

Kern County Employees' Retirement Association

Investment Performance Review
Period Ending: December 31, 2020



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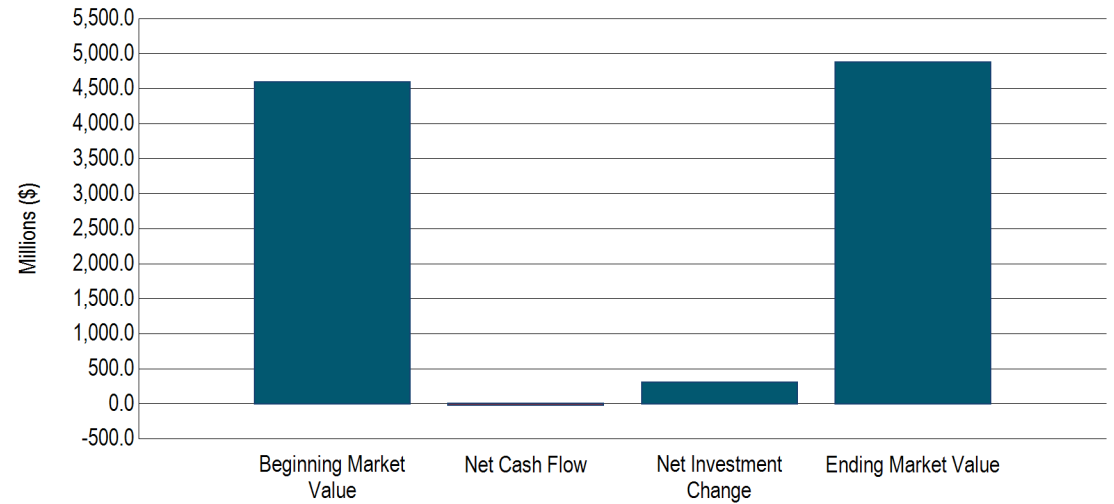
Total Fund Portfolio Reconciliation

Period Ending: December 31, 2020

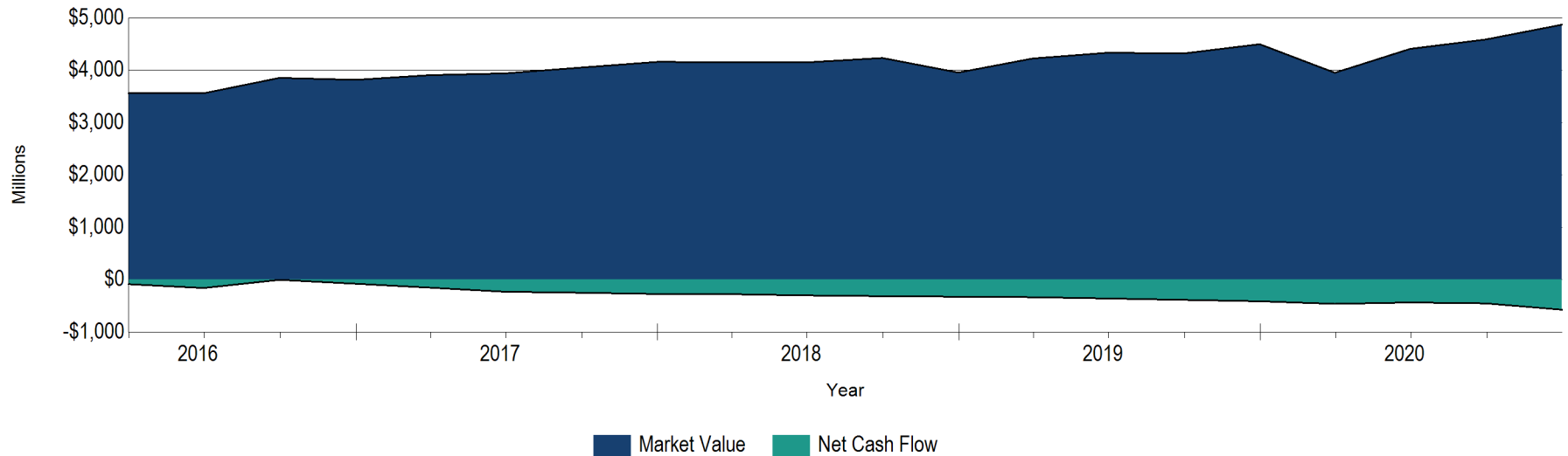
Portfolio Reconciliation

	Last Three Months
Beginning Market Value	\$4,589,823,300
Net Cash Flow	-\$19,073,796
Net Investment Change	\$300,419,975
Ending Market Value	\$4,871,169,479

Change in Market Value Last Three Months



Market Value History

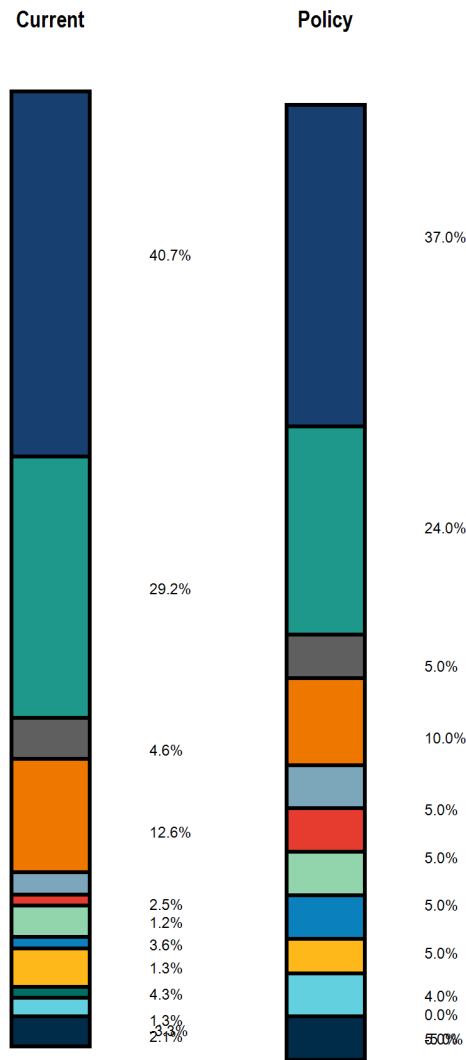


Contributions and withdrawals may include intra-account transfers between managers/funds. The Kern County Property Fund was removed at the beginning of 1Q 2016.

Total fund

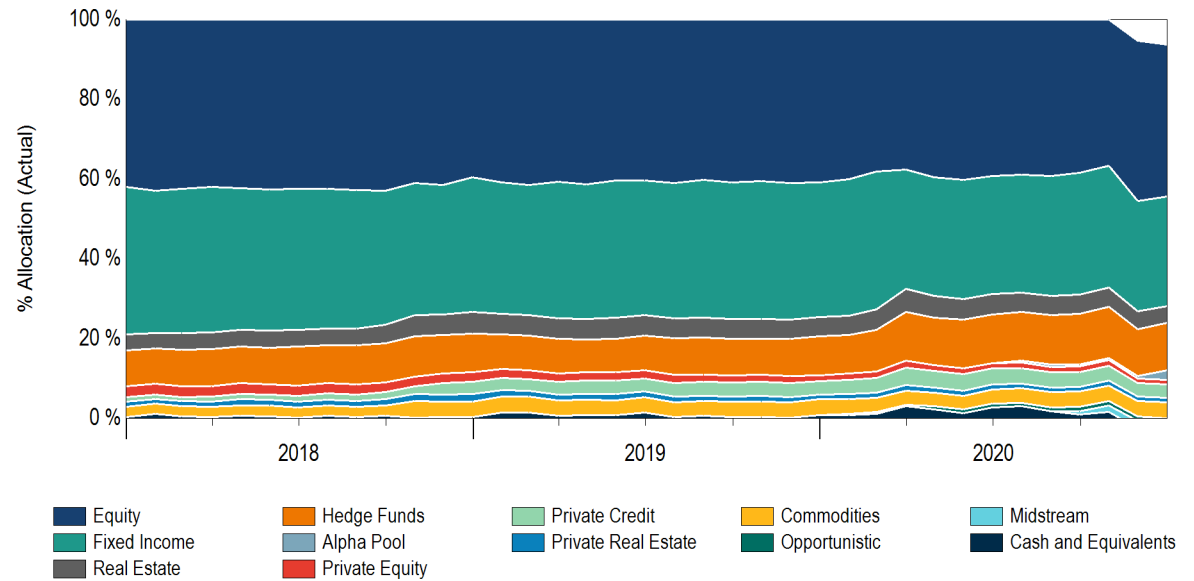
Asset Allocation vs. Policy

Period Ending: December 31, 2020



	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Equity	\$1,984,240,468	40.7%	37.0%	\$181,907,761	32.0% - 46.0%	Yes
Fixed Income	\$1,423,155,797	29.2%	24.0%	\$254,075,122	20.0% - 34.0%	Yes
Real Estate	\$224,269,375	4.6%	5.0%	-\$19,289,099	3.0% - 7.0%	Yes
Hedge Funds	\$615,724,248	12.6%	10.0%	\$128,607,300	5.0% - 15.0%	Yes
Alpha Pool	\$123,186,851	2.5%	5.0%	-\$120,371,623	0.0% - 7.0%	Yes
Private Equity	\$56,757,193	1.2%	5.0%	-\$186,801,281	0.0% - 10.0%	Yes
Private Credit	\$173,612,718	3.6%	5.0%	-\$69,945,756	0.0% - 10.0%	Yes
Private Real Estate	\$61,748,609	1.3%	5.0%	-\$181,809,865	0.0% - 10.0%	Yes
Commodities	\$207,249,151	4.3%	4.0%	\$12,402,372	2.0% - 6.0%	Yes
Opportunistic	\$61,602,376	1.3%	0.0%	\$61,602,376	0.0% - 10.0%	Yes
Midstream	\$101,963,634	2.1%	5.0%	-\$141,594,840	0.0% - 7.0%	Yes
Cash and Equivalents	-\$162,340,942	-3.3%	-5.0%	\$81,217,532	-7.0% - 5.0%	Yes
Total	\$4,871,169,479	100.0%	100.0%			

Asset Allocation History



Total Fund
Executive Summary (Gross of Fees)

Period Ending: December 31, 2020

	Notional Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
Total Fund	4,871,169,479	8.9	13.7	11.8	7.6	8.9	7.7	3.2	5.7	6.8	12.1	0.2
<i>Policy Index</i>		8.8	13.7	11.4	7.9	8.9	7.0	3.3	6.4	7.0	10.0	0.4
<i>InvMetrics Public DB > \$1B Gross Rank</i>		81	90	39	57	79	74	16	42	96	74	55
Equity	1,984,240,468	15.8	24.3	15.3	9.9	12.6	10.4	0.7	5.3	12.4	20.6	-2.1
<i>MSCI ACWI IMI GR</i>		15.8	25.3	16.8	10.3	12.7	9.7	1.7	5.1	11.7	19.6	-3.3
<i>Domesitc Equity</i>	1,075,399,180	14.7	23.8	19.1	14.2	15.8	--	6.3	9.2	16.1	19.4	4.0
<i>Russell 3000</i>		14.7	25.2	20.9	14.5	15.4	--	6.5	9.0	14.8	18.5	2.1
<i>International Developed Equity</i>	620,577,306	16.6	23.3	9.0	4.5	8.2	--	-5.5	-0.6	9.1	23.1	-9.8
<i>MSCI World ex USA GR</i>		15.9	21.7	8.1	4.8	8.2	--	-5.0	1.8	7.6	20.1	-9.4
<i>Emerging Markets Equity</i>	288,263,515	18.0	28.8	10.4	2.4	9.5	--	-10.9	0.4	4.0	20.4	-5.3
<i>MSCI Emerging Markets</i>		19.7	31.1	18.3	6.2	12.8	--	-3.4	1.2	8.2	23.7	-12.1
Fixed Income	1,423,155,797	3.4	5.6	9.6	6.0	6.3	4.7	6.6	7.9	0.2	4.6	4.2
<i>Fixed Income Custom Benchmark</i>		2.7	4.4	6.7	5.4	5.7	4.5	5.2	8.4	0.0	3.2	5.1
<i>Core Plus Fixed Income</i>	839,728,979	1.4	2.7	9.4	6.1	5.4	--	9.5	8.0	0.0	1.4	5.7
<i>BBgBarc US Aggregate TR</i>		0.7	1.3	7.5	5.3	4.4	--	8.7	7.9	-0.4	-0.3	6.0
<i>High Yield/ Specialty Credit</i>	371,276,498	5.2	9.6	6.0	5.7	7.2	--	0.0	7.5	3.3	10.4	-2.7
<i>ICE BofAML High Yield Master II</i>		6.5	11.5	6.2	5.9	8.4	--	-1.1	7.6	2.5	12.8	1.7
<i>Emerging Market Debt</i>	211,986,109	8.9	11.1	7.4	3.2	7.1	--	-1.2	8.5	-3.6	9.6	2.9
<i>50 JPM EMBI Global Div/ 50 JPM GBI EM</i>		7.2	9.2	2.0	3.7	6.9	--	-3.0	11.2	-1.8	6.5	5.5
Commodities	207,249,151	11.2	19.3	3.2	0.4	4.3	--	-10.7	-6.2	13.7	-3.1	-14.8
<i>Bloomberg Commodity Index TR USD</i>		10.2	20.2	-3.1	-2.5	1.0	--	-17.4	-6.8	7.3	-6.5	-13.3
Hedge Funds	615,724,248	6.0	10.9	16.1	7.9	7.3	6.4	7.3	2.6	7.6	8.0	-3.1
<i>75% 90 Day TBills +4% / 25% MSCI ACWI</i>		4.4	7.4	8.1	7.1	7.3	6.1	5.1	6.6	7.0	8.1	2.5
Alpha Pool	123,186,851	5.5	8.6	--	--	--	--	--	--	--	--	--
<i>91-Day TBills +4%</i>		1.0	2.0	--	--	--	--	--	--	--	--	--
Midstream Energy	101,963,634	18.6	--	--	--	--	--	--	--	--	--	--
<i>Alerian Midstream Index</i>		20.1	--	--	--	--	--	--	--	--	--	--
Core Real Estate	224,269,375	1.5	1.6	1.9	4.7	5.4	--	2.3	6.1	7.4	6.0	12.8
<i>NCREIF-ODCE</i>		1.3	1.8	1.2	4.9	6.2	--	2.2	6.4	8.4	7.9	11.8

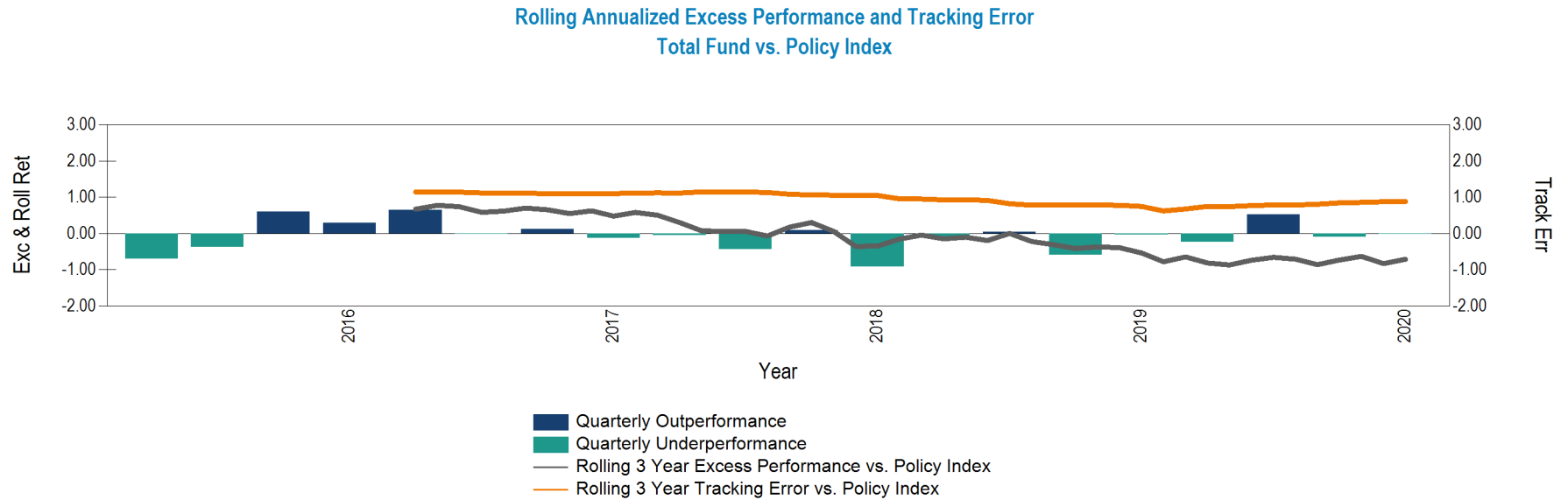
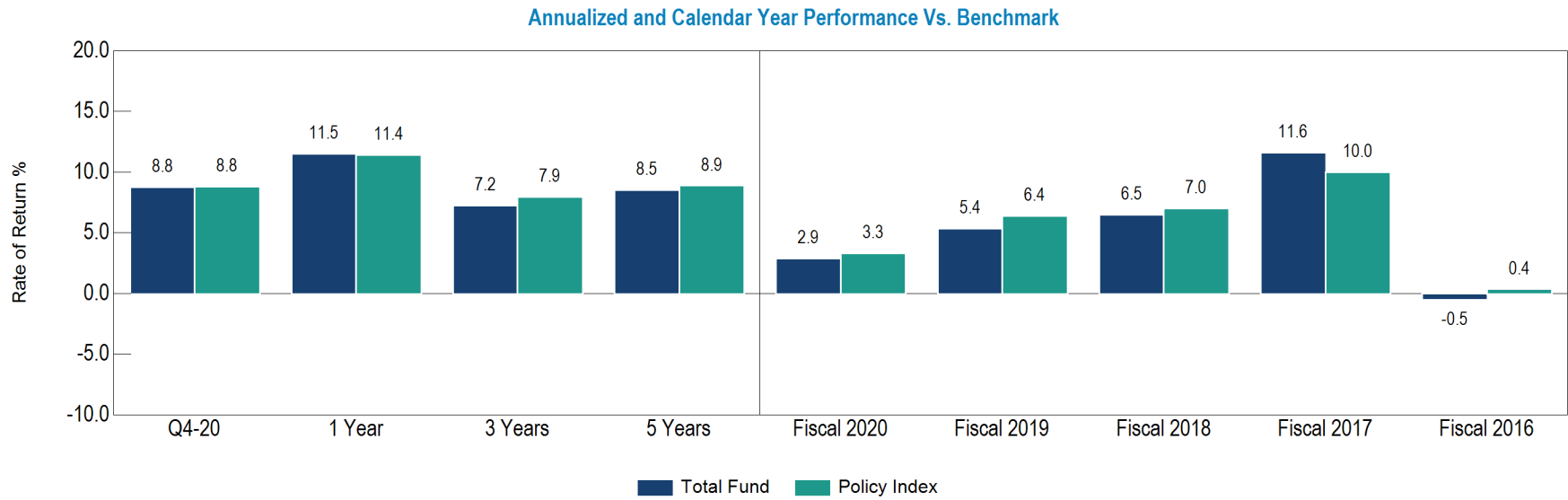
Total Fund
Executive Summary (Gross of Fees)

Period Ending: December 31, 2020

	Notional Market Value	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016
Private Real Estate	61,748,609	8.5	3.3	8.0	5.9	6.5	11.3	4.4	9.0	5.4	6.4	16.7
Private Equity	56,757,193	8.5	21.9	6.9	7.9	8.8	10.2	-10.5	10.9	7.8	14.8	4.5
Private Credit	173,612,718	-0.3	-1.5	1.9	5.9	8.4	--	5.9	9.7	9.3	10.2	--
Opportunistic	61,602,376	3.0	11.1	1.0	--	--	--	--	--	--	--	--
Assumed Rate of Return +3%		2.5	5.1	10.4	--	--	--	--	--	--	--	--
Cash	-162,340,942											

Total Fund
Performance vs. Policy (Net of Fees)

Period Ending: December 31, 2020



Performance and Attribution

Total Fund
Performance (Net of Fees)

Period Ending: December 31, 2020

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Inception	Inception Date
Total Fund	4,871,169,479	100.0	8.8	13.6	11.5	7.2	8.5	7.3	2.9	5.4	6.5	11.6	-0.5	7.1	Jun-11
<i>Policy Index</i>			8.8	13.7	11.4	7.9	8.9	7.0	3.3	6.4	7.0	10.0	0.4	6.9	Jun-11
Equity	1,984,240,468	40.7	15.7	24.1	14.9	9.5	12.1	10.0	0.3	4.8	11.8	20.1	-2.5		
<i>MSCI ACWI IMI GR</i>			15.8	25.3	16.8	10.3	12.7	9.7	1.7	5.1	11.7	19.6	-3.3		
Domestic Equity	1,075,399,180	22.1	14.6	23.6	18.8	13.8	15.4	--	6.0	8.8	15.5	18.9	3.6		
<i>Russell 3000</i>			14.7	25.2	20.9	14.5	15.4	--	6.5	9.0	14.8	18.5	2.1		
Equity Beta Exposure	346,389,120	7.1	12.1	--	--	--	--	--	--	--	--	--	--	15.5	Jul-20
<i>S&P 500</i>			12.1	--	--	--	--	--	--	--	--	--	--	15.6	Jul-20
Mellon DB SL Stock Index	342,596,715	7.0	12.1	22.1	18.4	14.2	--	--	7.5	10.4	--	--	--	14.9	Oct-17
<i>S&P 500</i>			12.1	22.2	18.4	14.2	--	--	7.5	10.4	--	--	--	14.9	Oct-17
Mellon NSL Dynamic US Equity	100,857,263	2.1	11.6	20.5	19.0	15.2	17.4	--	10.9	12.1	16.1	18.0	9.8	14.6	Sep-14
<i>S&P 500</i>			12.1	22.2	18.4	14.2	15.2	--	7.5	10.4	14.4	17.9	4.0	12.7	Sep-14
PIMCO StocksPLUS	121,704,055	2.5	12.4	23.0	19.4	14.5	15.7	14.7	7.7	10.6	14.1	19.1	2.7	11.1	Jul-03
<i>S&P 500</i>			12.1	22.2	18.4	14.2	15.2	13.9	7.5	10.4	14.4	17.9	4.0	10.2	Jul-03
AB US Small Cap Value Equity	86,015,145	1.8	35.3	37.3	3.7	2.2	8.7	--	-19.4	-6.9	13.2	23.9	--	6.8	Jul-15
<i>Russell 2000 Value</i>			33.4	36.8	4.6	3.7	9.7	--	-17.5	-6.2	13.1	24.9	--	7.2	Jul-15
Geneva Capital Small Cap Growth	77,836,881	1.6	24.9	27.3	33.0	19.2	18.2	--	9.3	8.6	22.7	21.2	--	15.6	Jul-15
<i>Russell 2000 Growth</i>			29.6	38.9	34.6	16.2	16.4	--	3.5	-0.5	21.9	24.4	--	12.5	Jul-15
International Developed Equity	620,577,306	12.7	16.5	23.1	8.7	4.1	7.9	--	-5.7	-0.9	8.7	22.6	-10.2		
<i>MSCI World ex USA IMI GR</i>			16.2	22.8	8.8	4.9	8.5	--	-4.7	0.7	8.3	20.3	-8.5		
Mellon DB SL World ex-US Index	258,154,337	5.3	15.7	21.4	7.5	--	--	--	-5.5	--	--	--	--	6.0	Jul-18
<i>MSCI World ex USA GR</i>			15.9	21.7	8.1	--	--	--	-5.0	--	--	--	--	6.8	Jul-18
BlackRock International Alpha Tilts	239,784,190	4.9	15.6	21.3	6.6	3.4	7.5	6.4	-6.8	0.4	7.9	24.4	-10.3	7.3	Sep-03
<i>MSCI EAFE Gross</i>			16.1	21.8	8.3	4.8	8.0	6.0	-4.7	1.6	7.4	20.8	-9.7	7.2	Sep-03
Cevian Capital II	28,969,604	0.6	18.8	25.9	7.5	2.8	8.1	--	-8.2	-5.0	2.9	32.9	-12.3	5.5	Dec-14
<i>MSCI Europe</i>			15.6	20.8	5.4	3.6	6.8	--	-6.8	1.9	5.3	21.1	-11.2	5.1	Dec-14
Fidelity Non-US Small Cap Equity	9,501,175	0.2	14.5	26.7	14.2	5.5	9.0	8.1	-1.2	-6.0	11.5	20.0	-2.6	6.1	Jun-08
<i>S&P Developed Ex-U.S. SmallCap</i>			17.9	29.9	13.7	5.0	9.7	7.6	-3.7	-5.7	11.4	21.8	-3.8	5.9	Jun-08
American Century Non-US Small Cap	84,168,000	1.7	--	--	--	--	--	--	--	--	--	--	--	5.2	Dec-20
<i>MSCI World ex US Small Cap Growth</i>			--	--	--	--	--	--	--	--	--	--	--	6.8	Dec-20

Total Fund

Executive Summary (Net of Fees)

Period Ending: December 31, 2020

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Inception	Inception Date
Emerging Markets Equity	288,263,515	5.9	17.8	28.3	9.4	1.4	8.4	--	-11.8	-0.6	2.9	19.3	-6.0		
MSCI EM IMI GR			20.0	31.9	18.8	6.2	12.6	--	-3.6	0.9	8.3	23.2	-11.8		
DFA Emerging Markets Value I	102,797,060	2.1	21.0	27.4	2.7	-0.3	9.7	--	-17.7	2.0	5.7	27.6	-11.7	3.9	Mar-14
MSCI Emerging Markets Value GR			23.1	29.1	6.0	2.3	9.7	--	-15.3	5.6	4.8	22.1	-14.0	4.1	Mar-14
AB Emerging Markets Strategic Core Equity	109,885,506	2.3	13.8	27.5	15.2	2.9	--	--	-5.1	-2.6	1.2	--	--	8.8	Nov-16
MSCI Emerging Markets Gross			19.8	31.4	18.7	6.6	--	--	-3.0	1.6	8.6	--	--	13.4	Nov-16
Mellon Emerging Markets Stock Index	75,580,948	1.6	19.7	31.1	--	--	--	--	--	--	--	--	--	30.7	Jun-20
MSCI Emerging Markets Gross			19.8	31.4	--	--	--	--	--	--	--	--	--	41.1	Jun-20
Fixed Income	1,423,155,797	29.2	3.3	5.5	9.3	5.8	6.1	4.5	6.3	7.6	-0.1	4.3	3.9		
Fixed Income Custom Benchmark			2.7	4.4	6.7	5.4	5.7	4.5	5.2	8.4	0.0	3.2	5.1		
Core Plus Fixed Income	839,728,979	17.2	1.3	2.6	9.2	6.0	5.3	--	9.3	7.9	-0.2	1.3	5.6		
BBgBarc US Aggregate TR			0.7	1.3	7.5	5.3	4.4	--	8.7	7.9	-0.4	-0.3	6.0		
Fixed Income Overlay	55,367,789	1.1	-1.1	--	--	--	--	--	--	--	--	--	--	-1.1	Aug-20
BBgBarc US Treasury 7-10 Yr TR			-1.3	--	--	--	--	--	--	--	--	--	--	-1.9	Aug-20
Mellon DB SL Aggregate Bond Index Fund	233,606,855	4.8	0.7	1.3	7.5	5.3	4.4	--	8.8	7.9	-0.4	-0.3	5.9	3.8	Jan-11
BBgBarc US Aggregate TR			0.7	1.3	7.5	5.3	4.4	--	8.7	7.9	-0.4	-0.3	6.0	3.8	Jan-11
PIMCO Core Plus	274,544,790	5.6	1.2	2.3	9.0	5.5	4.8	--	8.7	6.3	1.0	1.4	4.2	4.0	Jan-11
BBgBarc US Aggregate TR			0.7	1.3	7.5	5.3	4.4	--	8.7	7.9	-0.4	-0.3	6.0	3.8	Jan-11
Western Asset Core Plus	276,209,546	5.7	2.5	4.5	10.0	6.8	6.4	5.2	9.3	9.4	-0.4	3.0	6.3	5.4	May-04
BBgBarc US Aggregate TR			0.7	1.3	7.5	5.3	4.4	3.8	8.7	7.9	-0.4	-0.3	6.0	4.5	May-04
High Yield/ Specialty Credit	371,276,498	7.6	5.0	9.3	5.5	5.2	6.7	--	-0.5	7.0	2.8	9.9	-3.0		
ICE BofAML High Yield Master II			6.5	11.5	6.2	5.9	8.4	--	-1.1	7.6	2.5	12.8	1.7		
Western Asset High Yield Fixed Income	243,388,434	5.0	6.5	11.7	4.8	5.5	7.9	6.6	-2.2	8.3	2.2	11.7	0.2	7.1	May-05
50% BBgBarc US HY Ba 2%/50% BBgBarc US HY B 2% CAP			5.7	10.2	7.7	6.8	8.2	6.8	2.1	8.8	1.8	10.9	1.9	7.1	May-05
TCW Securitized Opportunities	127,888,065	2.6	1.7	4.1	5.1	4.3	--	--	2.2	5.2	4.3	6.3	--	4.7	Feb-16
BBgBarc US HY 2% Issuer Cap			6.4	11.3	7.0	6.2	--	--	0.0	7.5	2.6	12.7	--	9.1	Feb-16
Emerging Market Debt	211,986,109	4.4	8.8	10.9	7.1	2.7	6.6	--	-1.7	7.9	-4.2	8.9	2.3		
50 JPM EMBI Global Div/ 50 JPM GBI EM			7.2	9.2	2.0	3.7	6.9	--	-3.0	11.2	-1.8	6.5	5.5		
Stone Harbor Emerging Markets Debt	86,543,544	1.8	9.0	11.2	5.7	3.1	6.6	--	-1.8	8.2	-3.1	6.3	4.6	1.9	Aug-12
50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx			7.6	9.2	4.2	4.2	7.0	--	-0.8	10.6	-1.7	6.3	5.5	3.1	Aug-12
PIMCO EMD	125,442,565	2.6	8.6	10.6	--	--	--	--	--	--	--	--	--	6.0	Jan-20
50 JPM EMBI Global Div/ 50 JPM GBI EM			7.2	9.2	--	--	--	--	--	--	--	--	--	2.1	Jan-20

Total Fund

Executive Summary (Net of Fees)

Period Ending: December 31, 2020

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Inception	Inception Date
Commodities	207,249,151	4.3	11.2	19.2	3.0	0.3	4.0	--	-10.9	-6.3	13.7	-3.5	-15.3		
<i>Bloomberg Commodity Index TR USD</i>			10.2	20.2	-3.1	-2.5	1.0	--	-17.4	-6.8	7.3	-6.5	-13.3		
Gresham MTAP Commodity	74,923,521	1.5	10.7	20.6	-1.9	-2.3	2.1	--	-16.3	-9.0	12.4	-3.8	-15.7	-5.2	Sep-13
<i>Bloomberg Commodity Index TR USD</i>			10.2	20.2	-3.1	-2.5	1.0	--	-17.4	-6.8	7.3	-6.5	-13.3	-5.7	Sep-13
Wellington Commodities	132,325,630	2.7	11.4	18.2	6.6	1.9	6.0	--	-6.8	-4.6	15.0	-3.0	-13.7	-2.8	Sep-13
<i>Bloomberg Commodity Index TR USD</i>			10.2	20.2	-3.1	-2.5	1.0	--	-17.4	-6.8	7.3	-6.5	-13.3	-5.7	Sep-13
Hedge Funds	615,724,248	12.6	5.9	10.8	15.9	7.8	6.9	5.6	7.0	2.5	7.6	7.1	-4.7		
<i>75% 90 Day TBills +4% / 25% MSCI ACWI</i>			4.4	7.4	8.1	7.1	7.3	6.1	5.1	6.6	7.0	8.1	2.5		
Aristeia International Limited	62,413,409	1.3	7.6	14.9	21.8	11.7	10.7	--	8.7	9.2	2.6	13.1	-1.7	5.3	May-14
Brevan Howard	66,573,858	1.4	3.7	5.2	27.6	16.1	9.0	--	20.5	12.7	7.8	1.0	-6.0	7.8	Nov-13
D.E. Shaw	48,792,111	1.0	2.6	6.7	17.6	13.1	12.0	--	15.6	11.5	11.3	8.0	11.6	12.2	Jul-13
HBK Fund II	52,365,631	1.1	3.7	6.7	7.2	5.1	5.5	--	1.5	5.5	3.0	6.7	-0.7	4.1	Nov-13
Hudson Bay	87,135,832	1.8	4.5	9.1	20.7	--	--	--	16.2	--	--	--	--	16.5	Jun-19
Indus Pacific Opportunities	36,953,720	0.8	12.3	26.8	43.6	6.5	9.4	--	15.8	-19.2	15.8	15.1	-8.3	9.5	Jun-14
Magnetar Structured Credit	11,797,167	0.2	12.6	18.2	16.8	9.2	8.2	--	-0.2	5.4	7.7	8.6	-2.4	7.2	May-14
Myriad Opportunities Offshore	60,325,691	1.2	9.2	16.7	5.1	-0.4	--	--	-9.2	-8.4	10.4	8.2	--	3.5	May-16
Pharo Macro Fund LTD	58,502,733	1.2	9.3	11.5	15.0	--	--	--	--	--	--	--	--	13.7	Dec-19
PIMCO Commodity Alpha	71,604,795	1.5	4.1	7.7	9.0	7.1	--	--	4.8	5.2	10.4	17.0	--	9.9	May-16
River Birch	1,274,458	0.0	-10.1	-1.5	-15.7	-7.2	-2.2	--	-19.9	-0.5	2.8	9.6	--	-2.7	Aug-15
Sculptor Enhanced Domestic Partners	57,984,842	1.2	5.5	12.6	17.1	--	--	--	6.5	--	--	--	--	18.9	Mar-19
Alpha Pool	123,186,851	2.5	5.4	8.5	--	--	--	--	--	--	--	--	--		
<i>91-Day TBills +4%</i>			1.0	2.0	--	--	--	--	--	--	--	--	--		
Hudson Bay	26,857,108	0.6	4.3	--	--	--	--	--	--	--	--	--	--	7.4	Jul-20
Davidson Kempner	50,970,740	1.0	--	--	--	--	--	--	--	--	--	--	--	1.9	Dec-20
HBK Fund II	25,359,003	0.5	--	--	--	--	--	--	--	--	--	--	--	1.4	Dec-20
HBK Opportunities - SPAC Series	20,000,000	0.4	--	--	--	--	--	--	--	--	--	--	--	0.0	Dec-20
Midstream Energy	101,963,634	2.1	18.6	--	--	--	--	--	--	--	--	--	--		
<i>Alerian Midstream Index</i>			20.1	--	--	--	--	--	--	--	--	--	--		
Harvest Midstream	52,032,278	1.1	22.1	--	--	--	--	--	--	--	--	--	--	18.7	Sep-20
<i>Alerian Midstream Index</i>			20.1	--	--	--	--	--	--	--	--	--	--	7.5	Sep-20
PIMCO MidStream	49,931,356	1.0	--	--	--	--	--	--	--	--	--	--	--	14.3	Oct-20
<i>Alerian Midstream Index</i>			--	--	--	--	--	--	--	--	--	--	--	20.1	Oct-20

Total Fund
Executive Summary (Net of Fees)

Period Ending: December 31, 2020

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Fiscal 2016	Inception	Inception Date
Core Real Estate	224,269,375	4.6	1.3	1.1	1.1	4.1	4.9	--	1.4	5.9	7.4	5.6	11.8		
NCREIF-ODCE			1.3	1.8	1.2	4.9	6.2	9.9	2.2	6.4	8.4	7.9	11.8		
ASB Real Estate	117,006,539	2.4	0.9	0.8	1.6	4.4	4.4	--	1.5	6.8	7.1	3.3	10.7	7.3	Sep-13
NCREIF-ODCE			1.3	1.8	1.2	4.9	6.2	9.9	2.2	6.4	8.4	7.9	11.8	8.5	Sep-13
J.P. Morgan Strategic Property	107,262,836	2.2	1.7	1.4	0.5	3.9	5.2	--	1.3	5.0	7.6	7.4	10.0	6.9	Jul-14
NCREIF-ODCE			1.3	1.8	1.2	4.9	6.2	9.9	2.2	6.4	8.4	7.9	11.8	8.0	Jul-14
Private Real Estate	61,748,609	1.3	8.5	3.3	8.0	5.9	6.2	10.7	4.4	9.0	5.4	5.7	14.8		
Private Equity	56,757,193	1.2	8.5	21.9	6.9	7.9	8.2	9.8	-10.5	10.9	7.8	14.1	1.7		
Private Credit	173,612,718	3.6	-0.3	-1.5	1.9	5.9	8.4	--	5.9	9.7	9.3	10.2	--		
Opportunistic	61,602,376	1.3	3.0	11.1	1.0	--	--	--	--	--	--	--	--		
Assumed Rate of Return +3%			2.5	5.1	10.4	--	--	--	10.4	--	--	--	--		
DB Investors Fund IV	22,467,047	0.5	1.6	12.7	12.3	--	--	--	--	--	--	--	--	12.3	Jan-20
Assumed Rate of Return +3%			2.5	5.1	10.4	--	--	--	10.4	--	--	--	--	10.4	Jan-20
TAO Contingent	39,135,329	0.8	4.1	9.0	--	--	--	--	--	--	--	--	--	9.1	Apr-20
Assumed Rate of Return +3%			2.5	5.1	10.4	--	--	--	10.4	--	--	--	--	7.7	Apr-20
Cash	-162,340,942	-3.3	0.0	0.1	0.5	1.7	2.1	--	1.0	2.0	3.2	2.7	2.2		

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value as of 12/31/2020	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ³	IRR Date
Private Equity												
2001	Abbott Capital PE IV*	\$1,152,267	\$50,000,000	\$49,650,000	99%	\$350,000	\$85,714,140	\$1,228,338	1.73x	1.75x	11.0%	12/31/19
2005	Abbott Capital PE V*	\$10,858,080	\$65,000,000	\$62,790,000	97%	\$2,210,000	\$80,558,107		1.28x	1.47x	6.8%	06/30/20
2008	Abbott Capital PE VI*	\$28,032,610	\$50,000,000	\$49,500,000	99%	\$500,000	\$56,196,969	\$30,446,444	1.14x	1.63x	12.4%	09/30/20
2006	Pantheon Global III*	\$1,865,668	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$51,000,000	\$1,901,933	1.08x	1.11x	2.0%	09/30/20
1998	Pantheon USA III*	\$58,984	\$7,500,000	\$7,335,000	98%	\$165,000	\$8,197,500	\$58,056	1.12x	1.13x	1.9%	09/30/20
2002	Pantheon USA V*	\$469,541	\$25,000,000	\$24,350,000	97%	\$650,000	\$37,950,000	\$442,247	1.56x	1.58x	9.0%	09/30/20
2004	Pantheon USA VI*	\$2,622,668	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$48,523,827	\$2,606,012	1.47x	1.54x	6.8%	09/30/20
2006	Pantheon USA VII*	\$14,070,410	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$67,374,999	\$14,470,410	1.45x	1.75x	9.9%	09/30/20
2020	Vista Equity Partners IV	\$429,945	\$25,000,000	\$429,945	2%	\$24,570,055						
Total Private Equity		\$56,757,193	\$357,500,000	\$321,029,945	90%	\$36,470,055	\$435,515,542	\$51,153,440	1.36x	1.53x		
% of Portfolio (Market Value)		1.2%										

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

* Market Values are as of 9/30/2020 and accounts for all capital calls and distributions through 12/31/2020.

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value as of 12/31/2020	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ³	IRR Date
Private Credit												
2015	Colony Distressed Credit IV** ⁴	\$52,848,469	\$60,000,000	\$70,783,873	118%	-\$2,944,644	\$24,003,132	\$52,848,469	0.34x	1.09x	4.0%	9/30/20
2017	Brookfield Real Estate Finance Fund V**	\$25,154,938	\$50,000,000	\$27,069,177	54%	\$22,930,823	\$10,178,870	\$23,191,827	0.38x	1.31x	8.9%	good
2017	TSSP Adjacent Opportunities Partners**	\$31,512,511	\$50,000,000	\$31,632,288	63%	\$18,367,712	\$14,217,245	\$30,930,862	0.45x	1.45x	8.0%	3/31/20
2018	Magnetar Constellation*	\$52,327,882	\$60,000,000	\$63,785,879	106%	-\$3,785,879	\$6,361,051	N/A	0.10x	0.92x	N/A	N/A
2019	H.I.G Bayside Loan Opportunity Fund V	\$7,752,522	\$60,000,000	\$7,500,000	12%	\$52,500,000	\$1,930,727	N/A	0.26x	1.29x	N/A	N/A
2020	Blue Torch Credit Opportunities	\$2,016,397	\$20,000,000	\$3,072,562	15%	\$16,927,438	\$1,094,200	N/A	0.36x	1.01x	N/A	N/A
2020	Fortress Credit Opportunities	\$2,000,000										
Total Private Credit		\$173,612,718	\$300,000,000	\$200,771,217	67%	\$34,568,012	\$54,760,298	\$106,971,158	0.27x	1.14x		
% of Portfolio (Market Value)		3.6%										

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

⁴\$14,360,749 is recallable capital as of 6/30/2020.

*Market Values are as of 3/31/2020 and accounts for all capital calls and distributions through 12/31/2020.

**Market Values are as of 9/30/2020 and accounts for all capital calls and distributions through 12/31/2020.

IRR Analysis as of IRR date

Vintage Year	Manager/Fund	Estimated Market Value as of 12/31/2020	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ³	IRR Date
Private Real Estate												
2012	Invesco Real Estate III*	\$3,607,757	\$60,000,000	\$55,519,583	93%	\$4,480,417	\$72,861,953	\$6,294,045	1.31x	1.31x	12.9%	09/30/20
2014	Invesco Real Estate IV*	\$24,381,911	\$50,000,000	\$43,637,717	87%	\$6,362,283	\$31,934,211	\$24,596,747	0.73x	1.28x	11.9%	09/30/20
2017	Landmark Real Estate Partners VIII*	\$18,123,606	\$60,000,000	\$25,033,714	42%	\$34,966,286	\$15,256,042	\$18,637,114	0.61x	1.46x	13.6%	06/30/20
2018	Long Wharf Real Estate Partners VI*	\$5,927,692	\$50,000,000	\$7,066,404	14%	\$42,933,596	\$788,018	N/A	N/A	N/A	N/A	N/A
2020	Covenant Apartment Fund X											

Total Private Real Assets	\$61,748,609	\$220,000,000	\$131,257,418	60%	\$88,742,582	\$120,840,224	\$49,527,906	0.92x	1.39x
% of Portfolio (Market Value)	1.3%								

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

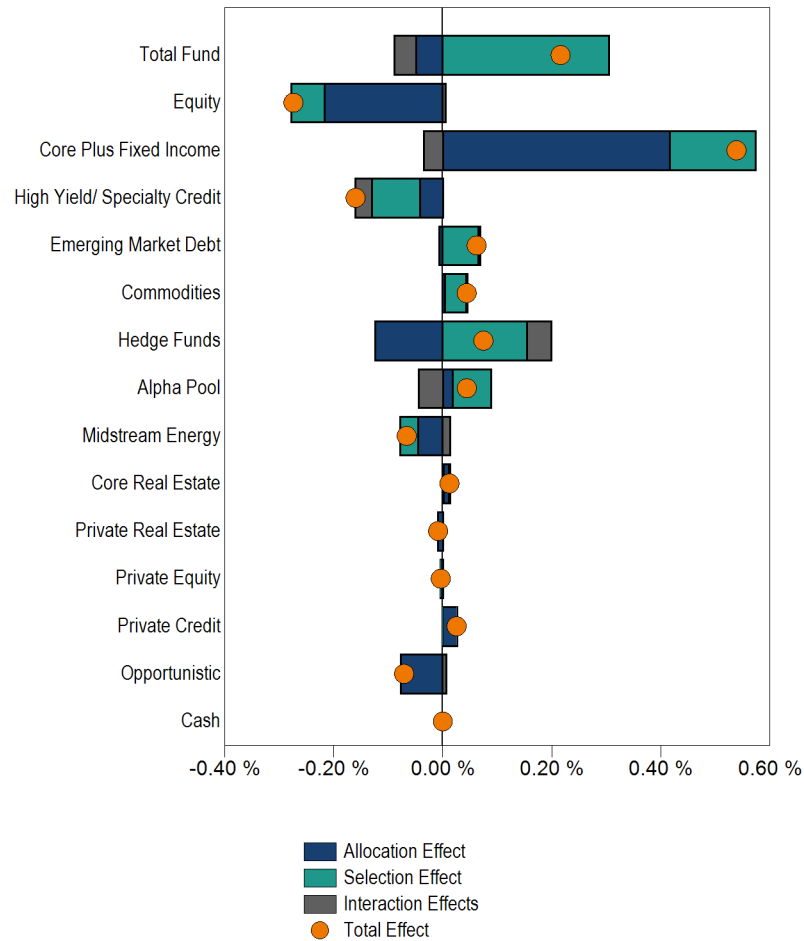
* Market Values are as of 9/30/2020 and accounts for all capital calls and distributions through 12/31/2020.

Total Fund

Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: December 31, 2020

Attribution Effects Last Three Months



Performance Attribution

	Quarter	Fiscal YTD
Wtd. Actual Return	8.82%	13.62%
Wtd. Index Return *	8.80%	13.69%
Excess Return	0.02%	-0.07%
Selection Effect	0.30%	0.20%
Allocation Effect	-0.05%	0.13%
Interaction Effect	-0.04%	-0.03%

*Calculated from benchmark returns and weightings of each component.

Attribution Summary Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	15.7%	15.8%	-0.1%	-0.1%	-0.2%	0.0%	-0.3%
Core Plus Fixed Income	1.3%	0.7%	0.7%	0.2%	0.4%	0.0%	0.5%
High Yield/ Specialty Credit	5.0%	6.5%	-1.4%	-0.1%	0.0%	0.0%	-0.2%
Emerging Market Debt	8.8%	7.2%	1.6%	0.1%	0.0%	0.0%	0.1%
Commodities	11.2%	10.2%	1.0%	0.0%	0.0%	0.0%	0.0%
Hedge Funds	5.9%	4.4%	1.5%	0.2%	-0.1%	0.0%	0.1%
Alpha Pool	5.4%	1.0%	4.4%	0.1%	0.0%	0.0%	0.0%
Midstream Energy	18.6%	20.1%	-1.5%	0.0%	0.0%	0.0%	-0.1%
Core Real Estate	1.3%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Real Estate	8.5%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	8.5%	8.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Credit	-0.3%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Opportunistic	3.0%	2.5%	0.5%	0.0%	-0.1%	0.0%	-0.1%
Cash	--	--	--	--	--	--	--
Total	8.8%	8.8%	0.0%	0.3%	-0.1%	0.0%	0.2%

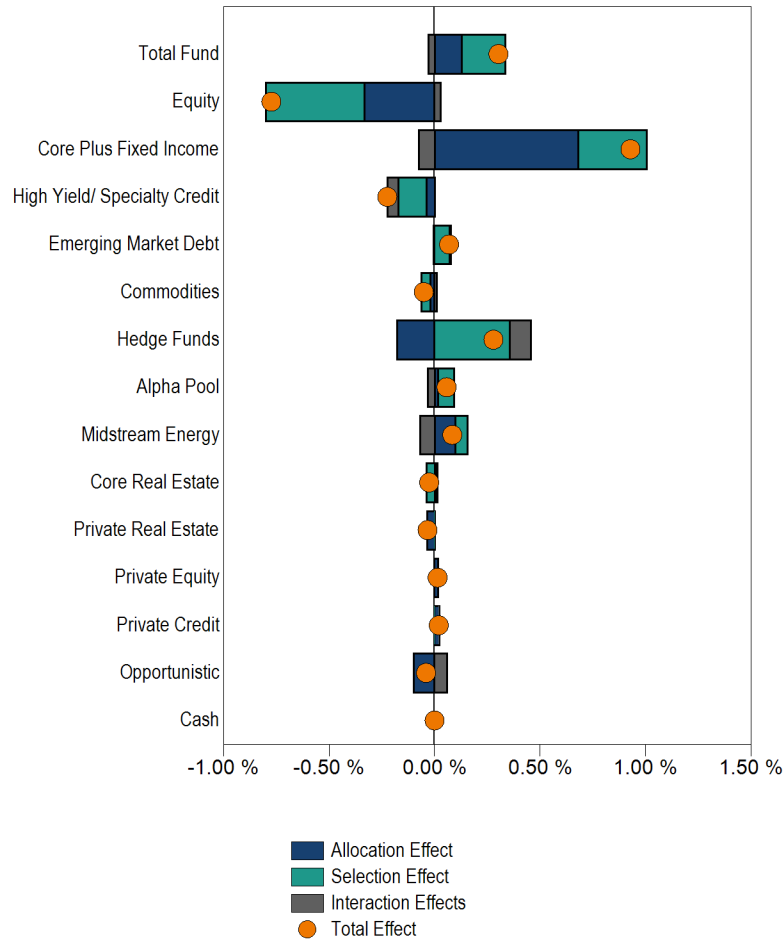
Weighted returns shown in attribution analysis may differ from actual returns.

Total Fund

Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: December 31, 2020

Attribution Effects Fiscal YTD



Performance Attribution

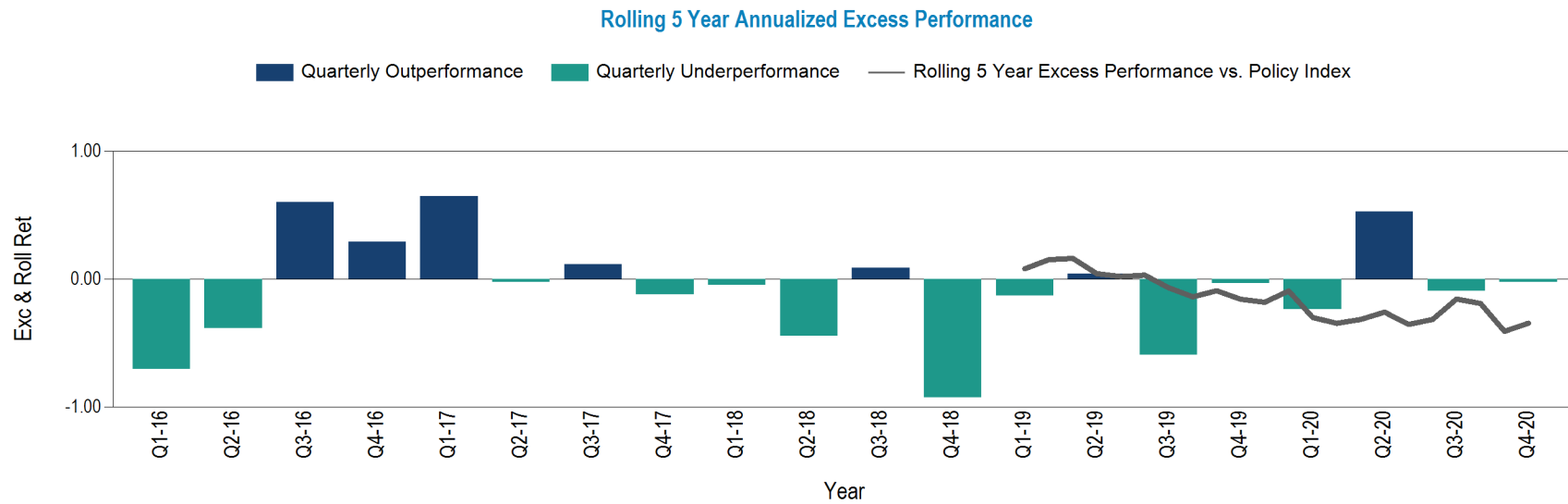
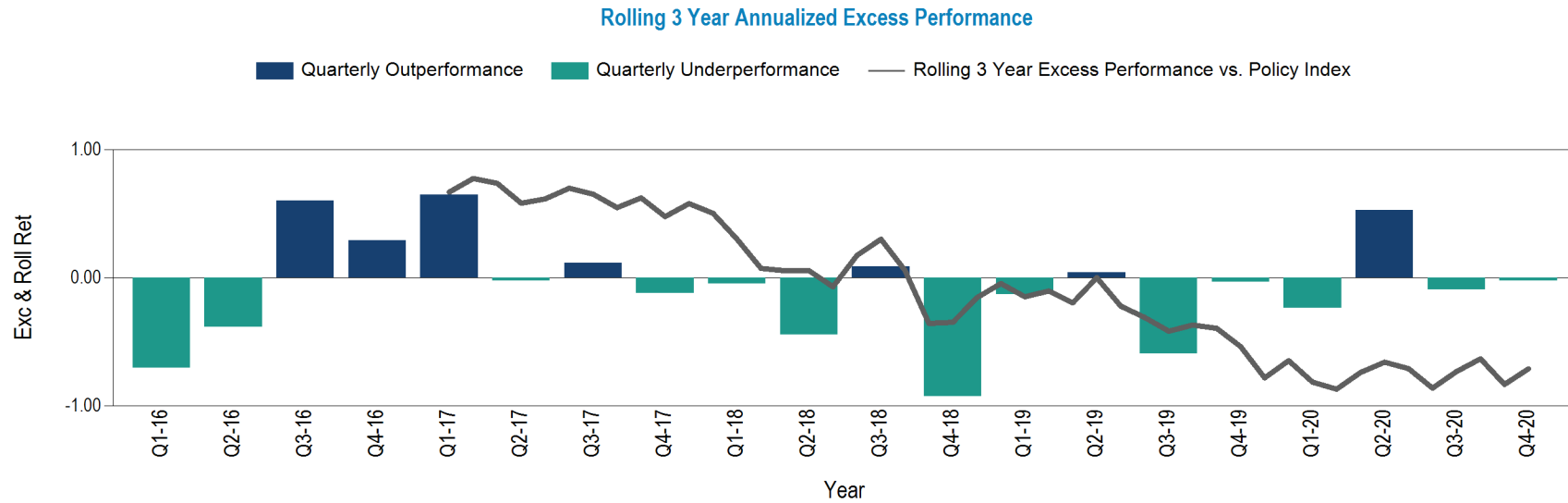
	Quarter	Fiscal YTD
Wtd. Actual Return	8.82%	13.62%
Wtd. Index Return *	8.80%	13.69%
Excess Return	0.02%	-0.07%
Selection Effect	0.30%	0.20%
Allocation Effect	-0.05%	0.13%
Interaction Effect	-0.04%	-0.03%

*Calculated from benchmark returns and weightings of each component.

Attribution Summary Fiscal YTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	24.1%	25.3%	-1.2%	-0.5%	-0.3%	0.0%	-0.8%
Core Plus Fixed Income	2.6%	1.3%	1.3%	0.3%	0.7%	-0.1%	0.9%
High Yield/ Specialty Credit	9.3%	11.5%	-2.2%	-0.1%	0.0%	0.0%	-0.2%
Emerging Market Debt	10.9%	9.2%	1.7%	0.1%	0.0%	0.0%	0.1%
Commodities	19.2%	20.2%	-1.0%	0.0%	0.0%	0.0%	-0.1%
Hedge Funds	10.8%	7.4%	3.4%	0.4%	-0.2%	0.1%	0.3%
Alpha Pool	8.5%	2.0%	6.5%	0.1%	0.0%	0.0%	0.1%
Midstream Energy	--	7.5%	--	0.1%	0.1%	-0.1%	0.1%
Core Real Estate	1.1%	1.8%	-0.6%	0.0%	0.0%	0.0%	0.0%
Private Real Estate	3.3%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	21.9%	21.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Credit	-1.5%	-1.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Opportunistic	11.1%	5.1%	6.0%	0.0%	-0.1%	0.1%	0.0%
Cash	--	--	--	--	--	--	--
Total	13.6%	13.7%	-0.1%	0.2%	0.1%	0.0%	0.3%

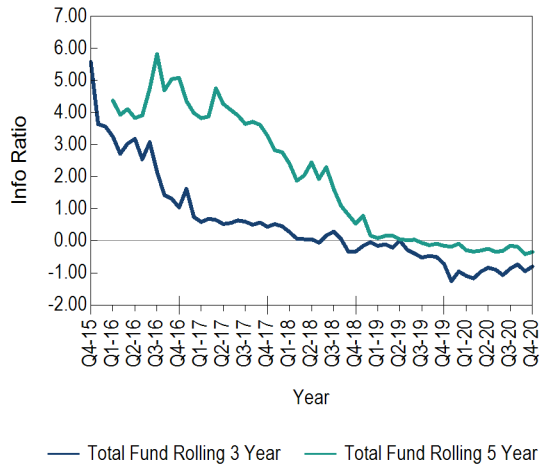
Weighted returns shown in attribution analysis may differ from actual returns.



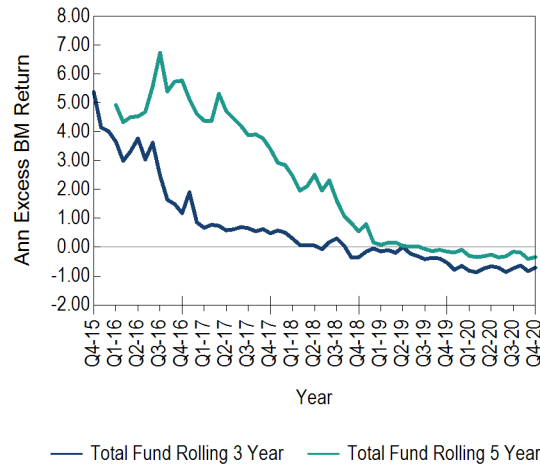
Total Fund Rolling Risk Statistics (Net of Fees)

Period Ending: December 31, 2020

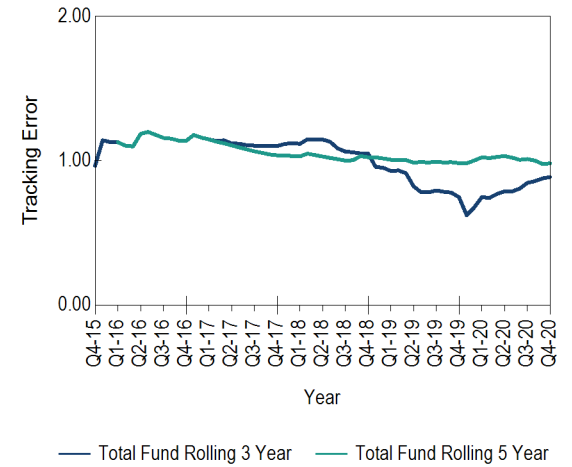
Rolling Information Ratio



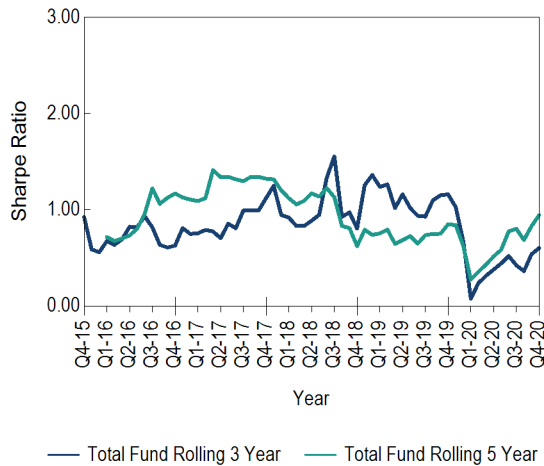
Rolling Annual Excess Benchmark Return



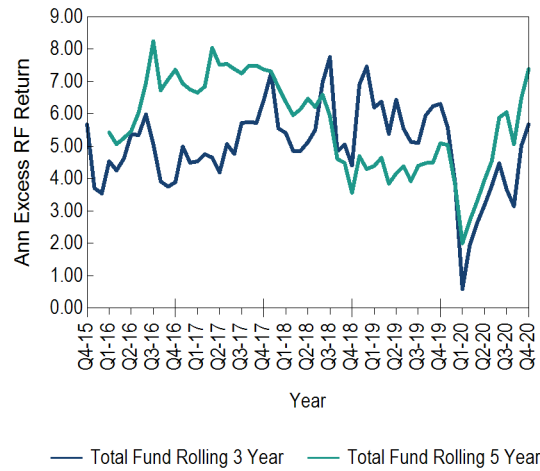
Rolling Tracking Error



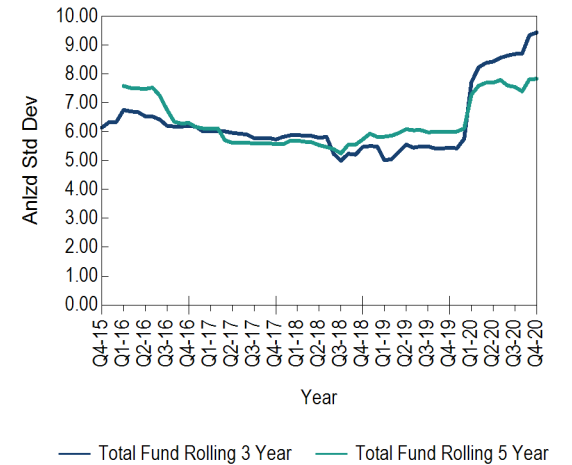
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation



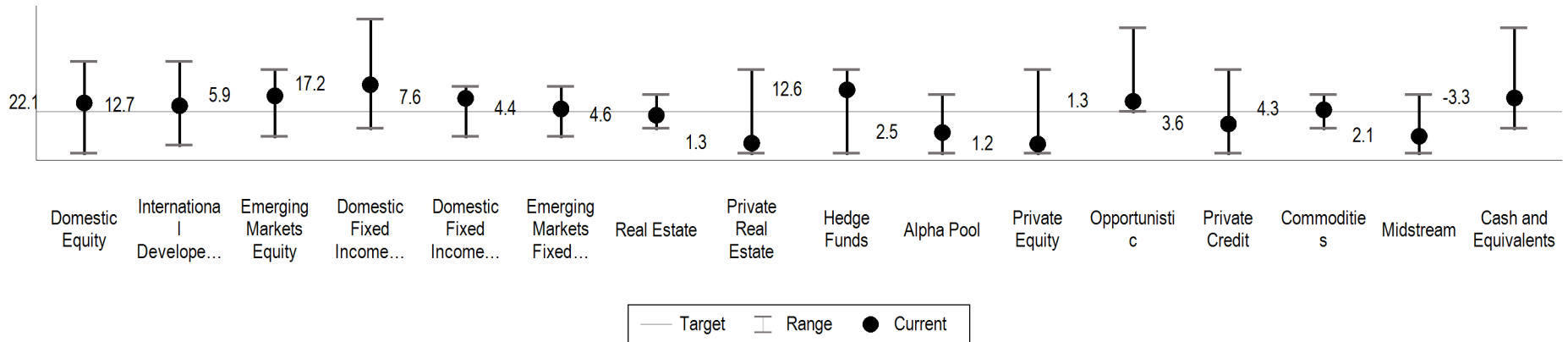
Asset Allocation

Total Fund
Sub-Asset Class Allocation

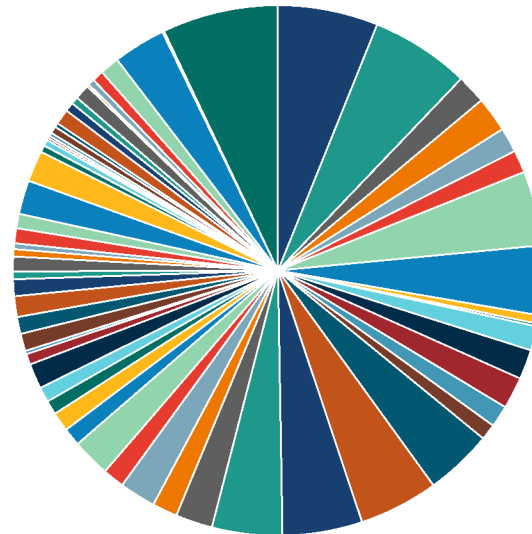
Period Ending: December 31, 2020

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Domestic Equity	\$1,075,399,647	22.1%	21.0%	\$52,454,056	16.0% - 27.0%	Yes
International Developed Equity	\$620,577,306	12.7%	12.0%	\$36,036,969	8.0% - 18.0%	Yes
Emerging Markets Equity	\$288,263,515	5.9%	4.0%	\$93,416,736	1.0% - 9.0%	Yes
Domestic Fixed Income Core Plus	\$839,893,189	17.2%	14.0%	\$157,929,462	12.0% - 25.0%	Yes
Domestic Fixed Income High Yield	\$371,276,498	7.6%	6.0%	\$79,006,330	3.0% - 9.0%	Yes
Emerging Markets Fixed Income	\$211,986,109	4.4%	4.0%	\$17,139,330	1.0% - 7.0%	Yes
Real Estate	\$224,269,375	4.6%	5.0%	-\$19,289,099	3.0% - 7.0%	Yes
Private Real Estate	\$61,748,609	1.3%	5.0%	-\$181,809,865	0.0% - 10.0%	Yes
Hedge Funds	\$615,724,248	12.6%	10.0%	\$128,607,300	5.0% - 15.0%	Yes
Alpha Pool	\$123,186,851	2.5%	5.0%	-\$120,371,623	0.0% - 7.0%	Yes
Private Equity	\$56,757,193	1.2%	5.0%	-\$186,801,281	0.0% - 10.0%	Yes
Opportunistic	\$61,602,376	1.3%	0.0%	\$61,602,376	0.0% - 10.0%	Yes
Private Credit	\$173,612,718	3.6%	5.0%	-\$69,945,756	0.0% - 10.0%	Yes
Commodities	\$207,249,151	4.3%	4.0%	\$12,402,372	2.0% - 6.0%	Yes
Midstream	\$101,963,634	2.1%	5.0%	-\$141,594,840	0.0% - 7.0%	Yes
Cash and Equivalents	-\$162,340,942	-3.3%	-5.0%	\$81,217,532	-7.0% - 5.0%	Yes
Total	\$4,871,169,479	100.0%	100.0%			

Actual vs. Target



Current Allocation: by Manager



- | | | | | | |
|-------------------------------------|---|-------------------------------------|------------------------------------|--|----------------|
| Equity Beta Exposure | AB Emerging Markets Strategic Core Equity | Aristeia International Limited | Davidson Kempner | Abbott VI | Futures Offset |
| Mellon DB SL Stock Index | Mellon Emerging Markets Stock Index | Brevarn Howard | HBK Fund II | Pantheon VII | |
| Mellon NSL Dynamic US Equity | Fixed Income Overlay | D.E. Shaw | HBK Opportunities - SPAC Series | Colony Distressed Credit IV | |
| PIMCO StocksPLUS | Mellon DB SL Aggregate Bond Index Fund | HBK Fund II | Harvest Midstream | TSSP Adjacent Opportunities Partners | |
| AB US Small Cap Value Equity | PIMCO Core Plus | Hudson Bay | PIMCO MidStream | Brookfield Real Estate Finance Fund V | |
| Geneva Capital Small Cap Growth | Western Asset Core Plus | Indus Pacific Opportunities | ASB Real Estate | Magnetar Constellation | |
| Mellon DB SL World ex-US Index | Western Asset High Yield Fixed Income | TCW Securitized Opportunities | J.P. Morgan Strategic Property | H.I.G. Bayside Loan Opportunity Fund V | |
| BlackRock International Alpha Tilts | TCW Securitized Opportunities | Stone Harbor Emerging Markets Debt | Invesco Real Estate IV | DB Investors Fund IV | |
| Cevian Capital II | PIMCO EMD | Pharo Macro Fund LTD | Landmark Real Estate Partners VIII | TAO Contingent | |
| Fidelity Non-US Small Cap Equity | Gresham MTAP Commodity | PIMCO Commodity Alpha | Long Wharf Real Estate | Short Term Investment Funds | |
| American Century Non-US Small Cap | Wellington Commodities | Sculptor Enhanced Domestic Partners | Covenant Apartment Fund X | Parametric Cash Overlay | |
| DFA Emerging Markets Value I | | Hudson Bay | Abbott V | Goldman Sachs Cash Account | |

Total Fund
3 Year Correlation Matrix (Net of Fees)

Period Ending: December 31, 2020

Correlation Matrix
3 Years Ending December 31, 2020

	Total Fund Equity	Global Equity	Domestic Equity	International Developed Equity	Emerging Markets Equity	Fixed Income	Core Plus Fixed Income	High Yield/ Specialty Credit	Emerging Market Debt	Commodities	Hedge Funds	Core Real Estate	Private Equity	Private Credit	Private Real Estate	Policy Index	
Total Fund	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Equity	1.00	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Global Equity	0.26	0.27	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
Domestic Equity	0.99	0.99	0.29	1.00	--	--	--	--	--	--	--	--	--	--	--	--	
International Developed Equity	0.99	0.99	0.27	0.97	1.00	--	--	--	--	--	--	--	--	--	--	--	
Emerging Markets Equity	0.95	0.94	0.15	0.89	0.95	1.00	--	--	--	--	--	--	--	--	--	--	
Fixed Income	0.87	0.85	0.26	0.83	0.84	0.82	1.00	--	--	--	--	--	--	--	--	--	
Core Plus Fixed Income	0.39	0.36	0.22	0.36	0.34	0.28	0.77	1.00	--	--	--	--	--	--	--	--	
High Yield/ Specialty Credit	0.97	0.96	0.21	0.96	0.95	0.90	0.88	0.42	1.00	--	--	--	--	--	--	--	
Emerging Market Debt	0.90	0.88	0.29	0.83	0.89	0.95	0.90	0.47	0.86	1.00	--	--	--	--	--	--	
Commodities	0.97	0.97	0.16	0.96	0.98	0.94	0.78	0.25	0.95	0.84	1.00	--	--	--	--	--	
Hedge Funds	0.92	0.92	0.12	0.89	0.92	0.91	0.82	0.39	0.86	0.86	0.91	1.00	--	--	--	--	
Core Real Estate	-0.43	-0.41	0.13	-0.42	-0.38	-0.37	-0.68	-0.74	-0.48	-0.44	-0.37	-0.53	1.00	--	--	--	
Private Equity	-0.05	-0.06	-0.65	-0.08	-0.02	0.06	-0.27	-0.53	-0.02	-0.13	0.06	-0.13	0.35	1.00	--	--	
Private Credit	-0.79	-0.79	0.12	-0.75	-0.79	-0.84	-0.73	-0.32	-0.80	-0.75	-0.84	-0.87	0.63	0.00	1.00	--	
Private Real Estate	-0.20	-0.20	0.32	-0.21	-0.19	-0.16	-0.28	-0.24	-0.33	-0.13	-0.29	-0.25	0.54	0.12	0.45	1.00	
Policy Index	1.00	1.00	0.25	0.98	1.00	0.95	0.87	0.38	0.97	0.89	0.98	0.91	-0.43	-0.03	-0.80	-0.21	1.00

Cash Flows

Total Fund
Net Cash Flow - Three Months Ended

Period Ending: December 31, 2020

	Equity					
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
SGA Global Equity	\$15	\$0	\$0	\$0	\$0	\$15
Equity Beta Exposure	\$56,648,800	\$505,236,166	-\$229,831,525	\$0	\$14,335,679	\$346,389,120
Mellon DB SL Stock Index	\$434,451,407	\$0	-\$140,000,000	-\$30,867	\$48,145,308	\$342,596,715
Mellon NSL Dynamic US Equity	\$159,008,551	\$0	-\$70,000,000	-\$126,769	\$11,848,712	\$100,857,263
PIMCO StocksPLUS	\$159,116,103	\$0	-\$55,000,000	-\$186,953	\$17,587,953	\$121,704,055
AB US Small Cap Value Equity	\$63,450,244	\$0	\$0	-\$169,751	\$22,564,901	\$86,015,145
Geneva Capital Small Cap Growth	\$62,197,889	\$0	\$0	-\$133,841	\$15,638,992	\$77,836,881
Mellon DB SL World ex-US Index	\$223,181,846	\$0	\$0	\$0	\$34,972,491	\$258,154,337
BlackRock International Alpha Tilts	\$268,111,907	\$0	-\$70,000,000	-\$277,658	\$41,672,283	\$239,784,190
Cevian Capital II	\$24,389,031	\$0	\$0	\$0	\$4,580,574	\$28,969,604
J.P. Morgan Fleming EAFE Plus Equity	\$82,380	\$0	-\$82,665	\$0	\$286	\$0
Fidelity Non-US Small Cap Equity	\$78,039,116	\$0	-\$80,000,000	-\$57,490	\$11,462,059	\$9,501,175
American Century Non-US Small Cap	--	\$80,000,000	\$0	\$0	\$4,168,000	\$84,168,000
DFA Emerging Markets Value I	\$84,964,662	\$0	\$0	-\$127,897	\$17,832,398	\$102,797,060
AB Emerging Markets Strategic Core Equity	\$96,237,059	\$0	\$0	-\$376,033	\$13,648,447	\$109,885,506
Mellon Emerging Markets Stock Index	\$54,550,089	\$10,000,000	\$0	\$0	\$11,030,859	\$75,580,948
Transition Equity	\$369	\$0	\$0	\$0	\$83	\$452
Total	\$1,764,429,468	\$595,236,166	-\$644,914,190	-\$1,487,261	\$269,489,024	\$1,984,240,468

	Fixed Income					
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Fixed Income Overlay	\$55,807,656	\$187,557	\$0	\$0	-\$627,424	\$55,367,789
Mellon DB SL Aggregate Bond Index Fund	\$232,077,167	\$0	\$0	-\$17,882	\$1,529,688	\$233,606,855
PIMCO Core Plus	\$270,999,915	\$0	\$0	-\$193,906	\$3,544,875	\$274,544,790
Western Asset Core Plus	\$269,350,104	\$0	\$0	-\$139,808	\$6,859,442	\$276,209,546
Western Asset High Yield Fixed Income	\$257,082,414	\$0	-\$30,000,000	-\$123,539	\$16,306,019	\$243,388,434
TCW Securitized Opportunities	\$125,743,509	\$0	\$0	-\$316,746	\$2,144,555	\$127,888,065
Stone Harbor Emerging Markets Debt	\$79,423,714	\$0	\$0	-\$125,071	\$7,119,830	\$86,543,544
PIMCO EMD	\$102,581,376	\$15,000,000	\$0	-\$34,155	\$7,861,189	\$125,442,565
Transition Fixed Income	\$158,735	\$0	-\$19	\$0	\$5,494	\$164,210
Total	\$1,393,224,590	\$15,187,557	-\$30,000,019	-\$951,108	\$44,743,669	\$1,423,155,797

Total Fund

Net Cash Flow - Three Months Ended

Period Ending: December 31, 2020

Commodities						
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Gresham MTAP Commodity	\$67,680,460	\$0	\$0	-\$88,149	\$7,243,060	\$74,923,521
Wellington Commodities	\$109,232,869	\$10,000,000	\$0	\$0	\$13,092,761	\$132,325,630
Total	\$176,913,329	\$10,000,000	\$0	-\$88,149	\$20,335,821	\$207,249,151

Hedge Funds						
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Aristeia International Limited	\$58,000,120	\$0	\$0	\$0	\$4,413,290	\$62,413,409
Brevan Howard	\$64,223,913	\$0	\$0	\$0	\$2,349,945	\$66,573,858
D.E. Shaw	\$47,569,869	\$0	\$0	\$0	\$1,222,242	\$48,792,111
HBK Fund II	\$50,497,500	\$0	\$0	\$0	\$1,868,131	\$52,365,631
Hudson Bay	\$83,395,053	\$0	\$0	\$0	\$3,740,779	\$87,135,832
Indus Pacific Opportunities	\$32,913,014	\$0	\$0	\$0	\$4,040,706	\$36,953,720
Magnetar Structured Credit	\$10,473,618	\$0	\$0	\$0	\$1,323,549	\$11,797,167
Myriad Opportunities Offshore	\$55,267,879	\$0	\$0	\$0	\$5,057,812	\$60,325,691
Pharo Macro Fund LTD	\$53,538,264	\$0	\$0	\$0	\$4,964,470	\$58,502,733
PIMCO Commodity Alpha	\$68,804,361	\$0	\$0	-\$177,303	\$2,800,435	\$71,604,795
River Birch	\$1,418,060	\$0	\$0	\$0	-\$143,602	\$1,274,458
Sculptor Enhanced Domestic Partners	\$54,973,840	\$0	\$0	\$0	\$3,011,002	\$57,984,842
Systematica Trend Following Fund	\$12,020,382	\$0	-\$11,900,178	\$0	-\$120,204	\$0
Total	\$593,095,873	\$0	-\$11,900,178	-\$177,303	\$34,528,554	\$615,724,248

Alpha Pool						
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Hudson Bay	\$25,751,817	\$0	\$0	\$0	\$1,105,291	\$26,857,108
Davidson Kempner	--	\$0	\$0	\$0	\$50,970,740	\$50,970,740
HBK Fund II	--	\$0	\$0	\$0	\$25,359,003	\$25,359,003

Midstream Energy						
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Harvest Midstream	\$34,036,988	\$10,000,000	\$0	\$0	\$7,995,290	\$52,032,278
PIMCO MidStream	\$0	\$45,000,000	\$0	\$0	\$4,931,356	\$49,931,356
Total	\$34,036,988	\$55,000,000	\$0	\$0	\$12,926,646	\$101,963,634

Total Fund

Net Cash Flow - Three Months Ended

Period Ending: December 31, 2020

Core Real Estate

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
ASB Real Estate	\$115,695,948	\$231,887	\$0	-\$231,887	\$1,078,704	\$117,006,539
J.P. Morgan Strategic Property	\$105,454,600	\$0	\$0	-\$240,773	\$1,808,236	\$107,262,836
Total	\$221,150,548	\$231,887	\$0	-\$472,661	\$2,886,940	\$224,269,375

Private Real Estate

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Invesco Real Estate III	\$3,607,757	\$0	-\$8,434,726	\$0	\$4,826,969	\$0
Invesco Real Estate IV	\$24,381,911	\$0	-\$704,927	\$0	\$214,836	\$23,891,820
Landmark Real Estate Partners VIII	\$18,123,606	\$3,554,646	-\$784,264	\$0	\$513,508	\$21,407,496
Long Wharf Real Estate	\$5,927,692	\$2,210,109	\$0	\$0	-\$88,508	\$8,049,293
Covenant Apartment Fund X	\$0	\$8,400,000	\$0	\$0	\$0	\$8,400,000
Total	\$52,040,967	\$14,164,755	-\$9,923,917	\$0	\$5,466,804	\$61,748,609

Private Equity

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Abbott IV	\$1,228,338	\$0	\$0	\$0	-\$76,071	\$1,152,267
Abbott V	\$10,858,080	\$0	-\$183,137	\$0	\$1,167,665	\$11,842,608
Abbott VI	\$28,032,610	\$0	-\$5,742,284	\$0	\$2,413,834	\$24,704,160
Pantheon Secondary III	\$1,865,668	\$0	-\$500,000	\$0	\$36,265	\$1,401,933
Pantheon III	\$58,984	\$0	\$0	\$0	-\$928	\$58,056
Pantheon V	\$469,541	\$0	\$0	\$0	-\$27,294	\$442,247
Pantheon VI	\$2,622,668	\$0	-\$180,000	\$0	-\$16,656	\$2,426,012
Pantheon VII	\$14,070,410	\$0	-\$1,350,002	\$0	\$1,579,557	\$14,299,965
Vista Equity Partners IV	\$429,945	\$0	\$0	\$0	\$0	\$429,945
Total	\$59,636,244	\$0	-\$7,955,423	\$0	\$5,076,372	\$56,757,193

Total Fund

Net Cash Flow - Three Months Ended

Period Ending: December 31, 2020

Private Credit

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Colony Distressed Credit IV	\$53,780,017	\$0	\$0	\$0	-\$931,548	\$52,848,469
TSSP Adjacent Opportunities Partners	\$30,477,506	\$1,496,680	-\$928,497	\$0	\$466,822	\$31,512,511
Brookfield Real Estate Finance Fund V	\$24,634,530	\$1,395,438	\$0	\$0	-\$875,030	\$25,154,938
Magnetar Constellation	\$53,774,056	\$0	-\$2,189,957	\$0	\$743,783	\$52,327,882
H.I.G. Bayside Loan Opportunity Fund V	\$5,508,616	\$3,000,000	-\$756,094	\$0	\$0	\$7,752,522
Blue Torch Credit Opportunities	\$3,090,768	\$0	-\$1,094,200	\$0	\$19,829	\$2,016,397
Fortress Credit Opportunites	--	\$2,000,000	\$0	\$0	\$0	\$2,000,000
Total	\$171,265,493	\$7,892,118	-\$4,968,747	\$0	-\$576,145	\$173,612,718

Opportunistic

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
DB Investors Fund IV	\$22,113,843	\$0	\$0	\$0	\$353,204	\$22,467,047
TAO Contingent	\$32,820,381	\$7,117,381	-\$2,144,208	\$0	\$1,341,775	\$39,135,329
Total	\$54,934,224	\$7,117,381	-\$2,144,208	\$0	\$1,694,979	\$61,602,376

Cash

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Short Term Cash Account	\$10,319,189	\$0	-\$12,613,186	\$0	\$0	-\$2,293,997
Short Term Investment Funds	\$107,170,176	\$482,218,436	-\$522,340,715	\$0	\$46,419	\$67,094,317
Parametric Cash Overlay	\$34,512,028	\$177,234,995	-\$30,593,534	\$0	\$21,214	\$181,174,703
Goldman Sachs Cash Account	\$3,798,823	\$493,600	-\$10,851,479	\$0	\$0	-\$6,559,056
Futures Offset	-\$112,456,456	\$2,097,019	-\$291,397,472	\$0	\$0	-\$401,756,909
Total	\$43,343,759	\$662,044,050	-\$867,796,385	\$0	\$67,634	-\$162,340,942

Total Fund
Cash Flow History

Period Ending: December 31, 2020

Portfolio Reconciliation

	Quarter-To-Date	Fiscal Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$4,589,823,300	\$4,408,240,184	\$4,498,468,777	\$4,159,475,801	\$3,603,644,783	--
Contributions	\$1,461,873,913	\$1,920,924,998	\$3,233,337,621	\$5,291,737,083	\$7,816,377,896	\$11,416,560,646
Withdrawals	-\$1,579,603,067	-\$2,052,721,770	-\$3,380,934,589	-\$5,553,448,096	-\$8,314,033,486	-\$11,377,876,113
Fees	-\$3,176,481	-\$6,439,538	-\$12,930,917	-\$38,440,371	-\$74,727,979	-\$97,727,108
Net Cash Flow	-\$117,729,154	-\$131,796,773	-\$147,596,968	-\$261,711,013	-\$497,655,590	\$38,684,533
Net Investment Change	\$399,075,333	\$594,726,067	\$520,297,669	\$973,404,690	\$1,765,180,285	\$4,832,484,945
Ending Market Value	\$4,871,169,479	\$4,871,169,479	\$4,871,169,479	\$4,871,169,479	\$4,871,169,479	\$4,871,169,479
Net Change	\$281,346,179	\$462,929,294	\$372,700,701	\$711,693,677	\$1,267,524,695	\$4,871,169,479

Contribution and withdrawals include transfers in and out of accounts. Ending market value is net of fees. Market value and flows do not include the Short Term Cash Account balance.

Asset Class Details

Total Fund

Risk Analysis - 3 Years (Net of Fees)

Period Ending: December 31, 2020

	Alpha	Beta	R-Squared	Anlzd Return	Information Ratio	Ann Excess BM Return	Tracking Error	Sharpe Ratio	Ann Excess RF Return	Anlzd Standard Deviation	Sortino Ratio	Up Mkt Capture Ratio	Down Mkt Capture Ratio
Total Fund	-0.06%	1.00	0.99	7.24%	-0.80	-0.71%	0.89%	0.60	5.67%	9.43%	0.90	96.48%	102.09%
Equity	-0.06%	1.00	1.00	9.46%	-1.04	-0.82%	0.79%	0.42	7.98%	18.85%	0.66	96.90%	100.43%
Global Equity	-2.31%	0.36	0.02	-46.58%	-1.06	-57.22%	53.98%	-0.91	-48.07%	53.09%	-0.58	-50.29%	93.82%
Domestic Equity	-0.05%	1.00	1.00	13.82%	-0.68	-0.67%	0.98%	0.63	12.34%	19.73%	0.95	98.71%	101.10%
International Developed Equity	-0.06%	1.00	0.99	4.15%	-0.48	-0.71%	1.47%	0.14	2.67%	18.67%	0.32	98.47%	101.23%
Emerging Markets Equity	-0.36%	0.95	0.98	1.40%	-1.51	-4.76%	3.15%	0.00	-0.08%	19.40%	0.09	79.08%	100.37%
Fixed Income	0.00%	1.08	0.98	5.76%	0.53	0.41%	0.77%	0.89	4.27%	4.82%	1.19	106.97%	103.83%
Core Plus Fixed Income	0.03%	1.04	0.90	5.98%	0.53	0.64%	1.21%	1.20	4.50%	3.75%	3.25	113.51%	112.00%
High Yield/ Specialty Credit	0.03%	0.82	0.98	5.17%	-0.33	-0.72%	2.15%	0.47	3.68%	7.86%	0.45	75.89%	74.85%
Emerging Market Debt	-0.09%	1.06	0.95	2.74%	-0.34	-0.93%	2.73%	0.10	1.26%	12.34%	0.22	100.56%	106.67%
Commodities	0.24%	0.98	0.88	0.26%	0.54	2.79%	5.14%	-0.08	-1.23%	14.76%	0.03	113.84%	96.47%
Hedge Funds	0.15%	0.84	0.51	7.83%	0.18	0.70%	3.84%	1.18	6.34%	5.38%	1.50	83.91%	41.56%
Core Real Estate	0.12%	0.55	0.70	4.15%	-0.48	-0.77%	1.61%	1.43	2.66%	1.86%	2.93	56.88%	75.26%

Total Fund
Risk Return Statistics: Last Three Years

Period Ending: December 31, 2020

Last Three Years			Last Three Years		Last Three Years		Last Three Years				
Equity	MSCI ACWI IMI GR		Core Plus Fixed Income	BBgBarc US Aggregate TR	High Yield/ Specialty Credit	ICE BofAML High Yield Master II		Emerging Market Debt	50 JPM EMBI Global Div/ 50 JPM GBI EM		
RETURN SUMMARY STATISTICS			RETURN SUMMARY STATISTICS		RETURN SUMMARY STATISTICS		RETURN SUMMARY STATISTICS				
Number of Periods	36	36	Number of Periods	36	36	Number of Periods	36	36	Number of Periods	36	36
Maximum Return	12.43	12.70	Maximum Return	2.64	2.59	Maximum Return	3.61	4.78	Maximum Return	6.74	5.49
Minimum Return	-14.74	-14.33	Minimum Return	-1.93	-1.15	Minimum Return	-10.52	-11.76	Minimum Return	-13.80	-12.61
Annualized Return	9.46	10.28	Annualized Return	5.98	5.34	Annualized Return	5.17	5.89	Annualized Return	2.74	3.67
Total Return	31.17	34.13	Total Return	19.04	16.89	Total Return	16.32	18.72	Total Return	8.45	11.41
Annualized Excess Return Over Risk Free	7.98	8.80	Annualized Excess Return Over Risk Free	4.50	3.86	Annualized Excess Return Over Risk Free	3.68	4.40	Annualized Excess Return Over Risk Free	1.26	2.18
Annualized Excess Return	-0.82	0.00	Annualized Excess Return	0.64	0.00	Annualized Excess Return	-0.72	0.00	Annualized Excess Return	-0.93	0.00
RISK SUMMARY STATISTICS			RISK SUMMARY STATISTICS		RISK SUMMARY STATISTICS		RISK SUMMARY STATISTICS				
Beta	1.00	1.00	Beta	1.04	1.00	Beta	0.82	1.00	Beta	1.06	1.00
Upside Deviation	11.10	11.25	Upside Deviation	2.61	2.59	Upside Deviation	3.87	5.27	Upside Deviation	6.48	5.83
Downside Deviation	14.32	13.74	Downside Deviation	1.84	1.30	Downside Deviation	11.43	11.82	Downside Deviation	12.63	11.10
RISK/RETURN SUMMARY STATISTICS			RISK/RETURN SUMMARY STATISTICS		RISK/RETURN SUMMARY STATISTICS		RISK/RETURN SUMMARY STATISTICS				
Annualized Standard Deviation	18.85	18.85	Annualized Standard Deviation	3.75	3.40	Annualized Standard Deviation	7.86	9.52	Annualized Standard Deviation	12.34	11.34
Alpha	-0.06	0.00	Alpha	0.03	0.00	Alpha	0.03	0.00	Alpha	-0.09	0.00
Sharpe Ratio	0.42	0.47	Sharpe Ratio	1.20	1.13	Sharpe Ratio	0.47	0.46	Sharpe Ratio	0.10	0.19
Excess Return Over Market / Risk	-0.04	0.00	Excess Return Over Market / Risk	0.17	0.00	Excess Return Over Market / Risk	-0.09	0.00	Excess Return Over Market / Risk	-0.07	0.00
Tracking Error	0.79	0.00	Tracking Error	1.21	0.00	Tracking Error	2.15	0.00	Tracking Error	2.73	0.00
Information Ratio	-1.04	--	Information Ratio	0.53	--	Information Ratio	-0.33	--	Information Ratio	-0.34	--
CORRELATION STATISTICS			CORRELATION STATISTICS		CORRELATION STATISTICS		CORRELATION STATISTICS				
R-Squared	1.00	1.00	R-Squared	0.90	1.00	R-Squared	0.98	1.00	R-Squared	0.95	1.00
Correlation	1.00	1.00	Correlation	0.95	1.00	Correlation	0.99	1.00	Correlation	0.98	1.00

91 Day T-Bills used as risk-free proxy

Total Fund
Risk Return Statistics: Last Three Years

Period Ending: December 31, 2020

Last Three Years			Last Three Years			Last Three Years		
	Commodities	Bloomberg Commodity Index TR USD	Hedge Funds	75% 90 Day TBills +4% / 25% MSCI ACWI		Core Real Estate		NCREIF-ODCE
RETURN SUMMARY STATISTICS			RETURN SUMMARY STATISTICS			RETURN SUMMARY STATISTICS		
Number of Periods	36	36	36	36	36	36	36	36
Maximum Return	8.05	6.76	3.99	3.34	3.34	1.45	2.20	2.20
Minimum Return	-12.62	-12.81	-5.24	-3.02	-3.02	-1.17	-1.55	-1.55
Annualized Return	0.26	-2.53	7.83	7.13	7.13	4.15	4.91	4.91
Total Return	0.77	-7.41	25.36	22.94	22.94	12.96	15.47	15.47
Annualized Excess Return Over Risk Free	-1.23	-4.02	6.34	5.64	5.64	2.66	3.43	3.43
Annualized Excess Return	2.79	0.00	0.70	0.00	0.00	-0.77	0.00	0.00
RISK SUMMARY STATISTICS			RISK SUMMARY STATISTICS			RISK SUMMARY STATISTICS		
Beta	0.98	1.00	0.84	1.00	1.00	0.55	1.00	1.00
Upside Deviation	8.14	6.32	3.41	2.75	2.75	1.54	1.85	1.85
Downside Deviation	9.98	10.76	5.21	3.03	3.03	1.41	--	--
RISK/RETURN SUMMARY STATISTICS			RISK/RETURN SUMMARY STATISTICS			RISK/RETURN SUMMARY STATISTICS		
Annualized Standard Deviation	14.76	14.13	5.38	4.54	4.54	1.86	2.80	2.80
Alpha	0.24	0.00	0.15	0.00	0.00	0.12	0.00	0.00
Sharpe Ratio	-0.08	-0.28	1.18	1.24	1.24	1.43	1.22	1.22
Excess Return Over Market / Risk	0.19	0.00	0.13	0.00	0.00	-0.41	0.00	0.00
Tracking Error	5.14	0.00	3.84	0.00	0.00	1.61	0.00	0.00
Information Ratio	0.54	--	0.18	--	--	-0.48	--	--
CORRELATION STATISTICS			CORRELATION STATISTICS			CORRELATION STATISTICS		
R-Squared	0.88	1.00	0.51	1.00	1.00	0.70	1.00	1.00
Correlation	0.94	1.00	0.71	1.00	1.00	0.84	1.00	1.00

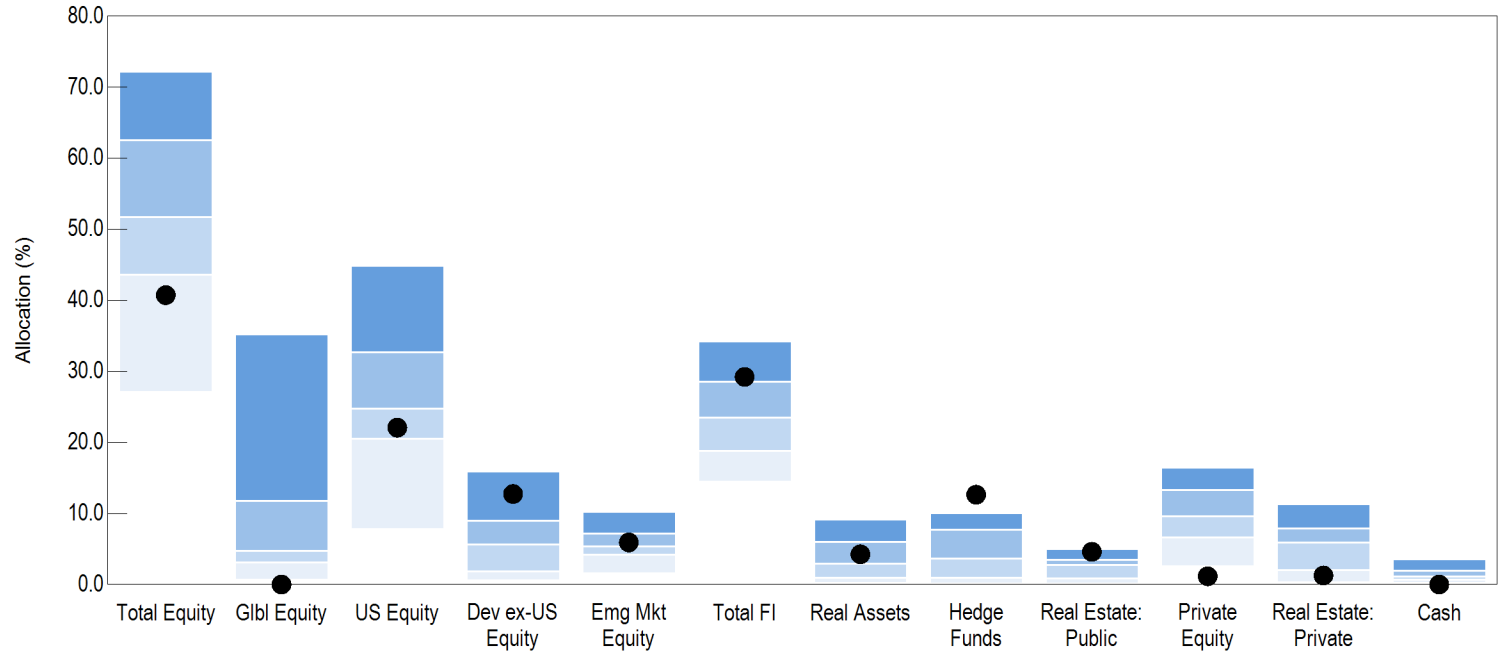
91 Day T-Bills used as risk-free proxy

Peer Comparison

Total Fund
Peer Universe Comparison: Asset Allocation

Period Ending: December 31, 2020

Total Plan Allocation vs. InvMetrics Public DB > \$1B Gross
As of December 31, 2020

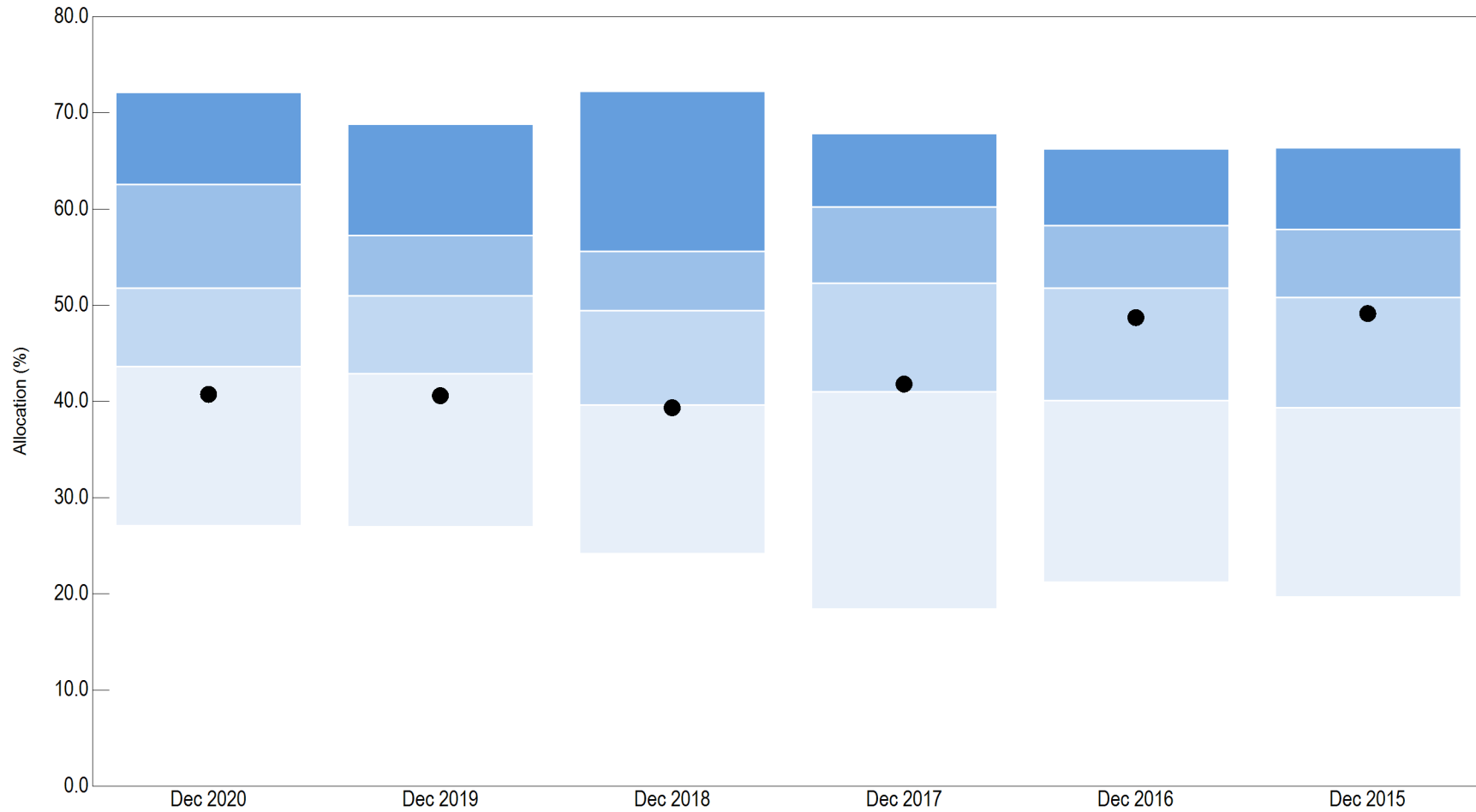


Allocation (Rank)

5th Percentile	72.2	35.2	44.8	15.9	10.2	34.2	9.2	10.0	5.0	16.5	11.3	3.5	--
25th Percentile	62.6	11.9	32.8	9.0	7.3	28.7	6.1	7.8	3.6	13.4	8.0	2.0	--
Median	51.8	4.8	24.9	5.7	5.5	23.5	3.1	3.7	2.8	9.7	6.0	1.2	--
75th Percentile	43.7	3.2	20.6	2.0	4.3	18.9	1.1	1.1	0.9	6.7	2.1	0.8	--
95th Percentile	27.2	0.8	7.9	0.6	1.7	14.5	0.3	0.2	0.2	2.6	0.4	0.3	--
# of Portfolios	54	22	41	24	35	54	25	30	13	38	37	51	--
● Total Fund	40.7 (86)	0.0 (99)	22.1 (65)	12.7 (18)	5.9 (43)	29.2 (25)	4.3 (40)	12.6 (3)	4.6 (8)	1.2 (98)	1.3 (83)	0.0 (99)	--

Private Credit allocation of 3.7% not included in the above chart. Opportunistic and midstream allocations not included in chart.

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

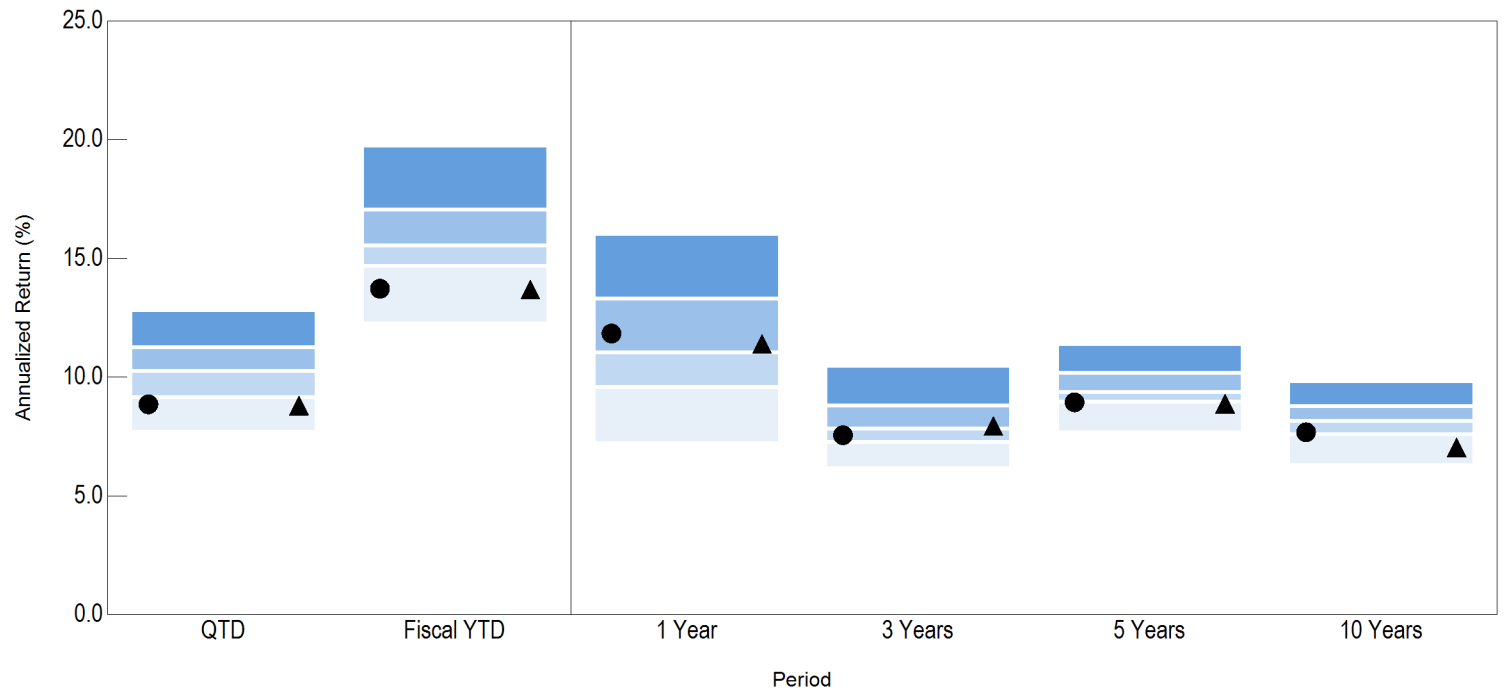


Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

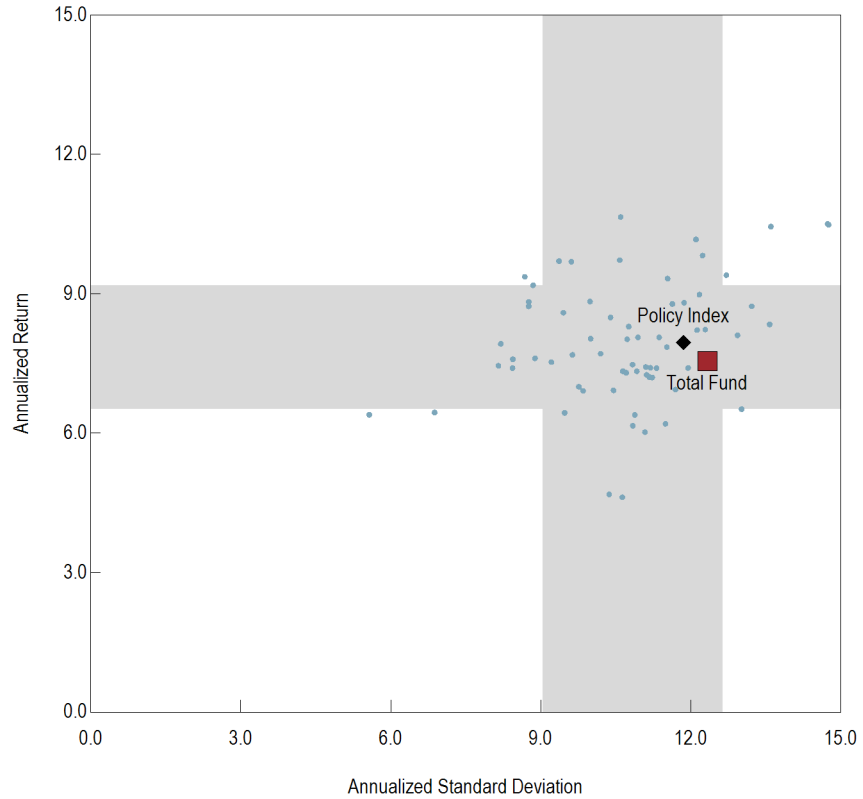
Period Ending: December 31, 2020

InvMetrics Public DB > \$1B Gross Return Comparison
Ending December 31, 2020



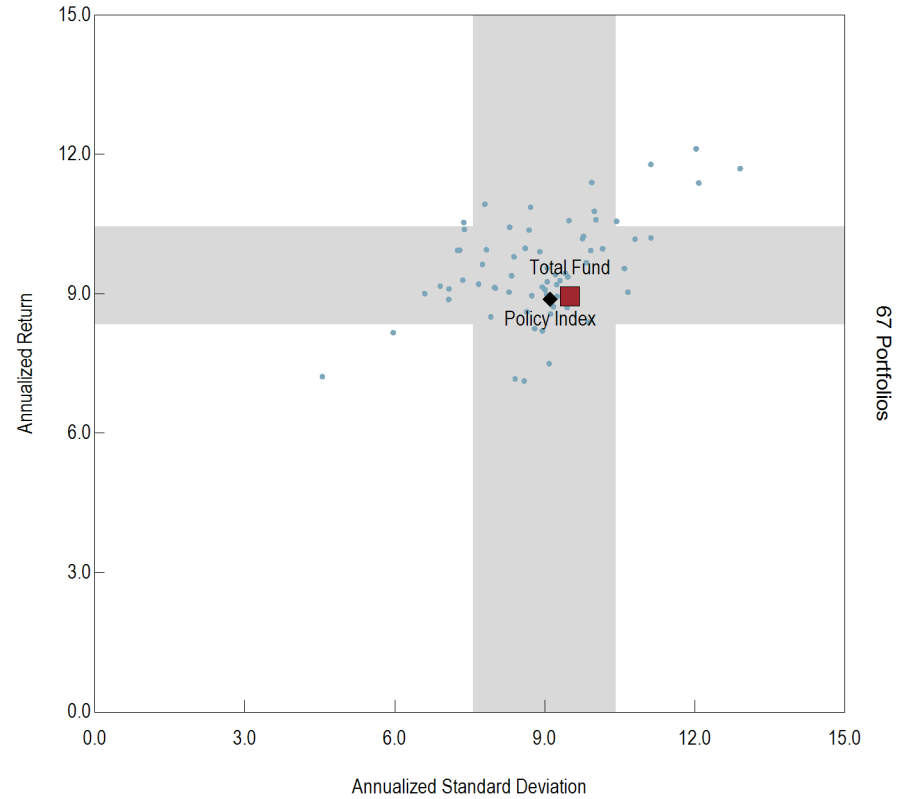
	QTD		Fiscal YTD		1 Year		3 Years		5 Years		10 Years	
Return (Rank)	12.8		19.8		16.0		10.5		11.4		9.8	
5th Percentile	11.3		17.1		13.3		8.8		10.2		8.8	
25th Percentile	10.3		15.6		11.1		7.8		9.4		8.2	
Median	9.2		14.7		9.6		7.3		9.0		7.6	
75th Percentile	7.7		12.3		7.2		6.2		7.7		6.3	
95th Percentile	67		67		67		67		67		63	
# of Portfolios	8.9	(81)	13.7	(90)	11.8	(39)	7.6	(57)	8.9	(79)	7.7	(74)
● Total Fund	8.8	(82)	13.7	(90)	11.4	(46)	7.9	(49)	8.9	(81)	7.0	(89)
▲ Policy Index												

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2020



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

Annualized Return vs. Annualized Standard Deviation
5 Years Ending December 31, 2020



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

Other

Total Fund

Investment Fund Fee Analysis

Period Ending: December 31, 2020

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Beta Exposure		\$346,389,120		
Mellon DB SL Stock Index	0.03% of Assets	\$342,596,715	\$102,779	0.03%
Mellon NSL Dynamic US Equity	0.50% of Assets	\$100,857,263	\$504,286	0.50%
PIMCO StocksPLUS	0.50% of Assets	\$121,704,055	\$608,520	0.50%
AB US Small Cap Value Equity	1.00% of First 25.0 Mil, 0.90% of Next 25.0 Mil, 0.75% Thereafter	\$86,015,145	\$745,114	0.87%
Geneva Capital Small Cap Growth	0.75% of Assets	\$77,836,881	\$583,777	0.75%
Mellon DB SL World ex-US Index		\$258,154,337		
BlackRock International Alpha Tilts	0.45% of First 100.0 Mil, 0.40% Thereafter	\$239,784,190	\$1,009,137	0.42%
Cevian Capital II	Performance-based 1.50 and 18.00	\$28,969,604	\$434,544	1.50%
Fidelity Non-US Small Cap Equity	0.40% of Assets	\$9,501,175	\$38,005	0.40%
American Century Non-US Small Cap		\$84,168,000		
DFA Emerging Markets Value I	0.54% of Assets	\$102,797,060	\$555,104	0.54%
AB Emerging Markets Strategic Core Equity	1.45% of Assets	\$109,885,506	\$1,593,340	1.45%
Mellon Emerging Markets Stock Index	0.05% of Assets	\$75,580,948	\$37,790	0.05%
Fixed Income Overlay		\$55,367,789		
Mellon DB SL Aggregate Bond Index Fund	0.05% of First 50.0 Mil, 0.04% of Next 50.0 Mil, 0.02% Thereafter	\$233,606,855	\$71,721	0.03%
PIMCO Core Plus	0.50% of First 25.0 Mil, 0.38% of Next 25.0 Mil, 0.25% Thereafter	\$274,544,790	\$780,112	0.28%
Western Asset Core Plus	0.30% of First 100.0 Mil, 0.15% Thereafter	\$276,209,546	\$564,314	0.20%
Western Asset High Yield Fixed Income	0.20% of Assets	\$243,388,434	\$486,777	0.20%
TCW Securitized Opportunities	1.00% of Assets	\$127,888,065	\$1,278,881	1.00%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2020

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Stone Harbor Emerging Markets Debt	0.60% of First 100.0 Mil, 0.55% Thereafter	\$86,543,544	\$519,261	0.60%
PIMCO EMD	0.05% of Assets	\$125,442,565	\$62,721	0.05%
Gresham MTAP Commodity	0.75% of Assets	\$74,923,521	\$561,926	0.75%
Wellington Commodities	0.75% of Assets	\$132,325,630	\$992,442	0.75%
Aristeia International Limited	Performance-based 1.00 and 20.00	\$62,413,409	\$1,033,593	1.66%
Brevan Howard	Performance-based 2.00 and 20.00	\$66,573,858	\$1,679,143	2.52%
D.E. Shaw	Performance-based 2.50 and 25.00	\$48,792,111	\$1,219,803	2.50%
HBK Fund II	Performance-based 1.50 and 20.00	\$52,365,631	\$894,885	1.71%
Hudson Bay		\$87,135,832		
Indus Pacific Opportunities	Performance-based 1.50 and 20.00	\$36,953,720	\$873,048	2.36%
Magnetar Structured Credit	Performance-based 1.50 and 20.00	\$11,797,167	\$359,494	3.05%
Myriad Opportunities Offshore	Performance-based 2.00 and 20.00	\$60,325,691	\$1,680,522	2.79%
Pharo Macro Fund LTD		\$58,502,733		
PIMCO Commodity Alpha	Performance-based 1.70 and 20.00	\$71,604,795	\$1,217,282	1.70%
River Birch	Performance-based 1.50 and 20.00	\$1,274,458	\$19,117	1.50%
Sculptor Enhanced Domestic Partners		\$57,984,842		
Hudson Bay		\$26,857,108		
Davidson Kempner		\$50,970,740		
HBK Fund II		\$25,359,003		
HBK Opportunities - SPAC Series		\$20,000,000		
Harvest Midstream		\$52,032,278		
PIMCO MidStream		\$49,931,356		
ASB Real Estate	1.25% of First 5.0 Mil, 1.00% of Next 10.0 Mil, 0.75% Thereafter	\$117,006,539	\$927,549	0.79%
J.P. Morgan Strategic Property	1.00% of Assets	\$107,262,836	\$1,072,628	1.00%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2020

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Invesco Real Estate III	1.50% of Assets	\$0	\$0	0.00%
Invesco Real Estate IV	1.50% of Assets	\$23,891,820	\$358,377	1.50%
Landmark Real Estate Partners VIII	777,717 Annually	\$21,407,496	\$777,717	3.63%
Long Wharf Real Estate	1.50% of Assets	\$8,049,293	\$120,739	1.50%
Covenant Apartment Fund X		\$8,400,000		
Abbott IV	330,000 Annually	\$1,152,267	\$330,000	28.64%
Abbott V	545,000 Annually	\$11,842,608	\$545,000	4.60%
Abbott VI	1.00% of First 25.0 Mil, 0.90% Thereafter	\$24,704,160	\$247,042	1.00%
Pantheon Secondary III	73,114 Quarterly	\$1,401,933	\$292,456	20.86%
Pantheon III	0 Annually	\$58,056	\$0	0.00%
Pantheon V	16,345 Quarterly	\$442,247	\$65,380	14.78%
Pantheon VI	149,262 Annually	\$2,426,012	\$149,262	6.15%
Pantheon VII	303,750 Annually	\$14,299,965	\$303,750	2.12%
Vista Equity Partners IV		\$429,945		
Colony Distressed Credit IV	0.38% of Assets	\$52,848,469	\$198,182	0.38%
TSSP Adjacent Opportunities Partners	1.35% of Assets	\$31,512,511	\$425,419	1.35%
Magnetar Constellation	Performance-based 1.50 and 17.50	\$52,327,882	\$784,918	1.50%
H.I.G. Bayside Loan Opportunity Fund V		\$7,752,522		
Blue Torch Credit Opportunities		\$2,016,397		
Fortress Credit Opportunites		\$2,000,000		
DB Investors Fund IV		\$22,467,047		
TAO Contingent		\$39,135,329		
Short Term Cash Account		-\$2,293,997		
Short Term Investment Funds		\$67,094,317		
Parametric Cash Overlay		\$181,174,703		
Goldman Sachs Cash Account		-\$6,559,056		
Futures Offset		-\$401,756,909		
Total		\$4,845,849,865	\$27,105,857	0.56%

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Total Fund Watch List (Gross of Fees)

Period Ending: December 31, 2020

Name	Allocation Group	Status	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8	Rule 9
Equity Beta Exposure	Domestic Equity	No Issues	--	--	--	--	--	--	--	--	--
Mellon DB SL Stock Index	Domestic Equity	No Issues	--	--	--	--	--	--	--	--	✓
Mellon NSL Dynamic US Equity	Domestic Equity	No Issues	✓	✓	✓	✓	✓	✓	✓	--	--
PIMCO StocksPLUS	Domestic Equity	No Issues	✓	✓	✓	✓	✓	✓	✓	--	--
AB US Small Cap Value Equity	Domestic Equity	No Issues	✓	✓	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	--	--
Geneva Capital Small Cap Growth	Domestic Equity	No Issues	✓	✓	Ⓡ	Ⓡ	✓	Ⓡ	✓	--	--
Mellon DB SL World ex-US Index	International Developed Equity	No Issues	--	--	--	--	--	--	--	--	Ⓡ
BlackRock International Alpha Tilts	International Developed Equity	No Issues	✓	✓	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	--	--
Fidelity Non-US Small Cap Equity	International Developed Equity	Watch	✓	✓	✓	✓	✓	✓	Ⓡ	Ⓡ	--
American Century Non-US Small Cap	International Developed Equity	No Issues	--	--	--	--	--	--	--	--	--
DFA Emerging Markets Value I	Emerging Markets Equity	No Issues	✓	Ⓡ	Ⓡ	Ⓡ	Ⓡ	Ⓡ	✓	--	--
AB Emerging Markets Strategic Core Equity	Emerging Markets Equity	No Issues	✓	✓	Ⓡ	Ⓡ	Ⓡ	--	--	--	--
Mellon Emerging Markets Stock Index	Emerging Markets Equity	No Issues	--	--	--	--	--	--	--	--	--
Fixed Income Overlay	Domestic Fixed Income Core Plus	No Issues	--	--	--	--	--	--	--	--	--
Mellon DB SL Aggregate Bond Index Fund	Domestic Fixed Income Core Plus	No Issues	--	--	--	--	--	--	--	--	✓
PIMCO Core Plus	Domestic Fixed Income Core Plus	No Issues	✓	✓	✓	Ⓡ	✓	Ⓡ	✓	--	--
Western Asset Core Plus	Domestic Fixed Income Core Plus	No Issues	✓	✓	✓	✓	✓	✓	✓	--	--

Rule 1 - Manager has outperformed the 10th percentile in the appropriate style universe for the one year period.

Rule 2 - Manager has underperformed the 75th percentile in the appropriate style universe for the one year period.

Rule 3 - Manager has underperformed the benchmark index for the one year period.

Rule 4 - Manager has underperformed the 50th percentile in the appropriate style universe for the three year period.

Rule 5 - Manager has underperformed the benchmark index for the three year period.

Rule 6 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 7 - Manager has underperformed the benchmark index for the five year period.

Rule 8 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 9 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.

Total Fund
Watch List (Gross of Fees)

Period Ending: December 31, 2020

Name	Allocation Group	Status	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8	Rule 9
Western Asset High Yield Fixed Income	Domestic Fixed Income High Yield	No Issues	✓	✓	✗	✗	✗	✓	✗	--	--
TCW Securitized Opportunities	Domestic Fixed Income High Yield	No Issues	✓	✓	✗	✓	✗	--	--	--	--
Stone Harbor Emerging Markets Debt	Emerging Markets Fixed Income	No Issues	✓	✓	✓	✗	✗	✗	✓	--	--
PIMCO EMD	Emerging Markets Fixed Income	No Issues	--	--	--	--	--	--	--	--	--
Gresham MTAP Commodity	Commodities	Watch	✓	✓	✓	✗	✓	✗	✓	--	--
Wellington Commodities	Commodities	No Issues	✓	✓	✓	✓	✓	✓	✓	--	--
Hudson Bay	Hedge Funds	No Issues	--	--	✓	--	--	--	--	--	--
Pharo Macro Fund LTD	Hedge Funds	No Issues	--	--	--	--	--	--	--	--	--
Sculptor Enhanced Domestic Partners	Hedge Funds	No Issues	--	--	✓	--	--	--	--	--	--
Hudson Bay	Capital Efficiency Alpha Pool	No Issues	--	--	--	--	--	--	--	--	--
Davidson Kempner	Capital Efficiency Alpha Pool	No Issues	--	--	--	--	--	--	--	--	--
Harvest Midstream	Midstream	No Issues	--	--	--	--	--	--	--	--	--
PIMCO MidStream	Midstream	No Issues	--	--	--	--	--	--	--	--	--

Rule 1 - Manager has outperformed the 10th percentile in the appropriate style universe for the one year period.

Rule 2 - Manager has underperformed the 75th percentile in the appropriate style universe for the one year period.

Rule 3 - Manager has underperformed the benchmark index for the one year period.

Rule 4 - Manager has underperformed the 50th percentile in the appropriate style universe for the three year period.

Rule 5 - Manager has underperformed the benchmark index for the three year period.

Rule 6 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 7 - Manager has underperformed the benchmark index for the five year period.

Rule 8 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 9 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.

Total Fund
Quarterly Historical Net Returns

Period Ending: December 31, 2020

	2020 Q4	2020 Q3	2020 Q2	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3	2018 Q2	2018 Q1
Total Fund	8.8	4.4	10.7	-11.3	4.6	0.2	3.1	6.8	-6.4	2.3	0.3	-0.1
<i>Policy Index</i>	8.8	4.5	10.2	-11.1	4.6	0.8	3.0	7.0	-5.5	2.2	0.7	-0.1

	2017 Q4	2017 Q3	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3	2015 Q2	2015 Q1
Total Fund	3.0	3.2	2.7	4.2	0.8	3.5	1.9	1.1	2.2	-5.4	0.7	2.4
<i>Policy Index</i>	3.2	3.1	2.8	3.5	0.5	2.9	2.2	1.8	1.4	-4.9	0.4	2.0

	2014 Q4	2014 Q3	2014 Q2	2014 Q1	2013 Q4	2013 Q3	2013 Q2	2013 Q1	2012 Q4	2012 Q3	2012 Q2	2012 Q1
Total Fund	0.8	-1.5	3.6	2.1	4.1	4.4	-0.6	4.4	2.2	4.2	-1.4	7.5
<i>Policy Index</i>	0.4	-1.4	3.4	2.4	3.8	4.4	-0.5	3.4	1.5	4.1	-1.0	6.5

Performance Return Calculations

Performance is calculated using a Time Weighted Rates of Return (TWRR) methodology. Monthly returns are linked geometrically and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Fund Incepted	Data Source	Manager	Fund Incepted	Data Source
AB Emerging Markets Strategic Core	11/3/2016	Northern Trust	Mellon Dynamic US Equity Fund	9/23/2014	Mellon
AB US Small Cap Value Equity	7/7/2015	Northern Trust	Mellon EB DV Stock Index	10/18/2017	Mellon
Abbott Capital PE IV	7/13/2001	Abbott Capital	Mellon EB DV World ex-US Index	8/1/2018	Mellon
Abbott Capital PE V	5/25/2005	Abbott Capital	Myriad Opportunities Offshore	5/19/2016	Northern Trust
Abbott Capital PE VI	3/31/2008	Abbott Capital	OZ Domestic Partners II	6/30/2013	Northern Trust
Aristeia International Limited	5/1/2014	Northern Trust	Pantheon Global III		Pantheon
ASB Real Estate	9/30/2013	ASB	Pantheon USA III		Pantheon
BlackRock International Alpha Tilts	9/30/2003	BlackRock	Pantheon USA V		Pantheon
Blue Torch Credit Opportunities	7/24/2020	Blue Torch	Pantheon USA VI		Pantheon
Brevan Howard	11/1/2013	Northern Trust	Pantheon USA VII		Pantheon
Brookfield Real Estate Finance Fund V	12/18/2017	Northern Trust	Parametric Overlay/ Cap Efficiency Program	7/31/2020	Parametric
Cevian Capital II	12/30/2014	Northern Trust	PMF LTD	12/27/2019	Northern Trust
Colony Distressed Debt IV	12/28/2015	Colony	PIMCO Commodity Alpha	5/4/2016	PIMCO
D.E. Shaw	6/30/2013	Northern Trust	PIMCO Core Plus	1/21/2011	Northern Trust
DFA Emerging Markets Value I	3/7/2014	Northern Trust	PIMCO EMD		Northern Trust
DP Investors	1/30/2020	Northern Trust	PIMCO StocksPLUS	7/14/2003	PIMCO
Gresham MTAP Commodity	9/3/2013	Gresham	Fidelity Non-US Small Cap Equity	6/10/2008	Northern Trust
Harvest Midstream	9/28/2020	Harvest Midstream	River Birch	8/3/2015	Northern Trust
HBK Fund II	11/1/2013	Northern Trust	Short Term Cash Account		Northern Trust
Henderson Smallcap Growth	7/22/2015	Northern Trust	Short Term Investment Funds		Northern Trust
H.I.G Bayside Loan Opportunities Fund V	7/24/2019	H.I.G. Capital	Stone Harbor Emerging Markets Debt	8/8/2012	Stone Harbor
Hudson Bay	6/7/2019	Northern Trust	Systematica Trend Following Fund		Northern Trust
Indus Pacific Opportunities	6/30/2014	Northern Trust	TCW Securitized Opportunities	2/3/2016	TCW
Invesco Real Estate III	6/30/2013	Invesco	Transition Equity		Northern Trust
Invesco Real Estate IV	12/18/2015	Invesco	Transition Fixed Income		Northern Trust
J.P. Morgan Fleming EAFE Plus Equity	11/5/2003	Northern Trust	TSSP Adjacent Opportunities Partners	11/17/2017	TPG Sixth Street
J.P. Morgan Strategic Property	7/2/2014	J.P. Morgan	Vista Equity Partners	7/24/2020	Vista Equity
Landmark Real Estate Partners VIII	4/29/2018	Landmark	Wellington Commodities	9/10/2013	Wellington
Long Wharf Real Estate	6/27/2019	Long Wharf	Western Asset Core Plus	5/31/2004	Northern Trust
Magnetar Structured Credit	5/1/2014	Northern Trust	Western Asset High Yield Fixed income	5/31/2005	Northern Trust
Mellon Aggregate Bond Index Fund	1/14/2011	Mellon	Western Asset Core Plus	5/31/2004	Northern Trust
			Western Asset High Yield Fixed income	5/31/2005	Northern Trust

Policy & Custom Index Composition

Policy Index: 10/1/2020-Present

37% MSCI ACWI IMI, 14% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 1% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 4% MSCI ACWI*, 5% BBgBarc US Aggregate, 2% Alerian Midstream, 3% BBgBarc US Aggregate, 5% 3-month T-bills +4--bps, -5% 3-month T-bills.

Policy Index: 7/1/2020-9/30/2020	37% MSCI ACWI IMI, 14% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 1% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 4% MSCI ACWI*, 5% BBgBarc US Aggregate, 1% Alerian Midstream, 4% BBgBarc
Policy Index: 4/1/2020-6/30/2020	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 1% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% BBgBarc US Aggregate*.
Policy Index: 1/1/2020-3/31/2020	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% BBgBarc US Aggregate*.
Policy Index: 10/1/2019-12/31/2019	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% BBgBarc US Aggregate*.
Policy Index: 7/1/2019-9/30/2019	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 4% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% BBgBarc US Aggregate*.
Policy Index: 4/1/2019-6/30/2019	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% BBgBarc US Aggregate*.
Policy Index: 1/1/2019-3/31/2019	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 3% actual time-weighted Private Credit Returns*, 2% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 5% BBgBarc US Aggregate*.
Policy Index: 10/1/2018-12/31/2018	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 2% actual time-weighted Private Equity Returns*, 2% actual time-weighted Private Credit Returns*, 2% actual time-weighted Private Real Estate Returns*, 3% MSCI ACWI*, 6% BBgBarc US Aggregate*.
Policy Index: 7/1/2018-9/30/2018	37% MSCI ACWI IMI, 19% BBgBarc US Aggregate, 6% Ice BofA ML High Yield Master II Index, 2% JPM Emerging Markets Bond Index Global Diversified, 2% JPM Government Bond Index-Emerging Markets, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +400bps,
Policy Index: 1/1/2017- 6/30/2018	19% Russell 3000 Index, 18% MSCI ACWI ex US, 29% BBgBarc US Aggregate, 10% NCREIF-ODCE, 4% Bloomberg Commodity Index, 7.5% 91-day T-bills + 400bps, 2.5% MSCI ACWI, 5% Russell 3000 Index + 300 bps, 5% ICE BofA ML High Yield + 200 bps.
Policy Index: 4/1/2014-12/31/2016	23% Russell 3000 Index, 29% BBgBarc US Aggregate, 22% MSCI ACWI ex US,

Other Disclosures

*Private Asset actual weights, rounded to 1%, and actual time-weighted returns of Private Equity, Private Credit, Private Real Estate used in policy with the difference in weight versus target allocated to private market's public market "equivalent". Private Equity to Global Equity, Private Credit and Private Real Estate to Core Plus.

All data prior to 2Q 2011 has been provided by the investment managers.

Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment manager fees will be included in the gross of fee return calculation

Fiscal year end: 6/30.

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: $\text{excess return} / \text{tracking error}$.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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