ratios can provide insight into how a manager achieves excess returns. A value manager might typically have a lower capture ratio in both up and down markets, achieving excess returns by protecting on the downside, whereas a growth manager might fall more than the overall market in down markets, but achieve above-market returns in a rising market.

UpsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Period Benchmark Return is > = 0

DownsideCapture = TotalReturn(FundReturns)/TotalReturns(BMReturn) when Benchmark <0

Data Source: InvestorForce

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 # Of Portfolios/Observations[1] – The total number of data points that make up a specified universe

Allocation Index[3] - The allocation index measures the value added (or subtracted) to each portfolio by active management. It is calculated monthly: The portfolio asset allocation to each category from the prior month-end is multiplied by a specified market index.

Asset Allocation Effect[2] - Measures an investment manager's ability to effectively allocate their portfolio's assets to various sectors. The allocation effect determines whether the overweighting or underweighting of sectors relative to a benchmark contributes positively or negatively to the overall portfolio return. Positive allocation occurs when the portfolio is over weighted in a sector that outperforms the benchmark and underweighted in a sector that underperforms the benchmark. Negative allocation occurs when the portfolio is over weighted in a sector that underperforms the benchmark and under weighted in a sector that outperforms the benchmark.

Agency Bonds (Agencies)[3] - The full faith and credit of the United States government is normally not pledged to payment of principal and interest on the majority of government agencies issuing these bonds, with maturities of up to ten years. Their yields, therefore, are normally higher than government and their marketability is good, thereby qualifying them as a low risk-high liquidity type of investment. They are eligible as security for advances to the member banks by the Federal Reserve, which attests to their standing.

Asset Backed Securities (ABS)[3] - Bonds which are similar to mortgage-backed securities but are collateralized by assets other than mortgages; commonly backed by credit card receivables, auto loans, or other types of consumer financing.

Attribution[3] - Attribution is an analytical technique that allows us to evaluate the performance of the portfolio relative to the benchmark. A proper attribution tells us where value was added or subtracted as a result of the manager's decisions.

Average Effective Maturity[4] - For a single bond, it is a measure of maturity that takes into account the possibility that a bond might be called back to the issuer.

For a portfolio of bonds, average effective maturity is the weighted average of the maturities of the underlying bonds. The measure is computed by weighing each bond's maturity by its market value with respect to the portfolio and the likelihood of any of the bonds being called. In a pool of mortgages, this would also account for the likelihood of prepayments on the mortgages.

Batting Average[1] - A measurement representing an investment manager's ability to meet or beat an index.

Formula: Divide the number of days (or months, quarters, etc.) in which the manager beats or matches the index by the total number of days (or months, quarters, etc.) in the period of question and multiply that factor by 100.

Brinson Fachler (BF) Attribution[1] - The BF methodology is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance. The main advantage of the BF methodology is that rather than using the overall return of the benchmark, it goes a level deeper than BHB and measures whether the benchmark sector, country, etc. outperformed/or underperformed the overall benchmark.

Brinson Hood Beebower (BHB) Attribution[1] - The BHB methodology shows that excess return must be equal to the sum of all other factors (i.e., allocation effect, selection effect, interaction effect, etc.). The advantage to using the BHB methodology is that it is a highly accepted industry standard for calculating the allocation, selection, and interaction effects within a portfolio that collectively explains a portfolio's underlying performance.

Corporate Bond (Corp) [4] - A debt security issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations. In some cases, the company's physical assets may be used as collateral for bonds.

Correlation[1] - A range of statistical relationships between two or more random variables or observed data values. A correlation is a single number that describes the degree of relationship between variables.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

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Coupon[4] – The interest rate stated on a bond when it is issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate."

Currency Effect[1] - Is the effect that changes in currency exchange rates over time affect excess performance.

Derivative Instrument[3] - A financial obligation that derives its precise value from the value of one or more other instruments (or assets) at the same point of time. For example, the relationship between the value of an S&P 500 futures contract (the derivative instrument in this case) is determined by the value of the S&P 500 Index and the value of a U.S. Treasury bill that matures at the expiration of the futures contract.

Downside Deviation[1] - Equals the standard deviation of negative return or the measure of downside risk focusing on the standard deviation of negative returns.

Formula:
Annualized Standard Deviation (Fund Return - Average Fund Return) where average fund return is greater than individual fund returns, monthly or quarterly.

Duration[3] - Duration is a measure of interest rate risk. The greater the duration of a bond, or a portfolio of bonds, the greater its price volatility will be in response to a change in interest rates. A bond's duration is inversely related to interest rates and directly related to time to maturity.

Equity/Debt/Cash Ratio[1] – The percentage of an investment or portfolio that is in Equity, Debt, and/or Cash (i.e. A 7/89/4 ratio represents an investment that is made up of 7% Equity, 89% Debt, and 4% Cash).

Foreign Bond[3] - A bond that is issued in a domestic market by a foreign entity, in the domestic market's currency. A foreign bond is most often issued by a foreign firm to raise capital in a domestic market that would be most interested in purchasing the firm's debt. For foreign firms doing a large amount of business in the domestic market, issuing foreign bonds is a common practice.

Hard Hurdle[5] – is a hurdle rate that once beaten allows a fund manager to charge a performance fee on only the funds above the specified hurdle rate.

High-Water Mark[4] - The highest peak in value that an investment fund/ account has reached. This term is often used in the context of fund manager compensation, which is performance based. Some performance-based fees only get paid when fund performance exceeds the high-water mark. The high-water mark ensures that the manager does not get paid large sums for poor performance.

Hurdle Rate[4] - The minimum rate of return on an investment required, in order for a manager to collect incentive fees from the investor, which is usually tied to a benchmark.

Interaction Effects[2] - The interaction effect measures the combined impact of an investment manager's selection and allocation decisions within a sector. For example, if an investment manager had superior selection and over weighted that particular sector, the interaction effect is positive. If an investment manager had superior selection, but underweighted that sector, the interaction effect is negative. In this case, the investment manager did not take advantage of the superior selection by allocating more assets to that sector. Since many investment managers consider the interaction effect to be part of the selection or the allocation, it is often combined with the either effect.

Median[3] - The value (rate of return, market sensitivity, etc.) that exceeds one-half of the values in the population and that is exceeded by one-half of the values. The median has a percentile rank of 50.

Modified Duration[3] - The percentage change in the price of a fixed income security that results from a change in yield.

Mortgage Backed Securities (MBS)[3] - Bonds which are a general obligation of the issuing institution but are also collateralized by a pool of mortgages.

Municipal Bond (Muni) [4] - A debt security issued by a state, municipality or county to finance its capital expenditures.

Net Investment Change[1] – Is the change in an investment after accounting for all Net Cash Flows.

Performance Fee[4] - A payment made to a fund manager for generating positive returns. The performance fee is generally calculated as a percentage of investment profits, often both realized and unrealized.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

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Policy Index[3] - A custom benchmark designed to indicate the returns that a passive investor would earn by consistently following the asset allocation targets set forth in this investment policy statement.

Price to Book (P/B)[4] - A ratio used to compare a stock's market value to its book value. It is calculated by dividing the current closing price of the stock by the latest quarter's book value per share, also known as the "price-equity ratio".

Price to Earnings (P/E)[3] - The weighted equity P/E is based on current price and trailing 12 months earnings per share (EPS).

Price to Sales (P/S)[4] - A ratio for valuing a stock relative to its own past performance, other companies, or the market itself. Price to sales is calculated by dividing a stock's current price by its revenue per share for the trailing 12 months.

Return on Equity (ROE)[4] **-** The amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

Selection (or Manager) Effect[2] - Measures the investment manager's ability to select securities within a given sector relative to a benchmark. The over or underperformance of the portfolio is weighted by the benchmark weight, therefore, selection is not affected by the manager's allocation to the sector. The weight of the sector in the portfolio determines the size of the effect—the larger the sector, the larger the effect is, positive or negative.

Soft Hurdle rate[5] – is a hurdle rate that once beaten allows a fund manager to charge a performance fee based on the entire annualized return.

Tiered Fee[1] – A fee structure that is paid to fund managers based on the size of the investment (i.e. 1.00% fee on the first $10M invested, 0.90% on the next $10M, and 0.80% on the remaining balance).

Total Effects[2] - The active management (total) effect is the sum of the selection, allocation, and interaction effects. It is also the difference between the total portfolio return and the total benchmark return. You can use the active management effect to determine the amount the investment manager has added to a portfolio's return.

Total Return[1] - The actual rate of return of an investment over a specified time period. Total return includes interest, capital gains, dividends, and distributions realized over a defined time period.

Universe[3] - The list of all assets eligible for inclusion in a portfolio.

Upside Deviation[1] – Standard Deviation of Positive Returns

Weighted Avg. Market Cap.[4] - A stock market index weighted by the market capitalization of each stock in the index. In such a weighting scheme, larger companies account for a greater portion of the index. Most indexes are constructed in this manner, with the best example being the S&P 500.

Yield (%)[3] - The current yield of a security is the current indicated annual dividend rate divided by current price.

Yield to Maturity[3] -The discount rate that equates the present value of cash flows, both principal and interest, to market price.

Data Source: [1]InvestorForce, [2]Interaction Effect Performance Attribution, [3]NEPC, LLC, [4]Investopedia, [5]Hedgeco.net

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