2021 Q1 INVESTMENT SUMMARY: BOARD REPORT

MODOT & PATROL EMPLOYEES' RETIREMENT SYSTEM

May 2021

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MARKET UPDATE

NEPC, LLC

MARKET OVERVIEW

Macro

US Dollar	VIX	US 10-Year
3.7%	-3.4	82.0 bps

Equity

S&P 500	MSCI EAFE	MSCI EM
6.2%	3.5%	2.3%

Credit

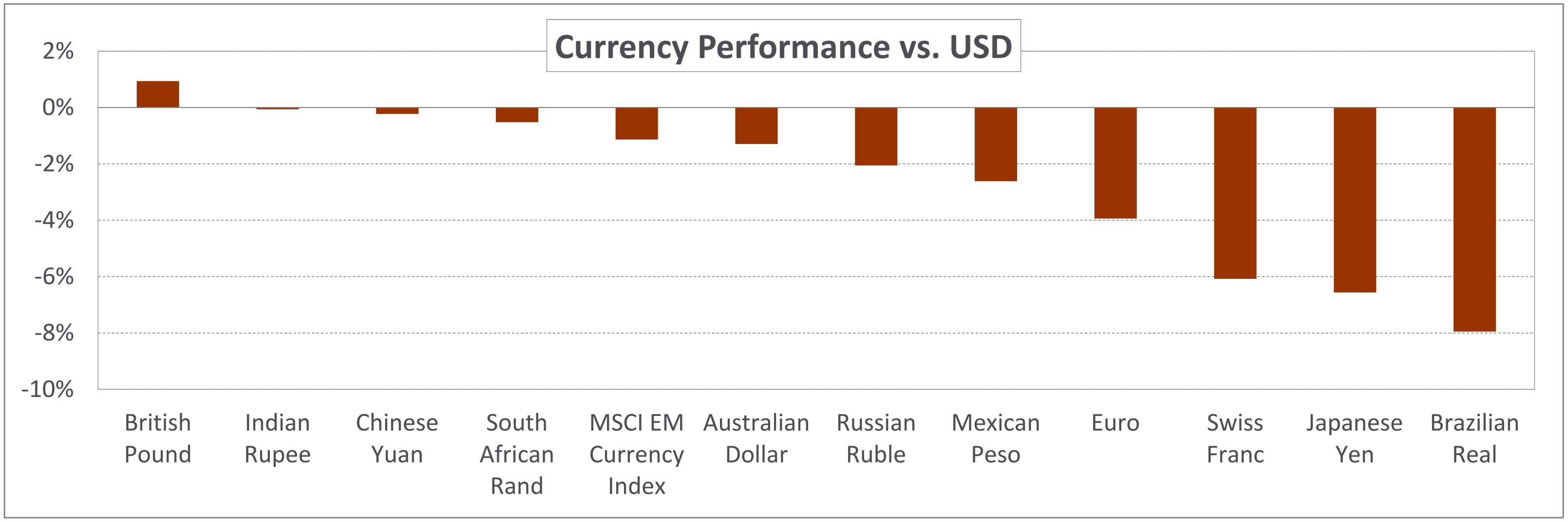
US Agg.	High Yield	Dollar EMD
-3.4%	0.8%	-4.5%

Real Assets

Oil	Gold	REITS
22.4%	-10.0%	8.5%

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 OVERVIEW

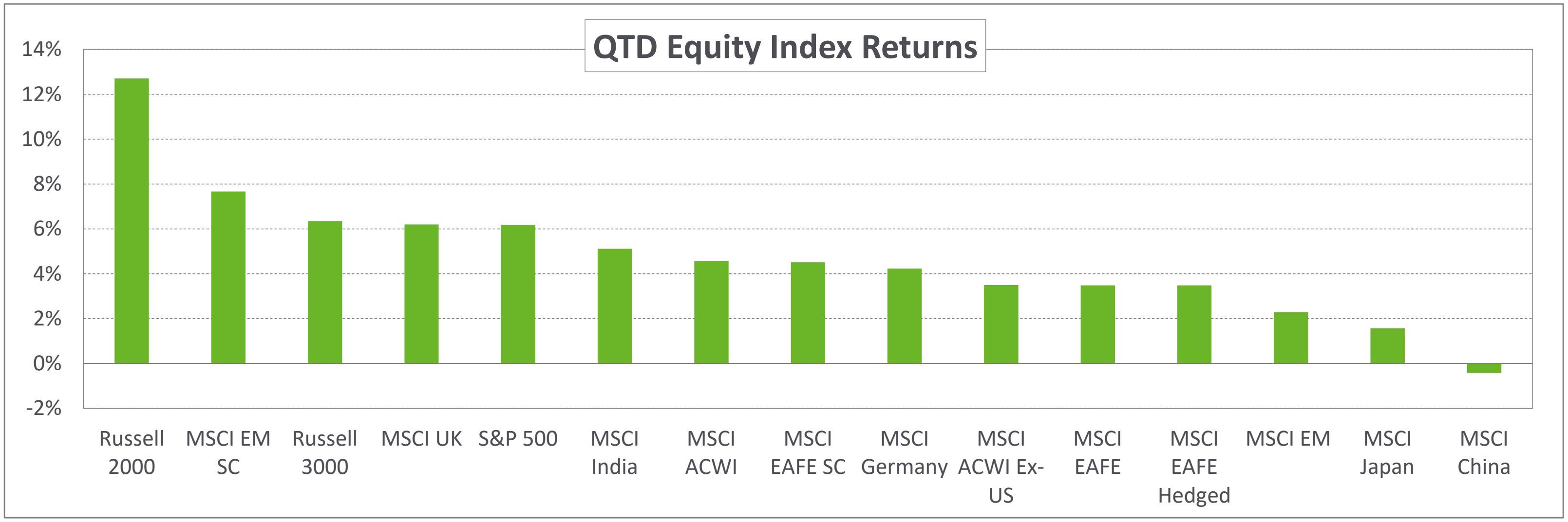


Source: MSCI, FactSet

Central Banks	Current Rate	CPI YOY	Notes from the Quarter
Federal Reserve	0.00% - 0.25%	1.7%	The Fed maintained current levels of monthly asset purchases and indicated that federal funds rate would remain near zero levels until at least 2024
European Central Bank	0.00%	0.9%	The ECB left rates unchanged and maintained its €1.85T emergency bond-buying program until at least March 2022
Bank of Japan	-0.10%	-0.4%	The BoJ announced plans to increase equity purchases from ¥6T to a maximum of ¥12T a year, but updated its policy to only intervene when market falls rather than committing to steady purchases

Source: FactSet

EQUITY OVERVIEW

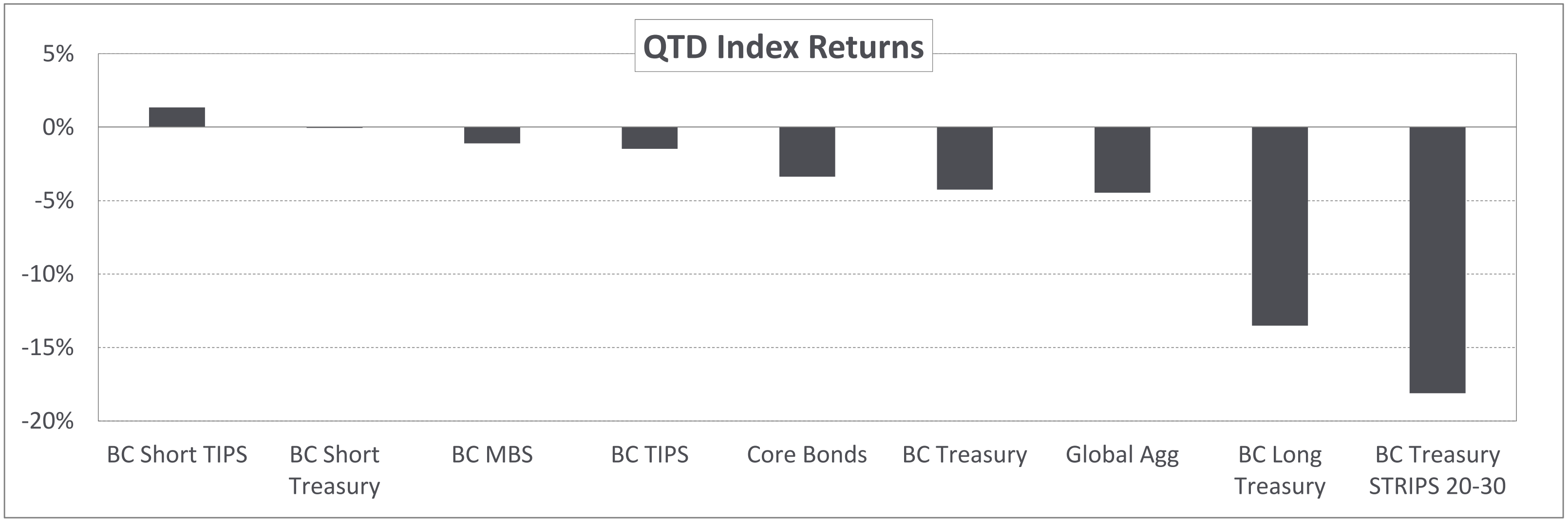


Source: S&P, MSCI, Russell, FactSet

Russell 3000 QTD Sector Returns	QTD	1 Year
Technology	3.2%	72.0%
Health Care	2.1%	39.9%
Consumer Discretionary	4.4%	86.7%
Consumer Staples	4.2%	32.2%
Energy	28.5%	89.0%
Materials & Processing	11.9%	86.1%
Producer Durables	8.5%	67.6%
Financial Services	16.1%	73.3%
Utilities	3.0%	21.6%

Source: FactSet

RATES OVERVIEW

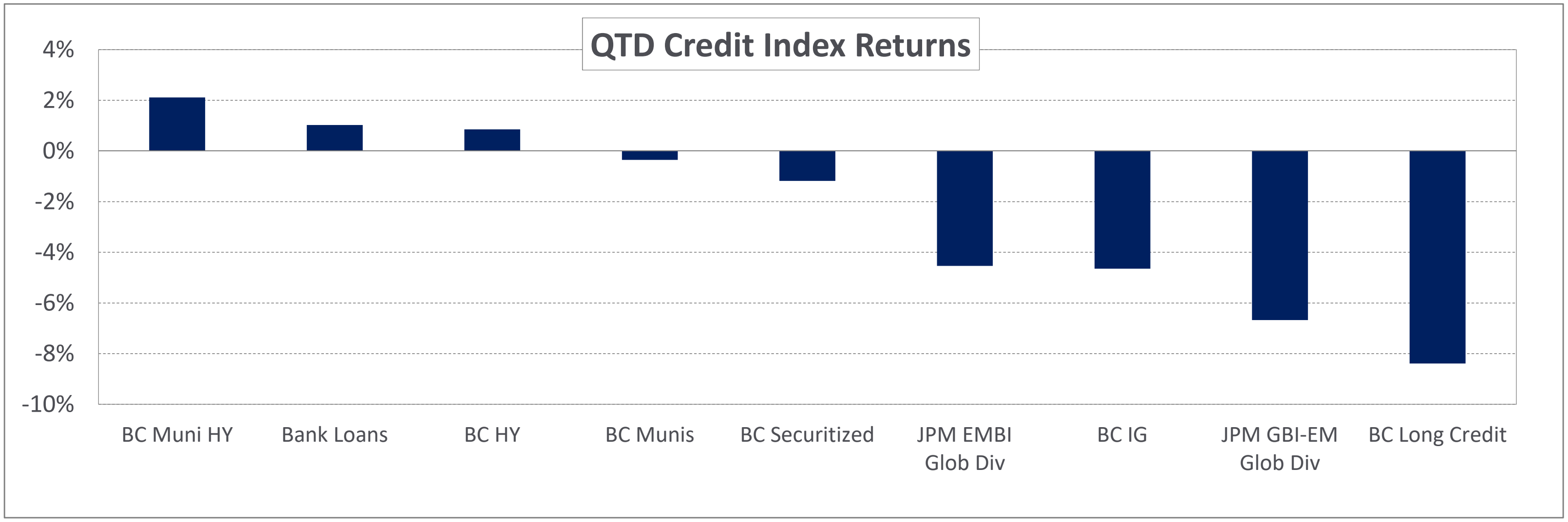


Source: S&P, MSCI, Russell, FactSet

	Previous Quarter Yield	Current Quarter Yield	|Δ|
US 10-Year	0.92%	1.74%	0.82%
US 30-Year	1.65%	2.42%	0.77%
US Real 10-Year	-1.06%	-0.63%	0.43%
German 10-Year	-0.58%	-0.30%	0.28%
Japan 10-Year	0.02%	0.08%	0.06%
China 10-Year	3.19%	3.21%	0.02%
EM Local Debt	4.22%	4.99%	0.78%

Source: Barclays, JPM, FactSet

CREDIT OVERVIEW

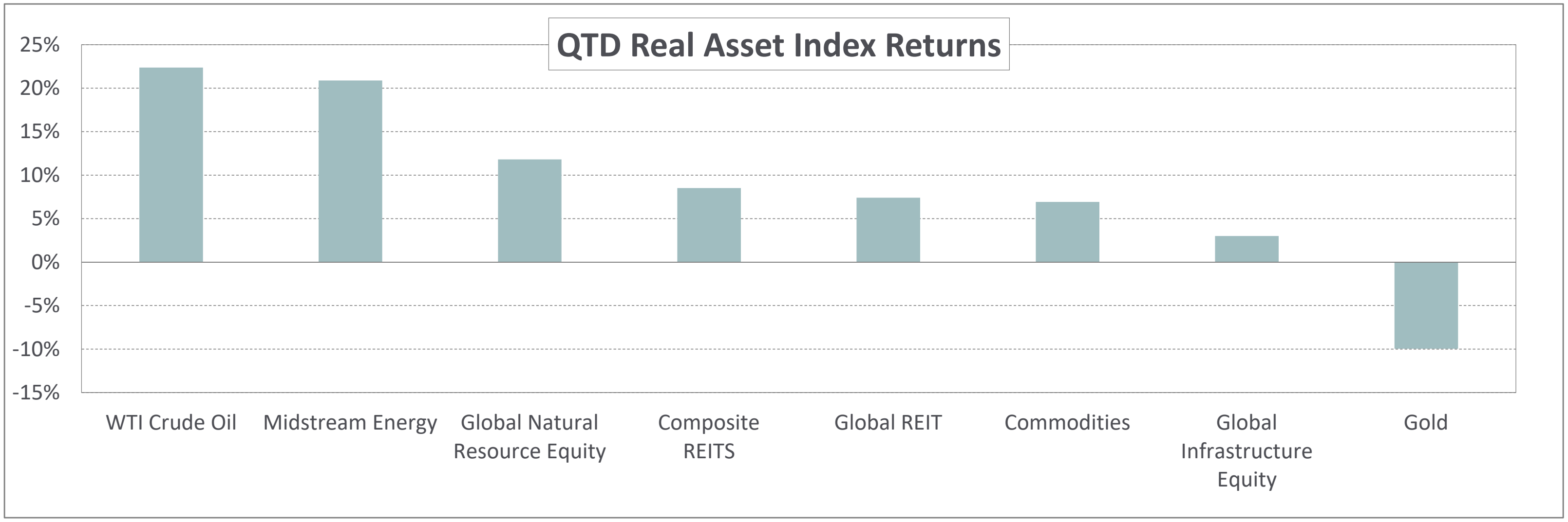


Source: S&P, MSCI, Russell, JPM, FactSet

	Previous Quarter Spread (bps)	Current Quarter Spread (bps)	|Δ|	Median
BC IG Credit	96	91	-5	136
BC Long Credit	141	126	-15	175
BC Securitized	42	16	-26	49
BC High Yield	360	310	-50	477
Muni HY	382	364	-18	632
JPM EMBI Glob Div	352	354	2	344
Bank Loans - Libor	374	355	-19	437

Source: Barclays, JPM, FactSet;
Medians calculated since 11/30/2000

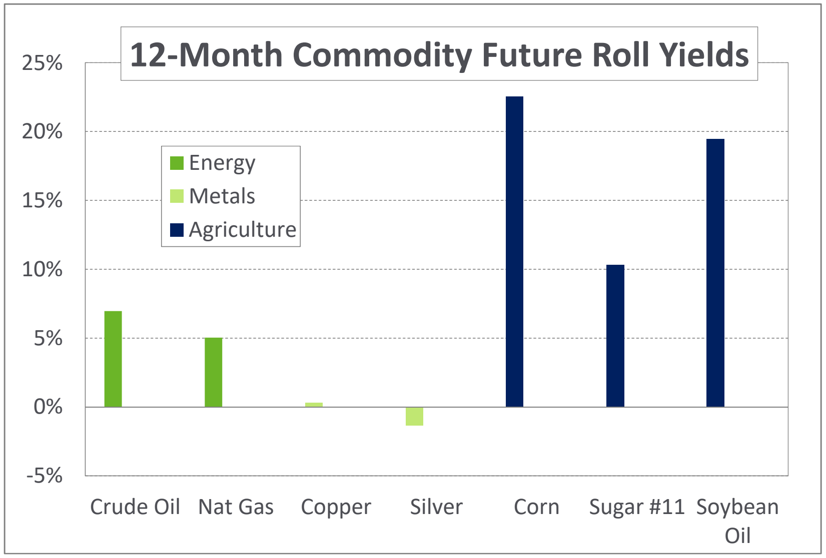
REAL ASSETS OVERVIEW



Source: S&P, MSCI, Russell, FactSet

Real Asset Yields	Previous Quarter	Current Quarter
Midstream Energy	7.9%	6.6%
Core Real Estate*	3.1%	3.0%
US REITs	3.8%	3.6%
Global REITs	4.3%	3.9%
Global Infrastructure Equities	3.4%	3.0%
Natural Resource Equities	3.4%	3.0%
Commodity Index Roll Yield	-0.1%	3.3%

Sources: Alerian, NAREIT, Barclays, NEPC, FactSet
Core Real Estate* yields are subject to a one quarter lag



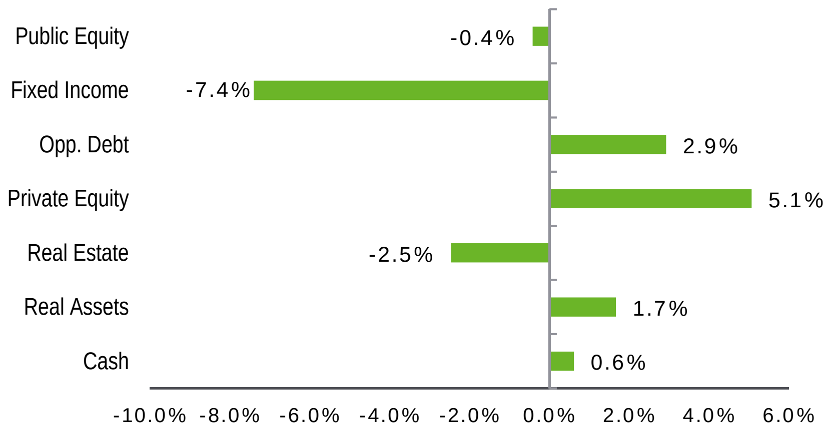
Source: FactSet

EXECUTIVE SUMMARY

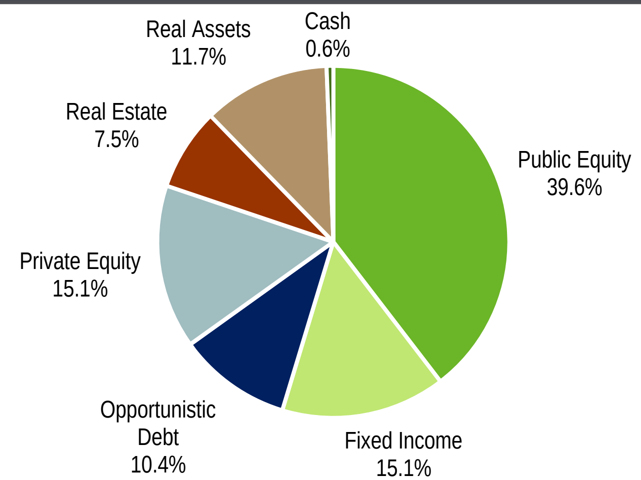
NEPC, LLC

ASSET ALLOCATION – CURRENT vs. POLICY

Current Allocation vs. Policy Allocation



Current Asset Allocation

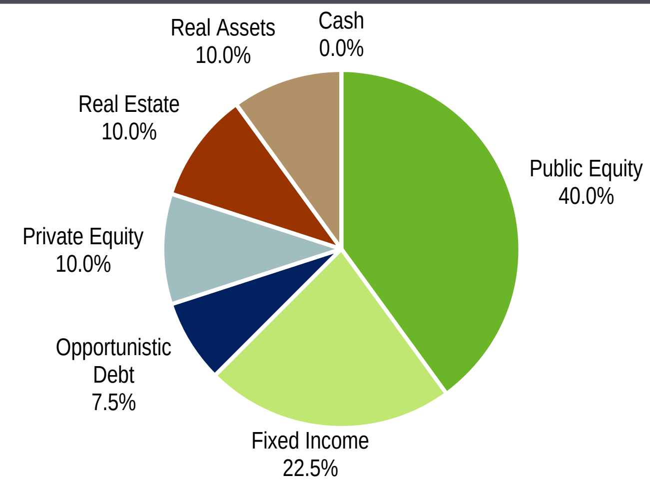


Current Allocation vs. Policy Allocation

	Current	Policy	Current	Difference*
Public Equity	$1,108,074,232	40.0%	39.6%	-0.4%
Fixed Income	$422,632,768	22.5%	15.1%	-7.4%
Opportunistic Debt	$291,857,298	7.5%	10.4%	2.9%
Private Equity	$421,731,080	10.0%	15.1%	5.1%
Real Estate	$211,093,253	10.0%	7.5%	-2.5%
Real Assets	$326,646,202	10.0%	11.7%	1.7%
Cash	$17,309,176	--	0.6%	-0.6%
Total	$2,799,344,009	100.0%	100.0%	

*Difference between Policy and Current Allocation

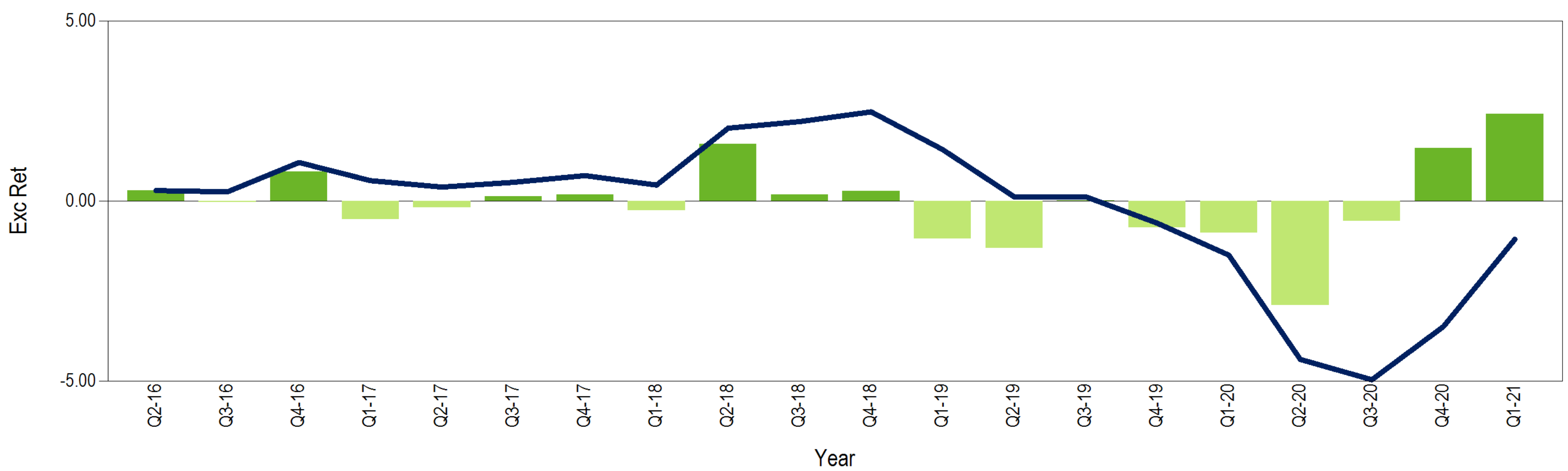
Policy Asset Allocation



TOTAL FUND PERFORMANCE SUMMARY

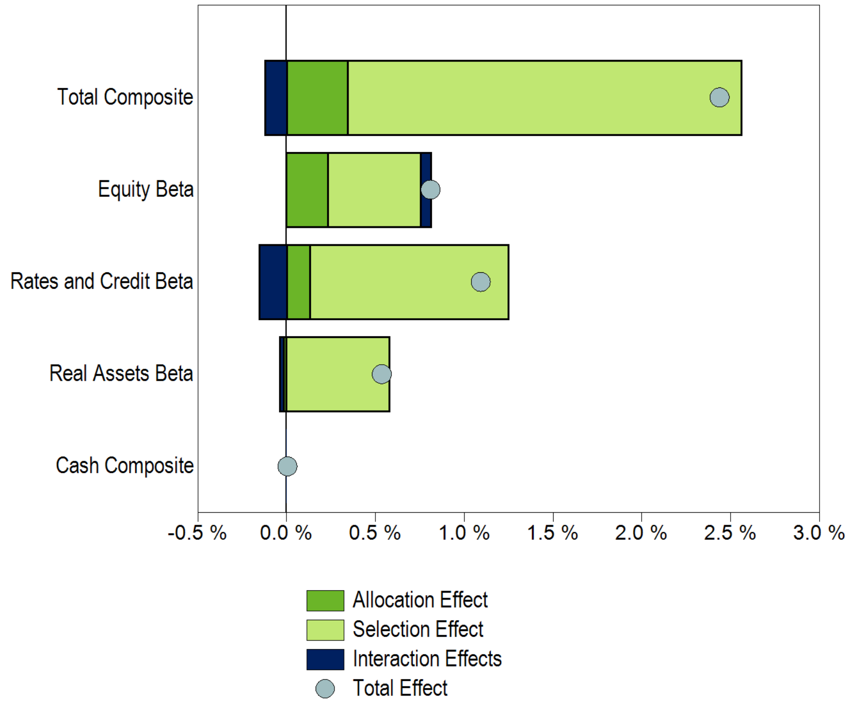
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Composite	**$2,799,344,008**	**5.09%**	**26.02%**	**9.59%**	**9.85%**	**8.99%**
Policy Index		*2.67%*	*25.50%*	*10.15%*	*10.08%*	*8.49%*
InvMetrics Public DB Net Median		*3.22%*	*35.93%*	*10.26%*	*10.24%*	*8.09%*

Quarterly and Cumulative Excess Performance



TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects
3 Months Ending March 31, 2021



Attribution Summary
3 Months Ending March 31, 2021

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity Beta	7.4%	6.3%	1.1%	0.5%	0.1%	0.0%	0.7%
Rates and Credit Beta	0.6%	-3.0%	3.6%	1.1%	0.2%	-0.2%	1.2%
Real Asset Beta	5.2%	2.4%	2.9%	0.6%	0.0%	0.0%	0.6%
Cash Composite	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**5.1%**	**2.7%**	**2.4%**	**2.2%**	**0.3%**	**-0.1%**	**2.4%**

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 Sele

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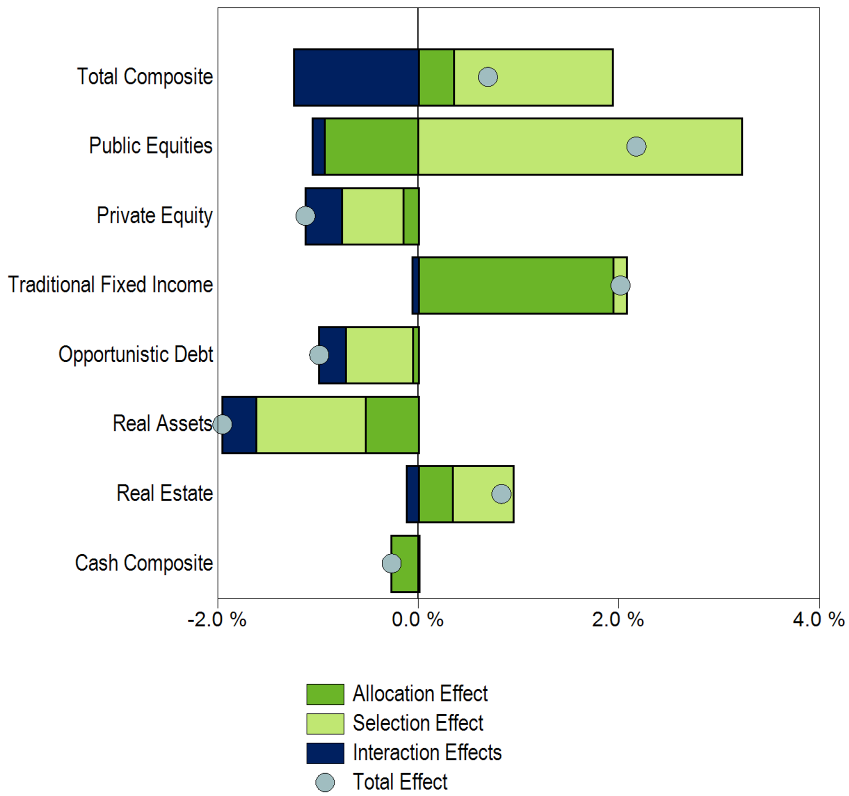
TOTAL FUND ATTRIBUTION ANALYSIS

Attribution Effects Relative to Policy Index
1 Year Ending March 31, 2021



Attribution Summary
1 Year Ending March 31, 2021

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Public Equities	64.6%	54.6%	10.0%	3.2%	-1.0%	-0.1%	2.1%
Private Equity	18.7%	21.9%	-3.2%	-0.6%	-0.2%	-0.3%	-1.1%
Traditional Fixed Income	1.3%	0.9%	0.4%	0.1%	1.9%	0.0%	2.0%
Opportunistic Debt	14.9%	23.7%	-8.8%	-0.7%	-0.1%	-0.3%	-1.1%
Real Assets	-3.0%	6.7%	-9.7%	-1.1%	-0.5%	-0.4%	-2.0%
Real Estate	7.2%	2.1%	5.1%	0.6%	0.3%	-0.1%	0.8%
Cash Composite	0.1%	0.1%	0.1%	0.0%	-0.2%	0.0%	-0.2%
Total	**26.0%**	**25.5%**	**0.5%**	**1.6%**	**0.3%**	**-1.3%**	**0.5%**

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**	**2,799,344,008**	**5.09**	**5**	**26.02**	**94**	**9.59**	**65**	**9.85**	**63**	**8.99**	**16**
Policy Index				*2.67*	*72*	*25.50*	*95*	*10.15*	*53*	*10.08*	*55*	*8.49*	*34*
Equity Beta	**50.00**	**54.64**	**1,529,805,312**	**7.36**		**49.57**							
Public Equities *	**40.00**	**39.55**	**1,107,266,540**	**8.20**	**24**	**64.62**	**38**	**10.58**	**65**	**12.14**	**59**	**9.15**	**60**
MSCI ACWI				*4.57*	*48*	*54.60*	*66*	*12.07*	*53*	*13.21*	*48*	*9.14*	*60*
Private Equity	**10.00**	**15.09**	**422,538,772**	**5.26**		**18.67**		**17.16**		**14.53**		**14.35**	
MO Hwy Priv. Equ. Index - Lagged				*12.95*		*21.91*		*17.57*		*18.64*		*17.27*	
Rates and Credit Beta	**30.00**	**25.53**	**714,490,066**	**0.57**		**6.66**							
Traditional Fixed Income	**22.50**	**15.10**	**422,632,768**	**-3.06**	**64**	**1.30**	**97**	**6.15**	**17**	**5.36**	**34**	**6.33**	**6**
Fixed Income Custom Benchmark				*-4.28*	*79*	*0.86*	*97*	*4.99*	*39*	*3.61*	*70*	*3.78*	*49*
Opportunistic Debt	**7.50**	**10.43**	**291,857,298**	**6.07**	**2**	**14.94**	**91**	**7.30**	**14**				
BBgBarc US High Yield TR				*0.85*	*55*	*23.72*	*37*	*6.84*	*23*	*8.06*	*24*	*6.48*	*21*
Real Assets Beta	**20.00**	**19.43**	**537,739,455**	**5.23**		**1.17**							
Real Assets	**10.00**	**11.67**	**326,646,202**	**5.78**		**-2.98**		**1.70**		**4.58**			
CPI + 4% (Unadjusted)				*2.69*		*7.16*		*6.23*		*6.32*		*5.82*	
Real Estate	**10.00**	**7.54**	**211,093,253**	**4.38**		**7.16**		**7.96**		**8.50**		**10.36**	
MODOT Real Estate Blend				*2.07*		*2.11*		*4.42*		*5.64*		*8.88*	
Cash Composite		**0.62**	**17,309,176**	**0.00**		**0.15**		**1.36**		**1.06**		**0.55**	
91 Day T-Bills				*0.01*		*0.09*		*1.36*		*1.12*		*0.59*	

** May include the use of derivatives*

Total Composite is ranked in the IFx Public DB (peer) Net+ Universe
Public Equities 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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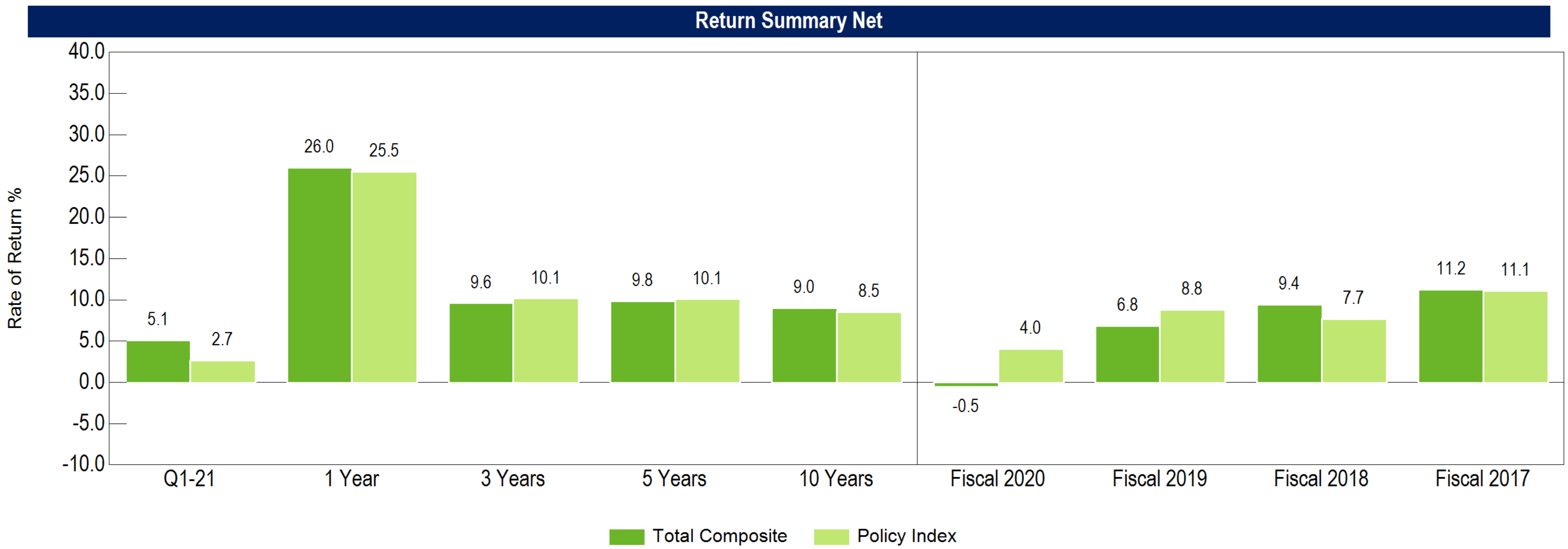
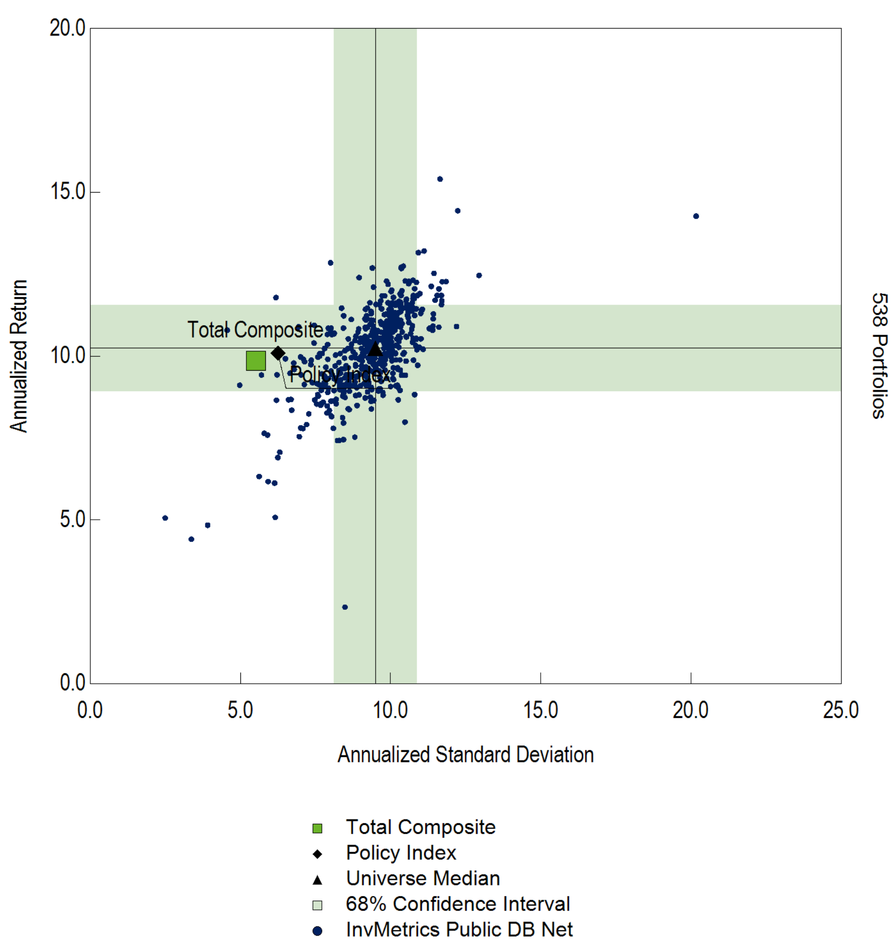
TOTAL FUND RETURN SUMMARY



TOTAL FUND RISK/RETURN - 5 YEARS

5 Years Ending March 31, 2021



Statistics Summary 5 Years Ending March 31, 2021	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Composite	9.85%	63	5.52%	1
Policy Index	10.08%	55	6.25%	3

Statistics Summary 5 Years Ending March 31, 2021	Sharpe Ratio	Rank
Total Composite	1.58	1
Policy Index	1.43	2

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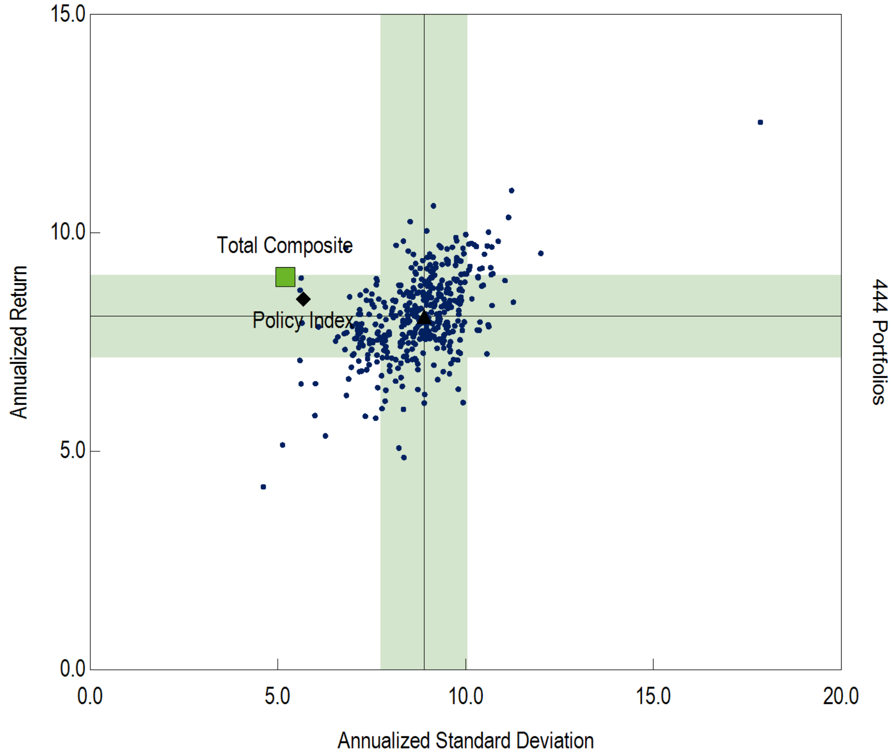
TOTAL FUND RISK/RETURN - 10 YEARS

10 Years Ending March 31, 2021

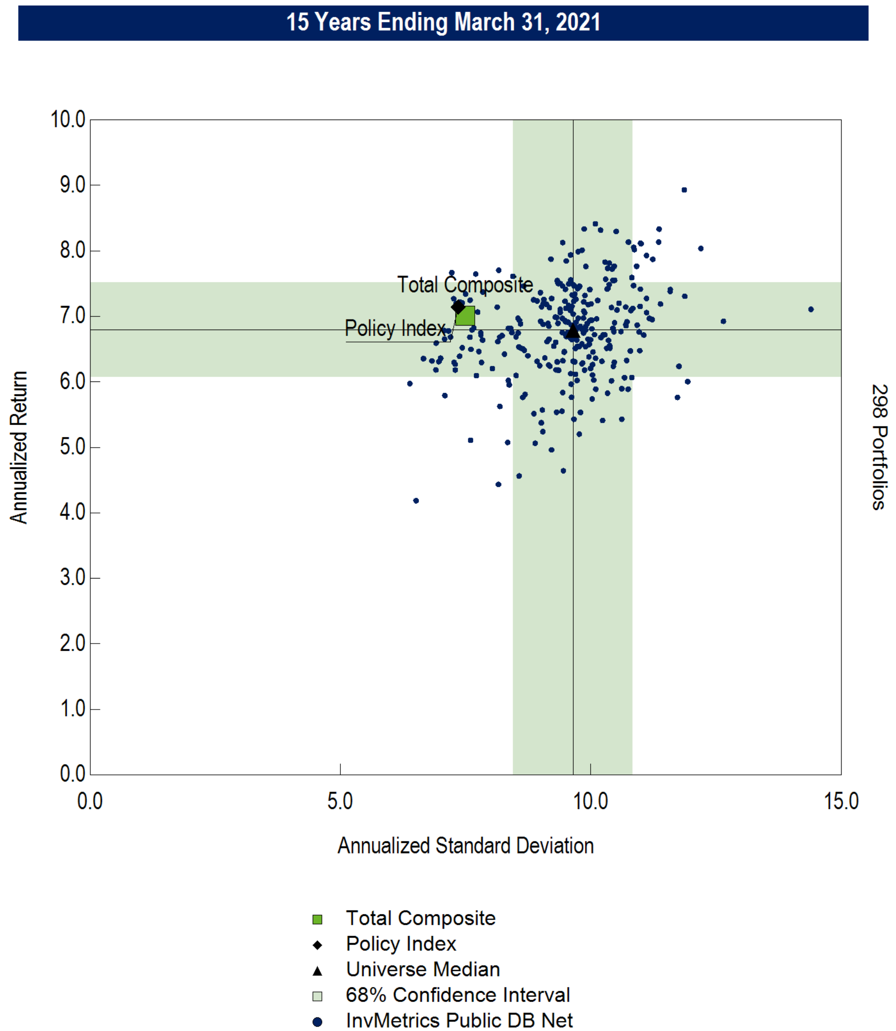


- Total Composite
- Policy Index
- Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Net

Statistics Summary 10 Years Ending March 31, 2021	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Composite	8.99%	16	5.20%	1
Policy Index	8.49%	34	5.68%	2

Statistics Summary 10 Years Ending March 31, 2021	Sharpe Ratio	Rank
Total Composite	1.62	1
Policy Index	1.39	1

TOTAL FUND RISK/RETURN - 15 YEARS



Statistics Summary
15 Years Ending March 31, 2021

	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Composite	7.01%	36	7.49%	9
Policy Index	7.14%	31	7.35%	7

Statistics Summary
15 Years Ending March 31, 2021

	Sharpe Ratio	Rank
Total Composite	0.80	6
Policy Index	0.83	3

TOTAL FUND PERFORMANCE

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Composite	**2,799,344,008**	**100.00**	**100.00**	**5.09**	**26.02**	**9.59**	**9.85**	**8.99**
Policy Index				*2.67*	*25.50*	*10.15*	*10.08*	*8.49*
Allocation Index				*4.36*	*25.65*	*9.98*	*10.07*	*--*
Equity Beta	**1,529,805,312**	**54.65**	**50.00**	**7.36**	**49.57**	**--**	**--**	**--**
Public Equities	**1,107,266,540**	**39.55**	**40.00**	**8.20**	**64.62**	**10.58**	**12.14**	**9.15**
MSCI ACWI				*4.57*	*54.60*	*12.07*	*13.21*	*9.14*
Global Public Equities w/ MLPs	**984,985,148**	**35.19**	**--**	**8.36**	**64.50**	**10.43**	**12.64**	**12.65**
MLPS	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Global Public Equities	**984,985,148**	**35.19**	**--**	**8.36**	**64.50**	**10.54**	**13.32**	**--**
MSCI ACWI				*4.57*	*54.60*	*12.07*	*13.21*	*9.14*
International Public Equities	**261,314,086**	**9.33**	**--**	**9.34**	**53.62**	**5.06**	**10.19**	**6.32**
MSCI ACWI ex USA				*3.49*	*49.41*	*6.51*	*9.76*	*4.93*
Acadian Int'l Small Cap	55,270,886	1.97		8.82	66.61	6.66	11.66	--
MSCI ACWI ex US Small Cap				*5.53*	*69.82*	*6.61*	*10.40*	*6.32*
Acadian Non-US Microcap	45,745,208	1.63		12.42	89.33	10.76	--	--
MSCI EAFE Small Cap				*4.50*	*61.98*	*6.32*	*10.50*	*8.01*
Silchester	159,331,614	5.69		8.75	42.75	3.22	8.20	7.68
MSCI EAFE				*3.48*	*44.57*	*6.02*	*8.85*	*5.52*
Transition Account	966,378	0.03		-4.58	-16.15	-8.32	-4.80	-7.17
Domestic Public Equities	**723,671,062**	**25.85**	**--**	**8.01**	**68.30**	**13.55**	**15.04**	**12.85**
Russell 3000				*6.35*	*62.53*	*17.12*	*16.64*	*13.79*
Large Cap US Public Equities	**634,798,872**	**22.68**	**--**	**6.64**	**64.93**	**14.15**	**15.22**	**13.33**
Cash Overlay *	231,681,590	8.28		1.17	49.85	10.56	13.17	--
S&P 500				*6.17*	*56.35*	*16.78*	*16.29*	*13.91*
Parametric Overlay	403,117,282	14.40		10.01	--	--	--	--
Small Cap US Public Equities	**88,872,191**	**3.17**	**--**	**19.20**	**98.11**	**10.52**	**14.13**	**11.38**
Russell 2000				*12.70*	*94.85*	*14.76*	*16.35*	*11.68*
Kennedy Capital	47,213,968	1.69		13.97	101.55	13.97	16.22	--
Russell Microcap				*23.89*	*120.33*	*16.57*	*18.10*	*12.20*
Kennedy Small-Cap Banking	41,658,223	1.49		25.96	93.53	7.71	--	--
Russell 2000 Value				*21.17*	*97.05*	*11.57*	*13.56*	*10.06*

** May include the use of derivatives*

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TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Hedge Equity *	**122,281,391**	**4.37**	**0.00**	**7.05**	**64.99**	**10.81**	**9.23**	**9.13**
Beta Overlay *	**36,615,641**	**1.31**	**--**	**19.34**	**276.01**	**--**	**--**	**--**
HFRI Fund of Funds Composite Index				*1.88*	*23.84*	*5.43*	*5.61*	*3.42*
Equity Oriented Hedge Funds	36,615,641	1.31		19.34	276.01	--	--	--
Equity Hedge Funds	**85,665,750**	**3.06**	**--**	**2.33**	**28.99**	**3.95**	**5.14**	**3.89**
Alpstone Capital	10,754,712	0.38		-7.93	-10.97	-0.62	--	--
Bridgewater Pure Alpha	18,233,586	0.65		-1.26	12.68	-2.08	2.01	3.68
Indus Pacific Opp. Fund	18,286,041	0.65		1.03	53.99	7.73	10.24	--
Metacapital	2,578,739	0.09		7.04	33.32	-14.93	-7.59	--
Millenium USA LP	18,840,765	0.67		9.29	29.15	13.53	11.76	--
Pentwater	16,971,908	0.61		6.23	44.89	11.06	14.26	--
Private Equity	**422,538,772**	**15.09**	**10.00**	**5.26**	**18.67**	**17.16**	**14.53**	**14.35**
MO Hwy Priv. Equ. Index - Lagged				*12.95*	*21.91*	*17.57*	*18.64*	*17.27*
PE Fund of Funds	**207,142,667**	**7.40**	**--**	**-0.06**	**13.09**	**14.52**	**12.56**	**13.60**
Grove Street - MP Ventures	60,969,992	2.18		-0.02	15.29	18.45	12.21	13.22
Grove Street - MP Ventures II	140,526,026	5.02		-0.07	12.09	12.48	12.54	13.25
Vectis H & L II	5,646,649	0.20		0.00	13.81	25.80	26.77	19.50
PE Direct Funds	**215,396,105**	**7.69**	**--**	**11.00**	**25.33**	**20.36**	**19.48**	**--**
Abry Partners VI	179,427	0.01		-15.65	-12.30	20.63	24.95	25.89
Abry Partners VII	1,568,348	0.06		9.27	-10.12	-6.44	2.94	--
Aisling	19,543,808	0.70		58.73	60.87	34.33	--	--
Arrowroot Capital III	15,053,906	0.54		0.00	1.19	12.34	--	--
Arrowroot Capital IV	14,167,989	0.51		0.00	47.64	--	--	--
Blackstone Asia	10,782,554	0.39		17.10	36.99	19.57	--	--
DC Capital Partners	10,603,950	0.38		8.42	20.55	30.55	--	--
Drive 0verdrive I	10,284,008	0.37		12.44	66.67	--	--	--
Drive III	2,943,099	0.11		-2.09	-7.54	--	--	--
DYAL IV	2,556,835	0.09		-12.77	-4.49	--	--	--
Heartwood Partners II	14,202,784	0.51		3.40	9.28	7.00	13.53	--
Heartwood Partners III	9,676,597	0.35		5.89	9.69	0.03	--	--
KPS IV	9,562,611	0.34		6.17	16.14	12.57	--	--
KPS Mid Cap	2,628,016	0.09		9.86	6.15	--	--	--
KPS V	2,823,304	0.10		0.45	--	--	--	--

** May include the use of derivatives*

MPERS

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Long Ridge II	16,004,070	0.57		16.84	62.38	55.38	--	--
Monomoy Capital Partners III	7,613,290	0.27		12.93	56.31	14.27	--	--
Newquest Fund	9,873,834	0.35		27.96	26.47	18.79	--	--
Nexus	11,849,824	0.42		9.35	58.65	--	--	--
Nexus Special Sits III	807,692	0.03		-7.32	--	--	--	--
Opengate Capital II	5,795,208	0.21		25.34	24.89	--	--	--
Opengate Capital Partners	12,113,271	0.43		8.63	9.63	15.27	--	--
Pfingsten Fund V	7,699,839	0.28		6.35	-13.06	3.99	--	--
Shore Capital Partners GP I LP	14,558,854	0.52		1.28	31.70	39.03	36.97	--
Shoreline China Valu III	2,502,987	0.09		4.75	5.88	1.09	4.81	--
MO Hwy Priv. Equ. Index - Lagged				*12.95*	*21.91*	*17.57*	*18.64*	*17.27*
Rates and Credit Beta	**714,490,066**	**25.52**	**30.00**	**0.57**	**6.66**	**--**	**--**	**--**
Traditional Fixed Income	**422,632,768**	**15.10**	**22.50**	**-3.06**	**1.30**	**6.15**	**5.36**	**6.33**
Fixed Income Custom Benchmark				*-4.28*	*0.86*	*4.99*	*3.61*	*3.78*
Core Fixed Income	**253,333,279**	**9.05**	**10.00**	**0.34**	**8.07**	**4.36**	**3.32**	**4.01**
BBgBarc US Govt/Credit TR				*-4.28*	*0.86*	*4.99*	*3.36*	*3.70*
Aberdeen	7,998,900	0.29		1.84	16.71	4.68	6.24	6.53
BBgBarc US Aggregate TR				*-3.37*	*0.71*	*4.65*	*3.10*	*3.44*
Internal Fixed - Core	198,692,369	7.10		-0.05	2.54	4.27	2.27	--
BBgBarc US Govt/Credit TR				*-4.28*	*0.86*	*4.99*	*3.36*	*3.70*
Octagon Senior Debt	30,738,183	1.10		2.50	23.59	3.28	3.85	--
BBgBarc US Aggregate TR				*-3.37*	*0.71*	*4.65*	*3.10*	*3.44*
Principal CMBS Fixed	15,903,828	0.57		-0.60	10.73	4.76	4.34	--
BBgBarc US CMBS Investment Grade				*-2.10*	*4.86*	*5.26*	*3.58*	*4.06*
Long Duration	**146,937,263**	**5.25**	**7.50**	**-7.67**	**-6.80**	**6.69**	**4.71**	**6.23**
BBgBarc US Govt Long TR				*-13.39*	*-15.60*	*5.84*	*3.17*	*6.30*
Internal Fixed - Long Duration	146,937,263	5.25		-7.67	-6.80	6.69	4.71	6.56
BBgBarc US Aggregate TR				*-3.37*	*0.71*	*4.65*	*3.10*	*3.44*
US TIPS	**22,362,226**	**0.80**	**5.00**	**-5.52**	**2.54**	**4.25**	**3.29**	**3.54**
Internal US TIPS	22,362,226	0.80		-5.52	2.54	4.25	3.29	3.54
BBgBarc US TIPS TR				*-1.47*	*7.54*	*5.68*	*3.86*	*3.44*

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.

MPERS

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Opportunistic Debt	**291,857,298**	**10.43**	**7.50**	**6.07**	**14.94**	**7.30**	**--**	**--**
BBgBarc US High Yield TR				*0.85*	*23.72*	*6.84*	*8.06*	*6.48*
Direct Lending	**151,515,865**	**5.41**	**--**	**5.60**	**10.15**	**--**	**--**	**--**
Core Direct Lending	**74,115,727**	**2.65**	**--**	**7.83**	**25.07**	**--**	**--**	**--**
Ares BDC	36,793,422	1.31		13.66	--	--	--	--
Internal Fixed - Nonrated	11,735,447	0.42		1.70	11.42	6.48	5.94	--
M&G III	1,272,826	0.05		4.64	15.73	5.67	6.04	--
MGG	14,353,884	0.51		3.47	7.11	--	--	--
Owl Rock	9,960,148	0.36		2.37	17.93	7.81	--	--
Opportunistic Direct Lending	**77,400,138**	**2.76**	**--**	**3.57**	**-1.06**	**--**	**--**	**--**
GSO Energy II	1,398,229	0.05		6.70	27.65	--	--	--
GSO Energy Select Opps	3,907,026	0.14		8.36	-12.75	-0.63	9.25	--
GSO I	202,812	0.01		7.86	-7.97	-20.32	-16.83	-0.43
GSO II	1,952,054	0.07		13.93	-2.26	2.09	5.51	--
GSO III	11,166,695	0.40		5.06	4.71	9.02	--	--
Northern Shipping II	3,545,132	0.13		2.69	-7.54	2.20	4.22	--
Northern Shipping III	7,302,393	0.26		2.13	8.94	8.90	7.36	--
OCP Asia	27,274,623	0.97		3.79	7.45	7.69	10.79	--
OCP Asia IV	3,336,906	0.12		--	--	--	--	--
Riverstone Credit Partners	8,032,227	0.29		3.51	-17.44	-1.30	5.32	--
Riverstone Credit Partners II	9,282,041	0.33		1.55	-10.14	--	--	--
Distressed /Special Sits	**98,128,125**	**3.51**	**--**	**4.03**	**13.62**	**--**	**--**	**--**
Anchorage Capital III	586,604	0.02		-0.31	-35.01	-15.01	-6.85	--
Anchorage Illiquid Opps V	14,698,158	0.53		5.08	11.16	8.58	9.31	--
Banner Ridge III	18,031,000	0.64		0.00	23.77	--	--	--
CVI Credit Value	66,552	0.00		0.77	2.59	10.08	10.87	--
CVI Credit Value Fund III	5,411,139	0.19		1.36	12.38	3.11	7.77	--
CVI Global Value	35,586	0.00		25.41	31.13	13.97	7.08	10.09
Fortress Credit Opps. Fund	1,229,469	0.04		-1.64	--	--	--	--
FP Credit Partners	6,422,577	0.23		3.52	-13.80	--	--	--
Longford II	9,724,300	0.35		6.17	4.40	--	--	--
Longford III	1,275,564	0.05		-13.92	--	--	--	--
Miravast ILS Credit Opp	12,656,904	0.45		-0.30	12.82	--	--	--
Silver Point Distressed	15,209,862	0.54		15.27	32.00	--	--	--
Varde Asia Credit Fund	12,780,410	0.46		2.10	8.26	--	--	--

MPERS

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Liquid Credit	**42,213,308**	**1.51**	**--**	**13.07**	**39.56**	**--**	**--**	**--**
ABRY ASF	123,339	0.00		2.62	-16.65	-12.57	-4.82	7.87
Anchorage Structured Credit	18,813,766	0.67		16.08	23.29	--	--	--
GSO Credit Alpha Fund	9,752,572	0.35		5.99	0.99	2.69	9.16	--
Och-Ziff Struct Products II	381,074	0.01		4.82	12.80	7.09	19.28	--
Octagon Opportunistic	13,142,557	0.47		14.88	98.75	5.54	10.73	--
Real Assets Beta	**537,739,455**	**19.21**	**20.00**	**5.23**	**1.17**	**--**	**--**	**--**
Real Assets	**326,646,202**	**11.67**	**10.00**	**5.78**	**-2.98**	**1.70**	**4.58**	**--**
CPI + 4% (Unadjusted)				*2.69*	*7.16*	*6.23*	*6.32*	*5.82*
Natural Resources	**184,470,604**	**6.59**	**--**	**4.77**	**-9.08**	**-1.32**	**4.68**	**--**
Ares Energy	8,508,592	0.30		2.58	-52.47	--	--	--
Blue Road	12,602,072	0.45		0.00	12.36	9.35	10.28	--
EMG I	5,166,949	0.18		42.76	43.85	9.21	4.95	--
EMG II	10,597,369	0.38		18.42	17.92	7.76	10.54	--
EMG III	11,704,953	0.42		-3.74	-29.02	-18.63	-8.33	--
EMG IV	19,614,950	0.70		6.74	-6.15	3.74	9.90	--
EMG V	13,707,338	0.49		26.35	31.15	--	--	--
Grey Rock Energy Fund II	8,449,483	0.30		0.00	-15.37	0.86	--	--
Grey Rock Energy Fund III	12,379,283	0.44		0.00	-3.98	--	--	--
NGP IX	343,045	0.01		62.33	35.95	64.92	39.03	--
NGP X	1,349,095	0.05		-12.46	-45.41	-29.75	-14.04	--
NGP XI	10,327,418	0.37		2.26	-25.32	-9.77	3.83	--
Orion II	17,809,034	0.64		-1.59	28.79	18.12	--	--
Orion III	8,064,630	0.29		4.95	27.68	--	--	--
Orion Mine Finance Fund I	6,646,714	0.24		4.66	-1.05	-4.70	6.69	--
Orion Mineral Royalty	8,407,380	0.30		12.64	--	--	--	--
Quantum VII	7,622,030	0.27		0.00	-19.08	-4.97	--	--
Ridgewood Energy	6,591,636	0.24		0.89	-23.41	-8.68	-1.44	--
Ridgewood III	7,109,858	0.25		-2.22	-7.45	-1.09	-3.78	--
Ridgewood IV	1,053,381	0.04		0.00	--	--	--	--
Turnbridge Capital Partners I	6,415,394	0.23		0.00	-38.79	-10.16	-5.43	--

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Infrastructure & Transport	**46,755,798**	**1.67**	**--**	**0.71**	**-1.12**	**6.34**	**5.88**	**--**
American Infrastructure I MLP	5,938,138	0.21		-2.04	-1.55	4.90	6.44	--
American Infrastructure II MLP	3,004,782	0.11		9.05	30.79	25.88	12.62	--
Apollo Aviation III	1,761,927	0.06		-9.87	-25.35	14.39	14.32	--
CBRE Caledon's Global	9,904,709	0.35		-0.17	--	--	--	--
CIM INFRA FUND II	9,387,196	0.34		8.99	13.87	--	--	--
Columbia Spectrum IV-A	439	0.00		-0.60	--	--	--	--
Corrum Capital Aviation	12,081,895	0.43		-5.25	-15.21	0.44	--	--
EIF - US Power III	2,351,203	0.08		15.94	3.86	-8.06	-6.13	--
Sciens Marine Investments	2,325,509	0.08		1.86	-27.72	-14.90	-6.45	--
CPI + 4% (Unadjusted)				*2.69*	*6.72*	*6.08*	*6.23*	*5.78*
Timber	**95,419,800**	**3.41**	**--**	**10.11**	**9.37**	**5.57**	**4.58**	**--**
MP Timber	39,265,093	1.40		1.65	0.79	4.27	3.80	--
MPATC	27,504,830	0.98		1.81	-0.41	-2.25	--	--
MPCTT	2,123,618	0.08		40.70	72.14	65.67	--	--
MPMCB	25,643,027	0.92		31.72	34.45	10.09	--	--
Russellville Land Timber	883,232	0.03		-1.30	-2.72	-1.42	--	--
NCREIF Timberland 1 Qtr. Lag				*0.58*	*0.81*	*1.77*	*2.32*	*4.56*
Real Estate	**211,093,253**	**7.54**	**10.00**	**4.38**	**7.16**	**7.96**	**8.50**	**10.36**
MODOT Real Estate Blend				*2.07*	*2.11*	*4.42*	*5.64*	*8.88*
REITS	**8,997,289**	**0.32**	**--**	**6.70**	**39.35**	**6.16**	**4.00**	**4.20**
CBRE Investors	8,997,289	0.32		6.70	39.35	6.16	4.00	4.20
FTSE NAREIT Developed				*5.80*	*34.65*	*5.06*	*3.86*	*5.73*
Core	**72,743,696**	**2.60**	**--**	**3.00**	**3.07**	**6.27**	**7.28**	**10.63**
Clarion Partners Lion Prop Fd	15,461,258	0.55		1.95	1.99	5.11	6.59	9.38
Principal CMBS	1,076,283	0.04		0.24	5.97	19.97	12.41	14.42
Principal Enhanced Property	55,442,187	1.98		3.36	3.32	5.84	8.05	12.36
Principal U.S. Property Fund	763,968	0.03		2.37	2.47	5.27	6.57	9.80

TOTAL FUND PERFORMANCE DETAIL

	Market Value ($)	% of Portfolio	Policy %	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Non-Core	**129,352,268**	**4.62**	**--**	**5.03**	**8.01**	**9.35**	**10.06**	**10.14**
Value-Add	**117,203,847**	**4.19**	**--**	**4.75**	**8.23**	**8.54**	**9.91**	**9.81**
Centersquare III	25,436,909	0.91		1.87	2.62	14.36	14.90	--
Centersquare IV	31,209,984	1.11		4.93	8.12	--	--	--
Centersquare V	3,572,582	0.13		--	--	--	--	--
M&G II	649,908	0.02		12.27	25.48	10.79	9.93	--
New Mountain	8,375,793	0.30		9.68	18.48	--	--	--
Oak Street IV	11,702,280	0.42		27.47	33.07	16.52	--	--
Och Ziff RE Credit FD LP	5,396,752	0.19		2.35	9.19	8.59	--	--
Torchlight Debt Opp II	58,319	0.00						
Torchlight Debt Opp III	35,616	0.00		-1.83	-3.70	-14.27	-3.20	--
Torchlight Debt Opps V	4,038,362	0.14		3.13	-0.84	7.65	9.51	--
Tristan EPISO	546,254	0.02		-51.59	-62.89	-40.80	-25.57	-10.41
Tristan EPISO 3	4,772,587	0.17		5.39	20.34	-8.77	6.64	--
Tristan EPISO 4	15,492,391	0.55		3.78	11.61	7.57	6.71	--
Tristan EPISO 5	5,916,110	0.21		-7.05	-4.85	--	--	--
NCREIF Property Index				*1.72*	*2.63*	*4.89*	*5.81*	*8.83*
Opportunistic	**12,148,421**	**0.43**	**--**	**7.80**	**5.86**	**18.81**	**13.98**	**13.36**
AEW Partners V	33,655	0.00						
Apollo European III	94,297	0.00		-1.44	-3.11	-25.60	-22.33	-10.76
Apollo Real Estate	17,646	0.00		0.38	17.97	48.06	27.77	20.80
Clarion Part Lion Mexico Fund	860,141	0.03		-8.11	-13.30	-14.12	-16.48	-12.92
Colony Capital VIII	189,200	0.01		13.43	-5.40	-11.66	-4.54	-2.66
Och-Ziff RE III	2,945,672	0.11		4.17	10.69	14.46	17.81	--
Sculptor IV	3,198,861	0.11		6.77	85.90	--	--	--
Stockdale I-A	4,808,949	0.17		14.19	8.84	--	--	--
NCREIF Property Index				*1.72*	*2.63*	*4.89*	*5.81*	*8.83*
Cash Composite *	**17,309,176**	**0.62**	**0.00**	**0.00**	**0.15**	**1.36**	**1.06**	**0.55**
91 Day T-Bills				*0.01*	*0.09*	*1.36*	*1.12*	*0.59*

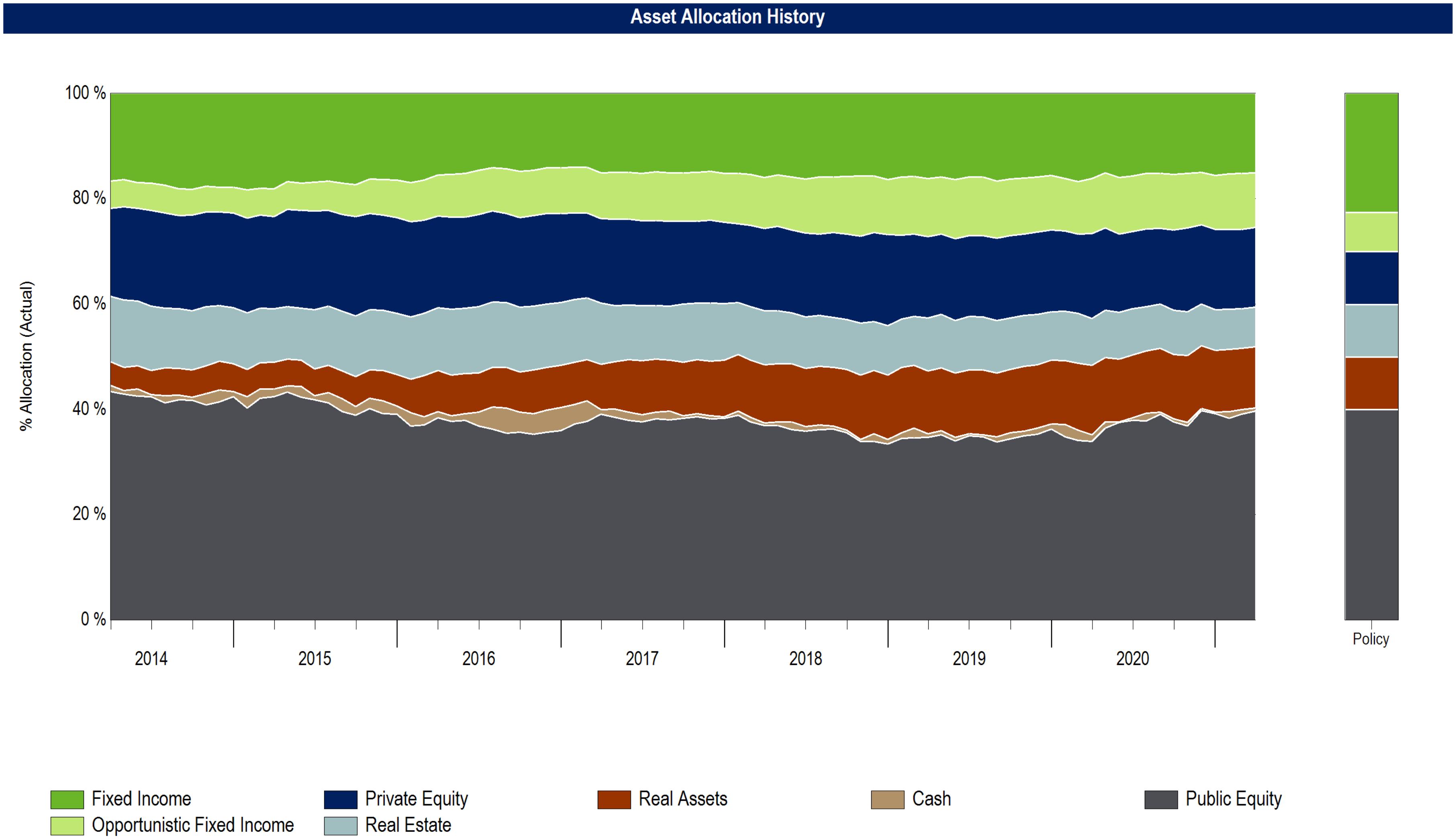
** May include the use of derivatives*

APPENDIX

NEPC, LLC

MPERS

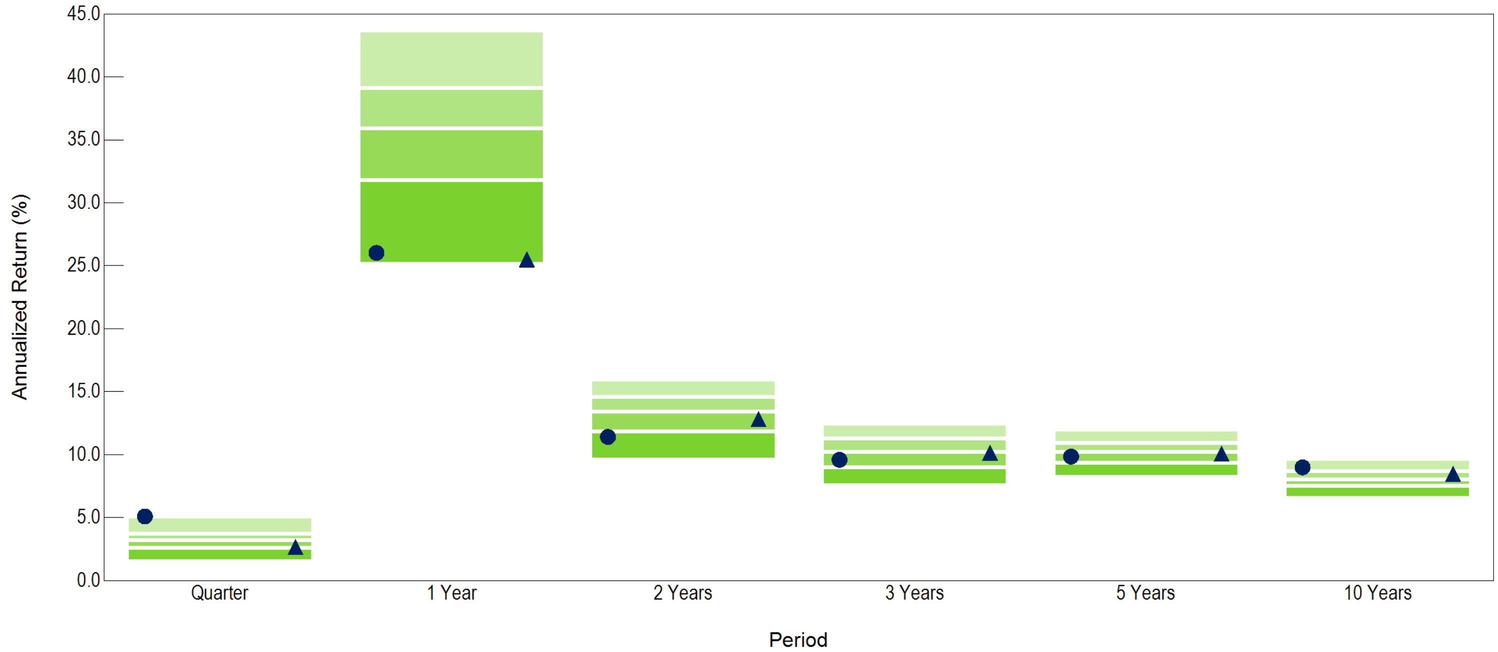
TOTAL FUND ASSET ALLOCATION HISTORY



MPERS

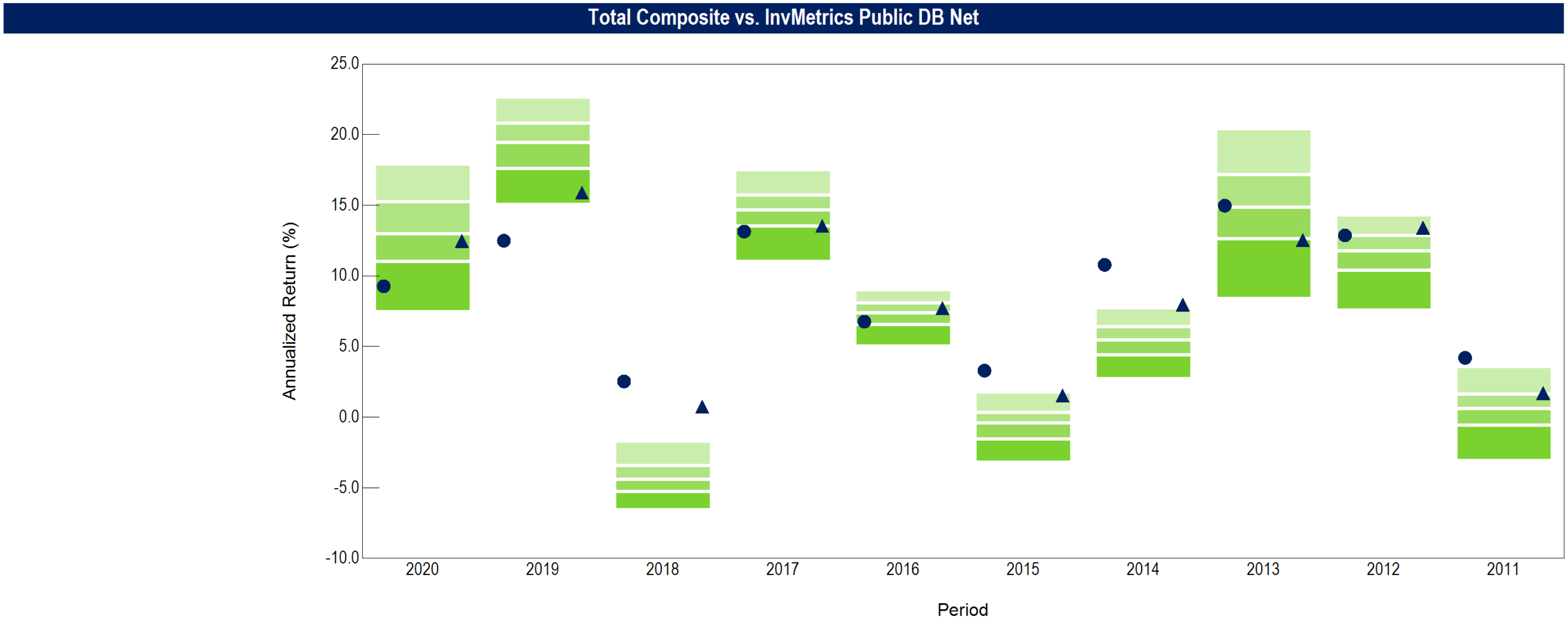
TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE

Total Composite vs. InvMetrics Public DB Net



	Return (Rank)											
5th Percentile	5.1		43.7		15.9		12.4		12.0		9.7	
25th Percentile	3.8		39.1		14.6		11.3		11.0		8.7	
Median	3.2		35.9		13.4		10.3		10.2		8.1	
75th Percentile	2.6		31.8		11.9		9.0		9.4		7.6	
95th Percentile	1.6		25.2		9.6		7.6		8.3		6.6	
# of Portfolios	580		578		572		558		538		444	
● Total Composite	5.1	(5)	26.0	(94)	11.4	(83)	9.6	(65)	9.8	(63)	9.0	(16)
▲ Policy Index	2.7	(72)	25.5	(95)	12.8	(61)	10.1	(53)	10.1	(55)	8.5	(34)

TOTAL FUND RETURN SUMMARY VS. PEER UNIVERSE



	Return (Rank)																			
5th Percentile	17.9		22.6		-1.7		17.5		9.0		1.7		7.7		20.4		14.3		3.6	
25th Percentile	15.3		20.8		-3.4		15.8		8.1		0.4		6.4		17.2		12.9		1.6	
Median	13.0		19.5		-4.4		14.7		7.4		-0.4		5.5		14.9		11.8		0.6	
75th Percentile	11.0		17.6		-5.2		13.6		6.6		-1.5		4.4		12.7		10.4		-0.5	
95th Percentile	7.5		15.1		-6.5		11.1		5.0		-3.2		2.7		8.4		7.6		-3.1	
# of Portfolios	596		550		496		269		269		262		210		191		159		137	
● Total Composite	9.3	(89)	12.5	(99)	2.5	(1)	13.1	(83)	6.8	(70)	3.3	(1)	10.8	(1)	15.0	(49)	12.9	(26)	4.2	(3)
▲ Policy Index	12.5	(57)	15.9	(92)	0.7	(1)	13.5	(76)	7.7	(39)	1.5	(7)	8.0	(4)	12.5	(76)	13.4	(15)	1.7	(24)

DISCLAIMERS & DISCLOSURES

- Past performance is no guarantee of future results.
- Returns for pooled funds, e.g. mutual funds and collective investment trusts, are collected from third parties; they are not generally calculated by NEPC. Returns for separate accounts, with some exceptions, are calculated by NEPC. Returns are reported net of manager fees unless otherwise noted.
- A "since inception" return, if reported, begins with the first full month after funding, although actual inception dates (e.g. the middle of a month) and the timing of cash flows are taken into account in Composite return calculations.
- NEPC's preferred data source is the plan's custodian bank or record-keeper. If data cannot be obtained from one of the preferred data sources, data provided by investment managers may be used. Information on market indices and security characteristics is received from additional providers. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within. In addition, some index returns displayed in this report or used in calculation of a policy index, allocation index or other custom benchmark may be preliminary and subject to change.
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