

# Kern County Employees' Retirement Association

Investment Performance Review

Period Ending: June 30, 2021



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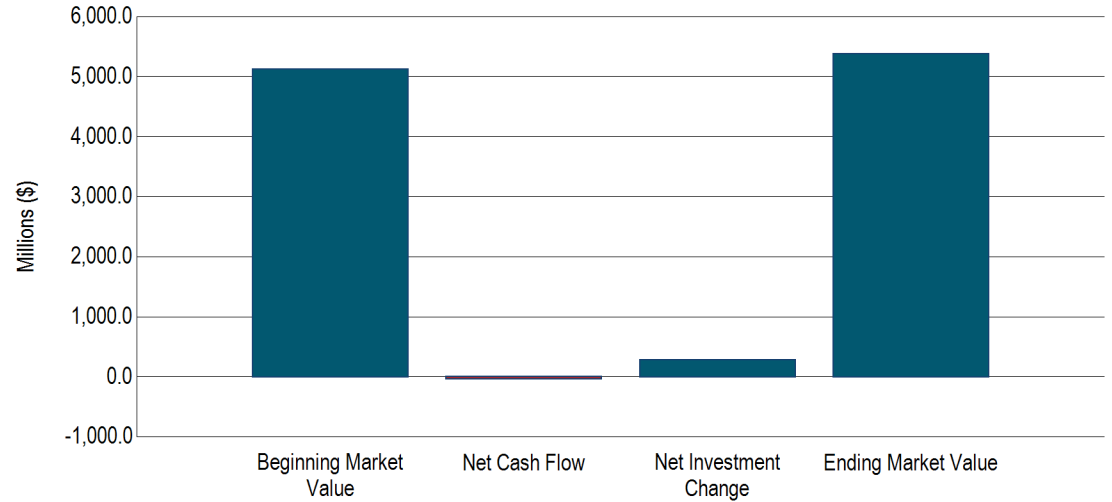
# Total Fund Portfolio Reconciliation

Period Ending: June 30, 2021

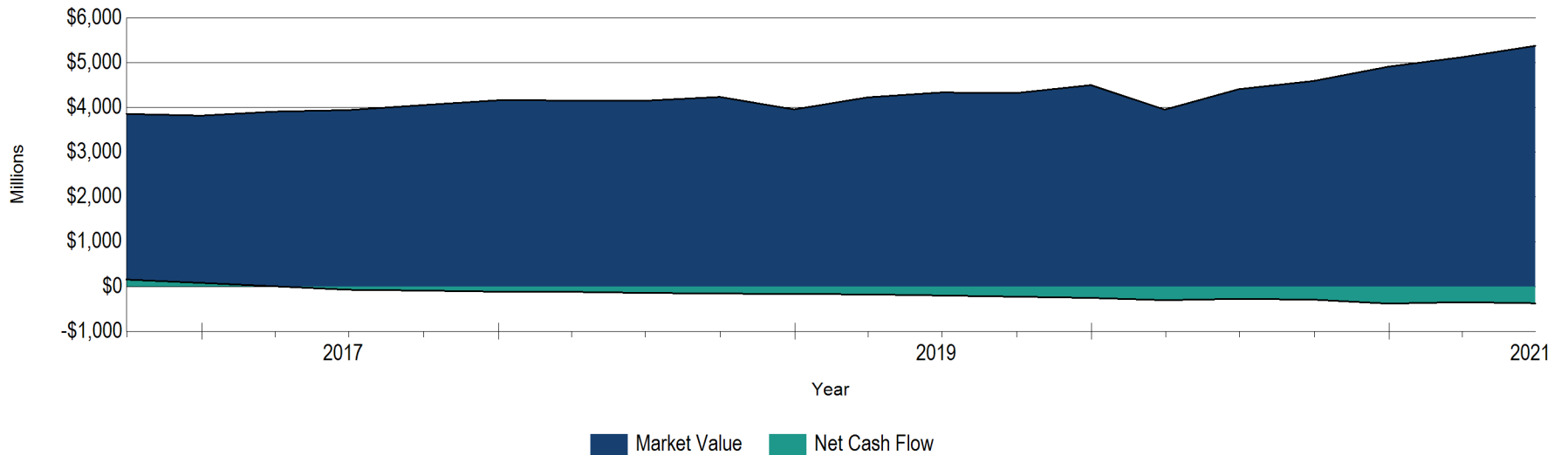
## Portfolio Reconciliation

	Last Three Months
Beginning Market Value	\$5,120,429,884
Net Cash Flow	-\$29,855,917
Net Investment Change	\$284,886,256
<b>Ending Market Value</b>	<b>\$5,375,460,223</b>

## Change in Market Value Last Three Months



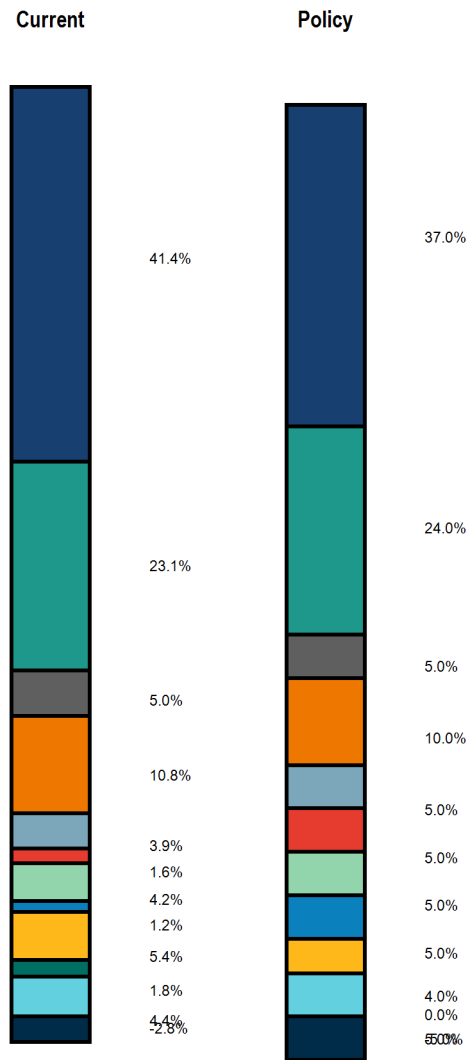
## Market Value History



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

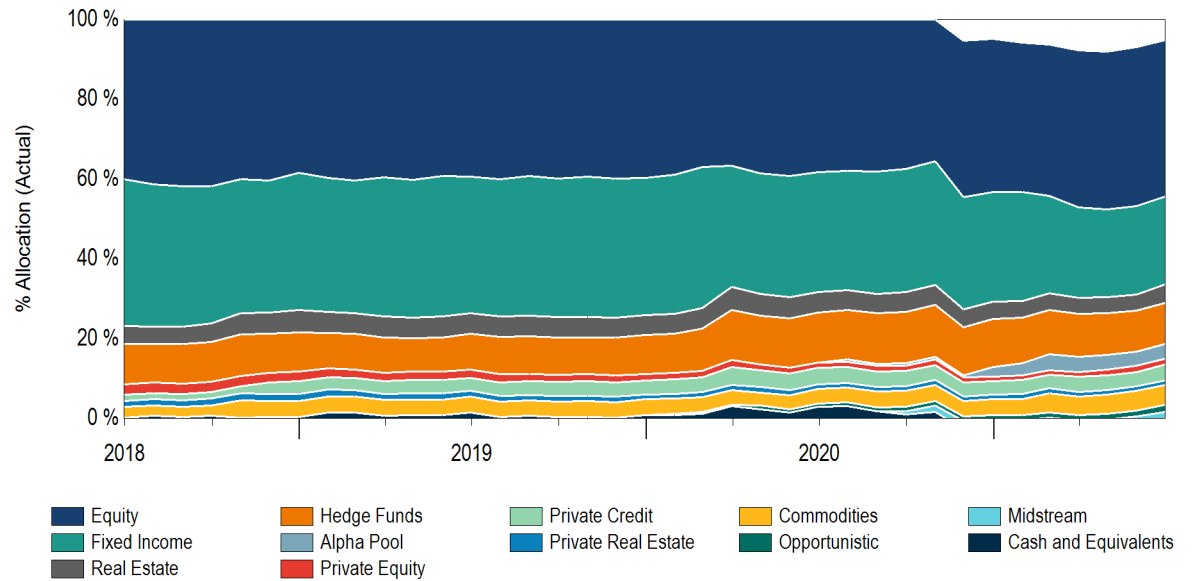
# Total fund Asset Allocation vs. Policy

Period Ending: June 30, 2021



	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Equity	\$2,225,560,905	41.4%	37.0%	\$236,779,419	32.0% - 46.0%	Yes
Fixed Income	\$1,240,443,405	23.1%	24.0%	-\$49,577,018	20.0% - 34.0%	Yes
Real Estate	\$269,838,117	5.0%	5.0%	\$1,083,863	3.0% - 7.0%	Yes
Hedge Funds	\$578,611,425	10.8%	10.0%	\$41,102,915	5.0% - 15.0%	Yes
Alpha Pool	\$212,041,974	3.9%	5.0%	-\$56,712,281	0.0% - 7.0%	Yes
Private Equity	\$85,369,441	1.6%	5.0%	-\$183,384,814	0.0% - 10.0%	Yes
Private Credit	\$223,664,719	4.2%	5.0%	-\$45,089,536	0.0% - 10.0%	Yes
Private Real Estate	\$64,974,778	1.2%	5.0%	-\$203,779,477	0.0% - 10.0%	Yes
Commodities	\$287,594,466	5.4%	4.0%	\$72,591,062	2.0% - 6.0%	Yes
Opportunistic	\$97,436,308	1.8%	0.0%	\$97,436,308	0.0% - 10.0%	Yes
Midstream	\$238,844,984	4.4%	5.0%	-\$29,909,271	0.0% - 7.0%	Yes
Cash and Equivalents	-\$149,295,424	-2.8%	-5.0%	\$119,458,831	-7.0% - 5.0%	Yes
<b>Total</b>	<b>\$5,375,085,097</b>	<b>100.0%</b>	<b>100.0%</b>			

Asset Allocation History



Market value does not include residual \$375,126 in Fidelity International.

Total Fund  
Executive Summary (Gross of Fees)

Period Ending: June 30, 2021

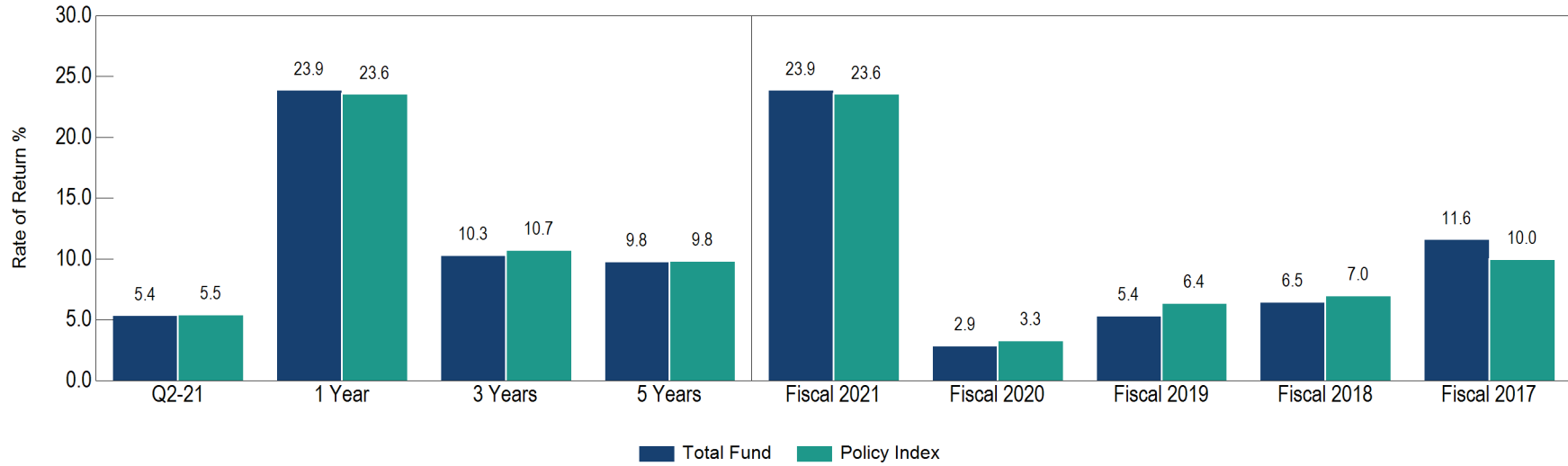
	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017
<b>Total Fund</b>	<b>5,375,460,223</b>	<b>5.4</b>	<b>9.2</b>	<b>24.2</b>	<b>24.2</b>	<b>10.7</b>	<b>10.2</b>	<b>8.0</b>	<b>24.2</b>	<b>3.2</b>	<b>5.7</b>	<b>6.8</b>	<b>12.1</b>
<i>Policy Index</i>		5.5	8.6	23.6	23.6	10.7	9.8	7.4	23.6	3.3	6.4	7.0	10.0
<i>InvMetrics Public DB &gt; \$1B Gross Rank</i>		42	42	87	87	63	78	81	87	16	42	96	74
<b>Equity</b>	<b>2,225,936,031</b>	<b>6.9</b>	<b>13.5</b>	<b>41.2</b>	<b>41.2</b>	<b>14.4</b>	<b>15.2</b>	<b>11.2</b>	<b>41.2</b>	<b>0.7</b>	<b>5.3</b>	<b>12.4</b>	<b>20.6</b>
<i>MSCI ACWI IMI GR</i>		7.3	12.9	41.5	41.5	14.8	15.1	10.5	41.5	1.7	5.1	11.7	19.6
<i>Domesitc Equity</i>	<i>1,207,582,566</i>	8.0	16.0	43.6	43.6	18.6	18.2	--	43.6	6.3	9.2	16.1	19.4
<i>Russell 3000</i>		8.2	15.1	44.2	44.2	18.7	17.9	--	44.2	6.5	9.0	14.8	18.5
<i>International Developed Equity</i>	<i>704,273,387</i>	6.0	11.1	37.0	37.0	8.8	11.6	--	37.0	-5.5	-0.6	9.1	23.1
<i>MSCI World ex USA GR</i>		5.9	10.3	34.2	34.2	9.1	10.9	--	34.2	-5.0	1.8	7.6	20.1
<i>Emerging Markets Equity</i>	<i>314,079,479</i>	4.5	9.1	40.6	40.6	8.0	9.5	--	40.6	-10.9	0.4	4.0	20.4
<i>MSCI Emerging Markets</i>		5.0	7.4	40.9	40.9	11.3	13.0	--	40.9	-3.4	1.2	8.2	23.7
<b>Fixed Income</b>	<b>1,240,443,405</b>	<b>2.8</b>	<b>-0.1</b>	<b>5.5</b>	<b>5.5</b>	<b>6.7</b>	<b>4.9</b>	<b>4.4</b>	<b>5.5</b>	<b>6.6</b>	<b>7.9</b>	<b>0.2</b>	<b>4.6</b>
<i>Fixed Income Custom Benchmark</i>		2.4	-0.4	4.1	4.1	5.9	4.1	4.1	4.1	5.2	8.4	0.0	3.2
<i>Core Plus Fixed Income</i>	<i>649,001,772</i>	2.3	-1.4	1.2	1.2	6.2	4.0	--	1.2	9.5	8.0	0.0	1.4
<i>BBgBarc US Aggregate TR</i>		1.8	-1.6	-0.3	-0.3	5.3	3.0	--	-0.3	8.7	7.9	-0.4	-0.3
<i>High Yield/ Specialty Credit</i>	<i>317,994,767</i>	2.7	3.8	13.6	13.6	6.9	6.9	--	13.6	0.0	7.5	3.3	10.4
<i>ICE BofAML High Yield Master II</i>		2.8	3.7	15.6	15.6	7.1	7.3	--	15.6	-1.1	7.6	2.5	12.8
<i>Emerging Market Debt</i>	<i>273,287,111</i>	4.3	-1.5	9.4	9.4	5.4	4.4	--	9.4	-1.2	8.5	-3.6	9.6
<i>50 JPM EMBI Global Div/ 50 JPM GBI EM</i>		4.2	-0.5	8.7	8.7	5.5	4.2	--	8.7	-3.0	11.2	-1.8	6.5
<b>Commodities</b>	<b>287,594,466</b>	<b>11.9</b>	<b>20.3</b>	<b>43.5</b>	<b>43.5</b>	<b>6.3</b>	<b>5.8</b>	<b>--</b>	<b>43.5</b>	<b>-10.7</b>	<b>-6.2</b>	<b>13.7</b>	<b>-3.1</b>
<i>Bloomberg Commodity Index TR USD</i>		13.3	21.2	45.6	45.6	3.9	2.4	--	45.6	-17.4	-6.8	7.3	-6.5
<b>Hedge Funds</b>	<b>578,611,425</b>	<b>2.1</b>	<b>4.8</b>	<b>16.3</b>	<b>16.3</b>	<b>8.5</b>	<b>8.3</b>	<b>6.6</b>	<b>16.3</b>	<b>7.3</b>	<b>2.6</b>	<b>7.6</b>	<b>8.0</b>
<i>75% 90 Day TBills +4% / 25% MSCI ACWI</i>		2.6	4.6	12.3	12.3	8.0	7.8	6.2	12.3	5.1	6.6	7.0	8.1
<b>Alpha Pool</b>	<b>212,041,974</b>	<b>1.8</b>	<b>5.6</b>	<b>14.6</b>	<b>14.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>14.6</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>91-Day T-Bill +4%</i>		1.0	2.0	4.1	4.1	--	--	--	4.1	--	--	--	--
<b>Midstream Energy</b>	<b>238,844,984</b>	<b>15.8</b>	<b>33.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Alerian Midstream Index</i>		16.4	40.7	--	--	--	--	--	--	--	--	--	--
<b>Core Real Estate</b>	<b>269,838,117</b>	<b>2.7</b>	<b>4.9</b>	<b>6.6</b>	<b>6.6</b>	<b>5.0</b>	<b>5.7</b>	<b>--</b>	<b>6.6</b>	<b>2.3</b>	<b>6.1</b>	<b>7.4</b>	<b>6.0</b>
<i>NCREIF-ODCE</i>		3.9	6.1	8.0	8.0	5.5	6.6	--	8.0	2.2	6.4	8.4	7.9

Total Fund  
Executive Summary (Gross of Fees)

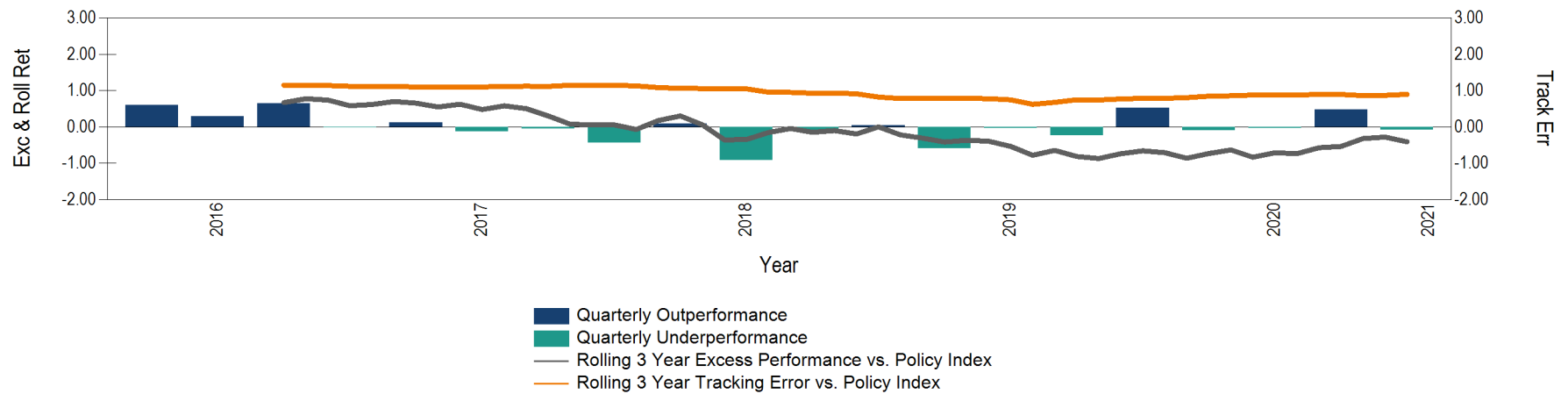
Period Ending: June 30, 2021

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017
Private Real Estate	64,974,778	-0.5	7.4	10.9	10.9	8.1	7.2	10.8	10.9	4.4	9.0	5.4	6.4
Private Equity	85,369,441	2.3	13.3	38.0	38.0	11.1	11.1	10.5	38.0	-10.5	10.9	7.8	14.8
Private Credit	223,664,719	1.9	4.2	3.8	3.8	6.3	7.7	--	3.8	5.5	9.7	9.3	10.2
Opportunistic	97,436,308	8.4	36.8	52.0	52.0	--	--	--	52.0	--	--	--	--
Assumed Rate of Return +3%		2.5	5.1	10.4	10.4	--	--	--	10.4	--	--	--	--
Cash	-149,295,424												

Annualized and Calendar Year Performance Vs. Benchmark



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Policy Index



## **Performance and Attribution**

Total Fund  
Performance (Net of Fees)

Period Ending: June 30, 2021

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Inception	Inception Date
<b>Total Fund</b>	<b>5,382,666,380</b>	<b>100.0</b>	<b>5.5</b>	<b>9.1</b>	<b>24.0</b>	<b>24.0</b>	<b>10.3</b>	<b>9.8</b>	<b>7.6</b>	<b>24.0</b>	<b>2.9</b>	<b>5.4</b>	<b>6.5</b>	<b>11.6</b>	<b>7.6</b>	<b>Jun-11</b>
<i>Policy Index</i>			5.5	8.7	23.7	23.7	10.8	9.9	7.5	23.7	3.3	6.4	7.0	10.0	7.5	Jun-11
<b>Equity</b>	<b>2,225,936,031</b>	<b>41.4</b>	<b>6.8</b>	<b>13.4</b>	<b>40.7</b>	<b>40.7</b>	<b>13.9</b>	<b>14.7</b>	<b>10.8</b>	<b>40.7</b>	<b>0.3</b>	<b>4.8</b>	<b>11.8</b>	<b>20.1</b>		
<i>MSCI ACWI IMI GR</i>			7.3	12.9	41.5	41.5	14.8	15.1	10.5	41.5	1.7	5.1	11.7	19.6		
<b>Domestic Equity</b>	<b>1,207,582,566</b>	<b>22.4</b>	<b>7.9</b>	<b>15.9</b>	<b>43.2</b>	<b>43.2</b>	<b>18.2</b>	<b>17.8</b>	<b>--</b>	<b>43.2</b>	<b>6.0</b>	<b>8.8</b>	<b>15.5</b>	<b>18.9</b>		
<i>Russell 3000</i>			8.2	15.1	44.2	44.2	18.7	17.9	--	44.2	6.5	9.0	14.8	18.5		
Equity Beta Exposure	491,687,990	9.1	8.3	14.9	--	--	--	--	--	--	--	--	--	--	32.7	Jul-20
<i>S&amp;P 500</i>			8.5	15.3	--	--	--	--	--	--	--	--	--	--	33.3	Jul-20
Mellon DB SL Stock Index	364,341,050	6.8	8.5	15.2	40.8	40.8	18.7	--	--	40.8	7.5	10.4	--	--	17.2	Oct-17
<i>S&amp;P 500</i>			8.5	15.3	40.8	40.8	18.7	--	--	40.8	7.5	10.4	--	--	17.2	Oct-17
Mellon NSL Dynamic US Equity	56,395,661	1.0	9.8	15.3	38.9	38.9	20.0	18.8	--	38.9	10.9	12.1	16.1	18.0	15.9	Sep-14
<i>S&amp;P 500</i>			8.5	15.3	40.8	40.8	18.7	17.6	--	40.8	7.5	10.4	14.4	17.9	14.1	Sep-14
PIMCO StocksPLUS	140,138,061	2.6	8.7	15.1	41.7	41.7	19.1	18.1	15.5	41.7	7.7	10.6	14.1	19.1	11.7	Jul-03
<i>S&amp;P 500</i>			8.5	15.3	40.8	40.8	18.7	17.6	14.8	40.8	7.5	10.4	14.4	17.9	10.8	Jul-03
AB US Small Cap Value Equity	97,142,318	1.8	3.1	29.3	77.5	77.5	10.0	13.3	--	77.5	-19.4	-6.9	13.2	23.9	10.9	Jul-15
<i>Russell 2000 Value</i>			4.6	26.7	73.3	73.3	10.3	13.6	--	73.3	-17.5	-6.2	13.1	24.9	10.8	Jul-15
Geneva Capital Small Cap Growth	57,877,486	1.1	4.9	8.1	37.6	37.6	17.8	19.4	--	37.6	9.3	8.6	22.7	21.2	15.7	Jul-15
<i>Russell 2000 Growth</i>			3.9	9.0	51.4	51.4	15.9	18.8	--	51.4	3.5	-0.5	21.9	24.4	13.0	Jul-15
<b>International Developed Equity</b>	<b>704,273,387</b>	<b>13.1</b>	<b>6.0</b>	<b>11.0</b>	<b>36.7</b>	<b>36.7</b>	<b>8.5</b>	<b>11.2</b>	<b>--</b>	<b>36.7</b>	<b>-5.7</b>	<b>-0.9</b>	<b>8.7</b>	<b>22.6</b>		
<i>MSCI World ex USA IMI NR</i>			5.5	9.9	34.8	34.8	8.6	10.6	--	34.8	-5.1	0.2	7.7	19.7		
Mellon DB SL World ex-US Index	313,375,880	5.8	6.4	11.7	35.6	35.6	--	--	--	35.6	-5.5	--	--	--	8.9	Jul-18
<i>MSCI World ex USA IMI GR</i>			5.7	10.3	35.4	35.4	--	--	--	35.4	-4.7	--	--	--	9.1	Jul-18
Cevian Capital II	33,776,678	0.6	1.4	16.6	46.8	46.8	8.6	11.9	--	46.8	-8.2	-5.0	2.9	32.9	7.6	Dec-14
<i>MSCI Europe</i>			7.4	11.8	35.1	35.1	8.7	10.3	--	35.1	-6.8	1.9	5.3	21.1	6.5	Dec-14
American Century Non-US Small Cap	92,235,200	1.7	7.0	9.6	--	--	--	--	--	--	--	--	--	--	15.3	Dec-20
<i>MSCI World ex US Small Cap Growth</i>			5.2	7.4	--	--	--	--	--	--	--	--	--	--	14.7	Dec-20
BlackRock International Alpha Tilts	264,510,502	4.9	5.7	10.1	33.5	33.5	7.7	10.9	6.9	33.5	-6.8	0.4	7.9	24.4	7.6	Sep-03
<i>MSCI EAFE Gross</i>			5.4	9.2	32.9	32.9	8.8	10.8	6.4	32.9	-4.7	1.6	7.4	20.8	7.6	Sep-03



# Total Fund

## Executive Summary (Net of Fees)

Period Ending: June 30, 2021

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Inception	Inception Date
<b>Emerging Markets Equity</b>	<b>314,079,479</b>	<b>5.8</b>	<b>4.3</b>	<b>8.7</b>	<b>39.5</b>	<b>39.5</b>	<b>7.0</b>	<b>8.5</b>	<b>--</b>	<b>39.5</b>	<b>-11.8</b>	<b>-0.6</b>	<b>2.9</b>	<b>19.3</b>		
<i>MSCI EM IMI GR</i>			5.8	8.9	43.7	43.7	11.8	13.3	--	43.7	-3.6	0.9	8.3	23.2		
DFA Emerging Markets Value I	86,745,314	1.6	7.1	15.8	47.6	47.6	7.4	10.8	--	47.6	-17.7	2.0	5.7	27.6	5.7	Mar-14
<i>MSCI Emerging Markets Value GR</i>			5.8	10.2	42.2	42.2	8.3	10.2	--	42.2	-15.3	5.6	4.8	22.1	5.2	Mar-14
AB Emerging Markets Strategic Core Equity	115,934,250	2.2	1.5	4.7	33.6	33.6	7.3	--	--	33.6	-5.1	-2.6	1.2	--	8.9	Nov-16
<i>MSCI Emerging Markets Gross</i>			5.1	7.6	41.4	41.4	11.7	--	--	41.4	-3.0	1.6	8.6	--	13.7	Nov-16
Mellon Emerging Markets Stock Index	111,399,915	2.1	5.1	7.6	41.1	41.1	--	--	--	41.1	--	--	--	--	37.0	Jun-20
<i>MSCI Emerging Markets Gross</i>			5.1	7.6	41.4	41.4	--	--	--	41.4	--	--	--	--	47.0	Jun-20
<b>Fixed Income</b>	<b>1,240,443,405</b>	<b>23.0</b>	<b>2.7</b>	<b>-0.4</b>	<b>5.1</b>	<b>5.1</b>	<b>6.4</b>	<b>4.6</b>	<b>4.1</b>	<b>5.1</b>	<b>6.3</b>	<b>7.6</b>	<b>-0.1</b>	<b>4.3</b>		
<i>Fixed Income Custom Benchmark</i>			2.4	-0.4	4.1	4.1	5.9	4.1	4.1	4.1	5.2	8.4	0.0	3.2		
<b>Core Plus Fixed Income</b>	<b>649,001,772</b>	<b>12.1</b>	<b>2.2</b>	<b>-1.7</b>	<b>0.8</b>	<b>0.8</b>	<b>5.9</b>	<b>3.8</b>	<b>--</b>	<b>0.8</b>	<b>9.3</b>	<b>7.9</b>	<b>-0.2</b>	<b>1.3</b>		
<i>Bloomberg US Aggregate TR</i>			1.8	-1.6	-0.3	-0.3	5.3	3.0	--	-0.3	8.7	7.9	-0.4	-0.3		
Mellon DB SL Aggregate Bond Index Fund	180,211,566	3.3	1.8	-1.6	-0.4	-0.4	5.3	3.0	3.4	-0.4	8.8	7.9	-0.4	-0.3	3.5	Jan-11
<i>Bloomberg US Aggregate TR</i>			1.8	-1.6	-0.3	-0.3	5.3	3.0	3.4	-0.3	8.7	7.9	-0.4	-0.3	3.5	Jan-11
PIMCO Core Plus	230,735,141	4.3	2.2	-1.2	1.1	1.1	5.3	3.6	3.6	1.1	8.7	6.3	1.0	1.4	3.7	Jan-11
<i>Bloomberg US Aggregate TR</i>			1.8	-1.6	-0.3	-0.3	5.3	3.0	3.4	-0.3	8.7	7.9	-0.4	-0.3	3.5	Jan-11
Western Asset Core Plus	238,055,065	4.4	2.6	-2.0	2.4	2.4	7.0	4.7	4.6	2.4	9.3	9.4	-0.4	3.0	5.1	May-04
<i>Bloomberg US Aggregate TR</i>			1.8	-1.6	-0.3	-0.3	5.3	3.0	3.4	-0.3	8.7	7.9	-0.4	-0.3	4.3	May-04
<b>High Yield/ Specialty Credit</b>	<b>317,994,767</b>	<b>5.9</b>	<b>2.6</b>	<b>3.5</b>	<b>13.1</b>	<b>13.1</b>	<b>6.4</b>	<b>6.3</b>	<b>--</b>	<b>13.1</b>	<b>-0.5</b>	<b>7.0</b>	<b>2.8</b>	<b>9.9</b>		
<i>ICE BofAML High Yield Master II</i>			2.8	3.7	15.6	15.6	7.1	7.3	--	15.6	-1.1	7.6	2.5	12.8		
Western Asset High Yield Fixed Income	187,293,638	3.5	3.2	4.3	16.5	16.5	7.3	7.1	6.5	16.5	-2.2	8.3	2.2	11.7	7.1	May-05
<i>50% Bloomberg US HY Ba 2%/50% Bloomberg US HY B 2% CAP</i>			2.6	2.9	13.4	13.4	8.0	7.3	6.6	13.4	2.1	8.8	1.8	10.9	7.0	May-05
TCW Securitized Opportunities	130,701,129	2.4	1.8	2.4	6.4	6.4	4.6	4.9	--	6.4	2.2	5.2	4.3	6.3	4.6	Feb-16
<i>Bloomberg US HY 2% Issuer Cap</i>			2.7	3.6	15.3	15.3	7.4	7.5	--	15.3	0.0	7.5	2.6	12.7	8.9	Feb-16

# Total Fund

## Executive Summary (Net of Fees)

Period Ending: June 30, 2021

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Inception	Inception Date
<b>Emerging Market Debt</b>	<b>273,287,111</b>	<b>5.1</b>	<b>4.2</b>	<b>-1.6</b>	<b>9.1</b>	<b>9.1</b>	<b>5.0</b>	<b>3.8</b>	<b>--</b>	<b>9.1</b>	<b>-1.7</b>	<b>7.9</b>	<b>-4.2</b>	<b>8.9</b>		
50 JPM EMBI Global Div/ 50 JPM GBI EM			4.2	-0.5	8.7	8.7	5.5	4.2	--	8.7	-3.0	11.2	-1.8	6.5		
Stone Harbor Emerging Markets Debt	109,925,504	2.0	4.2	-1.5	9.5	9.5	5.2	3.7	--	9.5	-1.8	8.2	-3.1	6.3	1.6	Aug-12
50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx			3.6	-1.8	7.2	7.2	5.5	4.2	--	7.2	-0.8	10.6	-1.7	6.3	2.7	Aug-12
PIMCO EMD	163,361,607	3.0	4.2	-1.7	8.7	8.7	--	--	--	8.7	--	--	--	--	2.9	Jan-20
50 JPM EMBI Global Div/ 50 JPM GBI EM			4.2	-0.5	8.7	8.7	--	--	--	8.7	--	--	--	--	1.1	Jan-20
<b>Commodities</b>	<b>287,594,466</b>	<b>5.3</b>	<b>11.7</b>	<b>19.9</b>	<b>42.5</b>	<b>42.5</b>	<b>5.7</b>	<b>5.2</b>	<b>--</b>	<b>42.5</b>	<b>-11.3</b>	<b>-6.7</b>	<b>13.3</b>	<b>-3.7</b>		
Bloomberg Commodity Index TR USD			13.3	21.2	45.6	45.6	3.9	2.4	--	45.6	-17.4	-6.8	7.3	-6.5		
Gresham MTAP Commodity	91,165,063	1.7	13.1	21.7	46.8	46.8	3.8	3.9	--	46.8	-16.3	-9.0	12.4	-3.8	-2.4	Sep-13
Bloomberg Commodity Index TR USD			13.3	21.2	45.6	45.6	3.9	2.4	--	45.6	-17.4	-6.8	7.3	-6.5	-3.0	Sep-13
Wellington Commodities	196,429,403	3.6	11.1	19.1	40.2	40.2	7.1	6.2	--	40.2	-7.5	-5.4	14.2	-3.3	-0.8	Sep-13
S&P GSCI Commodity Equal Weighted			10.9	18.7	40.9	40.9	6.0	5.6	--	40.9	-12.4	-3.5	12.6	-2.3	-1.0	Sep-13
<b>Hedge Funds</b>	<b>578,611,425</b>	<b>10.7</b>	<b>2.0</b>	<b>4.7</b>	<b>16.1</b>	<b>16.1</b>	<b>8.4</b>	<b>8.0</b>	<b>5.8</b>	<b>16.1</b>	<b>7.0</b>	<b>2.5</b>	<b>7.6</b>	<b>7.1</b>		
75% 90 Day TBills +4% / 25% MSCI ACWI			2.6	4.6	12.3	12.3	8.0	7.8	6.2	12.3	5.1	6.6	7.0	8.1		
Aristeia International Limited	66,028,661	1.2	1.6	5.8	21.6	21.6	13.0	10.9	--	21.6	8.7	9.2	2.6	13.1	5.8	May-14
Brevan Howard	67,194,167	1.2	-1.2	0.9	6.1	6.1	13.0	9.4	--	6.1	20.5	12.7	7.8	1.0	7.4	Nov-13
D.E. Shaw	54,407,650	1.0	3.7	11.5	19.0	19.0	15.3	13.0	--	19.0	15.6	11.5	11.3	8.0	12.9	Jul-13
HBK Fund II	54,491,317	1.0	1.6	4.1	11.0	11.0	5.9	5.5	--	11.0	1.5	5.5	3.0	6.7	4.3	Nov-13
Hudson Bay	70,286,088	1.3	1.5	4.7	14.2	14.2	--	--	--	14.2	16.2	--	--	--	14.8	Jun-19
Indus Pacific Opportunities	40,202,150	0.7	7.7	8.8	38.0	38.0	8.9	11.5	--	38.0	15.8	-19.2	15.8	15.1	10.1	Jun-14
Magnetar Structured Credit	10,593,872	0.2	4.6	16.8	38.1	38.1	13.2	11.2	--	38.1	-0.2	5.4	7.7	8.6	9.1	May-14
Myriad Opportunities Offshore	34,573,493	0.6	3.4	11.9	30.6	30.6	2.8	5.3	--	30.6	-9.2	-8.4	10.4	8.2	5.4	May-16
Pharo Macro Fund LTD	66,180,117	1.2	0.1	-7.2	3.5	3.5	--	--	--	3.5	--	--	--	--	4.2	Dec-19
PIMCO Commodity Alpha	58,253,692	1.1	3.1	6.0	14.2	14.2	8.0	10.2	--	14.2	4.8	5.2	10.4	17.0	10.2	May-16
River Birch	1,285,015	0.0	0.8	0.8	-0.7	-0.7	-7.5	-2.3	--	-0.7	-19.9	-0.5	2.8	9.6	-2.4	Aug-15
Sculptor Enhanced Domestic Partners	55,115,203	1.0	2.6	3.7	16.8	16.8	--	--	--	16.8	6.5	--	--	--	16.4	Mar-19
<b>Alpha Pool</b>	<b>212,041,974</b>	<b>3.9</b>	<b>1.6</b>	<b>5.3</b>	<b>14.5</b>	<b>14.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>14.5</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
91-Day T-Bill +4%			1.0	2.0	4.1	4.1	--	--	--	4.1	--	--	--	--		
Hudson Bay	54,290,431	1.0	1.3	4.4	--	--	--	--	--	--	--	--	--	--	12.3	Jul-20
Davidson Kempner	54,575,257	1.0	2.9	6.8	--	--	--	--	--	--	--	--	--	--	8.6	Dec-20
HBK Fund II	52,403,234	1.0	1.4	3.7	--	--	--	--	--	--	--	--	--	--	5.1	Dec-20
HBK Opportunities - SPAC Series	50,773,052	0.9	0.6	8.2	--	--	--	--	--	--	--	--	--	--	8.2	Dec-20

# Total Fund

## Executive Summary (Net of Fees)

Period Ending: June 30, 2021

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Fiscal 2017	Inception	Inception Date
<b>Midstream Energy</b>	<b>238,844,984</b>	<b>4.4</b>	<b>15.8</b>	<b>33.4</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
<i>Alerian Midstream Index</i>			16.4	40.7	--	--	--	--	--	--	--	--	--	--		
Harvest Midstream	129,562,296	2.4	18.1	38.5	--	--	--	--	--	--	--	--	--	--	64.4	Sep-20
<i>Alerian Midstream Index</i>			16.4	40.7	--	--	--	--	--	--	--	--	--	--	51.2	Sep-20
PIMCO Midstream	109,282,688	2.0	13.0	27.1	--	--	--	--	--	--	--	--	--	--	45.3	Oct-20
<i>50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream</i>			10.4	21.0	--	--	--	--	--	--	--	--	--	--	--	Oct-20
<b>Core Real Estate</b>	<b>269,838,117</b>	<b>5.0</b>	<b>2.5</b>	<b>4.5</b>	<b>5.6</b>	<b>5.6</b>	<b>4.3</b>	<b>5.2</b>	<b>--</b>	<b>5.6</b>	<b>1.4</b>	<b>5.9</b>	<b>7.4</b>	<b>5.6</b>		
<i>NCREIF-ODCE</i>			3.9	6.1	8.0	8.0	5.5	6.6	--	8.0	2.2	6.4	8.4	7.9		
ASB Real Estate	157,893,886	2.9	2.3	4.6	5.4	5.4	4.5	4.8	--	5.4	1.5	6.8	7.1	3.3	7.4	Sep-13
<i>NCREIF-ODCE</i>			3.9	6.1	8.0	8.0	5.5	6.6	--	8.0	2.2	6.4	8.4	7.9	8.7	Sep-13
J.P. Morgan Strategic Property	111,944,232	2.1	2.7	4.4	5.9	5.9	4.0	5.4	--	5.9	1.3	5.0	7.6	7.4	7.1	Jul-14
<i>NCREIF-ODCE</i>			3.9	6.1	8.0	8.0	5.5	6.6	--	8.0	2.2	6.4	8.4	7.9	8.3	Jul-14
<b>Private Real Estate</b>	<b>65,643,148</b>	<b>1.2</b>	<b>0.6</b>	<b>8.5</b>	<b>12.1</b>	<b>12.1</b>	<b>8.5</b>	<b>7.3</b>	<b>10.4</b>	<b>12.1</b>	<b>4.4</b>	<b>9.0</b>	<b>5.4</b>	<b>5.7</b>		
<b>Private Equity</b>	<b>87,667,801</b>	<b>1.6</b>	<b>5.0</b>	<b>16.3</b>	<b>41.7</b>	<b>41.7</b>	<b>12.0</b>	<b>11.6</b>	<b>10.3</b>	<b>41.7</b>	<b>-10.5</b>	<b>10.9</b>	<b>7.8</b>	<b>14.1</b>		
<b>Private Credit</b>	<b>227,904,145</b>	<b>4.2</b>	<b>2.9</b>	<b>5.2</b>	<b>4.8</b>	<b>4.8</b>	<b>6.6</b>	<b>7.9</b>	<b>--</b>	<b>4.8</b>	<b>5.5</b>	<b>9.7</b>	<b>9.3</b>	<b>10.2</b>		
<b>Opportunistic</b>	<b>97,436,308</b>	<b>1.8</b>	<b>8.4</b>	<b>36.8</b>	<b>52.0</b>	<b>52.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>52.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>		
<i>Assumed Rate of Return +3%</i>			2.5	5.1	10.4	10.4	--	--	--	10.4	--	--	--	--		
DB Investors Fund IV	38,888,067	0.7	16.2	73.1	95.1	95.1	--	--	--	95.1	--	--	--	--	55.8	Jan-20
TAO Contingent	58,548,241	1.1	2.3	16.4	26.9	26.9	--	--	--	26.9	--	--	--	--	21.1	Apr-20
<b>Cash</b>	<b>-149,295,424</b>	<b>-2.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>1.0</b>	<b>1.8</b>	<b>--</b>	<b>0.1</b>	<b>1.0</b>	<b>2.0</b>	<b>3.2</b>	<b>2.7</b>		

**IRR Analysis as of IRR date**

Vintage Year	Manager/Fund	Estimated Market Value as of 6/30/2021	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>3</sup>	IRR Date
<b>Private Equity</b>												
2001	Abbott Capital PE IV	\$1,109,623	\$50,000,000	\$49,650,000	99%	\$350,000	\$85,714,140	\$1,104,670	1.73x	1.75x	11.0%	12/31/20
2005	Abbott Capital PE V	\$9,788,995	\$65,000,000	\$62,790,000	97%	\$2,210,000	\$80,558,107	\$11,500,098	1.28x	1.44x	7.0%	03/31/21
2008	Abbott Capital PE VI	\$27,736,842	\$50,000,000	\$49,500,000	99%	\$500,000	\$56,196,969	\$29,986,842	1.14x	1.70x	13.4%	03/31/21
2006	Pantheon Global III	\$1,332,302	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$51,500,000	\$1,332,302	1.09x	1.12x	2.0%	03/31/21
1998	Pantheon USA III	\$55,402	\$7,500,000	\$7,335,000	98%	\$165,000	\$8,197,500	\$55,402	1.12x	1.13x	1.9%	03/31/21
2002	Pantheon USA V	\$429,741	\$25,000,000	\$24,350,000	97%	\$650,000	\$37,950,000	\$429,741	1.56x	1.58x	9.0%	03/31/21
2004	Pantheon USA VI	\$1,035,184	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$50,203,827	\$1,035,184	1.52x	1.55x	6.8%	03/31/21
2006	Pantheon USA VII	\$12,983,247	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$70,625,001	\$15,305,788	1.52x	1.79x	10.2%	03/31/21
2020	Vista Equity Partners IV	\$6,649,443	\$25,000,000	\$7,243,695	29%	\$17,756,305	\$0	N/A	N/A	N/A	N/A	N/A
2021	LGT Crown	\$4,250,000		\$2,750,000				N/A	N/A	N/A	N/A	N/A
2021	Brighton Private Equity	\$13,711,014		\$13,099,197				N/A	N/A	N/A	N/A	N/A
2021	Warren Equity	\$6,287,648		\$6,729,903				N/A	N/A	N/A	N/A	N/A

<b>Total Private Equity</b>	<b>\$85,369,441</b>	\$357,500,000	\$350,422,795	98%	\$29,656,305	\$440,945,544	\$60,750,027	1.26x	1.50x
<b>% of Portfolio (Market Value)</b>	<b>1.6%</b>								

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Net 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.

IRR Analysis as of IRR date												
Vintage	Manager/Fund	Estimated Market Value 6/30/2021	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>3</sup>	IRR Date
<b>Private Credit</b>												
2015	Colony Distressed Credit IV <sup>4</sup>	\$51,535,333	\$60,000,000	\$73,340,099	122%	-\$5,500,870	\$24,003,132	\$51,535,333	0.33x	1.03x	1.0%	3/31/21
2017	Brookfield Real Estate Finance Fund V*	\$25,233,983	\$50,000,000	\$27,970,575	56%	\$22,029,425	\$14,702,387	\$23,191,827	0.53x	1.43x	8.0%	3/31/21
2017	TSSP Adjacent Opportunities Partners*	\$36,271,752	\$50,000,000	\$55,656,967	111%	-\$5,656,967	\$30,221,460	\$36,662,874	0.54x	1.19x	11.0%	3/31/21
2018	Magnetar Constellation	\$47,687,292	\$60,000,000	\$65,379,764	109%	-\$5,379,764	\$7,813,259	N/A	0.12x	0.85x	N/A	N/A
2019	H.I.G Bayside Loan Opportunity Fund V	\$34,223,162	\$60,000,000	\$22,998,971	38%	\$37,001,029	\$7,662,556	N/A	0.33x	1.82x	N/A	N/A
2020	Blue Torch Credit Opportunities	\$8,258,196	\$20,000,000	\$9,136,210	46%	\$10,863,790	\$1,094,200	N/A	0.12x	1.02x	N/A	N/A
2020	Fortress Credit Opportunities	\$4,260,291	\$40,000,000	\$4,200,000	11%	\$35,800,000	\$0	N/A	0.00x	1.01x	N/A	N/A
2021	Fortress Lending Fund II	\$16,194,710	\$40,000,000	\$15,782,078	39%	\$24,217,922	\$0	N/A	0.00x	1.03x	N/A	N/A
<b>Total Private Credit</b>		<b>\$223,664,719</b>	\$300,000,000	\$245,346,376	82%	\$5,491,824	\$76,740,237	\$111,390,034	0.31x	1.22x		
<b>% of Portfolio (Market Value)</b>		<b>4.2%</b>										

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Net 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.

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

\*Market Values are as of 3/31/2021 and accounts for all capital calls and distributions through 6/30/2021.

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value 6/30/2021	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>3</sup>	IRR Date
<b>Private Real Estate</b>												
2012	Invesco Real Estate III	\$279,385	\$60,000,000	\$55,519,583	93%	\$4,480,417	\$81,296,679	\$6,294,045	1.46x	1.47x	13.6%	12/31/20
2014	Invesco Real Estate IV	\$22,388,635	\$50,000,000	\$43,637,717	87%	\$6,362,283	\$32,639,138	\$24,596,747	0.75x	1.26x	12.3%	12/31/20
2017	Landmark Real Estate Partners VIII	\$18,978,370	\$60,000,000	\$25,033,714	42%	\$34,966,286	\$15,256,042	\$18,637,114	0.61x	1.37x	13.6%	09/30/20
2018	Long Wharf Real Estate Partners VI	\$12,247,127	\$50,000,000	\$11,278,495	23%	\$38,721,505	\$7,214,725	\$7,470,120	0.64x	1.73x	12.5%	03/31/21
2020	Covenant Apartment Fund X	\$11,081,261	\$30,000,000	\$11,100,000	37%	\$18,900,000	\$0	N/A	N/A	N/A	N/A	N/A
<b>Total Private Real Assets</b>		<b>\$64,974,778</b>	\$250,000,000	\$146,569,509	59%	\$103,430,491	\$136,406,584	\$56,998,026	0.93x	1.37x		
<b>% of Portfolio (Market Value)</b>		<b>1.2%</b>										

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

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

<sup>3</sup>Net 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 3/31/2021 and accounts for all capital calls and distributions through 6/30/2021.

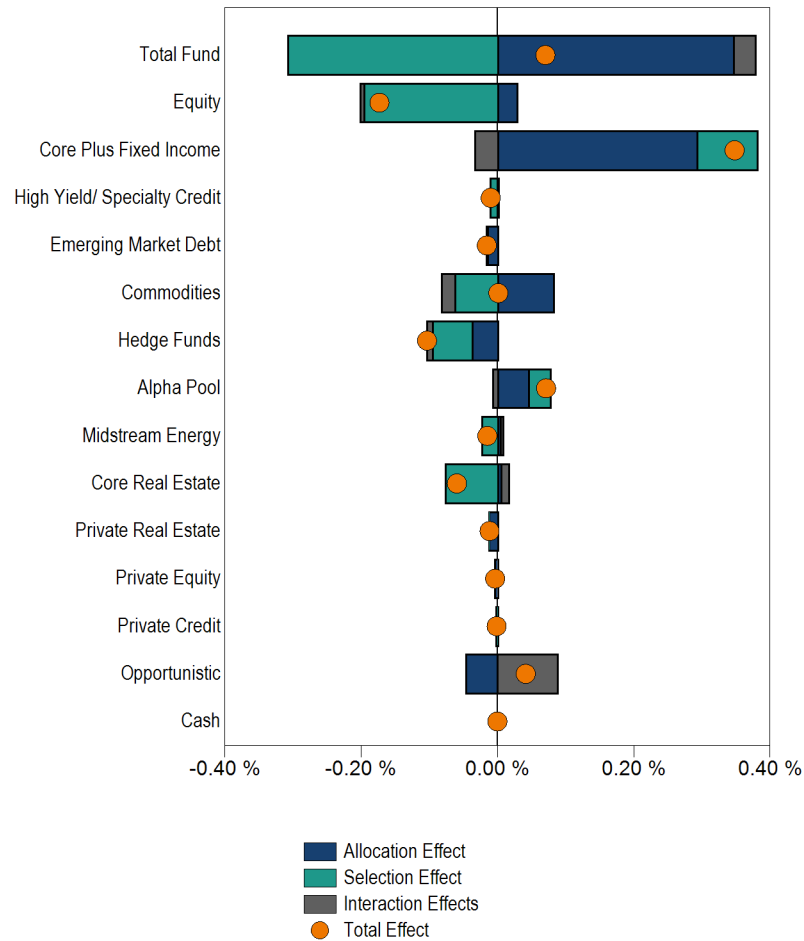
# Total Fund

## Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: June 30, 2021

### Attribution Effects Last Three Months

### Performance Attribution



	Quarter	Fiscal YTD
Wtd. Actual Return	5.51%	24.15%
Wtd. Index Return *	5.55%	23.64%
<b>Excess Return</b>	<b>-0.04%</b>	<b>0.51%</b>
Selection Effect	-0.31%	0.10%
Allocation Effect	0.35%	0.64%
Interaction Effect	0.03%	0.41%

\*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	6.8%	7.3%	-0.5%	-0.2%	0.0%	0.0%	-0.2%
Core Plus Fixed Income	2.2%	1.8%	0.4%	0.1%	0.3%	0.0%	0.3%
High Yield/ Specialty Credit	2.6%	2.8%	-0.2%	0.0%	0.0%	0.0%	0.0%
Emerging Market Debt	4.2%	4.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Commodities	11.7%	13.3%	-1.6%	-0.1%	0.1%	0.0%	0.0%
Hedge Funds	2.0%	2.6%	-0.6%	-0.1%	0.0%	0.0%	-0.1%
Alpha Pool	1.6%	1.0%	0.6%	0.0%	0.0%	0.0%	0.1%
Midstream Energy	15.8%	16.4%	-0.6%	0.0%	0.0%	0.0%	0.0%
Core Real Estate	2.5%	3.9%	-1.4%	-0.1%	0.0%	0.0%	-0.1%
Private Real Estate	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Credit	2.9%	2.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Opportunistic	8.4%	2.5%	5.9%	0.0%	0.0%	0.1%	0.0%
Cash	--	--	--	--	--	--	--
<b>Total</b>	<b>5.5%</b>	<b>5.6%</b>	<b>0.0%</b>	<b>-0.3%</b>	<b>0.3%</b>	<b>0.0%</b>	<b>0.1%</b>

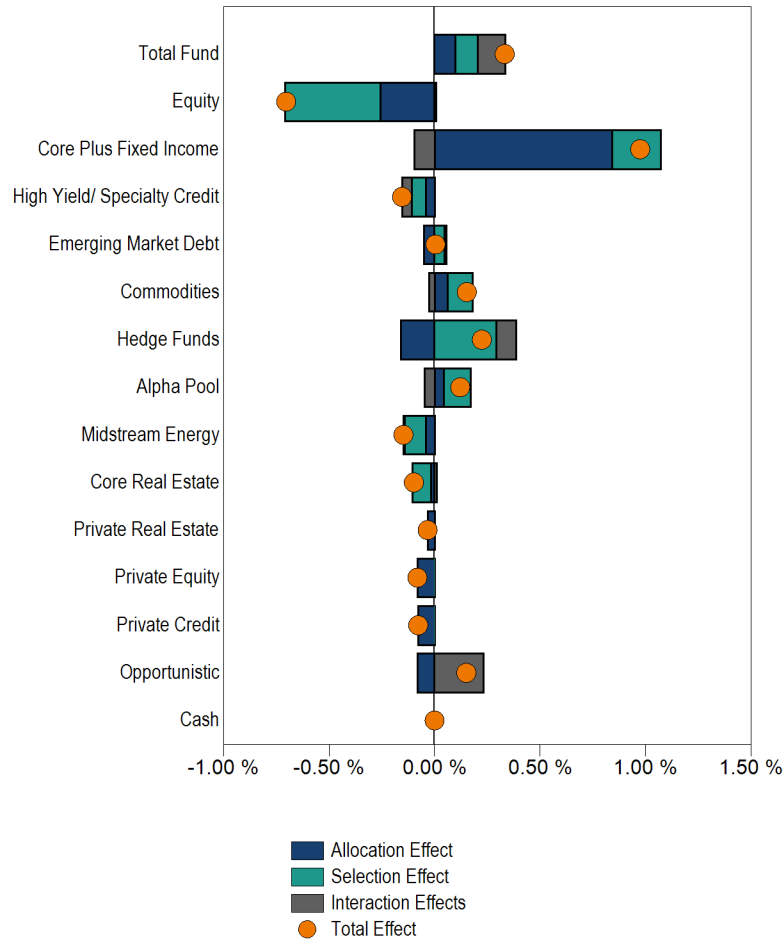
Weighted returns shown in attribution analysis may differ from actual returns.

# Total Fund

## Attribution Analysis - Asset Class Level (Net of Fees)

Period Ending: June 30, 2021

**Attribution Effects**  
Fiscal YTD



**Performance Attribution**

	Quarter	Fiscal YTD
Wtd. Actual Return	5.51%	24.15%
Wtd. Index Return *	5.55%	23.64%
<b>Excess Return</b>	<b>-0.04%</b>	<b>0.51%</b>
Selection Effect	-0.31%	0.10%
Allocation Effect	0.35%	0.64%
Interaction Effect	0.03%	0.41%

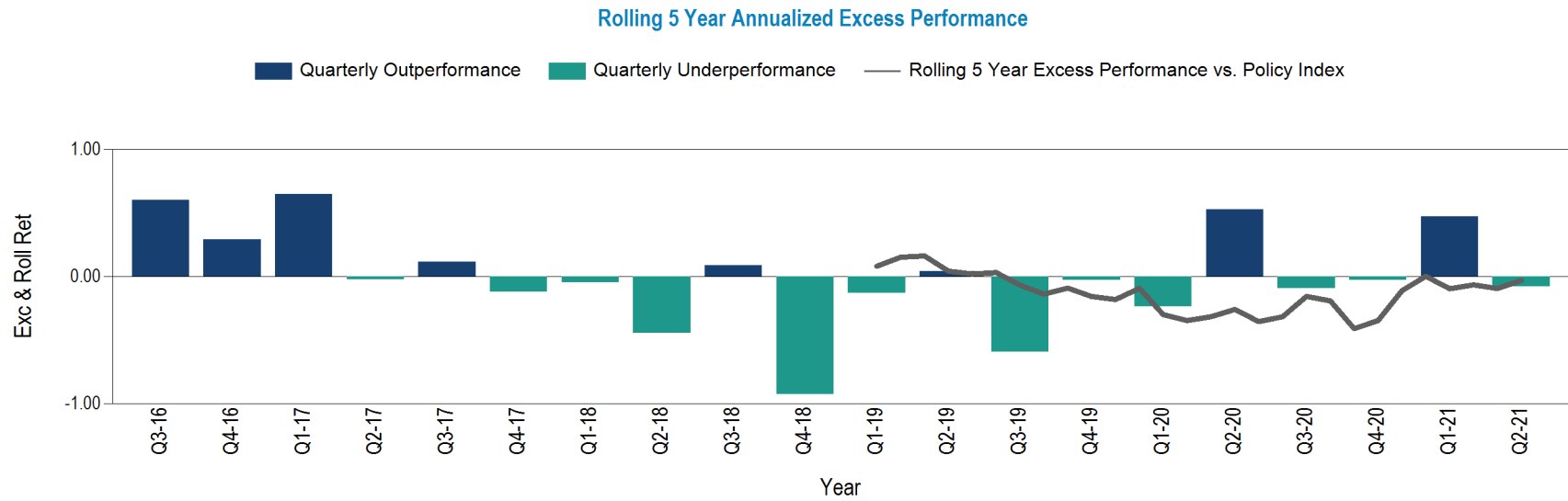
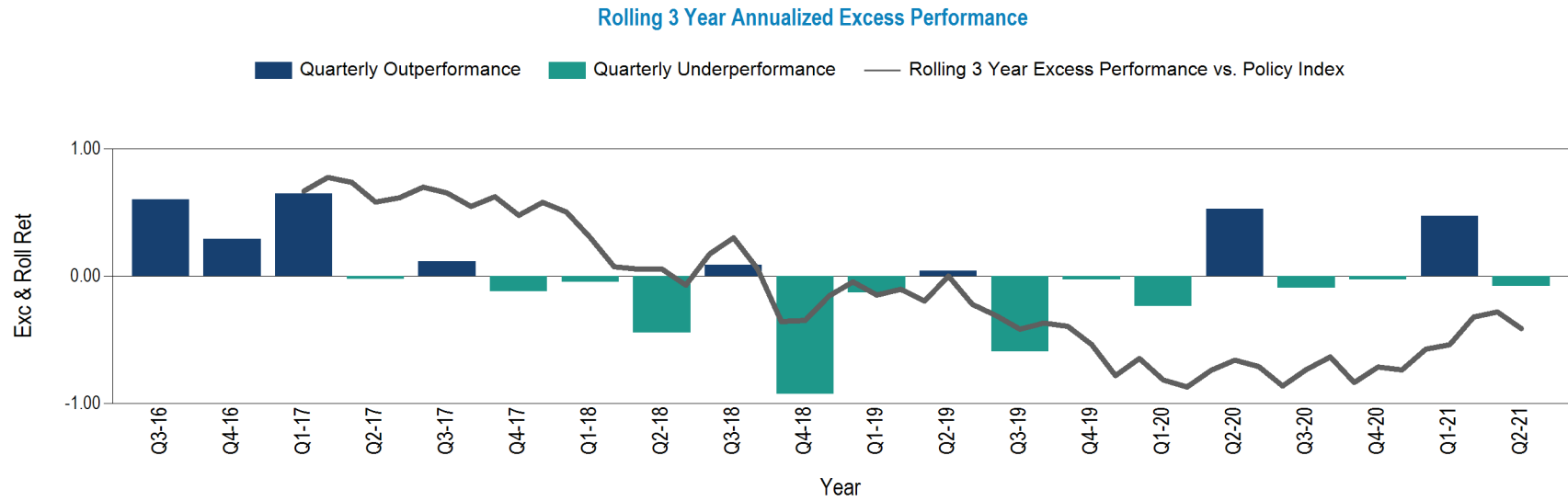
\*Calculated from benchmark returns and weightings of each component.

**Attribution Summary**  
Fiscal YTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	18.8%	20.0%	-1.2%	-0.4%	-0.3%	0.0%	-0.7%
Core Plus Fixed Income	5.0%	4.1%	0.9%	0.2%	0.8%	-0.1%	1.0%
High Yield/ Specialty Credit	6.1%	6.9%	-0.8%	-0.1%	0.0%	0.0%	-0.2%
Emerging Market Debt	3.6%	2.7%	0.9%	0.0%	-0.1%	0.0%	0.0%
Commodities	12.5%	9.7%	2.8%	0.1%	0.1%	0.0%	0.2%
Hedge Funds	11.5%	8.6%	2.8%	0.3%	-0.2%	0.1%	0.2%
Alpha Pool	--	--	--	0.1%	0.0%	0.0%	0.1%
Midstream Energy	--	--	--	-0.1%	0.0%	0.0%	-0.1%
Core Real Estate	3.5%	5.1%	-1.6%	-0.1%	0.0%	0.0%	-0.1%
Private Real Estate	8.2%	8.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Private Equity	12.6%	12.6%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Private Credit	5.1%	5.1%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Opportunistic	--	--	--	0.0%	-0.1%	0.2%	0.2%
Cash	--	--	--	--	--	--	--
<b>Total</b>	<b>13.0%</b>	<b>13.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.1%</b>	<b>0.3%</b>

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

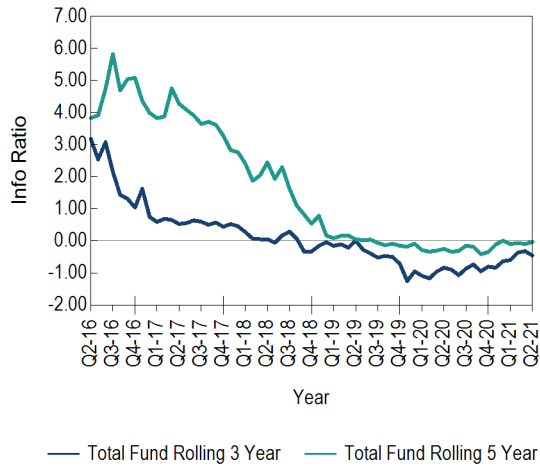




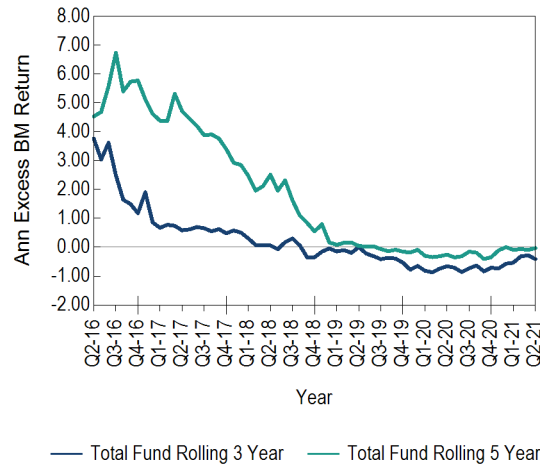
Total Fund  
Rolling Risk Statistics (Net of Fees)

Period Ending: June 30, 2021

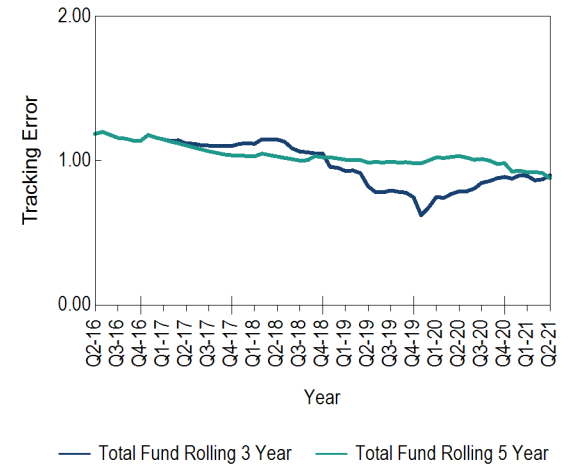
Rolling Information Ratio



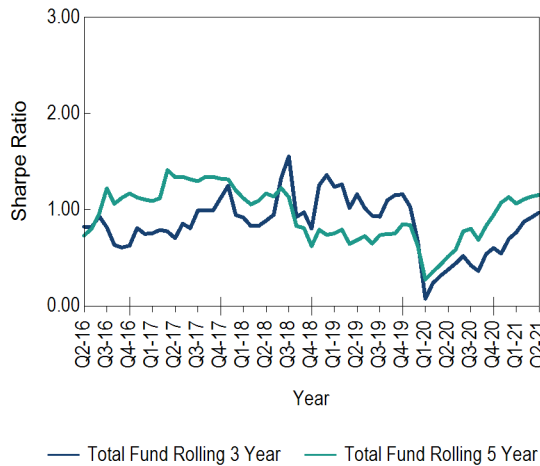
Rolling Annual Excess Benchmark Return



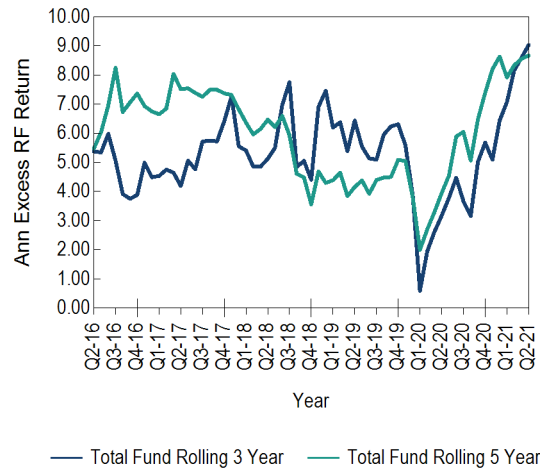
Rolling Tracking Error



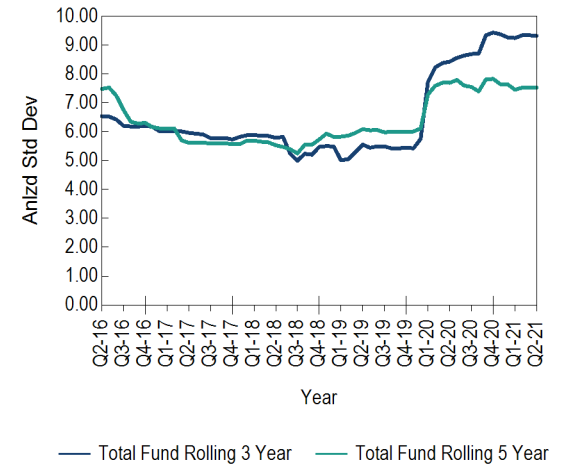
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation



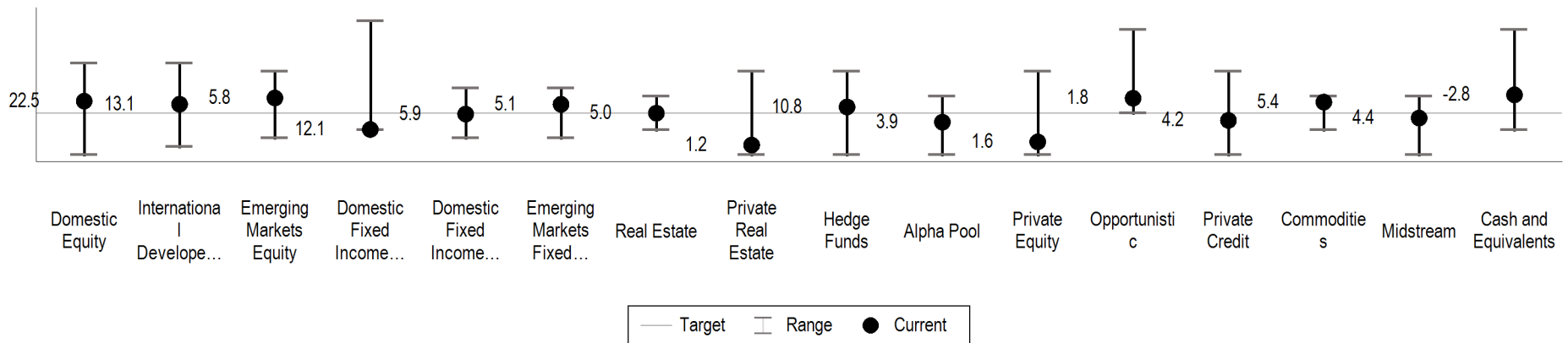
## **Asset Allocation**

# Total Fund Sub-Asset Class Allocation

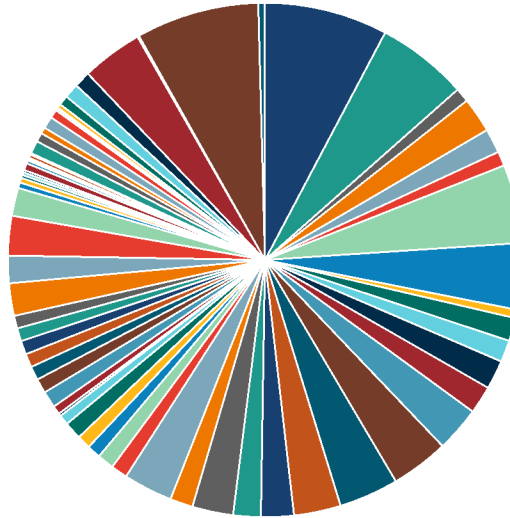
Period Ending: June 30, 2021

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Domestic Equity	\$1,207,583,165	22.5%	21.0%	\$78,815,295	16.0% - 27.0%	Yes
International Developed Equity	\$703,898,260	13.1%	12.0%	\$58,888,049	8.0% - 18.0%	Yes
Emerging Markets Equity	\$314,079,479	5.8%	4.0%	\$99,076,075	1.0% - 9.0%	Yes
Domestic Fixed Income Core Plus	\$649,161,527	12.1%	14.0%	-\$103,350,386	12.0% - 25.0%	Yes
Domestic Fixed Income High Yield	\$317,994,767	5.9%	6.0%	-\$4,510,339	3.0% - 9.0%	Yes
Emerging Markets Fixed Income	\$273,287,111	5.1%	4.0%	\$58,283,707	1.0% - 7.0%	Yes
Real Estate	\$269,838,117	5.0%	5.0%	\$1,083,863	3.0% - 7.0%	Yes
Private Real Estate	\$64,974,778	1.2%	5.0%	-\$203,779,477	0.0% - 10.0%	Yes
Hedge Funds	\$578,611,425	10.8%	10.0%	\$41,102,915	5.0% - 15.0%	Yes
Alpha Pool	\$212,041,974	3.9%	5.0%	-\$56,712,281	0.0% - 7.0%	Yes
Private Equity	\$85,369,441	1.6%	5.0%	-\$183,384,814	0.0% - 10.0%	Yes
Opportunistic	\$97,436,308	1.8%	0.0%	\$97,436,308	0.0% - 10.0%	Yes
Private Credit	\$223,664,719	4.2%	5.0%	-\$45,089,536	0.0% - 10.0%	Yes
Commodities	\$287,594,466	5.4%	4.0%	\$72,591,062	2.0% - 6.0%	Yes
Midstream	\$238,844,984	4.4%	5.0%	-\$29,909,271	0.0% - 7.0%	Yes
Cash and Equivalents	-\$149,295,424	-2.8%	-5.0%	\$119,458,831	-7.0% - 5.0%	Yes
<b>Total</b>	<b>\$5,375,085,097</b>	<b>100.0%</b>	<b>100.0%</b>			

Actual vs. Target



Current Allocation: by Manager



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

Total Fund  
3 Year Correlation Matrix (Net of Fees)

Period Ending: June 30, 2021

Correlation Matrix  
3 Years Ending June 30, 2021

	Total Fund Equity	Domestic Equity	International Developed Equity	Fixed Income	Core Plus Fixed Income	High Yield/ Specialty Credit	Emerging Market Debt	Commodities	Hedge Funds	Core Real Estate	Private Real Estate	Private Equity	Private Credit	Policy Index	
Total Fund	1.00	--	--	--	--	--	--	--	--	--	--	--	--	--	
Equity	1.00	1.00	--	--	--	--	--	--	--	--	--	--	--	--	
Domestic Equity	0.99	0.99	1.00	--	--	--	--	--	--	--	--	--	--	--	
International Developed Equity	0.99	0.99	0.98	1.00	--	--	--	--	--	--	--	--	--	--	
Fixed Income	0.76	0.74	0.73	0.74	1.00	--	--	--	--	--	--	--	--	--	
Core Plus Fixed Income	0.21	0.19	0.20	0.19	0.79	1.00	--	--	--	--	--	--	--	--	
High Yield/ Specialty Credit	0.96	0.96	0.95	0.95	0.82	0.31	1.00	--	--	--	--	--	--	--	
Emerging Market Debt	0.89	0.88	0.85	0.89	0.92	0.51	0.91	1.00	--	--	--	--	--	--	
Commodities	0.96	0.95	0.93	0.95	0.64	0.07	0.91	0.80	1.00	--	--	--	--	--	
Hedge Funds	0.91	0.92	0.89	0.92	0.74	0.26	0.87	0.85	0.86	1.00	--	--	--	--	
Core Real Estate	-0.29	-0.31	-0.32	-0.27	-0.55	-0.54	-0.40	-0.36	-0.16	-0.48	1.00	--	--	--	
Private Real Estate	-0.20	-0.18	-0.18	-0.17	-0.52	-0.58	-0.34	-0.33	-0.22	-0.21	0.55	1.00	--	--	
Private Equity	-0.02	-0.03	-0.05	0.00	-0.45	-0.71	-0.04	-0.25	0.12	-0.10	0.41	0.27	1.00	--	
Private Credit	-0.76	-0.77	-0.73	-0.76	-0.75	-0.37	-0.81	-0.80	-0.73	-0.87	0.67	0.47	0.19	1.00	
Policy Index	1.00	0.99	0.98	0.99	0.77	0.23	0.97	0.90	0.96	0.91	-0.29	-0.22	-0.02	-0.77	1.00

**Cash Flows**

Total Fund  
Net Cash Flow - Three Months Ended

Period Ending: June 30, 2021

	Equity					
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Equity Beta Exposure	\$454,862,410	\$0	-\$1,041,739	\$0	\$37,867,319	\$491,687,990
Mellon DB SL Stock Index	\$363,773,440	\$0	-\$30,000,000	-\$28,335	\$30,567,610	\$364,341,050
Mellon NSL Dynamic US Equity	\$106,003,446	\$0	-\$60,000,000	-\$117,601	\$10,392,214	\$56,395,661
PIMCO StocksPLUS	\$128,949,306	\$0	\$0	-\$172,098	\$11,188,755	\$140,138,061
AB US Small Cap Value Equity	\$108,083,253	\$0	-\$15,000,000	-\$218,728	\$4,059,065	\$97,142,318
Geneva Capital Small Cap Growth	\$80,364,002	\$0	-\$25,000,000	-\$124,079	\$2,513,485	\$57,877,486
Mellon DB SL World ex-US Index	\$270,777,959	\$25,000,000	\$0	\$0	\$17,597,921	\$313,375,880
BlackRock International Alpha Tilts	\$249,883,967	\$0	\$0	-\$276,029	\$14,626,536	\$264,510,502
Cevian Capital II	\$33,298,052	\$0	\$0	\$0	\$478,627	\$33,776,678
J.P. Morgan Fleming EAFE Plus Equity	\$0	\$0	\$0	\$0	\$0	\$0
Fidelity Non-US Small Cap Equity	\$392,505	\$0	-\$22,040	-\$381	\$4,661	\$375,126
American Century Non-US Small Cap	\$86,220,800	\$0	\$0	-\$73,731	\$6,014,400	\$92,235,200
DFA Emerging Markets Value I	\$80,991,640	\$0	\$0	-\$115,814	\$5,753,674	\$86,745,314
AB Emerging Markets Strategic Core Equity	\$113,840,454	\$0	\$0	-\$419,793	\$2,093,796	\$115,934,250
Mellon Emerging Markets Stock Index	\$105,946,128	\$0	\$0	\$0	\$5,453,787	\$111,399,915
Transition Equity	\$529	\$0	\$0	\$0	\$70	\$599
<b>Total</b>	<b>\$2,183,387,891</b>	<b>\$25,000,000</b>	<b>-\$131,063,779</b>	<b>-\$1,546,589</b>	<b>\$148,611,919</b>	<b>\$2,225,936,031</b>

	Fixed Income					
	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Fixed Income Overlay	\$52,146,305	\$52,359,965	-\$105,557,133	\$0	\$1,050,862	\$0
Mellon DB SL Aggregate Bond Index Fund	\$176,969,635	\$0	\$0	-\$15,209	\$3,241,931	\$180,211,566
PIMCO Core Plus	\$225,566,506	\$0	\$0	-\$166,673	\$5,168,635	\$230,735,141
Western Asset Core Plus	\$231,859,759	\$0	\$0	-\$126,053	\$6,195,306	\$238,055,065
Western Asset High Yield Fixed Income	\$181,447,938	\$0	\$0	-\$92,627	\$5,845,700	\$187,293,638
TCW Securitized Opportunities	\$128,370,228	\$0	\$0	-\$325,217	\$2,330,901	\$130,701,129
Stone Harbor Emerging Markets Debt	\$105,536,996	\$0	\$0	-\$162,731	\$4,388,508	\$109,925,504
PIMCO EMD	\$156,725,751	\$0	\$0	-\$25,712	\$6,635,856	\$163,361,607
Transition Fixed Income	\$158,311	\$0	-\$19	\$0	\$1,464	\$159,756
<b>Total</b>	<b>\$1,258,781,429</b>	<b>\$52,359,965</b>	<b>-\$105,557,152</b>	<b>-\$914,222</b>	<b>\$34,859,163</b>	<b>\$1,240,443,405</b>



Total Fund

Net Cash Flow - Three Months Ended

Period Ending: June 30, 2021

Commodities

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Gresham MTAP Commodity	\$80,641,207	\$0	\$0	-\$109,110	\$10,523,856	\$91,165,063
Wellington Commodities	\$176,551,346	\$0	\$0	\$0	\$19,878,057	\$196,429,403
<b>Total</b>	<b>\$257,192,553</b>	<b>\$0</b>	<b>\$0</b>	<b>-\$109,110</b>	<b>\$30,401,913</b>	<b>\$287,594,466</b>

Hedge Funds

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Aristeia International Limited	\$64,985,475	\$0	\$0	\$0	\$1,043,186	\$66,028,661
Brevan Howard	\$68,031,574	\$0	\$0	\$0	-\$837,408	\$67,194,167
D.E. Shaw	\$52,478,719	\$0	\$0	\$0	\$1,928,931	\$54,407,650
HBK Fund II	\$53,615,235	\$0	\$0	\$0	\$876,082	\$54,491,317
Hudson Bay	\$69,222,837	\$0	\$0	\$0	\$1,063,251	\$70,286,088
Indus Pacific Opportunities	\$37,332,971	\$0	\$0	\$0	\$2,869,178	\$40,202,150
Magnetar Structured Credit	\$13,174,095	\$0	-\$1,513,410	\$0	-\$1,066,813	\$10,593,872
Myriad Opportunities Offshore	\$49,393,634	\$0	-\$16,088,235	\$0	\$1,268,093	\$34,573,493
Pharo Macro Fund LTD	\$54,254,272	\$12,000,000	\$0	\$0	-\$74,155	\$66,180,117
PIMCO Commodity Alpha	\$73,610,529	\$0	-\$17,000,000	-\$236,985	\$1,643,164	\$58,253,692
River Birch	\$1,274,458	\$0	\$0	\$0	\$10,557	\$1,285,015
Sculptor Enhanced Domestic Partners	\$58,603,310	\$0	-\$5,000,000	\$0	\$1,511,893	\$55,115,203
<b>Total</b>	<b>\$595,977,110</b>	<b>\$12,000,000</b>	<b>-\$39,601,645</b>	<b>-\$236,985</b>	<b>\$10,235,960</b>	<b>\$578,611,425</b>

Alpha Pool

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Hudson Bay	\$53,469,155	\$0	\$0	\$0	\$821,276	\$54,290,431
Davidson Kempner	\$52,896,899	\$0	\$0	\$0	\$1,678,358	\$54,575,257
HBK Fund II	\$51,560,723	\$0	\$0	\$0	\$842,511	\$52,403,234
HBK Opportunities - SPAC Series	\$50,339,742	\$0	\$0	\$0	\$433,310	\$50,773,052
<b>Total</b>	<b>\$208,266,519</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$3,775,455</b>	<b>\$212,041,974</b>

Total Fund  
Net Cash Flow - Three Months Ended

Period Ending: June 30, 2021

**Midstream Energy**

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Harvest Midstream	\$109,662,392	\$0	\$0	\$0	\$19,899,904	\$129,562,296
PIMCO Midstream	\$77,041,900	\$20,070,000	\$0	-\$70,000	\$12,170,788	\$109,282,688
<b>Total</b>	<b>\$186,704,292</b>	<b>\$20,070,000</b>	<b>\$0</b>	<b>-\$70,000</b>	<b>\$32,070,692</b>	<b>\$238,844,984</b>

**Core Real Estate**

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
ASB Real Estate	\$119,828,076	\$35,308,551	\$0	-\$308,551	\$2,757,258	\$157,893,886
J.P. Morgan Strategic Property	\$109,010,393	\$0	\$0	-\$244,264	\$2,933,838	\$111,944,232
<b>Total</b>	<b>\$228,838,470</b>	<b>\$35,308,551</b>	<b>\$0</b>	<b>-\$552,815</b>	<b>\$5,691,096</b>	<b>\$269,838,117</b>

**Private Real Estate**

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Invesco Real Estate III	\$279,385	\$0	\$0	\$0	\$0	\$279,385
Invesco Real Estate IV	\$25,241,131	\$0	-\$2,852,496	\$0	\$0	\$22,388,635
Landmark Real Estate Partners VIII	\$22,965,643	\$0	-\$2,429,126	\$0	-\$1,558,147	\$18,978,370
Long Wharf Real Estate	\$6,982,244	\$5,371,655	-\$594,648	\$0	\$487,876	\$12,247,127
Covenant Apartment Fund X	\$8,321,875	\$2,700,000	\$0	\$0	\$59,386	\$11,081,261
<b>Total</b>	<b>\$63,790,278</b>	<b>\$8,071,655</b>	<b>-\$5,876,270</b>	<b>\$0</b>	<b>-\$1,010,885</b>	<b>\$64,974,778</b>

Total Fund

Net Cash Flow - Three Months Ended

Period Ending: June 30, 2021

Private Equity

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Abbott IV	\$1,104,670	\$0	\$0	\$0	\$4,953	\$1,109,623
Abbott V	\$11,042,575	\$0	-\$1,711,103	\$0	\$457,523	\$9,788,995
Abbott VI	\$29,839,446	\$0	-\$2,250,000	\$0	\$147,396	\$27,736,842
Pantheon Secondary III	\$1,354,661	\$0	\$0	\$0	-\$22,359	\$1,332,302
Pantheon III	\$56,208	\$0	\$0	\$0	-\$806	\$55,402
Pantheon V	\$442,588	\$0	\$0	\$0	-\$12,847	\$429,741
Pantheon VI	\$1,053,125	\$0	\$0	\$0	-\$17,941	\$1,035,184
Pantheon VII	\$13,553,859	\$0	-\$2,322,541	\$0	\$1,751,929	\$12,983,247
Vista Equity Partners IV	\$2,707,701	\$4,535,994	\$0	\$0	-\$594,252	\$6,649,443
LGT Crown	\$2,750,000	\$1,500,000	\$0	\$0	\$0	\$4,250,000
Brighton Private Equity	\$4,107,069	\$9,573,651	-\$581,523	\$0	\$611,817	\$13,711,014
Warren Equity	\$0	\$6,729,903	\$0	\$0	-\$442,255	\$6,287,648

Private Credit

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Colony Distressed Credit IV	\$53,248,126	\$0	\$0	\$0	-\$1,712,793	\$51,535,333
TSSP Adjacent Opportunities Partners	\$31,060,636	\$2,898,458	\$0	\$0	\$2,312,658	\$36,271,752
Brookfield Real Estate Finance Fund V	\$25,178,795	\$0	-\$349,666	\$0	\$404,854	\$25,233,983
Magnetar Constellation	\$51,825,237	\$1,593,885	-\$5,731,831	\$0	\$0	\$47,687,292
H.I.G. Bayside Loan Opportunity Fund V	\$25,568,055	\$6,346,171	\$0	\$0	\$2,308,936	\$34,223,162
Blue Torch Credit Opportunities	\$6,823,319	\$1,380,500	-\$63,966	\$0	\$118,343	\$8,258,196
Fortress Credit Opportunitites	\$2,000,000	\$2,200,000	\$0	\$0	\$60,291	\$4,260,291
Fortress Lending Fund II	\$14,000,000	\$1,782,078	\$0	\$0	\$412,632	\$16,194,710
<b>Total</b>	<b>\$209,704,168</b>	<b>\$16,201,092</b>	<b>-\$6,145,463</b>	<b>\$0</b>	<b>\$3,904,921</b>	<b>\$223,664,719</b>

Opportunistic

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
DB Investors Fund IV	\$33,455,199	\$0	\$0	\$0	\$5,432,868	\$38,888,067
TAO Contingent	\$42,473,253	\$15,103,960	\$0	\$0	\$971,028	\$58,548,241
<b>Total</b>	<b>\$75,928,452</b>	<b>\$15,103,960</b>	<b>\$0</b>	<b>\$0</b>	<b>\$6,403,896</b>	<b>\$97,436,308</b>

Total Fund

Net Cash Flow - Three Months Ended

Period Ending: June 30, 2021

	Beginning Market Value	Cash Contributions	Withdrawals	Fees	Net Investment Change	Ending Market Value
Short Term Cash Account	\$12,219,894	\$0	-\$12,053,378	\$0	\$0	\$166,516
Short Term Investment Funds	\$51,434,863	\$263,004,499	-\$249,400,952	\$0	\$4,990	\$65,043,399
Parametric Cash Overlay	\$197,223,060	\$129,427,095	-\$83,010,255	\$0	\$41,143	\$243,681,043
Goldman Sachs Cash Account	\$3,317,718	\$49,597,908	-\$46,074,020	\$0	\$0	\$6,841,607
Futures Offset	-\$507,008,715	\$42,651,615	-\$27,330,890	\$0	\$0	-\$491,687,990
Collateral Cash	\$26,660,000	\$0	\$0	\$0	\$0	\$26,660,000
<b>Total</b>	<b>-\$216,153,179</b>	<b>\$484,681,117</b>	<b>-\$417,869,495</b>	<b>\$0</b>	<b>\$46,133</b>	<b>-\$149,295,424</b>

Total Fund  
Cash Flow History

Period Ending: June 30, 2021

Portfolio Reconciliation

	Quarter-To-Date	Fiscal Year-To-Date	One Year	Three Years	Five Years	Ten Years
Beginning Market Value	\$5,120,429,884	\$4,408,365,946	\$4,408,365,946	\$4,150,297,655	\$3,560,485,286	\$2,568,389,741
Contributions	\$691,135,889	\$3,458,981,923	\$3,458,981,923	\$6,518,693,384	\$8,819,981,954	\$12,882,229,372
Withdrawals	-\$712,978,970	-\$3,544,182,966	-\$3,544,182,966	-\$6,712,241,515	-\$9,124,710,065	-\$12,793,622,606
Fees	-\$3,429,721	-\$13,212,848	-\$13,212,848	-\$38,722,777	-\$68,412,106	-\$104,500,418
Net Cash Flow	-\$21,843,082	-\$85,201,044	-\$85,201,044	-\$193,548,132	-\$304,728,111	\$88,606,766
Net Investment Change	\$276,873,421	\$1,052,295,321	\$1,052,295,321	\$1,418,710,701	\$2,119,703,049	\$2,718,463,717
Ending Market Value	\$5,375,460,223	\$5,375,460,223	\$5,375,460,223	\$5,375,460,223	\$5,375,460,223	\$5,375,460,223
Net Change	\$255,030,340	\$967,094,277	\$967,094,277	\$1,225,162,569	\$1,814,974,938	\$2,807,070,483

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: June 30, 2021

	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	-0.03%	1.00	0.99	10.34%	-0.46	-0.41%	0.90%	0.97	9.03%	9.31%	1.17	97.78%	100.70%
Equity	-0.06%	1.00	1.00	13.94%	-0.95	-0.87%	0.91%	0.69	12.73%	18.52%	0.90	97.55%	101.02%
Domestic Equity	-0.04%	1.00	1.00	18.20%	-0.47	-0.53%	1.14%	0.87	16.99%	19.51%	1.17	99.85%	101.66%
International Developed Equity	-0.05%	1.01	1.00	8.48%	-0.59	-0.66%	1.11%	0.39	7.27%	18.51%	0.61	100.63%	102.61%
Fixed Income	0.01%	1.08	0.98	6.39%	0.69	0.54%	0.78%	1.06	5.19%	4.89%	1.22	107.65%	102.61%
Core Plus Fixed Income	0.03%	1.06	0.91	6.02%	0.56	0.68%	1.21%	1.24	4.82%	3.89%	2.84	115.70%	116.08%
High Yield/ Specialty Credit	0.04%	0.81	0.98	6.38%	-0.36	-0.77%	2.13%	0.66	5.17%	7.81%	0.49	77.94%	75.23%
Emerging Market Debt	-0.06%	1.06	0.96	4.98%	-0.18	-0.47%	2.56%	0.31	3.78%	12.03%	0.39	101.88%	105.42%
Commodities	0.19%	0.97	0.89	6.15%	0.43	2.25%	5.21%	0.31	4.95%	15.78%	0.60	108.65%	97.10%
Hedge Funds	0.11%	0.88	0.52	8.40%	0.11	0.43%	3.80%	1.32	7.19%	5.43%	1.55	88.52%	55.77%
Core Real Estate	0.12%	0.52	0.74	4.30%	-0.64	-1.22%	1.90%	1.53	3.10%	2.02%	3.04	55.09%	74.88%

Total Fund  
Risk Return Statistics: Last Three Years

Period Ending: June 30, 2021

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			
<b>RETURN SUMMARY STATISTICS</b>			<b>RETURN SUMMARY STATISTICS</b>		<b>RETURN SUMMARY STATISTICS</b>		<b>RETURN SUMMARY STATISTICS</b>				
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	-1.44	Minimum Return	-10.52	-11.76	Minimum Return	-13.80	-12.61
Annualized Return	13.94	14.80	Annualized Return	6.02	5.34	Annualized Return	6.38	7.15	Annualized Return	4.98	5.45
Total Return	47.90	51.30	Total Return	19.18	16.90	Total Return	20.38	23.02	Total Return	15.71	17.26
Annualized Excess Return Over Risk Free	12.73	13.60	Annualized Excess Return Over Risk Free	4.82	4.14	Annualized Excess Return Over Risk Free	5.17	5.95	Annualized Excess Return Over Risk Free	3.78	4.25
Annualized Excess Return	-0.87	0.00	Annualized Excess Return	0.68	0.00	Annualized Excess Return	-0.77	0.00	Annualized Excess Return	-0.47	0.00
<b>RISK SUMMARY STATISTICS</b>			<b>RISK SUMMARY STATISTICS</b>		<b>RISK SUMMARY STATISTICS</b>		<b>RISK SUMMARY STATISTICS</b>				
Beta	1.00	1.00	Beta	1.06	1.00	Beta	0.81	1.00	Beta	1.06	1.00
Upside Deviation	10.46	10.64	Upside Deviation	2.57	2.57	Upside Deviation	3.74	5.12	Upside Deviation	6.37	5.70
Downside Deviation	15.43	14.85	Downside Deviation	2.12	1.56	Downside Deviation	12.92	13.60	Downside Deviation	12.92	11.20
<b>RISK/RETURN SUMMARY STATISTICS</b>			<b>RISK/RETURN SUMMARY STATISTICS</b>		<b>RISK/RETURN SUMMARY STATISTICS</b>		<b>RISK/RETURN SUMMARY STATISTICS</b>				
Annualized Standard Deviation	18.52	18.47	Annualized Standard Deviation	3.89	3.49	Annualized Standard Deviation	7.81	9.47	Annualized Standard Deviation	12.03	11.07
Alpha	-0.06	0.00	Alpha	0.03	0.00	Alpha	0.04	0.00	Alpha	-0.06	0.00
Sharpe Ratio	0.69	0.74	Sharpe Ratio	1.24	1.19	Sharpe Ratio	0.66	0.63	Sharpe Ratio	0.31	0.38
Excess Return Over Market / Risk	-0.05	0.00	Excess Return Over Market / Risk	0.17	0.00	Excess Return Over Market / Risk	-0.10	0.00	Excess Return Over Market / Risk	-0.04	0.00
Tracking Error	0.91	0.00	Tracking Error	1.21	0.00	Tracking Error	2.13	0.00	Tracking Error	2.56	0.00
Information Ratio	-0.95	--	Information Ratio	0.56	--	Information Ratio	-0.36	--	Information Ratio	-0.18	--
<b>CORRELATION STATISTICS</b>			<b>CORRELATION STATISTICS</b>		<b>CORRELATION STATISTICS</b>		<b>CORRELATION STATISTICS</b>				
R-Squared	1.00	1.00	R-Squared	0.91	1.00	R-Squared	0.98	1.00	R-Squared	0.96	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: June 30, 2021

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
<b>RETURN SUMMARY STATISTICS</b>			<b>RETURN SUMMARY STATISTICS</b>			<b>RETURN SUMMARY STATISTICS</b>		
Number of Periods	36	36	36	36	36	36	36	36
Maximum Return	8.05	8.29	3.99	3.34	3.34	1.84	3.93	3.93
Minimum Return	-12.62	-12.81	-5.24	-3.02	-3.02	-1.17	-1.56	-1.56
Annualized Return	6.15	3.90	8.40	7.97	7.97	4.30	5.52	5.52
Total Return	19.61	12.18	27.37	25.86	25.86	13.47	17.50	17.50
Annualized Excess Return Over Risk Free	4.95	2.70	7.19	6.76	6.76	3.10	4.32	4.32
Annualized Excess Return	2.25	0.00	0.43	0.00	0.00	-1.22	0.00	0.00
<b>RISK SUMMARY STATISTICS</b>			<b>RISK SUMMARY STATISTICS</b>			<b>RISK SUMMARY STATISTICS</b>		
Beta	0.97	1.00	0.88	1.00	1.00	0.52	1.00	1.00
Upside Deviation	8.89	7.41	3.42	2.63	2.63	1.76	3.13	3.13
Downside Deviation	10.25	11.16	5.41	3.15	3.15	1.41	--	--
<b>RISK/RETURN SUMMARY STATISTICS</b>			<b>RISK/RETURN SUMMARY STATISTICS</b>			<b>RISK/RETURN SUMMARY STATISTICS</b>		
Annualized Standard Deviation	15.78	15.29	5.43	4.43	4.43	2.02	3.33	3.33
Alpha	0.19	0.00	0.11	0.00	0.00	0.12	0.00	0.00
Sharpe Ratio	0.31	0.18	1.32	1.53	1.53	1.53	1.30	1.30
Excess Return Over Market / Risk	0.14	0.00	0.08	0.00	0.00	-0.60	0.00	0.00
Tracking Error	5.21	0.00	3.80	0.00	0.00	1.90	0.00	0.00
Information Ratio	0.43	--	0.11	--	--	-0.64	--	--
<b>CORRELATION STATISTICS</b>			<b>CORRELATION STATISTICS</b>			<b>CORRELATION STATISTICS</b>		
R-Squared	0.89	1.00	0.52	1.00	1.00	0.74	1.00	1.00
Correlation	0.94	1.00	0.72	1.00	1.00	0.86	1.00	1.00

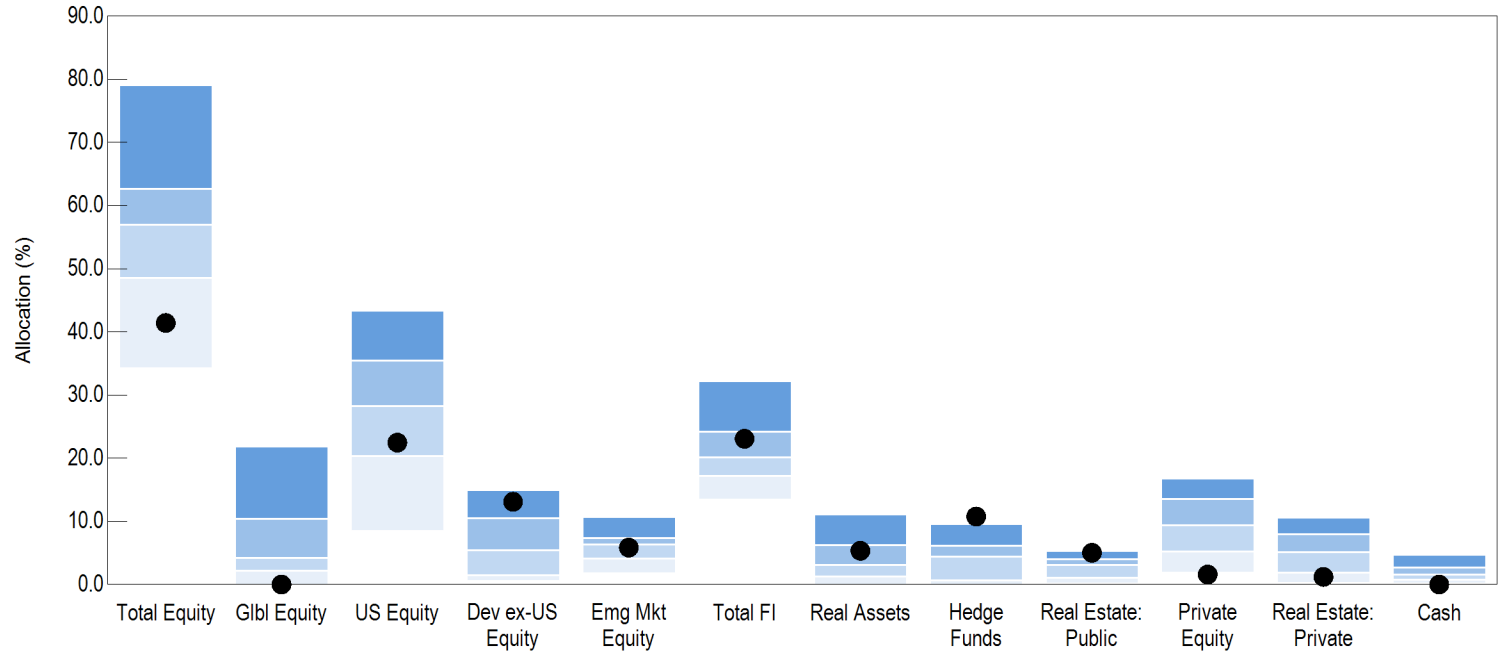
91 Day T-Bills used as risk-free proxy

**Peer Comparison**

Total Fund  
Peer Universe Comparison: Asset Allocation

Period Ending: June 30, 2021

Total Plan Allocation vs. InvMetrics Public DB > \$1B Gross  
As of June 30, 2021



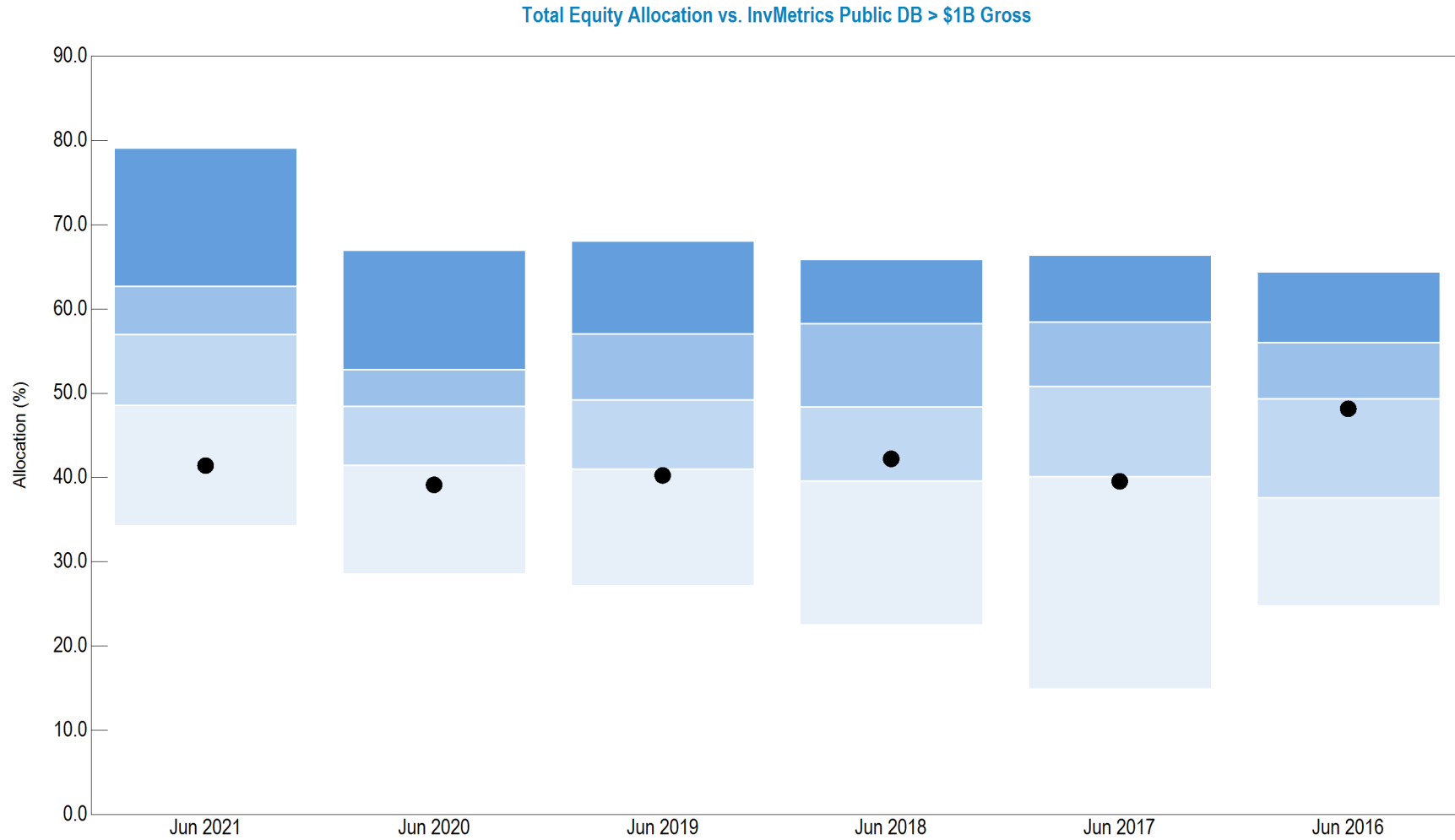
Allocation (Rank)

5th Percentile	79.1	21.8	43.4	14.9	10.7	32.2	11.1	9.6	5.3	16.8	10.6	4.7	--
25th Percentile	62.7	10.5	35.6	10.6	7.5	24.2	6.4	6.2	4.1	13.7	8.1	2.8	--
Median	57.0	4.3	28.4	5.5	6.5	20.2	3.2	4.5	3.2	9.5	5.2	1.7	--
75th Percentile	48.6	2.3	20.5	1.5	4.2	17.3	1.3	0.8	1.2	5.3	2.0	0.9	--
95th Percentile	34.3	0.0	8.5	0.7	1.9	13.5	0.1	0.1	0.3	2.0	0.4	0.3	--
# of Portfolios	48	20	38	22	30	48	23	27	10	32	31	43	--
● Total Fund	41.4 (91)	0.0 (95)	22.5 (70)	13.1 (9)	5.8 (57)	23.1 (31)	5.4 (36)	10.8 (4)	5.0 (11)	1.6 (97)	1.2 (80)	0.0 (99)	--

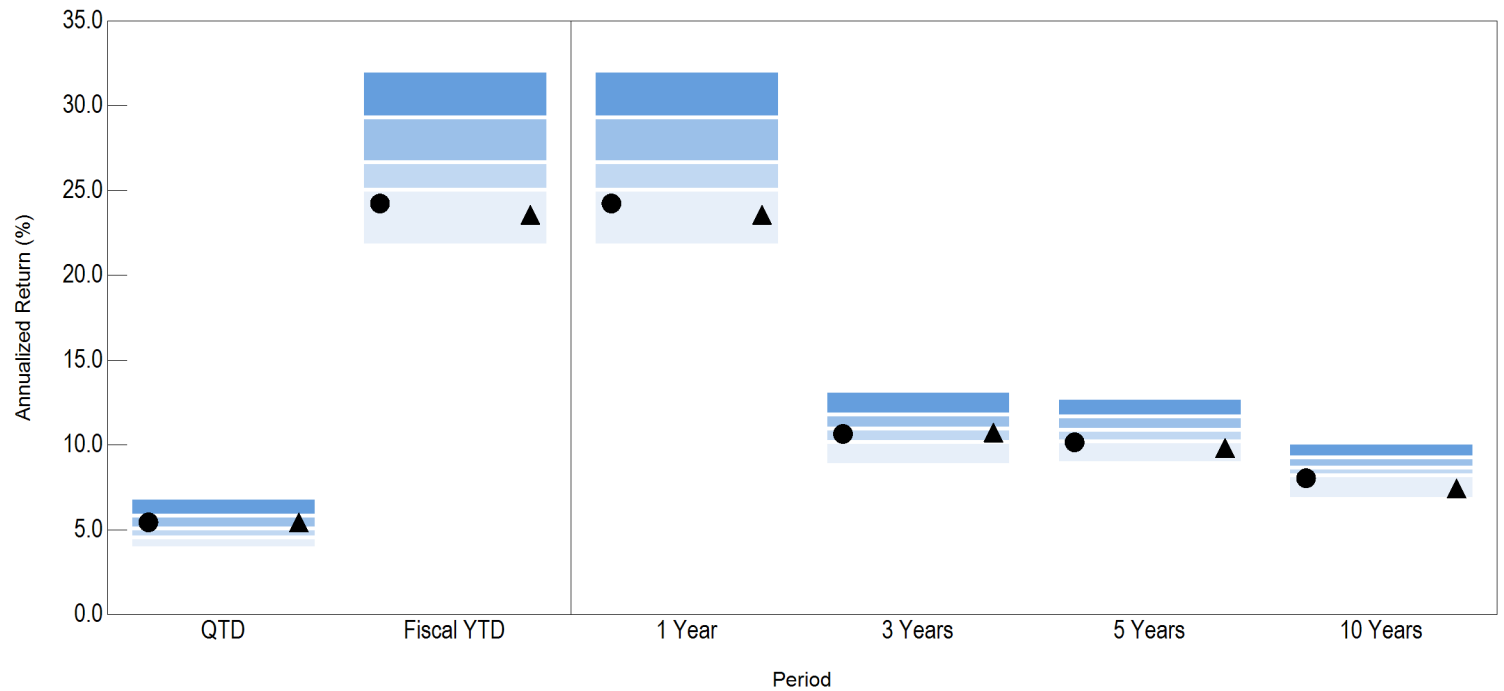
Private Credit allocation of 4.2% not included in the above chart. Opportunistic and midstream allocations not included in chart.

Total Equity  
Peer Universe Comparison: Total Equity Allocation

Period Ending: June 30, 2021

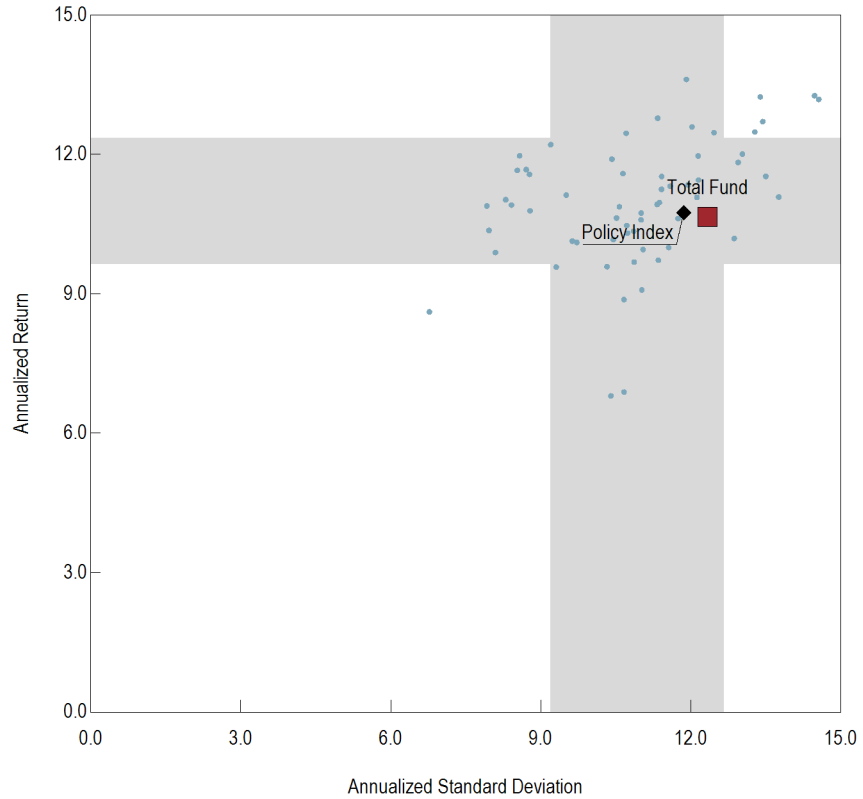


InvMetrics Public DB > \$1B Gross Return Comparison  
Ending June 30, 2021



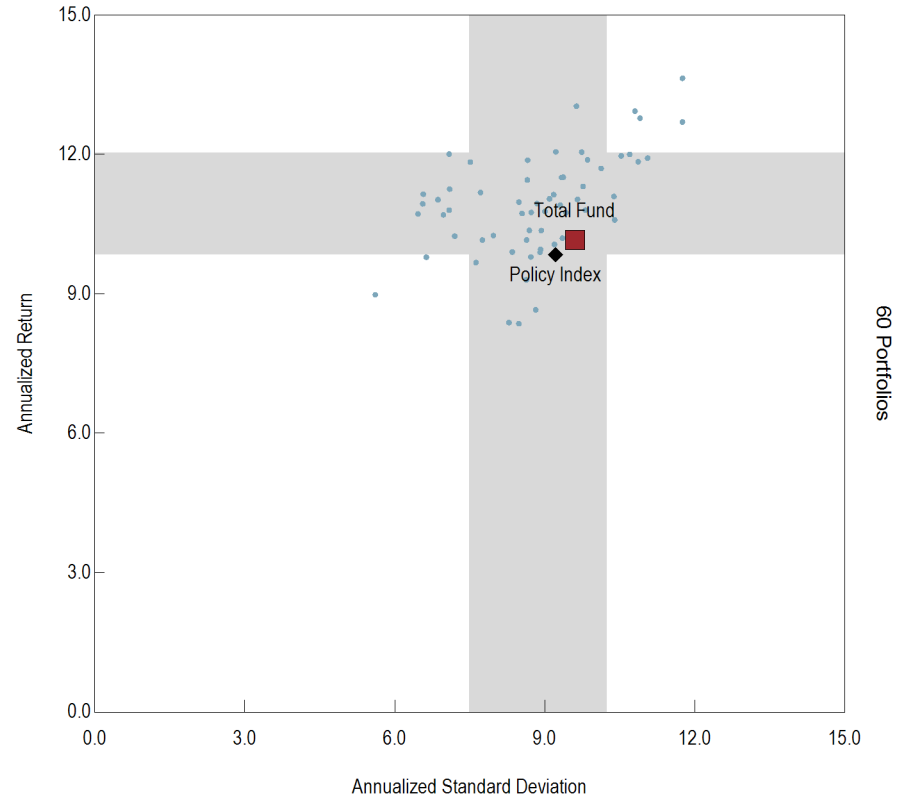
	Return (Rank)											
	QTD		Fiscal YTD		1 Year		3 Years		5 Years		10 Years	
5th Percentile	6.9		32.1		32.1		13.2		12.8		10.1	
25th Percentile	5.9		29.3		29.3		11.8		11.7		9.3	
Median	5.1		26.7		26.7		11.0		10.9		8.7	
75th Percentile	4.6		25.1		25.1		10.2		10.2		8.2	
95th Percentile	3.9		21.8		21.8		8.9		9.0		6.8	
# of Portfolios	60		60		60		60		60		58	
● Total Fund	5.4	(42)	24.2	(87)	24.2	(87)	10.7	(63)	10.2	(78)	8.0	(81)
▲ Policy Index	5.5	(41)	23.6	(91)	23.6	(91)	10.7	(61)	9.8	(88)	7.4	(89)

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending June 30, 2021



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

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending June 30, 2021



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

**Other**

# Total Fund Investment Fund Fee Analysis

Period Ending: June 30, 2021

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Beta Exposure		\$491,687,990		
Mellon DB SL Stock Index	0.03% of Assets	\$364,341,050	\$109,302	0.03%
Mellon NSL Dynamic US Equity	0.50% of Assets	\$56,395,661	\$281,978	0.50%
PIMCO StocksPLUS	0.50% of Assets	\$140,138,061	\$700,690	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	\$97,142,318	\$828,567	0.85%
Geneva Capital Small Cap Growth	0.75% of Assets	\$57,877,486	\$434,081	0.75%
Mellon DB SL World ex-US Index		\$313,375,880		
BlackRock International Alpha Tilts	0.45% of First 100.0 Mil, 0.40% Thereafter	\$264,510,502	\$1,108,042	0.42%
Cevian Capital II	Performance-based 1.50 and 18.00	\$33,776,678	\$603,045	1.79%
American Century Non-US Small Cap	0.32% of Assets	\$92,235,200	\$295,153	0.32%
DFA Emerging Markets Value I	0.54% of Assets	\$86,745,314	\$468,425	0.54%
AB Emerging Markets Strategic Core Equity	1.45% of Assets	\$115,934,250	\$1,681,047	1.45%
Mellon Emerging Markets Stock Index	0.05% of Assets	\$111,399,915	\$55,700	0.05%
Fixed Income Overlay		\$0		
Mellon DB SL Aggregate Bond Index Fund	0.05% of First 50.0 Mil, 0.04% of Next 50.0 Mil, 0.02% Thereafter	\$180,211,566	\$61,042	0.03%
PIMCO Core Plus	0.50% of First 25.0 Mil, 0.38% of Next 25.0 Mil, 0.25% Thereafter	\$230,735,141	\$670,588	0.29%
Western Asset Core Plus	0.30% of First 100.0 Mil, 0.15% Thereafter	\$238,055,065	\$507,083	0.21%
Western Asset High Yield Fixed Income	0.20% of Assets	\$187,293,638	\$374,587	0.20%
TCW Securitized Opportunities	1.00% of Assets	\$130,701,129	\$1,307,011	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: June 30, 2021

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	\$109,925,504	\$654,590	0.60%
PIMCO EMD	0.05% of Assets	\$163,361,607	\$81,681	0.05%
Gresham MTAP Commodity	0.75% of Assets	\$91,165,063	\$683,738	0.75%
Wellington Commodities	0.75% of Assets	\$196,429,403	\$1,473,221	0.75%
Aristeia International Limited	Performance-based 1.00 and 20.00	\$66,028,661	\$707,204	1.07%
Brevan Howard	Performance-based 2.00 and 20.00	\$67,194,167	\$1,343,883	2.00%
D.E. Shaw	Performance-based 2.50 and 25.00	\$54,407,650	\$1,360,191	2.50%
HBK Fund II	Performance-based 1.50 and 20.00	\$54,491,317	\$817,370	1.50%
Hudson Bay		\$70,286,088		
Indus Pacific Opportunities	Performance-based 1.50 and 20.00	\$40,202,150	\$874,496	2.18%
Magnetar Structured Credit	Performance-based 1.50 and 20.00	\$10,593,872	\$247,003	2.33%
Myriad Opportunities Offshore	Performance-based 2.00 and 20.00	\$34,573,493	\$782,805	2.26%
Pharo Macro Fund LTD		\$66,180,117		
PIMCO Commodity Alpha	Performance-based 1.70 and 20.00	\$58,253,692	\$1,047,034	1.80%
River Birch	Performance-based 1.50 and 20.00	\$1,285,015	\$20,367	1.58%
Sculptor Enhanced Domestic Partners		\$55,115,203		
Hudson Bay		\$54,290,431		
Davidson Kempner		\$54,575,257		
HBK Fund II		\$52,403,234		
HBK Opportunities - SPAC Series		\$50,773,052		
Harvest Midstream		\$129,562,296		
PIMCO Midstream	0.69% of Assets	\$109,282,688	\$754,051	0.69%
ASB Real Estate	1.25% of First 5.0 Mil, 1.00% of Next 10.0 Mil, 0.75% Thereafter	\$157,893,886	\$1,234,204	0.78%
J.P. Morgan Strategic Property	1.00% of Assets	\$111,944,232	\$1,119,442	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: June 30, 2021

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Invesco Real Estate III	1.50% of Assets	\$279,385	\$4,191	1.50%
Invesco Real Estate IV	1.50% of Assets	\$22,388,635	\$335,830	1.50%
Landmark Real Estate Partners VIII	777,717 Annually	\$18,978,370	\$777,717	4.10%
Long Wharf Real Estate	1.50% of Assets	\$12,247,127	\$183,707	1.50%
Covenant Apartment Fund X		\$11,081,261		
Abbott IV	330,000 Annually	\$1,109,623	\$330,000	29.74%
Abbott V	545,000 Annually	\$9,788,995	\$545,000	5.57%
Abbott VI	1.00% of First 25.0 Mil, 0.90% Thereafter	\$27,736,842	\$274,632	0.99%
Pantheon Secondary III	73,114 Quarterly	\$1,332,302	\$292,456	21.95%
Pantheon III	0 Annually	\$55,402	\$0	0.00%
Pantheon V	16,345 Quarterly	\$429,741	\$65,380	15.21%
Pantheon VI	149,262 Annually	\$1,035,184	\$149,262	14.42%
Pantheon VII	303,750 Annually	\$12,983,247	\$303,750	2.34%
Vista Equity Partners IV		\$6,649,443		
LGT Crown		\$4,250,000		
Brighton Private Equity		\$13,711,014		
Warren Equity		\$6,287,648		
Colony Distressed Credit IV	0.38% of Assets	\$51,535,333	\$193,257	0.38%
TSSP Adjacent Opportunities Partners	1.35% of Assets	\$36,271,752	\$489,669	1.35%
Magnetar Constellation	Performance-based 1.50 and 17.50	\$47,687,292	\$715,309	1.50%
H.I.G. Bayside Loan Opportunity Fund V		\$34,223,162		
Blue Torch Credit Opportunities		\$8,258,196		
Fortress Credit Opportunites		\$4,260,291		
Fortress Lending Fund II		\$16,194,710		
DB Investors Fund IV		\$38,888,067		
TAO Contingent		\$58,548,241		
Short Term Cash Account		\$166,516		
Short Term Investment Funds		\$65,043,399		

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: June 30, 2021

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	✓	✓	✓	Ⓡ	Ⓡ	✓	✓	--	--
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	✓	✓	✓	✓	✓	✓	✓	--	--
Western Asset High Yield Fixed Income	Domestic Fixed Income High Yield	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: June 30, 2021

Name	Allocation Group	Status	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8	Rule 9
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	✓	⚠	⚠	✓	✓	✓	✓	--	--
Harvest Midstream	Midstream	No Issues	--	--	--	--	--	--	--	--	--
PIMCO Midstream	Midstream	No Issues	--	--	--	--	--	--	--	--	--
ASB Real Estate	Real Estate	No Issues	--	--	⚠	--	⚠	--	⚠	--	--
J.P. Morgan Strategic Property	Real Estate	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: June 30, 2021

	2021 Q2	2021 Q1	2020 Q4	2020 Q3	2020 Q2	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3
<b>Total Fund</b>	<b>5.4</b>	<b>3.5</b>	<b>8.8</b>	<b>4.4</b>	<b>10.7</b>	<b>-11.3</b>	<b>4.6</b>	<b>0.2</b>	<b>3.1</b>	<b>6.8</b>	<b>-6.4</b>	<b>2.3</b>
<i>Policy Index</i>	5.5	3.0	8.8	4.5	10.1	-11.1	4.6	0.8	3.0	7.0	-5.5	2.2

	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3
<b>Total Fund</b>	<b>0.3</b>	<b>-0.1</b>	<b>3.0</b>	<b>3.2</b>	<b>2.7</b>	<b>4.2</b>	<b>0.8</b>	<b>3.5</b>	<b>1.9</b>	<b>1.1</b>	<b>2.2</b>	<b>-5.4</b>
<i>Policy Index</i>	0.7	-0.1	3.2	3.1	2.8	3.5	0.5	2.9	2.2	1.8	1.4	-4.9

	2015 Q2	2015 Q1	2014 Q4	2014 Q3	2014 Q2	2014 Q1	2013 Q4	2013 Q3	2013 Q2	2013 Q1	2012 Q4	2012 Q3
<b>Total Fund</b>	<b>0.7</b>	<b>2.4</b>	<b>0.8</b>	<b>-1.5</b>	<b>3.6</b>	<b>2.1</b>	<b>4.1</b>	<b>4.4</b>	<b>-0.6</b>	<b>4.4</b>	<b>2.2</b>	<b>4.2</b>
<i>Policy Index</i>	0.4	2.0	0.4	-1.4	3.4	2.4	3.8	4.4	-0.5	3.4	1.5	4.1

**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**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
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

Policy & Custom Index Composition

Policy Index: 1/1/2021-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, 4% Alerian Midstream, 1% BBgBarc
Policy Index: 7/1/2020-12/31/2020	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: 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, 2.5% MSCI ACWI, 5% NCREIF-ODCE, 3% actual time-weighted Private Equity Returns*, 2% actual time-weighted Private Credit Returns*, 1% actual time-weighted Private Real Estate Returns*, 2% MSCI ACWI*, 7% BBgBarc US Aggregate*.
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

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**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: excess return divided by 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.



## Disclaimer

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