Kern County Employees' Retirement Association

Investment Performance Review
Period Ending: September 30, 2022

Verus

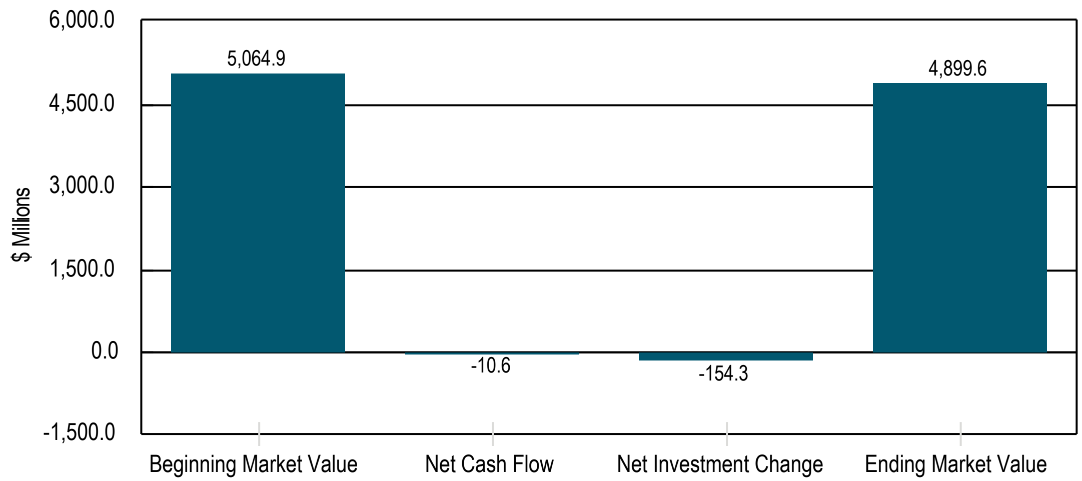
VERUSINVESTMENTS.COM

SEATTLE 206.622.3700
CHICAGO 312.815.5228
PITTSBURGH 412.784.6678
LOS ANGELES 310.297.1777
SAN FRANCISCO 415.362.3484

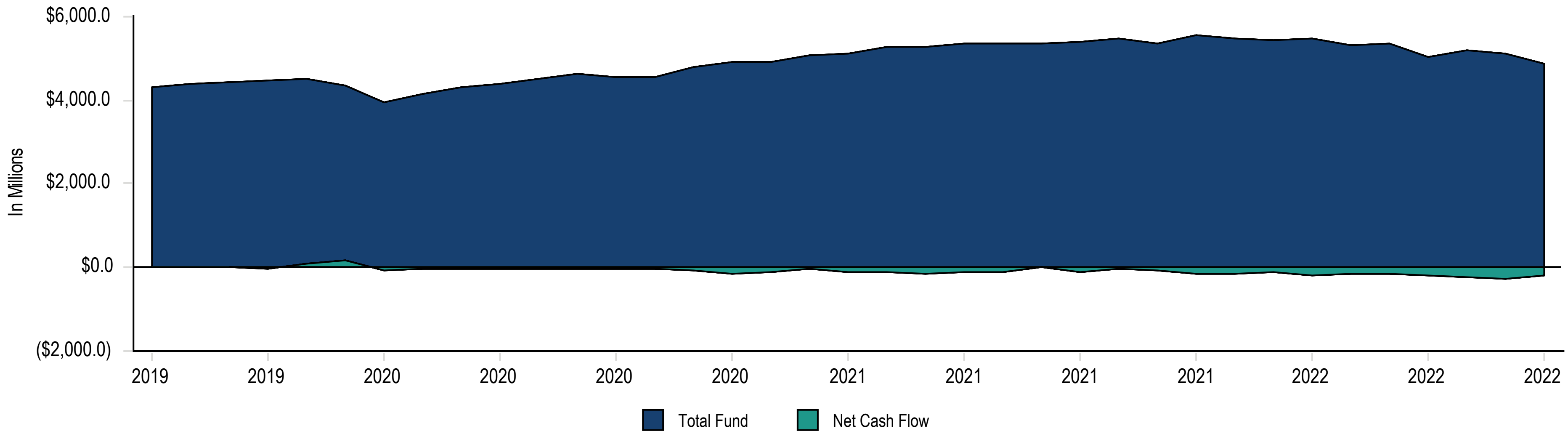
Portfolio Reconciliation

	Last Three Months
Beginning Market Value	$5,064,923,983
Net Cash Flows	-$10,556,478
Net Investment Change	-$154,338,703
Ending Market Value	$4,899,555,765

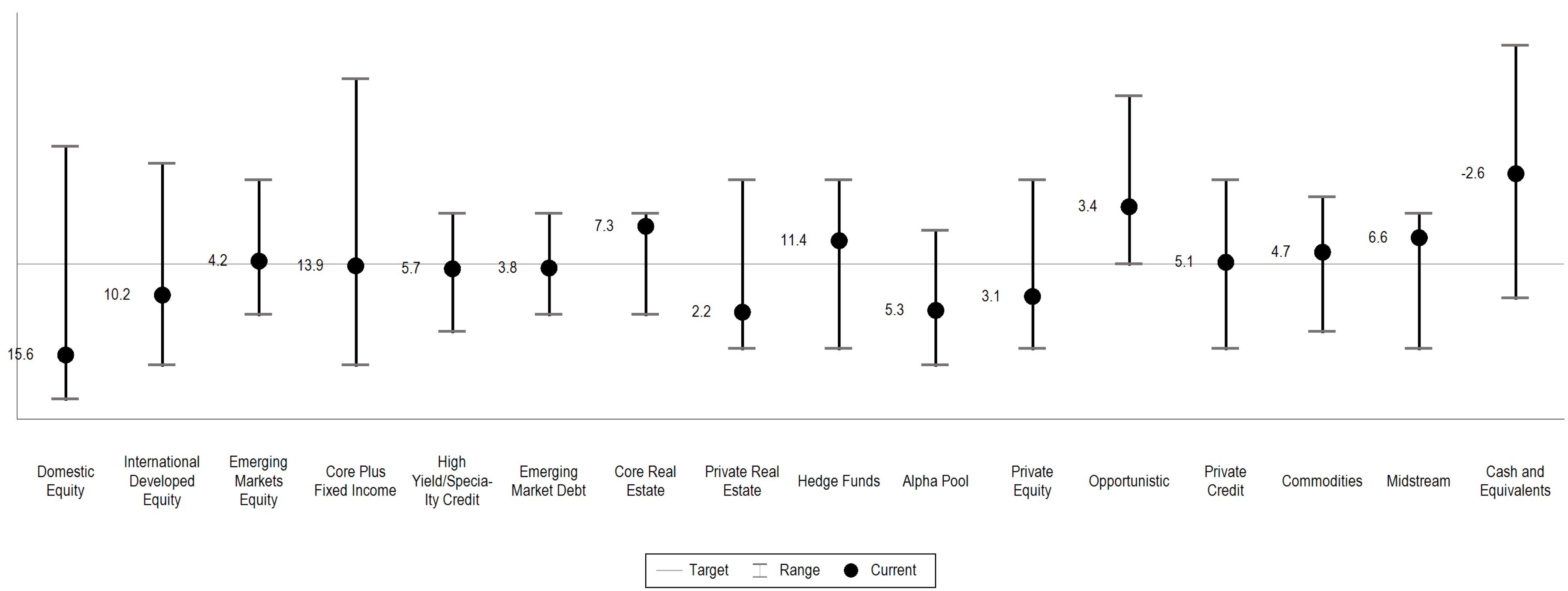
Change in Market Value
Last Three Months

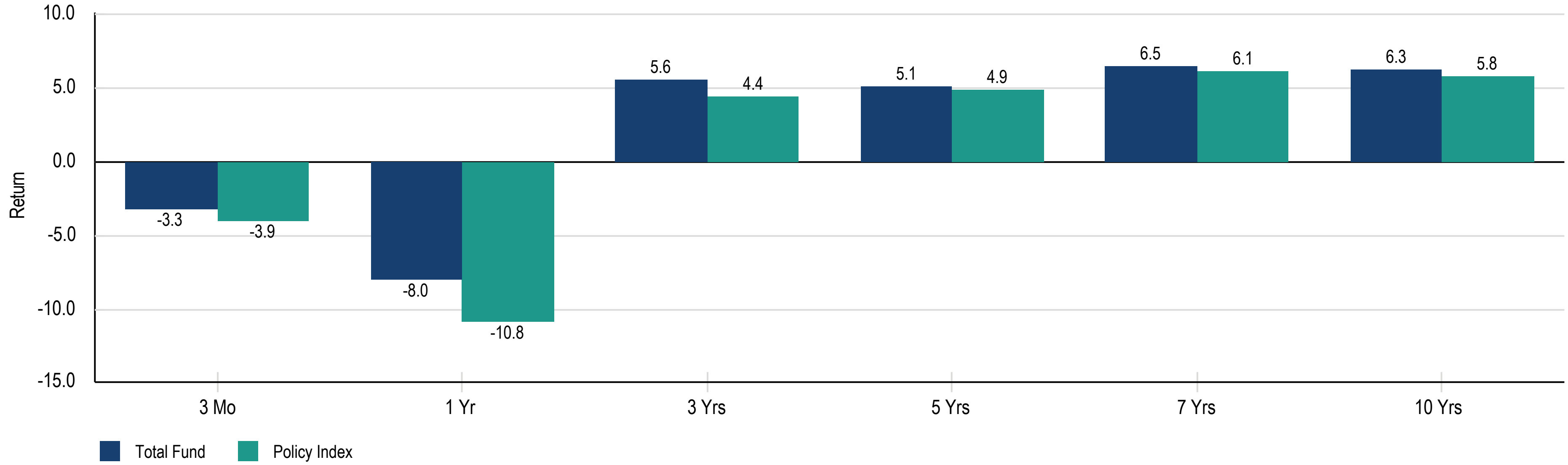


Market Value History



	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Equity	$1,469,296,073	30.0%	37.0%	-$341,923,574	26.0% - 48.0%	Yes
Fixed Income	$1,148,497,884	23.5%	24.0%	-$26,347,293	14.0% - 34.0%	Yes
Core Real Estate	$360,386,343	7.3%	5.0%	$111,259,403	2.0% - 8.0%	Yes
Hedge Funds	$558,797,269	11.4%	10.0%	$69,278,445	5.0% - 15.0%	Yes
Alpha Pool	$258,106,049	5.3%	8.0%	-$133,509,010	2.0% - 10.0%	Yes
Private Equity	$151,729,789	3.1%	5.0%	-$93,029,623	0.0% - 10.0%	Yes
Private Credit	$251,236,931	5.1%	5.0%	$6,477,519	0.0% - 10.0%	Yes
Private Real Estate	$106,156,539	2.2%	5.0%	-$138,602,873	0.0% - 10.0%	Yes
Commodities	$231,611,569	4.7%	4.0%	$35,804,040	0.0% - 8.0%	Yes
Opportunistic	$168,102,976	3.4%	0.0%	$168,102,976	0.0% - 10.0%	Yes
Midstream Energy	$322,797,858	6.6%	5.0%	$78,038,446	0.0% - 8.0%	Yes
Cash and Equivalents	-$127,163,515	-2.6%	-8.0%	$264,451,544	-10.0% - 5.0%	Yes
Total	**$4,899,555,765**	**100.0%**	**100.0%**			

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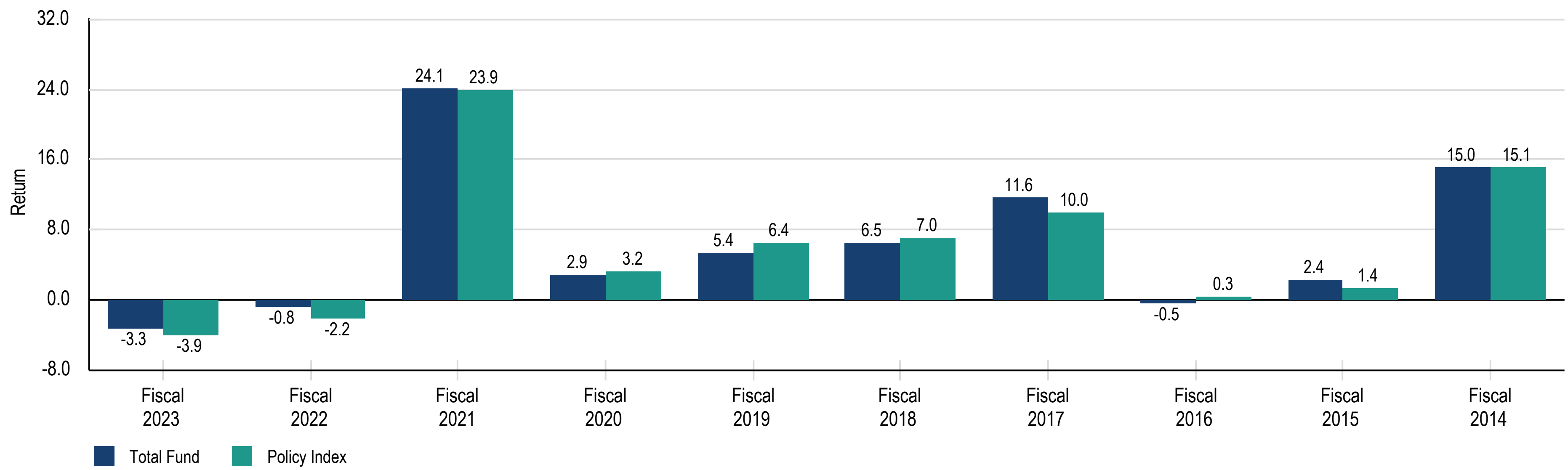
10 Yrs
Total Fund
Policy Index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-0.8
-2.2
-0.5
Fiscal 2023
Fiscal 2022
Fiscal 2021
Fiscal 2020
Fiscal 2019
Fiscal 2018
Fiscal 2017
Fiscal 2016
Fiscal 2015
Fiscal 2014
Total Fund
Policy Index

Total Fund
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association
Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Total Fund	**4,899,555,765**	**100.0**	**-3.2**	**-3.2**	**-7.8**	**5.9**	**5.4**	**6.7**	**-4.2**	**24.4**	**3.2**	**5.7**	**6.8**
Policy Index			*-3.9*	*-3.9*	*-10.8*	*4.4*	*4.9*	*5.8*	*-6.6*	*23.9*	*3.2*	*6.4*	*7.0*
InvMetrics Public DB > $1B Rank			*11*	*11*	*15*	*31*	*43*	*71*	*32*	*89*	*21*	*60*	*97*
Equity	**1,469,296,073**	**30.0**	**-7.0**	**-7.0**	**-20.1**	**4.1**	**4.8**	**8.5**	**-14.9**	**41.2**	**0.7**	**5.3**	**12.4**
MSCI AC World IMI (Net)			*-6.6*	*-6.6*	*-21.2*	*3.6*	*4.2*	*7.2*	*-16.5*	*40.9*	*1.2*	*4.6*	*11.1*
Domestic Equity	764,916,807	15.6	-5.2	-5.2	-17.0	7.9	8.9	-	-12.0	43.6	6.3	9.2	16.1
MSCI USA IMI			*-4.4*	*-4.4*	*-17.6*	*7.9*	*8.8*	*11.5*	*-13.7*	*44.4*	*6.7*	*9.0*	*14.9*
International Developed Equity	498,570,161	10.2	-8.3	-8.3	-23.9	0.0	0.2	-	-17.2	37.0	-5.5	-0.6	9.1
MSCI World ex U.S. IMI Index (Net)			*-9.2*	*-9.2*	*-25.0*	*-1.2*	*-0.5*	*3.8*	*-17.7*	*34.8*	*-5.1*	*0.2*	*7.7*
Emerging Markets Equity	205,808,369	4.2	-10.9	-10.9	-24.3	-2.7	-2.9	-	-21.4	40.6	-10.9	0.4	4.0
MSCI Emerging Markets IMI (Net)			*-10.8*	*-10.8*	*-27.5*	*-1.2*	*-1.4*	*-*	*-24.8*	*43.2*	*-4.0*	*0.5*	*7.9*
Fixed Income	**1,148,497,884**	**23.4**	**-3.2**	**-3.2**	**-15.5**	**-2.2**	**0.2**	**1.5**	**-12.7**	**5.4**	**6.6**	**7.9**	**0.2**
Fixed Income Custom Benchmark			*-3.9*	*-3.9*	*-15.1*	*-2.9*	*-0.2*	*1.4*	*-11.6*	*4.0*	*5.2*	*8.4*	*-0.1*
Core Plus Fixed Income	681,571,318	13.9	-4.5	-4.5	-15.4	-2.9	0.0	-	-11.2	1.0	9.5	8.0	0.0
Blmbg. U.S. Aggregate Index			*-4.8*	*-4.8*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*-10.3*	*-0.3*	*8.7*	*7.9*	*-0.4*
High Yield/ Specialty Credit	281,200,553	5.7	0.2	0.2	-10.3	0.5	2.3	-	-9.5	13.6	0.0	7.5	3.3
ICE BofA U.S. High Yield Index			*-0.7*	*-0.7*	*-14.1*	*-0.7*	*1.4*	*3.9*	*-12.7*	*15.6*	*-1.1*	*7.6*	*2.5*
Emerging Market Debt	185,624,755	3.8	-4.1	-4.1	-21.5	-5.3	-3.4	-	-19.6	9.4	-1.2	8.5	-3.6
50 JPM EMBI Global Div / 50 JPM GBI EM Global Div			*-4.6*	*-4.6*	*-22.5*	*-7.1*	*-3.2*	*-0.6*	*-20.2*	*7.1*	*-1.1*	*10.8*	*-1.9*
Commodities	**231,611,569**	**4.7**	**-7.1**	**-7.1**	**8.8**	**13.4**	**7.8**	**-**	**20.1**	**43.5**	**-10.7**	**-6.2**	**13.7**
Bloomberg Commodity Index Total Return			*-4.1*	*-4.1*	*11.8*	*13.5*	*7.0*	*-2.1*	*24.3*	*45.6*	*-17.4*	*-6.8*	*7.3*
Hedge Funds	**558,797,269**	**11.4**	**1.5**	**1.5**	**2.9**	**9.4**	**7.0**	**6.5**	**2.8**	**16.3**	**7.3**	**2.6**	**7.6**
75% 90 Day TBills +4% / 25% MSCI ACWI (Net)			*-0.5*	*-0.5*	*-2.0*	*4.8*	*5.3*	*5.5*	*-1.0*	*12.2*	*5.2*	*6.5*	*6.8*
Alpha Pool	**258,106,049**	**5.3**	**0.3**	**0.3**	**1.1**	**-**	**-**	**-**	**1.5**	**14.5**	**-**	**-**	**-**
90-Day T-Bill +4%			*1.5*	*1.5*	*4.6*	*-*	*-*	*-*	*4.2*	*4.1*	*-*	*-*	*-*
Midstream Energy	**322,797,858**	**6.6**	**5.1**	**5.1**	**15.6**	**-**	**-**	**-**	**9.6**	**-**	**-**	**-**	**-**
Alerian Midstream Energy Index			*-1.0*	*-1.0*	*11.7*	*-*	*-*	*-*	*11.4*	*-*	*-*	*-*	*-*
Core Real Estate	**360,386,343**	**7.4**	**0.6**	**0.6**	**19.4**	**11.3**	**9.2**	**-**	**25.6**	**6.6**	**2.3**	**6.1**	**7.4**
NCREIF ODCE			*0.5*	*0.5*	*22.1*	*12.4*	*10.2*	*10.9*	*29.5*	*8.0*	*2.2*	*6.4*	*8.4*
Private Real Estate	**106,156,539**	**2.2**	**1.9**	**1.9**	**25.5**	**16.7**	**11.6**	**13.0**	**31.3**	**12.1**	**4.4**	**9.0**	**5.4**
			1.9	*1.9*	*25.5*	*16.7*	*11.6*	*13.0*	*31.3*	*12.1*	*4.4*	*9.0*	*5.4*
Private Equity	**151,729,789**	**3.1**	**-3.5**	**-3.5**	**8.2**	**14.2**	**12.0**	**11.7**	**23.0**	**41.7**	**-10.5**	**10.9**	**7.8**
			-3.5	*-3.5*	*8.2*	*14.2*	*12.0*	*11.7*	*23.0*	*41.7*	*-10.5*	*10.9*	*7.8*
Private Credit	**251,236,931**	**5.1**	**-1.2**	**-1.2**	**-3.1**	**3.0**	**5.4**	**-**	**1.2**	**4.8**	**5.5**	**9.7**	**9.3**
			-1.2	*-1.2*	*-3.1*	*3.0*	*5.4*	*-*	*1.2*	*4.8*	*5.5*	*9.7*	*9.3*

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018
Opportunistic	**168,102,976**	**3.4**	**-3.1**	**-3.1**	**-7.7**	**-**	**-**	**-**	**-5.4**	**59.9**	**-**	**-**	**-**
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	*-*	*-*	*-*	*7.2*	*7.2*	*-*	*-*	*-*
Cash	**-127,163,515**	**-2.6**	**0.8**	**0.8**	**0.0**	**0.3**	**1.1**	**-2.9**	**-0.7**	**0.1**	**1.0**	**2.0**	**3.2**

Performance and Attribution

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Inception	Inception Date
Total Fund	**4,899,555,765**	**100.0**	**-3.3**	**-3.3**	**-8.0**	**5.6**	**5.1**	**6.3**	**-4.5**	**24.1**	**2.9**	**5.4**	**6.5**	**6.0**	**Jun-11**
Policy Index			*-3.9*	*-3.9*	*-10.8*	*4.4*	*4.9*	*5.8*	*-6.6*	*23.9*	*3.2*	*6.4*	*7.0*	*5.6*	
Equity	**1,469,296,073**	**30.0**	**-7.1**	**-7.1**	**-20.3**	**3.8**	**4.4**	**8.1**	**-15.1**	**40.7**	**0.3**	**4.8**	**11.8**	**7.3**	**Jun-11**
MSCI AC World IMI (Net)			*-6.6*	*-6.6*	*-21.2*	*3.6*	*4.2*	*7.2*	*-16.5*	*40.9*	*1.2*	*4.6*	*11.1*	*6.5*	
Domestic Equity	**764,916,807**	**15.6**	**-5.2**	**-5.2**	**-17.1**	**7.6**	**8.6**	**-**	**-12.2**	**43.2**	**6.0**	**8.8**	**15.5**	**9.4**	**Jul-14**
MSCI USA IMI			*-4.4*	*-4.4*	*-17.6*	*7.9*	*8.8*	-	*-13.7*	*44.4*	*6.7*	*9.0*	*14.9*	*9.2*	
Equity Beta Exposure	124,611,900	2.5	-5.7	-5.7	-16.5	-	-	-	-11.0	-	-	-	-	5.1	Aug-20
S&P 500 Index			*-4.9*	*-4.9*	*-15.5*	-	-	-	*-10.6*	-	-	-	-	*5.9*	
Mellon DB SL Stock Index Fund	426,205,824	8.7	-4.9	-4.9	-15.5	8.1	-	-	-10.6	40.8	7.5	10.4	-	9.0	Oct-17
S&P 500 Index			*-4.9*	*-4.9*	*-15.5*	*8.2*	*9.2*	-	*-10.6*	*40.8*	*7.5*	*10.4*	-	*8.9*	
PIMCO StocksPLUS	92,550,537	1.9	-5.5	-5.5	-18.0	7.4	8.7	11.8	-12.8	41.7	7.7	10.6	14.1	9.8	Jul-03
S&P 500 Index			*-4.9*	*-4.9*	*-15.5*	*8.2*	*9.2*	*11.7*	*-10.6*	*40.8*	*7.5*	*10.4*	*14.4*	*9.0*	
AB US Small Cap Value Equity	78,127,226	1.6	-5.2	-5.2	-20.1	4.7	2.7	-	-16.1	77.5	-19.4	-6.9	13.2	5.6	Jul-15
Russell 2000 Value Index			*-4.6*	*-4.6*	*-17.7*	*4.7*	*2.9*	-	*-16.3*	*73.3*	*-17.5*	*-6.2*	*13.1*	*5.6*	
Geneva Capital Small Cap Growth	43,421,320	0.9	-4.6	-4.6	-24.2	4.6	7.0	-	-22.1	37.6	9.3	8.6	22.7	8.3	Jul-15
Russell 2000 Growth Index			*0.2*	*0.2*	*-29.3*	*2.9*	*3.6*	-	*-33.4*	*51.4*	*3.5*	*-0.5*	*21.9*	*4.7*	
International Developed Equity	**498,570,161**	**10.2**	**-8.3**	**-8.3**	**-23.9**	**-0.2**	**0.0**	**-**	**-17.3**	**36.7**	**-5.7**	**-0.9**	**8.7**	**1.7**	**Jul-14**
MSCI World ex U.S. IMI Index (Net)			*-9.2*	*-9.2*	*-25.0*	*-1.2*	*-0.5*	-	*-17.7*	*34.8*	*-5.1*	*0.2*	*7.7*	*0.8*	
Mellon DB SL World ex-US Index Fund	405,985,897	8.3	-9.0	-9.0	-23.1	-0.6	-	-	-16.1	35.6	-5.5	-	-	-0.3	Jul-18
MSCI World ex U.S. IMI Index (Net)			*-9.2*	*-9.2*	*-25.0*	*-1.2*	-	-	*-17.7*	*34.8*	*-5.1*	*0.2*	-	*-1.3*	
Cevian Capital II	31,433,651	0.6	1.3	1.3	-6.9	8.8	4.2	-	-8.2	46.8	-8.2	-5.0	2.9	5.3	Dec-14
MSCI Europe (Net)			*-10.1*	*-10.1*	*-24.8*	*-1.7*	*-1.2*	-	*-17.6*	*35.1*	*-6.8*	*1.9*	*5.3*	*1.4*	
American Century Non-US Small Cap	60,918,029	1.2	-7.8	-7.8	-34.9	-	-	-	-27.4	-	-	-	-	-13.4	Dec-20
MSCI World ex U.S. Small Cap Growth Index (Net)			*-8.8*	*-8.8*	*-35.7*	-	-	-	*-28.6*	-	-	-	-	*-16.0*	
Emerging Markets Equity	**205,808,369**	**4.2**	**-11.1**	**-11.1**	**-24.8**	**-3.5**	**-3.8**	**-**	**-21.9**	**39.5**	**-11.8**	**-0.6**	**2.9**	**-1.0**	**Jul-14**
MSCI Emerging Markets IMI (Net)			*-10.8*	*-10.8*	*-27.5*	*-1.2*	*-1.4*	-	*-24.8*	*43.2*	*-4.0*	*0.5*	*7.9*	*0.4*	
DFA Emerging Markets Value I	68,160,210	1.4	-9.8	-9.8	-18.7	0.8	-0.5	-	-12.9	47.6	-17.7	2.0	5.7	2.0	Mar-14
MSCI Emerging Markets Value (Net)			*-11.0*	*-11.0*	*-23.6*	*-2.6*	*-2.1*	-	*-18.6*	*41.6*	*-15.7*	*5.0*	*4.3*	*0.1*	
AB Emerging Markets Strategic Core Equity Collective Trust	64,396,359	1.3	-11.6	-11.6	-26.0	-4.9	-4.9	-	-25.2	33.6	-5.1	-2.6	1.2	-0.4	Dec-16
MSCI Emerging Markets (Net)			*-11.6*	*-11.6*	*-28.1*	*-2.1*	*-1.8*	-	*-25.3*	*40.9*	*-3.4*	*1.2*	*8.2*	*2.7*	
Mellon Emerging Markets Stock Index Fund	73,251,800	1.5	-11.7	-11.7	-28.5	-	-	-	-25.5	41.1	-	-	-	-3.3	Jun-20
MSCI Emerging Markets (Net)			*-11.6*	*-11.6*	*-28.1*	-	-	-	*-25.3*	*40.9*	-	-	-	*0.0*	
Fixed Income	**1,148,497,884**	**23.4**	**-3.3**	**-3.3**	**-15.8**	**-2.5**	**-0.1**	**1.3**	**-13.0**	**5.1**	**6.3**	**7.6**	**-0.1**	**2.8**	**Jun-10**
Fixed Income Custom Benchmark			*-3.9*	*-3.9*	*-15.1*	*-2.9*	*-0.2*	*1.4*	*-11.6*	*4.0*	*5.2*	*8.4*	*-0.1*	*2.6*	
Core Plus Fixed Income	**681,571,318**	**13.9**	**-4.6**	**-4.6**	**-15.6**	**-3.0**	**-0.1**	**-**	**-11.4**	**0.8**	**9.3**	**7.9**	**-0.2**	**1.1**	**Jul-14**
Bloomberg U.S. Aggregate Index			*-4.8*	*-4.8*	*-14.6*	*-3.3*	*-0.3*	-	*-10.3*	*-0.3*	*8.7*	*7.9*	*-0.4*	*0.8*	
Fixed Income Beta Exposure	254,923,009	5.2	-5.5	-5.5	-	-	-	-	-	-	-	-	-	-3.2	Jun-22
Bloomberg U.S. Aggregate Index			*-4.8*	*-4.8*	-	-	-	-	-	-	-	-	-	*-6.2*	
Mellon DB SL Aggregate Bond Index Fund	154,776,570	3.2	-4.8	-4.8	-14.7	-3.3	-0.3	0.8	-10.4	-0.4	8.8	7.9	-0.4	1.7	Jan-11
Bloomberg U.S. Aggregate Index			*-4.8*	*-4.8*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*-10.3*	*-0.3*	*8.7*	*7.9*	*-0.4*	*1.8*	

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Inception	Inception Date
PIMCO Core Plus	156,733,471	3.2	-4.7	-4.7	-14.3	-2.5	0.0	1.0	-9.9	1.1	8.7	6.3	1.0	2.0	Feb-11
Bloomberg U.S. Aggregate Index			*-4.8*	*-4.8*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*-10.3*	*-0.3*	*8.7*	*7.9*	*-0.4*	*1.7*	
Western Asset Core Plus	115,138,268	2.3	-4.6	-4.6	-18.7	-3.8	-0.4	1.5	-14.5	2.4	9.3	9.4	-0.4	3.5	Jun-04
Bloomberg U.S. Aggregate Index			*-4.8*	*-4.8*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*-10.3*	*-0.3*	*8.7*	*7.9*	*-0.4*	*3.1*	
High Yield/ Specialty Credit	**281,200,553**	**5.7**	**0.1**	**0.1**	**-10.8**	**0.0**	**1.8**	**-**	**-10.0**	**13.1**	**-0.5**	**7.0**	**2.8**	**1.9**	**Jul-14**
ICE BofA U.S. High Yield Index			*-0.7*	*-0.7*	*-14.1*	*-0.7*	*1.4*	*-*	*-12.7*	*15.6*	*-1.1*	*7.6*	*2.5*	*2.7*	
Western Asset High Yield Fixed Income	183,575,160	3.7	-0.2	-0.2	-15.0	-1.2	1.2	3.6	-14.1	16.5	-2.2	8.3	2.2	5.4	Jun-05
50% Bloomberg US HY Ba 2%/50% Bloomberg US HY B 2% CAP			*-0.7*	*-0.7*	*-13.8*	*-0.4*	*1.8*	*3.9*	*-12.4*	*13.4*	*2.1*	*8.8*	*1.8*	*5.7*	
TCW Securitized Opportunities	97,625,393	2.0	0.7	0.7	-4.3	1.2	2.6	-	-4.0	6.4	2.2	5.2	4.3	3.2	Feb-16
Bloomberg U.S. High Yield - 2% Issuer Cap			*-0.6*	*-0.6*	*-14.1*	*-0.5*	*1.6*	*-*	*-12.8*	*15.3*	*0.0*	*7.5*	*2.6*	*4.9*	
Emerging Market Debt	**185,624,755**	**3.8**	**-4.2**	**-4.2**	**-21.7**	**-5.6**	**-3.8**	**-**	**-19.8**	**9.1**	**-1.7**	**7.9**	**-4.2**	**-1.5**	**Jul-14**
50 JPM EMBI Global Div / 50 JPM GBI EM Global Div			*-4.6*	*-4.6*	*-22.5*	*-7.1*	*-3.2*	*-*	*-20.2*	*7.1*	*-1.1*	*10.8*	*-1.9*	*-1.1*	
Stone Harbor Emerging Markets Debt Blend Portfolio	59,118,869	1.2	-4.0	-4.0	-22.8	-6.3	-3.8	-1.6	-20.9	9.5	-1.8	8.2	-3.1	-1.5	Aug-12
50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx			*-4.4*	*-4.4*	*-21.7*	*-6.6*	*-2.9*	*-0.5*	*-19.5*	*7.2*	*-0.8*	*10.6*	*-1.7*	*-0.3*	
PIMCO EMD	126,505,886	2.6	-4.3	-4.3	-21.0	-	-	-	-19.2	8.7	-	-	-	-7.8	Feb-20
50 JPM EMBI Global Div / 50 JPM GBI EM Global Div			*-4.6*	*-4.6*	*-22.5*	*-*	*-*	*-*	*-20.2*	*7.1*	*-*	*-*	*-*	*-9.1*	
Commodities	**231,611,569**	**4.7**	**-7.3**	**-7.3**	**8.2**	**12.6**	**7.2**	**-**	**19.4**	**42.5**	**-11.3**	**-6.7**	**13.3**	**-0.5**	**Jul-13**
Bloomberg Commodity Index Total Return			*-4.1*	*-4.1*	*11.8*	*13.5*	*7.0*	*-*	*24.3*	*45.6*	*-17.4*	*-6.8*	*7.3*	*-0.4*	
Gresham MTAP Commodity Builder Fund	78,689,436	1.6	-5.1	-5.1	13.3	14.2	7.5	-	24.7	46.8	-16.3	-9.0	12.4	-0.2	Oct-13
Bloomberg Commodity Index Total Return			*-4.1*	*-4.1*	*11.8*	*13.5*	*7.0*	*-*	*24.3*	*45.6*	*-17.4*	*-6.8*	*7.3*	*-0.5*	
WTC-CTF	152,922,133	3.1	-8.2	-8.2	6.2	12.4	7.4	-	17.2	40.2	-7.5	-5.4	14.2	-0.1	Sep-13
S&P GSCI Commodity Equal Weighted			*-7.2*	*-7.2*	*8.6*	*11.5*	*7.2*	*-*	*19.0*	*40.9*	*-12.4*	*-3.5*	*12.6*	*0.3*	
Hedge Funds	**558,797,269**	**11.4**	**1.4**	**1.4**	**3.1**	**9.3**	**6.9**	**5.9**	**3.0**	**16.1**	**7.0**	**2.5**	**7.6**	**5.8**	**Sep-10**
75% 90 Day TBills +4% / 25% MSCI ACWI (Net)			*-0.5*	*-0.5*	*-2.0*	*4.8*	*5.3*	*5.5*	*-1.0*	*12.2*	*5.2*	*6.5*	*6.8*	*5.4*	
Aristeia International Limited	68,735,073	1.4	2.2	2.2	3.5	11.0	9.5	-	1.8	21.6	8.7	9.2	2.6	5.4	May-14
Brevan Howard Fund	72,956,432	1.5	0.2	0.2	14.5	14.5	12.4	-	15.2	6.1	20.5	12.7	7.8	8.0	Sep-13
D.E. Shaw Composite Fund	65,388,544	1.3	4.0	4.0	29.9	21.6	17.4	-	30.6	19.0	15.6	11.5	11.3	14.8	Jul-13
HBK Fund II	56,549,779	1.2	1.5	1.5	1.8	5.5	4.9	-	2.3	11.0	1.5	5.5	3.0	4.2	Nov-13
Hudson Bay Cap Structure Arbitrage Enhanced Fund	78,771,664	1.6	4.0	4.0	9.7	13.0	-	-	7.7	14.2	16.2	-	-	12.9	Jun-19
Indus Pacific Opportunities Fund	37,249,096	0.8	0.9	0.9	-7.7	16.5	5.2	-	-8.2	38.0	15.8	-19.2	15.8	7.5	Jul-14
Magnetar Structured Credit Fund	8,285,833	0.2	2.0	2.0	3.5	12.3	9.9	-	1.1	38.1	-0.2	5.4	7.7	8.1	May-14
Pharo Macro Fund	61,746,193	1.3	-0.7	-0.7	-10.8	-	-	-	-11.1	3.5	-	-	-	-2.1	Dec-19
PIMCO Commodity Alpha Fund	63,623,535	1.3	-2.6	-2.6	2.7	8.6	7.1	-	8.6	14.2	4.8	5.2	10.4	9.1	Jun-16
Sculptor Domestic Partners II LP	45,491,119	0.9	3.3	3.3	-18.7	3.1	-	-	-19.9	16.8	6.5	-	-	4.7	Feb-19
Alpha Pool	**258,106,049**	**5.3**	**0.3**	**0.3**	**1.1**	**-**	**-**	**-**	**1.5**	**14.5**	**-**	**-**	**-**	**7.0**	**Jul-20**
90-Day T-Bill +4%			*1.5*	*1.5*	*4.6*	*-*	*-*	*-*	*4.2*	*4.1*	*-*	*-*	*-*	*4.3*	
Hudson Bay	60,844,859	1.2	2.4	2.4	7.1	-	-	-	6.7	-	-	-	-	9.9	Aug-20
Davidson Kempner Institutional Partners	53,329,668	1.1	-1.1	-1.1	-4.2	-	-	-	-3.4	-	-	-	-	2.0	Dec-20
HBK Fund II	54,382,816	1.1	0.7	0.7	0.2	-	-	-	1.3	-	-	-	-	3.8	Dec-20
HBK Opportunities Platform – SPAC Series	36,000,034	0.7	-0.7	-0.7	-2.4	-	-	-	-2.5	-	-	-	-	2.6	Nov-20
Garda Fixed Income Relative Value Opportunity Fund	53,548,672	1.1	-0.4	-0.4	4.8	-	-	-	-	-	-	-	-	4.8	Sep-21

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: September 30, 2022

	Notional Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	Fiscal 2022	Fiscal 2021	Fiscal 2020	Fiscal 2019	Fiscal 2018	Inception	Inception Date
Midstream Energy	**322,797,858**	**6.6**	**5.0**	**5.0**	**15.2**	**-**	**-**	**-**	**9.3**	**-**	**-**	**-**	**-**	**31.3**	**Sep-20**
Alerian Midstream Energy Index			*-1.0*	*-1.0*	*11.7*	-	-	-	*11.4*	-	-	-	-	*27.9*	
Harvest Midstream	185,889,047	3.8	6.9	6.9	23.6	-	-	-	15.3	-	-	-	-	40.1	Aug-20
Alerian Midstream Energy Index			*-1.0*	*-1.0*	*11.7*	-	-	-	*11.4*	-	-	-	-	*27.9*	
PIMCO Midstream	136,908,811	2.8	2.4	2.4	4.9	-	-	-	2.2	-	-	-	-	23.3	Sep-20
50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream			*-1.3*	*-1.3*	*-1.8*	-	-	-	*-0.7*	-	-	-	-	-	
Core Real Estate	**360,386,343**	**7.4**	**0.6**	**0.6**	**18.8**	**10.5**	**8.6**	**-**	**24.8**	**5.6**	**1.4**	**5.9**	**7.4**	**9.0**	**Oct-14**
NCREIF ODCE			*0.5*	*0.5*	*22.1*	*12.4*	*10.2*	-	*29.5*	*8.0*	*2.2*	*6.4*	*8.4*	*10.5*	
ASB Allegiance Real Estate Fund	199,291,186	4.1	2.2	2.2	19.7	10.7	8.9	-	23.0	5.4	1.5	6.8	7.1	9.1	Sep-13
NCREIF ODCE			*0.5*	*0.5*	*22.1*	*12.4*	*10.2*	-	*29.5*	*8.0*	*2.2*	*6.4*	*8.4*	*10.7*	
JPMCB Strategic Property Fund	161,095,157	3.3	-1.4	-1.4	18.3	10.5	8.5	-	27.8	5.9	1.3	5.0	7.6	8.9	Jul-14
NCREIF ODCE			*0.5*	*0.5*	*22.1*	*12.4*	*10.2*	-	*29.5*	*8.0*	*2.2*	*6.4*	*8.4*	*10.6*	
Private Real Estate	**106,156,539**	**2.2**	**1.9**	**1.9**	**25.5**	**16.7**	**11.6**	**12.5**	**31.3**	**12.1**	**4.4**	**9.0**	**5.4**	**12.8**	**Mar-11**
			1.9	*1.9*	*25.5*	*16.7*	*11.6*	*13.0*	*31.3*	*12.1*	*4.4*	*9.0*	*5.4*	*12.8*	
Private Equity	**151,729,789**	**3.1**	**-3.5**	**-3.5**	**8.2**	**14.2**	**12.0**	**11.2**	**22.9**	**41.7**	**-10.5**	**10.9**	**7.8**	**11.1**	**Sep-10**
			-3.5	*-3.5*	*8.2*	*14.2*	*12.0*	*11.7*	*23.0*	*41.7*	*-10.5*	*10.9*	*7.8*	*11.3*	
Private Credit	**251,236,931**	**5.1**	**-1.2**	**-1.2**	**-3.1**	**3.0**	**5.4**	**-**	**1.2**	**4.8**	**5.5**	**9.7**	**9.3**	**-25.9**	**Dec-15**
			-1.2	*-1.2*	*-3.1*	*3.0*	*5.4*	-	*1.2*	*4.8*	*5.5*	*9.7*	*9.3*	*7.0*	
Opportunistic	**168,102,976**	**3.4**	**-3.2**	**-3.2**	**-7.8**	**-**	**-**	**-**	**-5.4**	**59.9**	**-**	**-**	**-**	**11.3**	**Jan-20**
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	-	-	-	*7.2*	*7.2*	-	-	-	*7.2*	
River Birch International	8,154,365	0.2	6.4	6.4	7.1	-3.3	-2.9	-	-0.2	-0.7	-19.9	-0.5	2.8	-	Jul-15
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	*7.2*	-	-	*7.2*	*7.2*	*7.2*	-	-	-	
DB Investors Fund IV	22,582,102	0.5	-11.5	-11.5	-42.9	-	-	-	-34.4	95.1	-	-	-	4.5	Dec-19
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	-	-	-	*7.2*	*7.2*	-	-	-	*7.2*	
Sixth Street TAO Partners (D)	84,455,252	1.7	-4.7	-4.7	4.7	-	-	-	9.6	39.6	-	-	-	16.3	Mar-20
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	-	-	-	*7.2*	*7.2*	-	-	-	*7.2*	
Aristeia Select Opportunities II	52,911,257	1.1	1.6	1.6	9.9	-	-	-	-	-	-	-	-	5.1	Jul-21
Assumed Rate of Return +3%			*1.8*	*1.8*	*7.2*	-	-	-	*7.2*	-	-	-	-	*7.2*	
Cash	**-127,163,515**	**-2.6**	**0.8**	**0.8**	**0.0**	**0.3**	**1.1**	**-2.9**	**-0.8**	**0.1**	**1.0**	**2.0**	**3.2**	**-2.5**	**Apr-11**

			IRR Analysis as of IRR date									
Vintage Year	Manager/Fund	Estimated Market Value as of 9/30/2022	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												
2005	Abbott Capital PE V	$3,100,331	$65,000,000	$62,790,000	97%	$2,210,000	$89,361,494	$3,100,331	*1.42x*	*1.47x*	*6.9%*	12/31/21
2008	Abbott Capital PE VI	$22,959,156	$50,000,000	$49,750,000	100%	$250,000	$75,850,074	$21,952,850	*1.52x*	*1.99x*	*13.2%*	06/30/22
2006	Pantheon Global III	$567,222	$50,000,000	$47,300,000	95%	$2,700,000	$52,000,000	$567,222	*1.10x*	*1.11x*	*1.9%*	06/30/22
1998	Pantheon USA III	$49,712	$7,500,000	$7,335,000	98%	$165,000	$8,197,500	$49,712	*1.12x*	*1.12x*	*1.9%*	06/30/22
2002	Pantheon USA V	$414,136	$25,000,000	$24,350,000	97%	$650,000	$37,950,000	$425,173	*1.56x*	*1.58x*	*9.0%*	03/31/22
2004	Pantheon USA VI	$354,968	$35,000,000	$33,075,000	95%	$1,925,000	$50,623,827	$361,594	*1.53x*	*1.54x*	*6.7%*	06/30/22
2006	Pantheon USA VII	$8,101,079	$50,000,000	$46,600,000	93%	$3,400,000	$79,424,999	$8,333,247	*1.70x*	*1.88x*	*10.2%*	06/30/22
2020	Vista Foundation Fund IV	$13,958,460	$25,000,000	$14,189,855	57%	$10,810,145	$30,252	$14,049,020	*0.00x*	*0.99x*	*-1.7%*	06/30/22
2021	Crown Global Secondaries V Master S.	$21,239,887	$50,000,000	$16,750,000	34%	$33,250,000	$0	$19,198,409	*0.00x*	*1.27x*	*47.0%*	06/30/22
2021	Brighton Park Capital Fund I	$37,910,214	$30,000,000	$32,509,766	108%	-$2,509,766	$1,167,799	$36,257,961	*0.04x*	*1.20x*	*22.6%*	06/30/22
2021	Warren Equity Partners Fund III	$24,410,915	$32,500,000	$22,969,862	71%	$9,530,138	$508,290	N/A	*0.02x*	*1.08x*	N/A	N/A
2021	Peak Rock Capital Fund III	$9,273,982	$30,000,000	$9,683,186	32%	$20,316,814	$1,452,276	$8,979,016	*0.15x*	*1.11x*	22.78%	06/30/22
2021	Level Equity Growth Partners V	$2,872,189	$15,000,000	$3,315,369	22%	$11,684,631	$0	N/A	N/A	N/A	N/A	N/A
2021	Level Equity Opportunities Fund 2021	$1,371,903	$15,000,000	$1,650,936	11%	$13,349,064	$0	N/A	N/A	N/A	N/A	N/A
2022	Linden Capital Partners V LP	$5,145,635	$22,500,000	$5,145,635	23%	$17,354,365	$0	N/A	N/A	N/A	N/A	N/A
	Total Private Equity	**$151,729,789**	$502,500,000	$372,268,974	74%	$125,085,391	$396,566,512	$113,274,535	*1.07x*	*1.47x*		
	% of Portfolio (Market Value)	*3.1%*										

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]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.

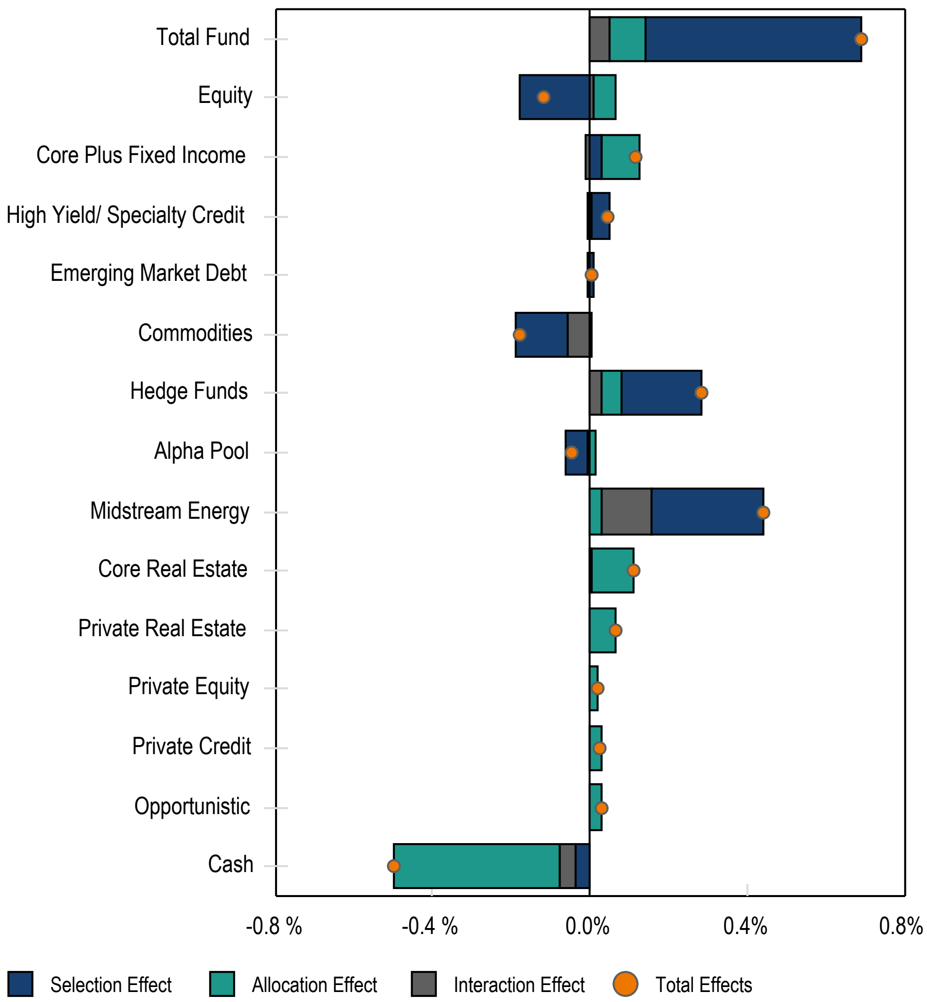
Vintage Year	Manager/Fund	Estimated Market Value 9/30/2022	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI)[1]	Tot. Value/ Paid-In (TVPI)[2]	Net IRR Since Inception[3]	IRR Date
			IRR Analysis as of IRR date									
Private Credit												
2015	DC Value Recovery Fund IV[4]	$33,313,661	$60,000,000	$73,340,099	122%	-$5,500,870	$24,003,132	$34,822,903	0.33x	0.78x	15.0%	6/30/22
2017	Sixth Street TAO Partners (B)	$37,760,184	$50,000,000	$66,777,561	134%	-$16,777,561	$41,444,279	$38,346,022	0.62x	1.19x	10.1%	6/30/22
2017	Brookfield Real Estate Finance Fund V	$19,766,051	$50,000,000	$35,882,954	72%	$14,117,046	$25,823,610	$19,481,686	0.72x	1.27x	7.7%	6/30/22
2018	Magnetar Constellation Fund V	$31,450,617	$60,000,000	$64,905,493	108%	-$4,905,493	$39,505,702	$37,069,321	0.61x	1.09x	26.6%	2/28/22
2019	H.I.G Bayside Loan Opportunity Fund V	$40,257,660	$60,000,000	$33,496,503	56%	$26,503,497	$11,244,389	$44,209,221	0.34x	1.54x	19.0%	6/30/22
2020	Blue Torch Credit Opportunities Fund II	$19,379,415	$20,000,000	$16,613,092	83%	$3,386,908	$1,836,476	$16,765,419	0.11x	1.28x	13.4%	6/30/22
2022	Blue Torch Credit Opportunities Fund III	$7,203,466	$40,000,000	$7,199,891	18%	$32,800,109	$0	N/A	0.00x	1.00x	N/A	N/A
2020	Fortress Credit Opportunites Fund V Expansic	$12,998,162	$40,000,000	$11,647,375	29%	$28,352,625	$468,590	$12,983,908	0.04x	1.16x	25.3%	6/30/22
2021	Fortress Lending Fund II	$30,712,727	$40,000,000	$32,137,851	80%	$7,862,149	$3,268,302	$29,374,059	0.10x	1.06x	10.7%	6/30/22
2022	Fortress Lending Fund III	$15,394,988	$40,000,000	$16,000,000	40%	$24,000,000	$0	N/A	N/A	N/A	N/A	N/A
2022	OrbiMed Royalty & Credit Opportunities IV	$3,000,000	$30,000,000	$3,000,000	10%	$27,000,000	$0	N/A	N/A	N/A	N/A	N/A
	Total Private Credit	**$251,236,931**	$490,000,000	$361,000,818	74%	$136,838,411	$147,594,480	$233,052,539	0.41x	1.10x		
	% of Portfolio (Market Value)	5.1%										

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]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.
[4]Name changed from Colony Distressed Credit fund to DC Value Recovery Fund IV

			IRR Analysis as of IRR date									
Vintage Year	**Manager/Fund**	**Estimated Market Value 9/30/2022**	**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												
2014	Invesco Real Estate Value-Add Fund IV	$4,031,249	$50,000,000	$43,637,717	87%	$6,362,283	$55,590,259	$4,235,230	*1.27x*	*1.37x*	*11.7%*	06/30/22
2017	Landmark Real Estate Partners VIII	$28,646,936	$60,000,000	$36,127,951	60%	$23,872,049	$22,058,205	$30,330,286	*0.61x*	*1.40x*	*20.4%*	06/30/22
2018	Long Wharf Real Estate Partners VI	$34,368,035	$50,000,000	$41,704,658	83%	$8,295,342	$16,451,932	$34,368,035	*0.39x*	*1.22x*	*28.2%*	09/30/22
2020	Covenant Apartment Fund X	$29,447,044	$30,000,000	$22,807,333	76%	$7,192,667	$5,646,691	$24,357,028	*0.25x*	*1.54x*	*30.7%*	06/30/22
2021	Singerman Real Estate Opportunity Fund IV	$3,850,122	$35,000,000	$3,815,000	11%	$31,185,000	$0	N/A	N/A	N/A	N/A	N/A
2022	LBA Logistics Value Fund IX, L.P.	$5,813,153	$40,000,000	$6,153,846	5%	$38,076,923	$0	N/A	N/A	N/A	N/A	N/A
	Total Private Real Estate	**$106,156,539**	$265,000,000	$154,246,505	58%	$114,984,264	$99,747,088	$93,290,579	*0.65x*	*1.33x*		
	% of Portfolio (Market Value)	**2.2%**										

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]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.

Attribution Effects
Last Three Months



Performance Attribution

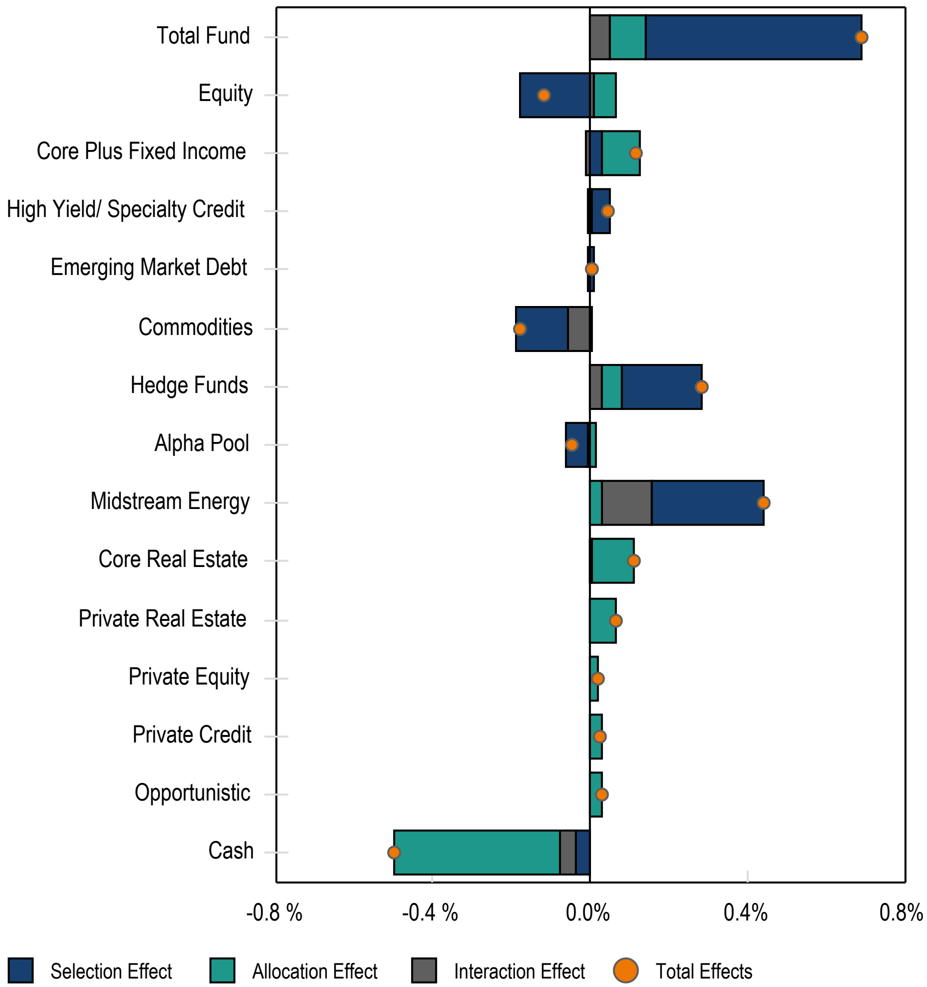
	Last Three Months
Wtd. Actual Return	-3.25
Wtd. Index Return	-3.95
Excess Return	**0.69**
Selection Effect	0.55
Allocation Effect	0.09
Interaction Effect	0.05

Attribution Summary
Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	-7.1	-6.6	-0.4	-0.2	0.1	0.0	-0.1
Core Plus Fixed Income	-4.6	-4.8	0.2	0.0	0.1	0.0	0.1
High Yield/ Specialty Credit	0.1	-0.7	0.8	0.0	0.0	0.0	0.0
Emerging Market Debt	-4.2	-4.3	0.2	0.0	0.0	0.0	0.0
Commodities	-7.3	-4.1	-3.1	-0.2	0.0	-0.1	-0.2
Hedge Funds	1.4	-0.5	2.0	0.2	0.1	0.0	0.3
Alpha Pool	0.3	1.5	-1.2	-0.1	0.0	0.0	0.0
Midstream Energy	5.0	-1.0	6.0	0.4	0.0	0.1	0.4
Core Real Estate	0.6	0.5	0.0	0.0	0.1	0.0	0.1
Private Real Estate	1.9	1.9	0.0	0.0	0.1	0.0	0.1
Private Equity	-3.5	-3.5	0.0	0.0	0.0	0.0	0.0
Private Credit	-1.2	-1.2	0.0	0.0	0.0	0.0	0.0
Opportunistic	-3.2	1.8	-4.9	0.0	0.0	0.0	0.0
Cash	0.8	0.0	0.8	-0.1	-0.4	0.0	-0.5
Total Fund	**-3.3**	**-3.9**	**0.7**	**0.2**	**0.1**	**0.0**	**0.7**

Weighted returns shown in attribution analysis may differ from actual returns. Negative cash allocation unable to be shown in Attribution Summary table. Wtd. Index Returns calculated from benchmark returns and weightings of each component. Selection Effect includes Other Effect in the Performance Attribution table.

Attribution Effects
Fiscal YTD



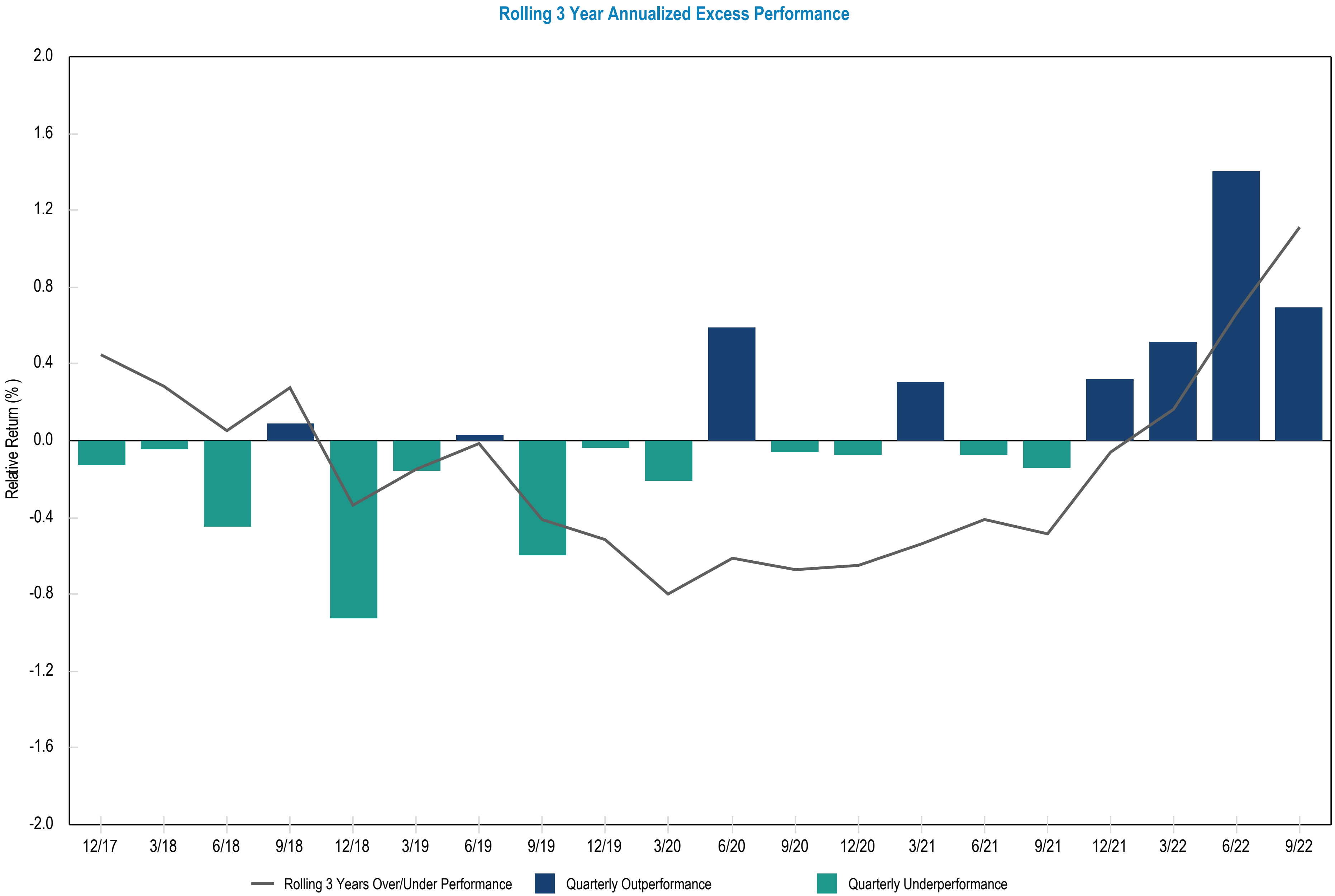
Performance Attribution

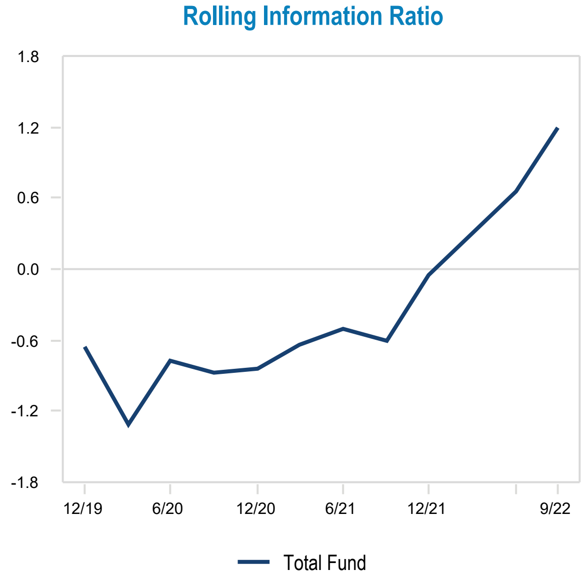
	Fiscal YTD
Wtd. Actual Return	-3.25
Wtd. Index Return	-3.95
Excess Return	**0.69**
Selection Effect	0.55
Allocation Effect	0.09
Interaction Effect	0.05

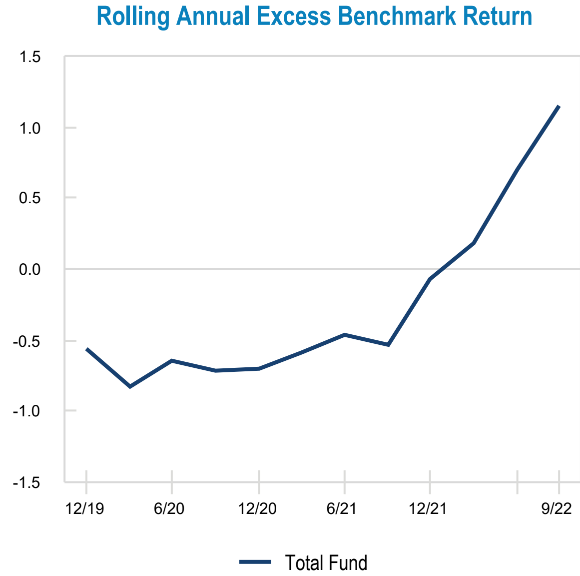
Attribution Summary
Fiscal YTD

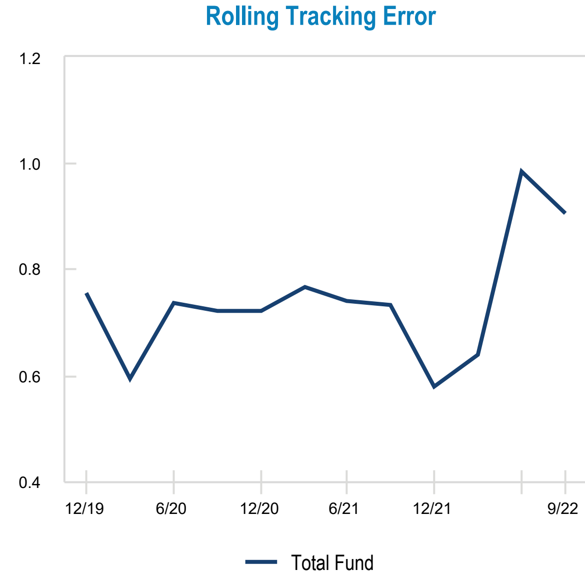
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	-7.1	-6.6	-0.4	-0.2	0.1	0.0	-0.1
Core Plus Fixed Income	-4.6	-4.8	0.2	0.0	0.1	0.0	0.1
High Yield/ Specialty Credit	0.1	-0.7	0.8	0.0	0.0	0.0	0.0
Emerging Market Debt	-4.2	-4.3	0.2	0.0	0.0	0.0	0.0
Commodities	-7.3	-4.1	-3.1	-0.2	0.0	-0.1	-0.2
Hedge Funds	1.4	-0.5	2.0	0.2	0.1	0.0	0.3
Alpha Pool	0.3	1.5	-1.2	-0.1	0.0	0.0	0.0
Midstream Energy	5.0	-1.0	6.0	0.4	0.0	0.1	0.4
Core Real Estate	0.6	0.5	0.0	0.0	0.1	0.0	0.1
Private Real Estate	1.9	1.9	0.0	0.0	0.1	0.0	0.1
Private Equity	-3.5	-3.5	0.0	0.0	0.0	0.0	0.0
Private Credit	-1.2	-1.2	0.0	0.0	0.0	0.0	0.0
Opportunistic	-3.2	1.8	-4.9	0.0	0.0	0.0	0.0
Cash	0.8	0.0	0.8	-0.1	-0.4	0.0	-0.5
Total Fund	**-3.3**	**-3.9**	**0.7**	**0.2**	**0.1**	**0.0**	**0.7**

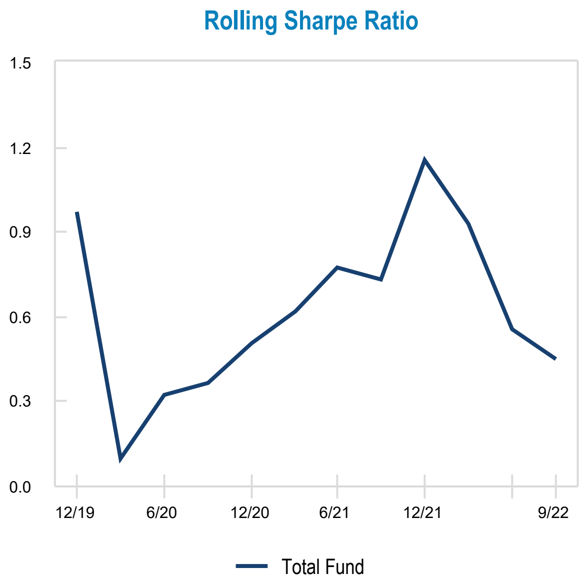
Weighted returns shown in attribution analysis may differ from actual returns. Negative cash allocation unable to be shown in Attribution Summary table. Wtd. Index Returns calculated from benchmark returns and weightings of each component. Selection Effect includes Other Effect in the Performance Attribution table.


Rolling 3 Year Annualized Excess Performance
2.0
1.6
1.2
0.8
0.4
0.0
-0.4
-0.8
-1.2
-1.6
-2.0
Relative Return (%)
12/17
3/18
6/18
9/18
12/18
3/19
6/19
9/19
12/19
3/20
6/20
9/20
12/20
3/21
6/21
9/21
12/21
3/22
6/22
9/22
Rolling 3 Years Over/Under Performance
Quarterly Outperformance
Quarterly Underperformance

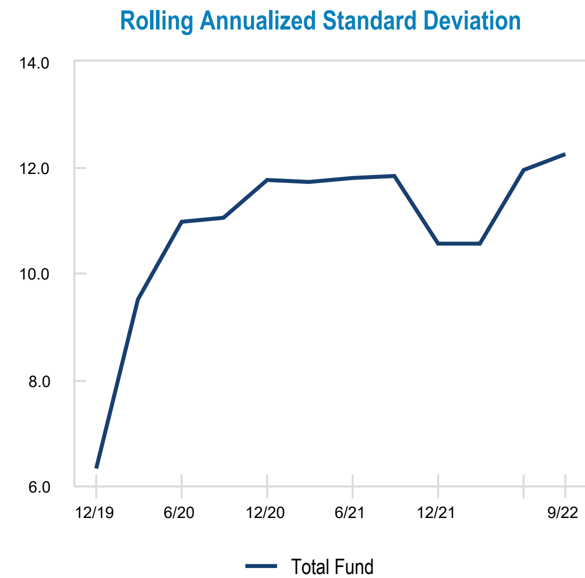

Rolling Information Ratio
1.8
1.2
0.6
0.0
-0.6
-1.2
-1.8
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

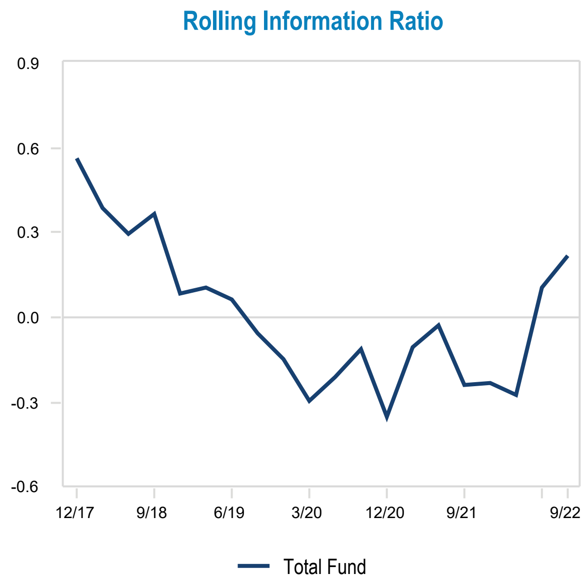

Rolling Annual Excess Benchmark Return
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

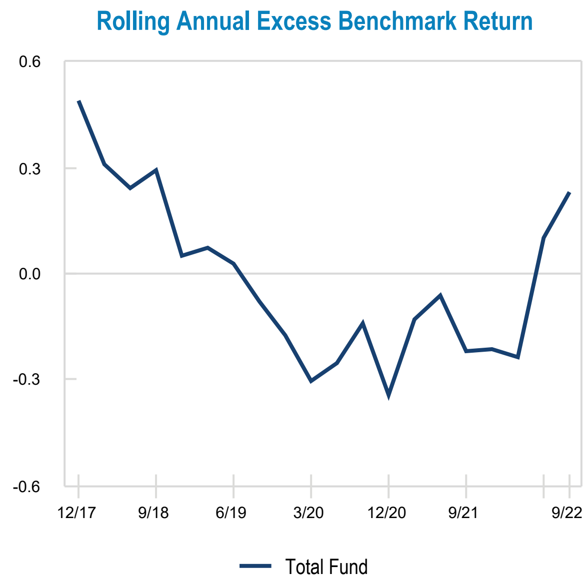

Rolling Tracking Error
1.2
1.0
0.8
0.6
0.4
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

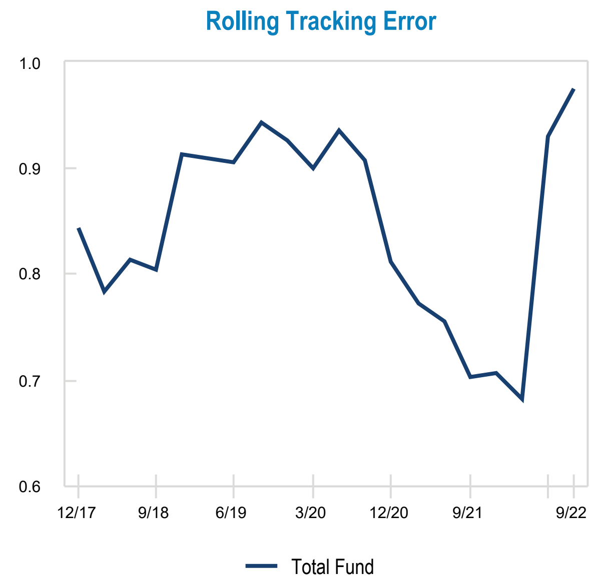

Rolling Sharpe Ratio
1.5
1.2
0.9
0.6
0.3
0.0
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

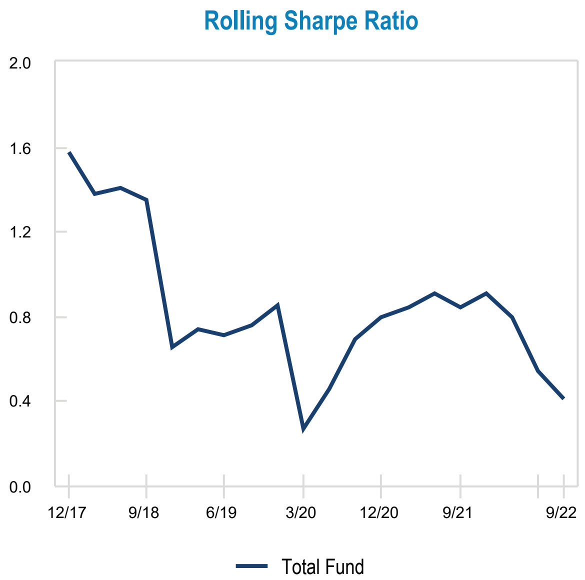

Rolling Annual Excess Risk Free Return
15.0
10.0
5.0
0.0
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

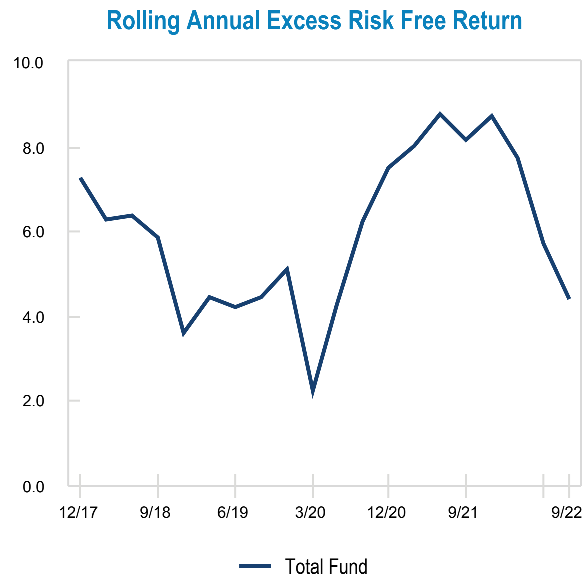

Rolling Annualized Standard Deviation
14.0
12.0
10.0
8.0
6.0
12/19
6/20
12/20
6/21
12/21
9/22
Total Fund

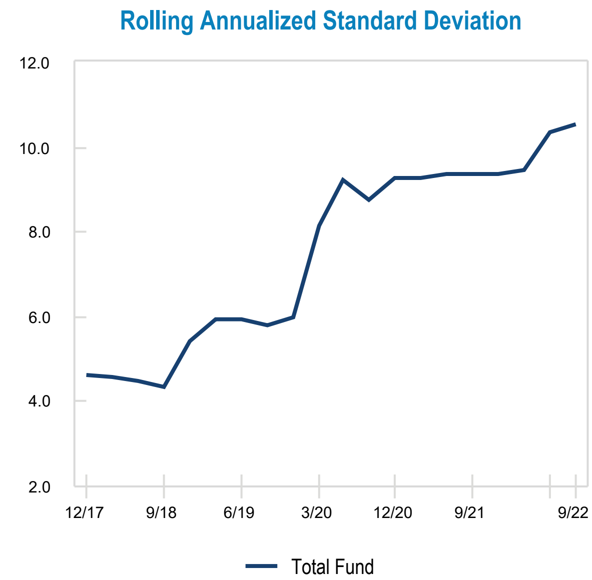

Rolling Information Ratio
0.9
0.6
0.3
0.0
-0.3
-0.6
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund


Rolling Annual Excess Benchmark Return
0.6
0.3
0.0
-0.3
-0.6
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund


Rolling Tracking Error
1.0
0.9
0.8
0.7
0.6
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund


Rolling Sharpe Ratio
2.0
1.6
1.2
0.8
0.4
0.0
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund


Rolling Annual Excess Risk Free Return
10.0
8.0
6.0
4.0
2.0
0.0
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund


Rolling Annualized Standard Deviation
12.0
10.0
8.0
6.0
4.0
2.0
12/17
9/18
6/19
3/20
12/20
9/21
9/22
Total Fund

Cash Flows

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Equity	**1,760,498,263**	**2,078,160**	**-312,008,962**		**135,000,000**	**-116,271,388**	**1,469,296,073**
Equity Beta Exposure	425,371,375	2,021,306	-298,759,687			-4,021,094	124,611,900
Russell 2000 Overlay	13,578,600	56,854	-13,249,275			-386,179	
Mellon DB SL Stock Index Fund	280,796,486				175,000,000	-29,590,662	426,205,824
PIMCO StocksPLUS	97,925,248					-5,374,711	92,550,537
AB US Small Cap Value Equity	82,210,920					-4,083,694	78,127,226
Geneva Capital Small Cap Growth	45,419,386					-1,998,066	43,421,320
Mellon DB SL World ex-US Index Fund	471,376,354				-25,000,000	-40,390,457	405,985,897
Fidelity Non-US Small Cap Equity	246,745					-14,161	232,584
Cevian Capital II	31,023,988					409,663	31,433,651
American Century Non-US Small Cap	66,087,970					-5,169,941	60,918,029
DFA Emerging Markets Value I	75,568,224					-7,408,014	68,160,210
AB Emerging Markets Strategic Core Equity Collective Trust	87,939,424				-15,000,000	-8,543,065	64,396,359
Mellon Emerging Markets Stock Index Fund	82,952,809					-9,701,009	73,251,800
Transition Equity	733					3	736
Fixed Income	**1,130,869,301**	**215,258,351**	**-3,016,314**	**-62,325**	**-150,000,000**	**-44,551,129**	**1,148,497,884**
Fixed Income Beta Exposure	51,180,364	215,258,351	-1,227,703			-10,288,003	254,923,009
Mellon DB SL Aggregate Bond Index Fund	162,487,098					-7,710,528	154,776,570
PIMCO Core Plus	190,694,370				-25,000,000	-8,960,899	156,733,471
Western Asset Core Plus	197,945,711				-75,000,000	-7,807,443	115,138,268
Western Asset High Yield Fixed Income	183,851,907					-276,747	183,575,160
TCW Securitized Opportunities	125,463,906		-1,788,611	-62,325	-25,000,000	-987,577	97,625,393
Stone Harbor Emerging Markets Debt Blend Portfolio	86,965,794				-25,000,000	-2,846,925	59,118,869
PIMCO EMD	132,174,077					-5,668,191	126,505,886
Transition Fixed Income	106,074					-4,816	101,258
Commodities	**269,362,016**			**-34,203**	**-20,000,000**	**-17,716,243**	**231,611,569**
Gresham MTAP Commodity Builder Fund	82,876,151			-34,203		-4,152,511	78,689,436
WTC-CTF	186,485,865				-20,000,000	-13,563,732	152,922,133
Hedge Funds	**549,644,108**			**-166,394**		**9,319,554**	**558,797,269**
Aristeia International Limited	67,235,553					1,499,520	68,735,073
Brevan Howard Fund	72,840,227					116,205	72,956,432
D.E. Shaw Composite Fund	62,844,042					2,544,502	65,388,544
HBK Fund II	55,719,468					830,311	56,549,779

Total Fund | Kern County Employees' Retirement Association
Net Cash Flow: Last 1 Quarter | Period Ending: September 30, 2022

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Hudson Bay Cap Structure Arbitrage Enhanced Fund	75,712,464					3,059,200	78,771,664
Indus Pacific Opportunities Fund	36,899,245					349,851	37,249,096
Magnetar Structured Credit Fund	7,860,049					425,784	8,285,833
Pharo Macro Fund	61,182,322					563,871	61,746,193
PIMCO Commodity Alpha Fund	65,294,254			-166,394		-1,504,324	63,623,535
Sculptor Domestic Partners II LP	44,056,485					1,434,635	45,491,119
Alpha Pool	**257,534,903**	**3,524,958**		**-33,034**	**-3,747,280**	**826,502**	**258,106,049**
Hudson Bay	58,481,870	936,271				1,426,718	60,844,859
Davidson Kempner Institutional Partners	53,077,049	832,367				-579,748	53,329,668
HBK Fund II	53,527,255	472,102				383,459	54,382,816
HBK Opportunities Platform – SPAC Series	39,536,750	450,882		-33,034	-3,747,280	-207,284	36,000,034
Garda Fixed Income Relative Value Opportunity Fund	52,911,979	833,336				-196,643	53,548,672
Midstream Energy	**318,886,871**	**614,978**		**-253,667**	**-12,606,719**	**16,156,395**	**322,797,858**
Harvest Midstream	185,157,607	614,978		-253,667	-12,606,719	12,976,848	185,889,047
PIMCO Midstream	133,729,264					3,179,547	136,908,811
Core Real Estate	**358,380,234**		**-288,894**			**2,295,002**	**360,386,343**
ASB Allegiance Real Estate Fund	194,923,658					4,367,528	199,291,186
JPMCB Strategic Property Fund	163,456,576		-288,894			-2,072,526	161,095,157
Private Real Estate	**94,350,728**	**131,250**	**-839,546**		**10,707,228**	**1,806,879**	**106,156,539**
Invesco Real Estate Value-Add Fund IV	4,235,230					-203,981	4,031,249
Landmark Real Estate Partners VIII	30,330,286				-672,441	-1,010,909	28,646,936
Long Wharf Real Estate	27,660,734				6,749,257	-41,956	34,368,035
Covenant Apartment Fund X	24,357,028		-839,546		2,707,335	3,222,227	29,447,044
Singerman Real Estate Opportunity Fund IV	3,770,201	131,250				-51,329	3,850,122
LBA Logistics Value Fund IX, L.P.	3,997,249				1,923,077	-107,173	5,813,153
Private Equity	**139,043,110**				**12,790,774**	**-104,095**	**151,729,789**
Abbott V	3,100,331						3,100,331
Abbott VI	21,952,850					1,006,306	22,959,156
Pantheon Secondary III	567,222						567,222
Pantheon III	49,712						49,712
Pantheon V	425,173					-11,037	414,136

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Pantheon VI	361,594					-6,626	354,968
Pantheon VII	8,333,247				-999,999	767,831	8,101,079
Vista Foundation Fund IV	14,049,020					-90,560	13,958,460
Crown Global Secondaries V Master S.C.Sp	19,198,409				2,000,000	41,478	21,239,887
Brighton Park Capital Fund I	36,257,961				3,823,746	-2,171,493	37,910,214
Warren Equity Partners Fund III	21,033,189				2,809,034	568,692	24,410,915
Peak Rock Capital Fund III	8,979,016				12,358	282,608	9,273,982
Level Equity Growth Partners V	3,105,937					-233,748	2,872,189
Level Equity Opportunities Fund 2021	1,629,450					-257,547	1,371,903
Linden Capital Partners V LP					5,145,635		5,145,635
Private Credit	**247,247,651**				**7,118,613**	**-3,129,333**	**251,236,931**
DC Value Recovery Fund IV	34,822,903					-1,509,242	33,313,661
Sixth Street TAO Partners (B)	38,346,022				623,038	-1,208,876	37,760,184
Brookfield Real Estate Finance Fund V	19,481,686					284,365	19,766,051
Magnetar Constellation Fund V	35,302,607				-4,428,232	576,242	31,450,617
H.I.G. Bayside Loan Opportunity Fund V	44,209,221				-2,739,576	-1,211,985	40,257,660
Blue Torch Credit Opportunities Fund II	16,765,419				2,369,045	244,951	19,379,415
Fortress Credit Opportunites Fund V Expansion	12,983,908					14,254	12,998,162
Fortress Lending Fund II	29,374,059				1,094,447	244,221	30,712,727
Fortress Lending Fund III	13,961,826				2,000,000	-566,838	15,394,988
OrbiMed Royalty & Credit Opportunities IV					3,000,000		3,000,000
Opportunistic	**165,818,510**			**-55,993**	**7,962,265**	**-5,621,807**	**168,102,976**
DB Investors Fund IV	25,512,204					-2,930,102	22,582,102
Sixth Street TAO Partners (D)	80,379,385				7,962,265	-3,886,398	84,455,252
Aristeia Select Opportunities II	52,099,878			-55,993		867,371	52,911,257
River Birch International	7,827,043					327,322	8,154,365
Cash	**-226,711,713**	**691,030,483**	**-607,040,943**		**12,775,120**	**2,650,960**	**-127,163,515**
Short Term Cash Account	1						1
Short Term Investment Funds	60,450,901	15,684,406	-27,700,122		12,775,120	764,946	62,107,829
Parametric Cash Overlay	62,317,076	165,400,485	-182,006,834			364,459	46,075,185
Goldman Sachs Cash Account	-4,585,549	188,375,905	-158,204,092			39,713	25,625,978
Futures Offset	-489,842,116	321,569,687	-212,119,895			857,415	-379,534,909
Collateral Cash	27,010,000		-27,010,000				

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
BlackRock Short Duration Fund	117,937,974					624,427	118,562,401

Portfolio Reconciliation

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Beginning Market Value	5,064,923,983	5,064,923,983	5,425,448,232	4,333,251,812	4,052,385,749	3,033,121,908
Contributions	1,386,827,365	1,386,827,365	3,538,085,460	9,910,468,070	12,044,045,941	17,748,763,949
Withdrawals	-1,397,383,843	-1,397,383,843	-3,650,825,372	-10,130,786,451	-12,375,408,772	-18,377,117,059
Fees	-605,616	-605,616	-10,116,717	-39,145,729	-65,409,455	-121,863,829
Net Cash Flows	-10,556,478	-10,556,478	-112,739,913	-220,318,381	-331,362,831	-628,353,111
Net Investment Change	-154,811,740	-154,811,740	-413,152,555	786,622,333	1,178,532,847	2,494,786,967
Ending Market Value	4,899,555,765	4,899,555,765	4,899,555,765	4,899,555,765	4,899,555,765	4,899,555,765
Net Change $	-165,368,218	-165,368,218	-525,892,468	566,303,953	847,170,016	1,866,433,857

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.

Risk Metrics

Correlation Matrix
3 Years Ending September 30, 2022

	A	B	C	D	E	F	G	H	I	J	K	L
A	1.00											
B	0.99	1.00										
C	0.96	0.99	1.00									
D	0.97	0.98	0.94	1.00								
E	0.89	0.87	0.81	0.86	1.00							
F	0.84	0.81	0.80	0.77	0.74	1.00						
G	0.62	0.61	0.62	0.55	0.51	0.92	1.00					
H	0.90	0.86	0.84	0.83	0.82	0.89	0.66	1.00				
I	0.87	0.83	0.78	0.82	0.84	0.89	0.65	0.89	1.00			
J	0.71	0.63	0.56	0.68	0.67	0.40	0.12	0.60	0.59	1.00		
K	0.77	0.75	0.70	0.73	0.81	0.64	0.40	0.79	0.77	0.56	1.00	
L	-0.20	-0.19	-0.17	-0.19	-0.24	-0.36	-0.36	-0.26	-0.29	0.00	-0.24	1.00

A = Total Fund
B = Equity
C = Domestic Equity
D = International Developed Equity
E = Emerging Markets Equity
F = Fixed Income
G = Core Plus Fixed Income
H = High Yield/ Specialty Credit
I = Emerging Market Debt
J = Commodities
K = Hedge Funds
L = Core Real Estate

Low Interaction
Moderate Interation
Moderate to High Interation
High Interaction

	Alpha	Beta	R-Squared	Return	Information Ratio	Excess Performance	Tracking Error	Sharpe Ratio	Excess Return	Standard Deviation	Sortino Ratio	Up Capture	Down Capture
Total Fund	1.3	0.9	1.0	5.6	0.8	1.2	1.3	0.5	5.4	10.1	0.7	98.7	89.6
Equity	0.2	1.0	1.0	3.8	0.1	0.2	1.0	0.3	5.1	19.4	0.4	99.5	98.8
Domestic Equity	-0.2	1.0	1.0	7.6	-0.3	-0.3	1.1	0.4	8.9	20.5	0.6	98.5	99.1
International Developed Equity	1.1	1.0	1.0	-0.2	1.1	1.1	0.9	0.1	1.2	19.5	0.1	103.1	99.1
Emerging Markets Equity	-2.4	1.0	1.0	-3.5	-0.8	-2.3	3.0	-0.1	-2.4	18.5	-0.2	87.2	96.9
Fixed Income	0.6	1.1	1.0	-2.5	0.5	0.4	1.0	-0.4	-2.9	6.8	-0.5	111.5	103.3
Core Plus Fixed Income	0.5	1.1	1.0	-3.0	0.2	0.2	1.2	-0.6	-3.5	5.8	-0.7	119.8	109.1
High Yield/ Specialty Credit	0.5	0.8	1.0	0.0	0.2	0.7	2.6	0.0	-0.2	8.9	0.0	78.2	74.2
Emerging Market Debt	2.1	1.1	1.0	-5.6	1.1	1.5	1.5	-0.4	-5.5	12.7	-0.5	109.8	97.1
Commodities	0.4	0.9	0.9	12.6	-0.2	-0.8	5.7	0.7	13.0	17.8	1.1	91.8	90.3
Hedge Funds	5.5	0.8	0.5	9.3	1.2	4.6	3.7	1.6	8.5	5.1	2.7	106.4	21.1
Core Real Estate	3.6	0.5	0.9	10.5	-0.5	-1.9	3.9	2.1	9.5	4.5	12.5	83.8	74.9
Private Real Estate	0.0	1.0	1.0	16.7	-	0.0	0.0	1.7	15.3	8.8	5.3	100.0	100.0
Private Equity	0.0	1.0	1.0	14.2	-0.6	0.0	0.0	1.0	13.6	13.7	2.0	100.0	100.1
Private Credit	0.0	1.0	1.0	3.0	-0.6	0.0	0.0	0.5	2.4	4.7	0.9	99.9	100.0
Opportunistic	-	-	-	-	-	-	-	-	-	-	-	-	-
Midstream Energy	-	-	-	-	-	-	-	-	-	-	-	-	-
Alpha Pool	-	-	-	-	-	-	-	-	-	-	-	-	-

Data not available for time periods less than 3 years (Alpha Pool, Midstream, & Opportunistic added in 2020)

Risk Return Statistics: Last Three Years

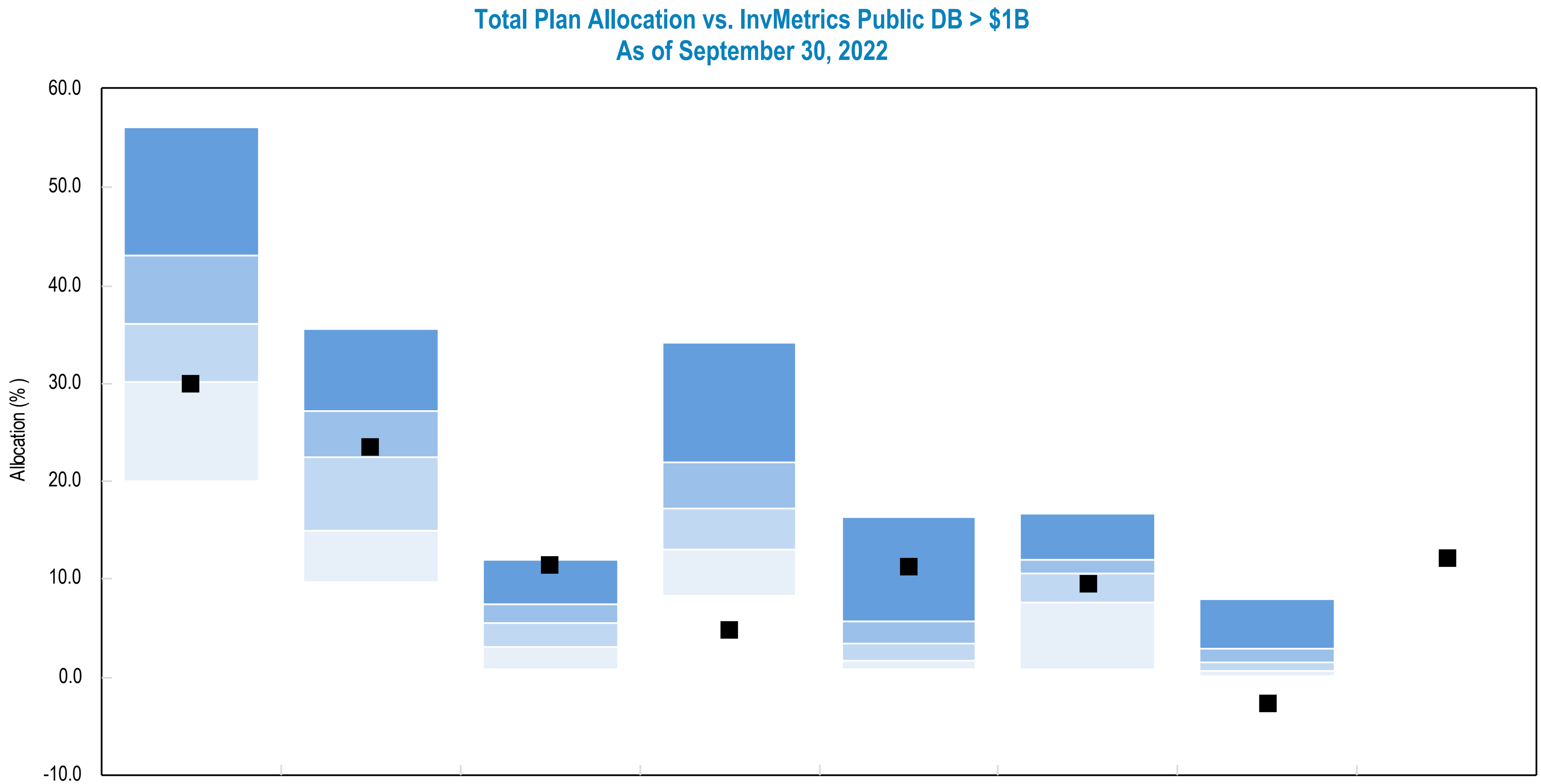
3 Years

	Equity	MSCI AC World IMI (Net)	Core Plus Fixed Income	Bloomberg U.S. Aggregate Index	High Yield/ Specialty Credit	ICE BofA U.S. High Yield Index	Emerging Market Debt	50 JPM EMBI Global Div/ 50 JPM GBI EM Global Div	Commodities	Bloomberg Commodity Index Total Return	Hedge Funds	75% 90 Day TBills +4%/ 25% MSCI ACWI (Net)	Core Real Estate	NCREIF ODCE-monthly
RETURN SUMMARY STATISTICS														
Up Market Periods	22	22	16	16	24	24	17	17	25	25	24	24	35	35
Down Market Periods	14	14	20	20	12	12	19	19	11	11	12	12	1	1
Maximum Return	12.43	12.66	2.64	2.44	4.80	6.01	6.74	5.62	8.01	8.78	3.99	3.33	5.39	7.97
Minimum Return	-14.74	-14.39	-4.38	-4.32	-10.52	-11.76	-13.80	-12.46	-12.65	-12.81	-5.24	-2.91	-1.17	-1.56
Return	3.83	3.64	-3.02	-3.26	0.02	-0.69	-5.58	-7.07	12.64	13.45	9.34	4.77	10.47	12.37
Excess Return	5.08	4.93	-3.48	-3.76	-0.16	-0.66	-5.49	-7.17	12.97	13.85	8.50	4.18	9.51	11.41
Excess Performance	0.18	0.00	0.24	0.00	0.71	0.00	1.49	0.00	-0.82	0.00	4.57	0.00	-1.90	0.00
RISK SUMMARY STATISTICS														
Beta	0.99	1.00	1.08	1.00	0.80	1.00	1.06	1.00	0.91	1.00	0.78	1.00	0.54	1.00
Upside Risk	13.61	13.72	3.23	2.77	5.12	6.53	6.73	6.11	13.81	13.84	4.80	3.98	5.32	8.36
Downside Risk	13.89	14.01	4.92	4.59	7.34	8.83	10.85	10.35	11.86	12.96	3.10	2.84	0.71	0.90
RISK/RETURN SUMMARY STATISTICS														
Standard Deviation	19.37	19.55	5.83	5.29	8.95	10.98	12.69	11.87	17.78	18.50	5.07	4.69	4.51	7.66
Alpha	0.20	0.00	0.54	0.00	0.49	0.00	2.12	0.00	0.35	0.00	5.50	0.00	3.63	0.00
Sharpe Ratio	0.26	0.25	-0.59	-0.70	-0.02	-0.06	-0.43	-0.60	0.72	0.74	1.63	0.87	2.09	1.48
Excess Risk	19.51	19.67	5.89	5.33	9.09	11.11	12.80	11.98	17.92	18.64	5.20	4.81	4.55	7.70
Tracking Error	1.04	0.00	1.23	0.00	2.60	0.00	1.55	0.00	5.66	0.00	3.66	0.00	3.90	0.00
Information Ratio	0.14	-	0.23	-	0.19	-	1.09	-	-0.15	-	1.18	-	-0.49	-
CORRELATION STATISTICS														
R-Squared	1.00	1.00	0.96	1.00	0.97	1.00	0.99	1.00	0.91	1.00	0.52	1.00	0.85	1.00
Actual Correlation	1.00	1.00	0.98	1.00	0.99	1.00	0.99	1.00	0.95	1.00	0.72	1.00	0.92	1.00

	2 Ys			
	Midstream Energy	Alerian Midstream Energy Index	Opportunistic	Assumed Rate of Return +3%
RETURN SUMMARY STATISTICS				
Up Market Periods	17	17	24	24
Down Market Periods	7	7	0	0
Maximum Return	16.45	18.94	19.65	0.58
Minimum Return	-11.82	-12.21	-4.04	0.58
Return	34.71	36.56	16.20	7.25
Excess Return	31.77	33.87	16.10	6.68
Excess Performance	-1.85	0.00	8.95	0.00
RISK SUMMARY STATISTICS				
Beta	0.84	1.00	-	-
Upside Risk	19.07	21.76	16.78	2.03
Downside Risk	10.76	12.61	5.37	0.00
RISK/RETURN SUMMARY STATISTICS				
Standard Deviation	19.84	23.13	16.97	0.00
Alpha	3.27	0.00	-	-
Sharpe Ratio	1.60	1.46	0.95	33.74
Excess Risk	19.90	23.20	17.02	0.20
Tracking Error	4.98	0.00	16.97	0.00
Information Ratio	-0.42	-	0.56	-
CORRELATION STATISTICS				
R-Squared	0.97	1.00	-	-
Actual Correlation	0.98	1.00	-	-

Data for unavailable for positions held for less than two years.

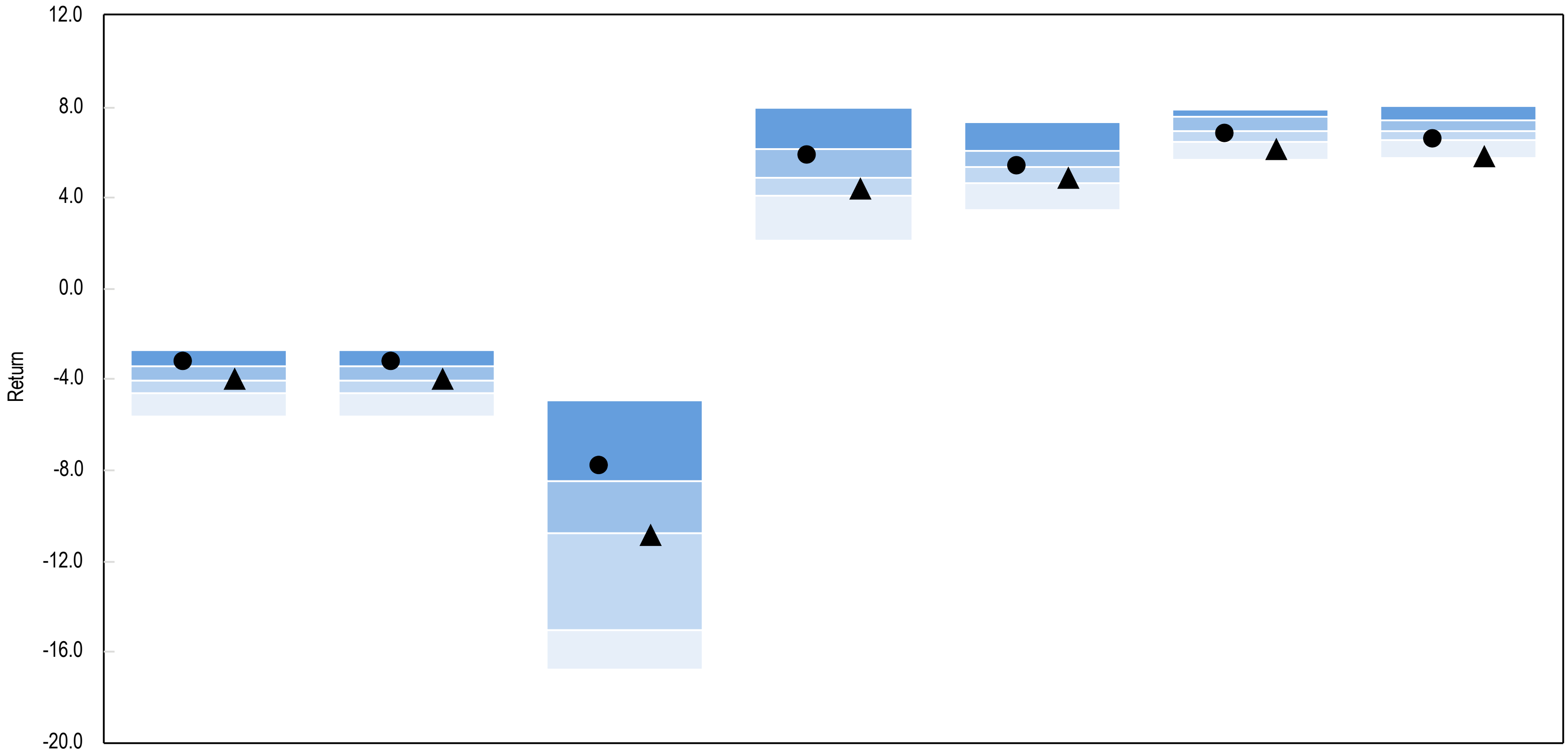
Peer Comparison



	Total Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Assets/Commod	Real Estate - Private	Cash & Equivalents	Other
■ Total Fund	30.0 (78)	23.4 (43)	11.4 (16)	4.8 (100)	11.3 (13)	9.5 (65)	-2.6	12.1 (1)
5th Percentile	56.2	35.5	11.9	34.2	16.4	16.7	7.9	12.1
1st Quartile	43.1	27.2	7.5	21.9	5.8	12.0	2.9	12.1
Median	36.1	22.4	5.5	17.3	3.4	10.6	1.5	12.1
3rd Quartile	30.2	14.9	3.1	13.1	1.7	7.7	0.6	12.1
95th Percentile	20.0	9.7	0.9	8.4	0.8	0.8	0.0	12.1
Population	32	29	14	21	17	21	22	1

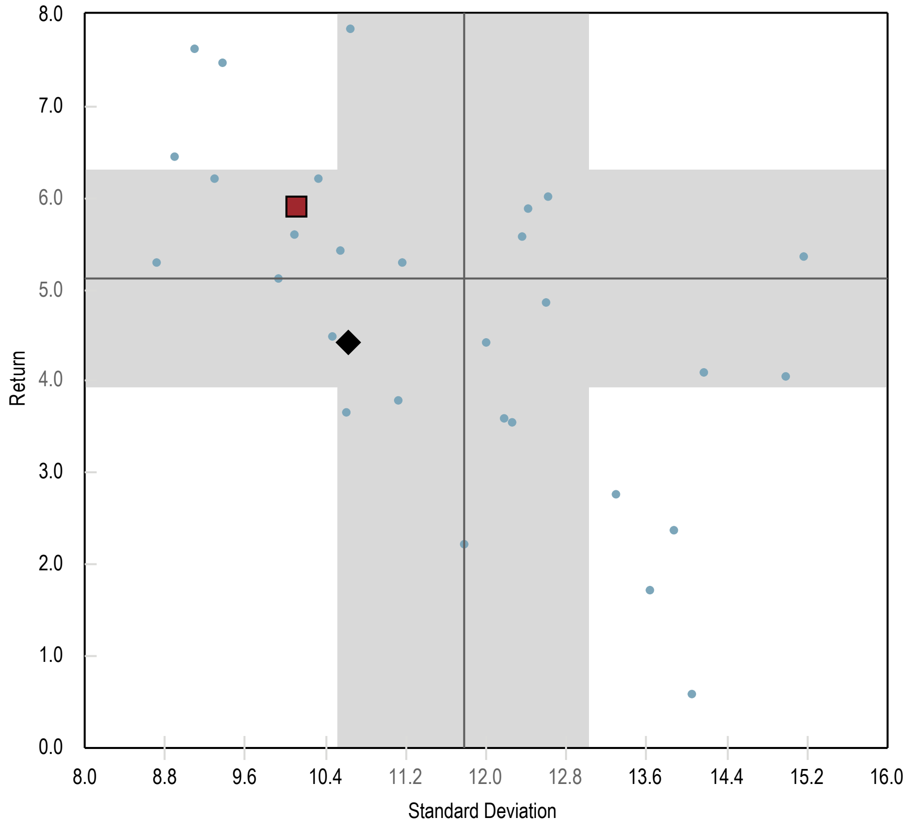
Parentheses contain percentile rankings. Other contains Alpha Pool, Opportunistic, and Private Credit. Real Estate contains Private and Core Real Estate. Real Assets contain Commodities and Midstream.

Total Fund vs. InvMetrics Public DB > $1B



	Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Total Fund	-3.2 (11)	-3.2 (11)	-7.8 (15)	5.9 (31)	5.4 (43)	6.9 (58)	6.7 (71)
▲ Policy Index	-3.9 (45)	-3.9 (45)	-10.8 (51)	4.4 (58)	4.9 (69)	6.1 (84)	5.8 (94)
5th Percentile	-2.7	-2.7	-4.9	7.9	7.4	7.9	8.1
1st Quartile	-3.4	-3.4	-8.5	6.1	6.1	7.6	7.4
Median	-4.0	-4.0	-10.8	4.9	5.4	7.0	6.9
3rd Quartile	-4.6	-4.6	-15.0	4.1	4.6	6.4	6.6
95th Percentile	-5.7	-5.7	-16.8	2.2	3.5	5.7	5.8
Population	31	31	28	27	27	27	25

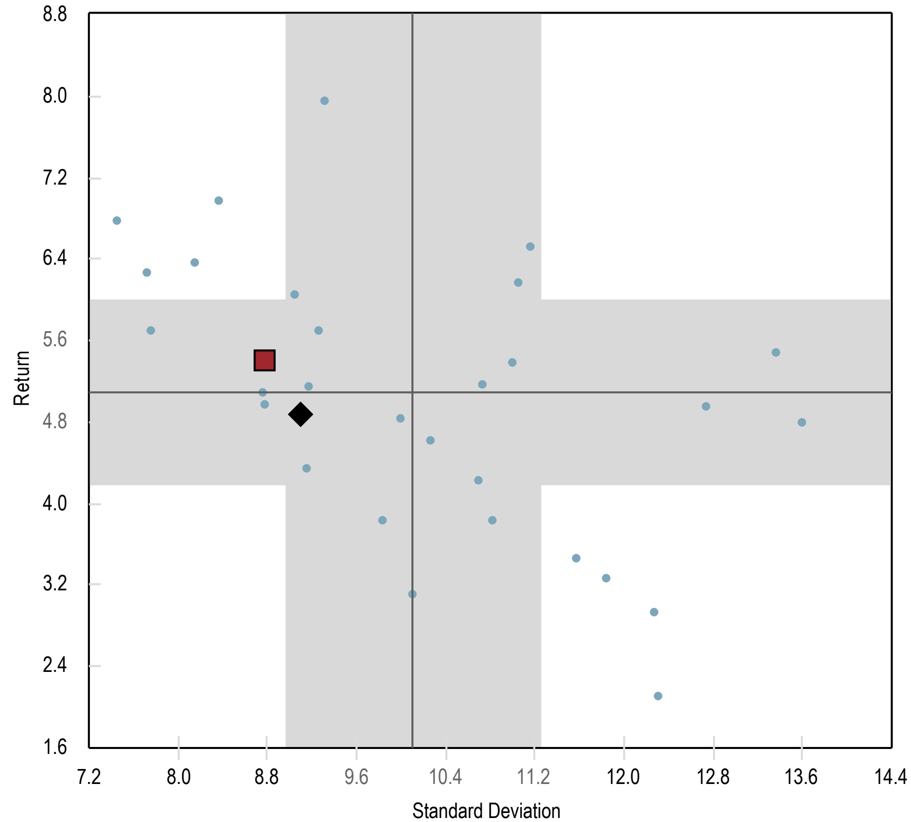
Annalized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2022



InvMetrics Public DB > $1B

	Return	Standard Deviation
Total Fund	5.90	10.10
Policy Index	4.43	10.63
Median	5.12	11.78
Population	29	29

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2022



InvMetrics Public DB > $1B

	Return	Standard Deviation
Total Fund	5.41	8.77
Policy Index	4.87	9.10
Median	5.10	10.10
Population	29	29

Other

Fund Name	Allocation Group	Overall Status	Outperformed Universe 10th percentile (1yr)	Outperformed Universe 75th percentile (1yr)	Outperformed Index (1yr)	Outperformed Median Rank (3 yrs)	Outperformed Index (3yrs)	Outperformed Median Rank (5 yrs)	Outperformed Index (5yrs)	Concern	Index Fund Tracking Error over 0.25% (1yr)
Equity Beta Exposure	Equity	🟩	-	-	-	-	-	-	-	-	⚑
Russell 2000 Overlay	Equity	🟩	-	-	-	-	-	-	-	-	⚑
Mellon DB SL Stock Index Fund	Equity	🟩	-	-	-	-	-	-	-	-	✔
PIMCO StocksPLUS	Equity	🟩	✔	⚑	⚑	✔	⚑	✔	⚑	-	-
AB US Small Cap Value Equity	Equity	🟩	✔	⚑	⚑	⚑	⚑	⚑	⚑	-	-
Geneva Capital Small Cap Growth	Equity	🟩	✔	✔	✔	⚑	✔	⚑	✔	-	-
Mellon DB SL World ex-US Index Fund	Equity	🟩	-	-	-	-	-	-	-	-	⚑
Fidelity Non-US Small Cap Equity	Equity	🟩	⚑	✔	✔	✔	✔	✔	✔	-	-
Cevian Capital II	Equity	🟩	-	-	-	-	-	-	-	-	⚑
American Century Non-US Small Cap	Equity	🟩	✔	✔	✔	-	-	-	-	-	-
DFA Emerging Markets Value I	Equity	🟩	⚑	✔	✔	✔	✔	✔	✔	-	-
AB Emerging Markets Strategic Core Equity Collective Trust	Equity	🟩	✔	✔	-	⚑	-	⚑	-	-	-
Mellon Emerging Markets Stock Index Fund	Equity	🟩	-	-	-	-	-	-	-	-	-
Mellon DB SL Aggregate Bond Index Fund	Fixed Income	🟩	-	-	-	-	-	-	-	-	✔
PIMCO Core Plus	Fixed Income	🟨	✔	✔	✔	✔	✔	⚑	✔	P	-
Western Asset Core Plus	Fixed Income	🟩	✔	⚑	⚑	⚑	⚑	⚑	⚑	-	-
Western Asset High Yield Fixed Income	Fixed Income	🟩	✔	✔	⚑	✔	⚑	✔	⚑	-	-
TCW Securitized Opportunities	Fixed Income	🟩	✔	✔	✔	✔	✔	✔	✔	-	-
Stone Harbor Emerging Markets Debt Blend Portfolio	Fixed Income	🟩	✔	✔	⚑	⚑	✔	⚑	⚑	P	-
PIMCO EMD	Fixed Income	🟩	✔	✔	✔	-	-	-	-	-	-
Gresham MTAP Commodity Builder Fund	Commodities	🟩	✔	✔	✔	⚑	✔	⚑	✔	-	-
WTC-CTF	Commodities	🟩	✔	⚑	⚑	⚑	✔	⚑	✔	-	-

Legend For Overall Status

No Issues	🟩
Watch	🟨
Terminate	🟥

Legend for Standards

Pass	✔
Fail	⚑

Legend for Concern

Provisional	P
Restricted	R
No Issues	--

Fund Name	Allocation Group	Overall Status	Outperformed Universe 10th percentile (1yr)	Outperformed Universe 75th percentile (1yr)	Outperformed Index (1yr)	Outperformed Median Rank (3 yrs)	Outperformed Index (3yrs)	Outperformed Median Rank (5 yrs)	Outperformed Index (5yrs)	Concern	Index Fund Tracking Error over 0.25% (1yr)
Aristeia International Limited	Hedge Funds	■	-	-	⚐	-	✔	-	✔	-	-
Brevan Howard Fund	Hedge Funds	■	-	-	✔	-	✔	-	✔	-	-
D.E. Shaw Composite Fund	Hedge Funds	■	-	-	✔	-	✔	-	✔	-	-
HBK Fund II	Hedge Funds	■	-	-	⚐	-	⚐	-	⚐	-	-
Hudson Bay Cap Structure Arbitrage Enhanced Fund	Hedge Funds	■	-	-	✔	-	✔	-	✔	-	-
Indus Pacific Opportunities Fund	Hedge Funds	■	-	-	⚐	-	✔	-	⚐	-	-
Magnetar Structured Credit Fund	Hedge Funds	■	-	-	⚐	-	✔	-	✔	-	-
PIMCO Commodity Alpha Fund	Hedge Funds	■	✔	⚐	⚐	⚐	⚐	⚐	✔	-	-
River Birch International	Opportunistic	■	-	-	✔	-	⚐	-	⚐	-	-
Sculptor Domestic Partners II LP	Hedge Funds	■	-	-	⚐	-	✔	-	-	-	-
Harvest Midstream	Midstream	■	✔	✔	✔	-	-	-	-	-	-
PIMCO Midstream	Midstream	■	✔	✔	⚐	-	-	-	-	-	-
ASB Allegiance Real Estate Fund	Core Real Estate	■	-	-	⚐	-	⚐	-	⚐	-	-
JPMCB Strategic Property Fund	Core Real Estate	■	-	-	⚐	-	⚐	-	⚐	-	-
Invesco Real Estate Value-Add Fund IV	Private Real Estate	■	-	-	⚐	-	⚐	-	⚐	-	-
Landmark Real Estate Partners VIII	Private Real Estate	■	-	-	-	-	-	-	-	-	⚐
DB Investors Fund IV	Opportunistic	■	-	-	⚐	-	-	-	-	-	-
Sixth Street TAO Partners (D)	Opportunistic	■	-	-	⚐	-	-	-	-	-	-
Aristeia Select Opportunities II	Opportunistic	■	-	-	⚐	-	-	-	-	-	-

Legend For Overall Status

No Issues	■ (green)
Watch	■ (yellow)
Terminate	■ (red)

Legend for Standards

Pass	✔
Fail	⚐

Legend for Concern

Provisional	P
Restricted	R
No Issues	--

	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3	2021 Q2	2021 Q1	2020 Q4	2020 Q3	2020 Q2	2020 Q1	2019 Q4
Total Fund	**-3.3**	**-7.5**	**-0.8**	**3.6**	**0.5**	**5.5**	**3.5**	**8.8**	**4.4**	**10.7**	**-11.3**	**4.6**
Policy Index	*-3.9*	*-8.9*	*-1.3*	*3.3*	*0.6*	*5.6*	*3.2*	*8.8*	*4.5*	*10.1*	*-11.1*	*4.6*

	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2	2017 Q1	2016 Q4
Total Fund	**0.2**	**3.1**	**6.8**	**-6.4**	**2.3**	**0.3**	**-0.1**	**3.0**	**3.2**	**2.7**	**4.2**	**0.8**
Policy Index	*0.8*	*3.0*	*7.0*	*-5.5*	*2.2*	*0.7*	*-0.1*	*3.2*	*3.1*	*2.8*	*3.5*	*0.5*

	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3	2015 Q2	2015 Q1	2014 Q4	2014 Q3	2014 Q2	2014 Q1	2013 Q4
Total Fund	**3.5**	**1.9**	**1.1**	**2.2**	**-5.4**	**0.7**	**2.4**	**0.8**	**-1.5**	**3.6**	**2.1**	**4.1**
Policy Index	*2.9*	*2.2*	*1.8*	*1.4*	*-4.9*	*0.4*	*2.0*	*0.4*	*-1.4*	*3.4*	*2.4*	*4.0*

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

Investment Fund or Strategy	Fund Incepted	Data Source	Investment Fund or Strategy	Fund Incepted	Data Source
AB Emerging Markets Strategic Core	11/3/2016	Northern Trust	Linden Capital Partners V LP	7/19/2022	Linden
AB US Small Cap Value Equity	7/7/2015	Northern Trust	Long Wharf Real Estate	6/27/2019	Long Wharf
Abbott Capital PE IV	7/13/2001	Abbott Capital	Magnetar Constellation	11/14/2018	Magnetar
Abbott Capital PE V	5/25/2005	Abbott Capital	Magnetar Structured Credit	5/1/2014	Magnetar
Abbott Capital PE VI	3/31/2008	Abbott Capital	Mellon Aggregate Bond Index Fund	1/14/2011	Mellon
American Century Non-US Small Cap	12/15/2020	American Century	Mellon EB DV Stock Index	10/18/2017	Mellon
Aristeia International Limited	5/1/2014	Northern Trust	Mellon EB DV World ex-US Index	8/1/2018	Mellon
ASB Real Estate	9/30/2013	ASB	Myriad Opportunities Offshore	5/19/2016	Northern Trust
Barclays Capital Aggregate Rebalancing Overlay	6/15/2022	Parametric	OrbiMed Royalty & Credit Opportunities	9/12/2022	OrbiMed
BlackRock Short Duration Fund	9/8/2021	BlackRock	Pantheon Global III		Pantheon
Blue Torch Credit Opportunities	7/24/2020	Blue Torch	Pantheon USA III		Pantheon
Brevan Howard	11/1/2013	Northern Trust	Pantheon USA V		Pantheon
Brighton Private Equity	3/28/2021	Brighton	Pantheon USA VI		Pantheon
Brookfield Real Estate Finance Fund V	12/18/2017	Northern Trust	Pantheon USA VII		Pantheon
Cevian Capital II	12/30/2014	Northern Trust	Parametric Overlay/ Cap Efficiency Program	7/31/2020	Parametric
DC Value Recovery fund IV	12/28/2015	Colony	Peak Rock Capital Fund III	7/13/2021	Peak Rock
Covenant Apartment Fund X	10/29/2020	Covenant	PIMCO Commodity Alpha	5/4/2016	PIMCO
DB Investors Fund IV	1/29/2020	DB	PIMCO Core Plus	1/21/2011	Northern Trust
D.E. Shaw	6/30/2013	Northern Trust	PIMCO EMD		Northern Trust
DFA Emerging Markets Value I	3/7/2014	Northern Trust	PIMCO Midstream	10/9/2020	PIMCO
Fortress Credit Opportunities	12/17/2020	Fortress	PIMCO StocksPLUS	7/14/2003	PIMCO
Fortress Lending Fund II	3/15/2021	Fortress	Fidelity Non-US Small Cap Equity	6/10/2008	Northern Trust
Garda Fixed Income Relative Value Opp	9/30/2021	Garda	River Birch	8/3/2015	Northern Trust
Geneva Capital Small Cap Growth	7/22/2015	Geneva	Singerman Real Estate Opportunity Fund IV	10/27/2021	Singerman
Gresham MTAP Commodity	9/3/2013	Gresham	Sculptor Enhanced Domestic Partners	3/26/2019	Sculptor
Harvest Midstream	9/28/2020	Harvest Midstream	Short Term Cash Account		Northern Trust
HBK Fund II	11/1/2013	Northern Trust	Short Term Investment Funds		Northern Trust
Henderson Smallcap Growth	7/22/2015	Northern Trust	Stone Harbor Emerging Markets Debt	8/8/2012	Stone Harbor
H.I.G Bayside Loan Opportunities Fund V	7/24/2019	H.I.G. Capital	TAO Contingent	4/16/2020	TPG Sixth Street
Hudson Bay	6/7/2019	Northern Trust	TCW Securitized Opportunities	2/3/2016	TCW
Indus Pacific Opportunities	6/30/2014	Northern Trust	Transition Equity		Northern Trust
Invesco Real Estate III	6/30/2013	Invesco	Transition Fixed Income		Northern Trust
Invesco Real Estate IV	12/18/2015	Invesco	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 VII	4/29/2018	Landmark	Warren Equity	4/1/2021	Warren
LBA Logistics Value Fund IX, L.P.	2/22/2022	LBA	Wellington Commodities	9/10/2013	Wellington
Level Equity Growth Partners V	11/1/2021	Level Equity	Western Asset Core Plus	5/31/2004	Northern Trust
Level Equity Opportunities Fund 2021	11/1/2021	Level Equity	Western Asset High Yield Fixed income	5/31/2005	Northern Trust
LGT Crown	2/1/2021	LGT			

Policy & Custom Index Composition

Policy Index: 7/1/2021-Present	37% MSCI ACWI IMI, 14% Bloomberg 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*, 1% Bloomberg US Aggregate*, 4% Bloomberg US Aggregate, 5% Alerian Midstream, 5% 3-Month T-bill +400bps, 91 Day T-Bills, -5% 3-Month T-bill.
Policy Index: 1/1/2021-6/30/2021	37% MSCI ACWI IMI, 14% Bloomberg 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*, 1% Bloomberg US Aggregate*, 4% Bloomberg US Aggregate, 5% Alerian Midstream, 5% 3-Month T-bill +400bps, 91 Day T-Bills, -5% 3-Month T-bill.
Policy Index: 7/1/2020-12/31/2020	37% MSCI ACWI IMI, 14% Bloomberg 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% Bloomberg US Aggregate, 1% Alerian Midstream, 4% Bloomberg US
Policy Index: 4/1/2020-6/30/2020	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 1/1/2020-3/31/2020	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 10/1/2019-12/31/2019	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 7/1/2019-9/30/2019	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 4/1/2019-6/30/2019	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 1/1/2019-3/31/2019	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 10/1/2018-12/31/2018	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 7/1/2018-9/30/2018	37% MSCI ACWI IMI, 19% Bloomberg 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% Bloomberg US Aggregate*.
Policy Index: 1/1/2017- 6/30/2018	19% Russell 3000 Index, 18% MSCI ACWI ex US, 29% Bloomberg 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% Bloomberg 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: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - 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: Portfolio Excess Return / 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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