

Kern County Employees' Retirement Association

Investment Performance Review

Period Ending: March 31, 2023



[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206.622.3700

CHICAGO 312.815.5228

PITTSBURGH 412.784.6678

LOS ANGELES 310.297.1777

SAN FRANCISCO 415.362.3484

Total Fund
Portfolio Reconciliation

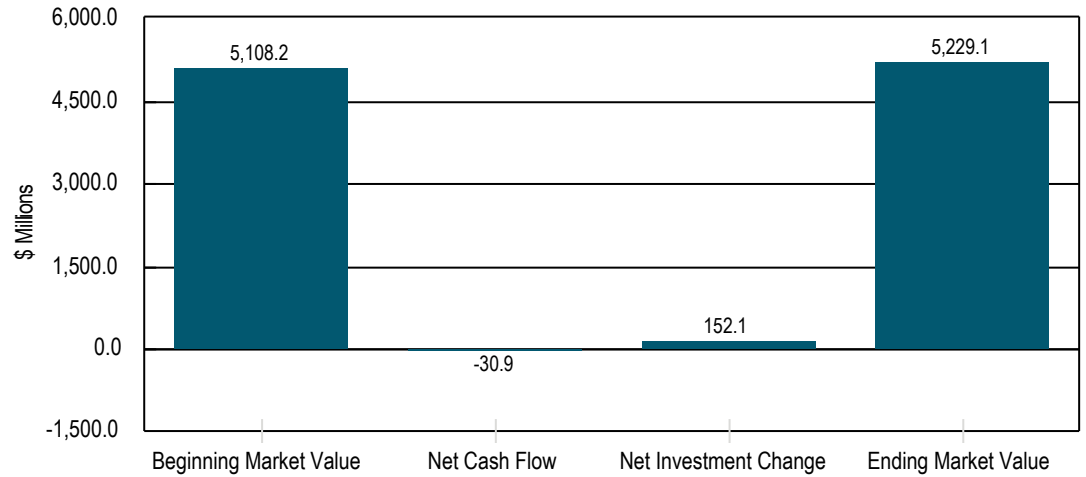
Kern County Employees' Retirement Association
Period Ending: March 31, 2023

Portfolio Reconciliation

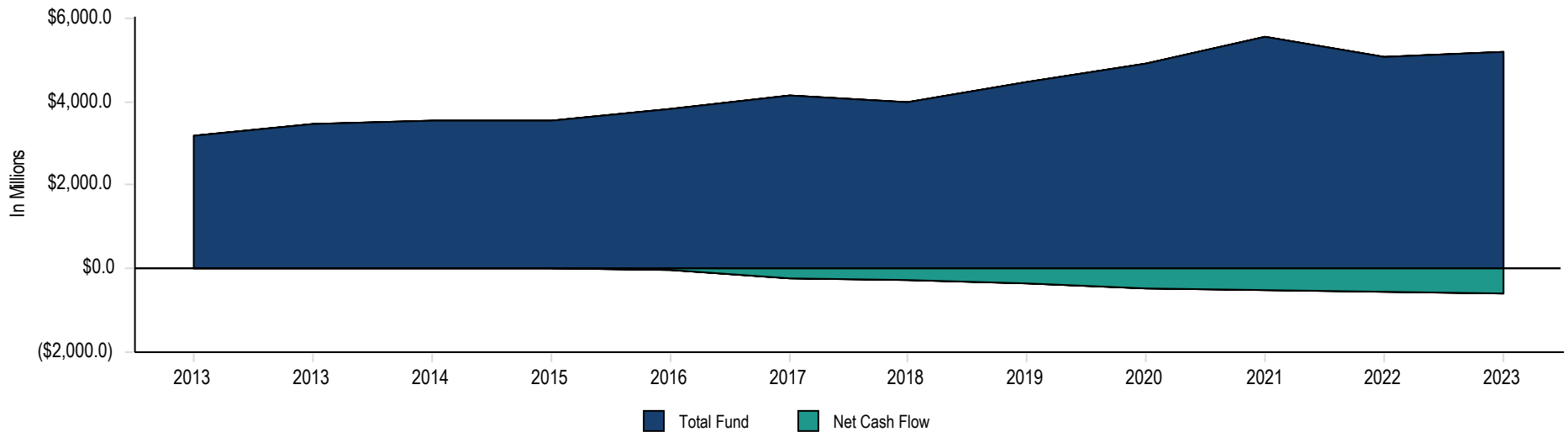
Last Three Months

Beginning Market Value	\$5,108,203,758
Net Cash Flows	-\$30,913,139
Net Investment Change	\$152,095,026
Ending Market Value	\$5,229,051,413

Change in Market Value
Last Three Months



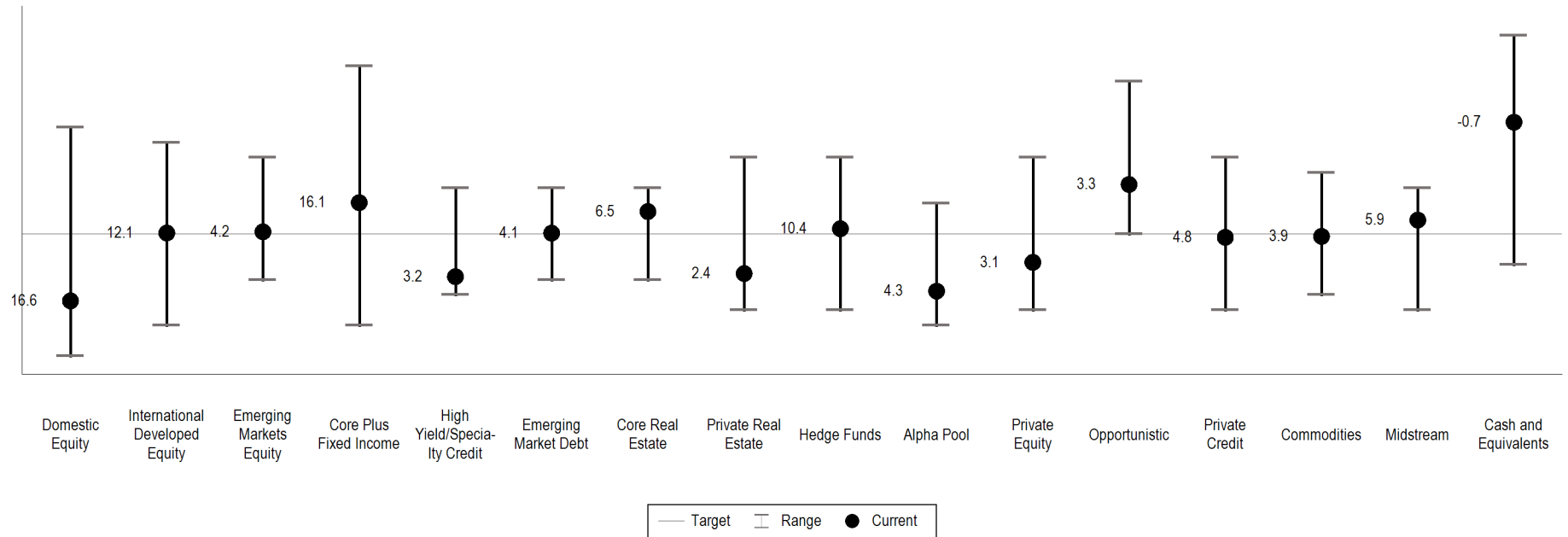
Market Value History



Total Fund
Asset Allocation vs. Policy

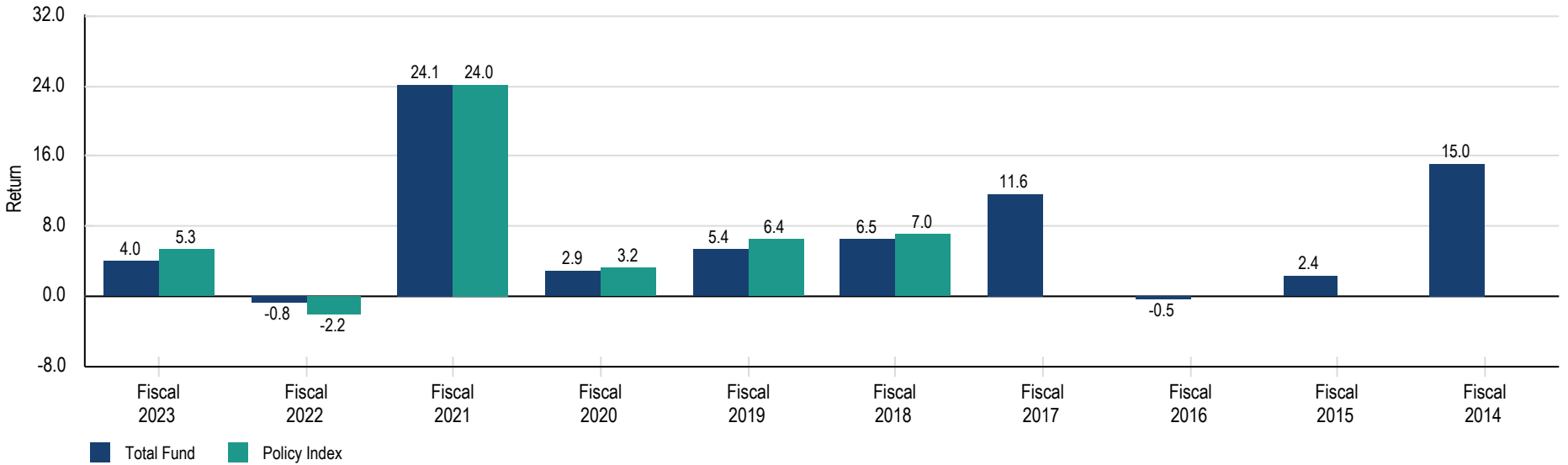
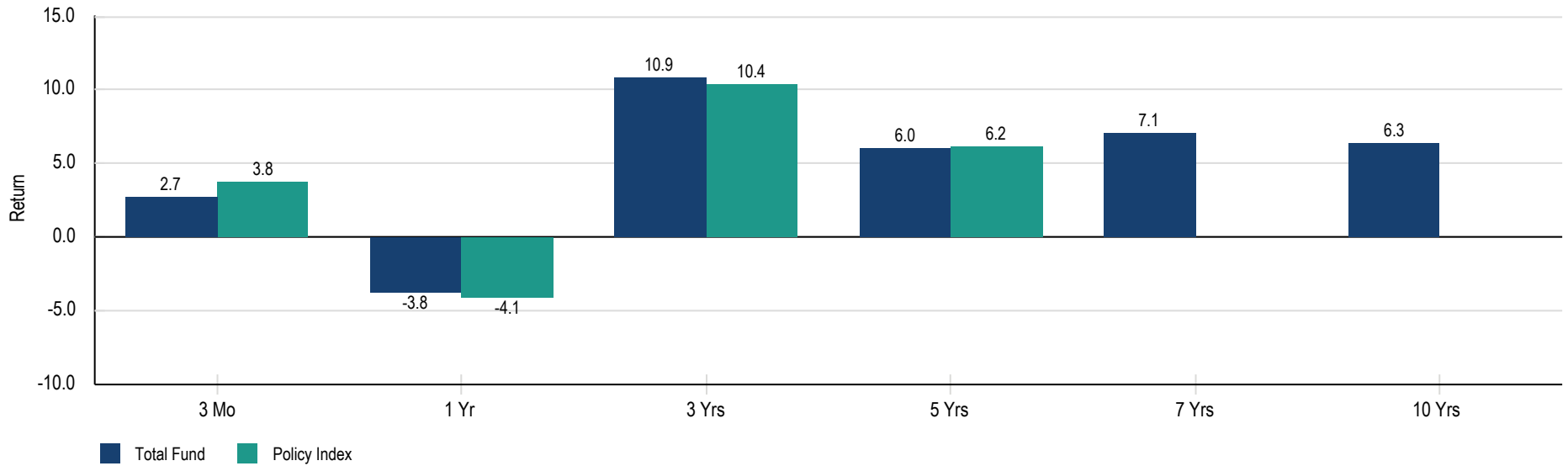
Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Equity	\$1,684,531,735	32.8%	37.0%	-\$212,849,364	26.0% - 48.0%	Yes
Fixed Income	\$1,293,165,405	23.3%	24.0%	-\$33,710,708	14.0% - 34.0%	Yes
Core Real Estate	\$321,881,000	6.5%	5.0%	\$75,860,102	2.0% - 8.0%	Yes
Hedge Funds	\$530,794,535	10.4%	10.0%	\$17,986,677	5.0% - 15.0%	Yes
Alpha Pool	\$218,863,824	4.3%	8.0%	-\$191,815,022	2.0% - 10.0%	Yes
Private Equity	\$164,186,192	3.1%	5.0%	-\$94,910,770	0.0% - 10.0%	Yes
Private Credit	\$245,458,300	4.8%	5.0%	-\$10,945,629	0.0% - 10.0%	Yes
Private Real Estate	\$123,608,804	2.4%	5.0%	-\$132,546,895	0.0% - 10.0%	Yes
Commodities	\$197,553,350	3.9%	4.0%	-\$7,569,793	0.0% - 8.0%	Yes
Opportunistic	\$167,025,043	3.3%	0.0%	\$167,025,043	0.0% - 10.0%	Yes
Midstream	\$303,662,302	5.9%	5.0%	\$47,258,373	0.0% - 8.0%	Yes
Cash and Equivalents	\$-21,679,077	-0.7%	-8.0%	\$376,217,986	-10.0% - 5.0%	Yes
Total	\$5,229,051,413	100.0%	100.0%			



Total Fund
Performance vs. Policy (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023



Total Fund
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	5,229,051,413	100.0	2.8	4.2	-3.5	11.2	6.3	6.7	-4.2	24.4	3.2	5.7	6.8
<i>Policy Index</i>			3.8	5.3	-4.1	10.4	6.2	-	-6.5	24.0	3.2	6.4	7.0
<i>InvMetrics Public DB > \$1B Rank</i>			91	70	30	47	47	59	32	89	21	62	97
Equity	1,684,531,735	32.2	6.8	9.7	-6.6	16.5	7.1	9.2	-14.9	41.2	0.7	5.3	12.4
<i>MSCI AC World IMI (Net)</i>			6.9	9.7	-7.7	15.6	6.6	7.9	-16.5	40.9	1.2	4.6	11.1
Domestic Equity	852,361,067	16.3	6.6	8.7	-8.8	18.6	10.6	-	-12.0	43.6	6.3	9.2	16.1
<i>MSCI USA IMI</i>			7.3	10.0	-8.5	18.8	10.6	11.8	-13.7	44.4	6.7	9.0	14.9
International Developed Equity	619,134,174	11.8	7.8	14.0	-2.6	14.8	3.8	-	-17.2	37.0	-5.5	-0.6	9.1
<i>MSCI World ex U.S. IMI Index (Net)</i>			7.6	13.3	-3.9	13.5	3.5	5.0	-17.7	34.8	-5.1	0.2	7.7
Emerging Markets Equity	213,035,817	4.1	4.6	1.9	-9.6	9.5	-1.8	-	-21.4	40.6	-10.9	0.4	4.0
<i>MSCI Emerging Markets IMI (Net)</i>			3.9	1.5	-10.7	9.2	-0.6	-	-24.8	43.2	-4.0	0.5	7.9
Fixed Income	1,293,165,405	24.7	2.8	2.5	-4.8	0.2	1.4	1.9	-12.7	5.4	6.6	7.9	0.2
<i>Fixed Income Custom Benchmark</i>			3.1	2.0	-4.5	-0.4	1.2	1.9	-11.6	4.0	5.2	8.4	-0.1
Core Plus Fixed Income	823,458,691	15.7	2.4	-0.8	-5.9	-2.3	1.0	-	-11.2	1.0	9.5	8.0	0.0
<i>Blmbg. U.S. Aggregate Index</i>			3.0	-0.1	-4.8	-2.8	0.9	1.4	-10.3	-0.3	8.7	7.9	-0.4
High Yield/ Specialty Credit	260,844,746	5.0	3.3	5.9	-2.9	5.6	3.4	-	-9.5	13.6	0.0	7.5	3.3
<i>ICE BofA U.S. High Yield Index</i>			3.7	7.1	-3.6	5.8	3.1	4.0	-12.7	15.6	-1.1	7.6	2.5
Emerging Market Debt	208,560,566	4.0	3.8	8.8	-2.5	2.6	-1.3	-	-19.6	9.4	-1.2	8.5	-3.6
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			3.5	6.9	-3.8	0.5	-1.4	0.3	-20.2	7.1	-1.1	10.8	-1.9
Commodities	197,553,350	3.8	-1.7	-3.8	-10.3	22.6	7.1	-	20.1	43.5	-10.7	-6.2	13.7
<i>Bloomberg Commodity Index Total Return</i>			-5.4	-7.2	-12.5	20.8	5.4	-1.7	24.3	45.6	-17.4	-6.8	7.3
Hedge Funds	530,794,535	10.2	1.6	5.8	6.0	11.3	7.0	6.2	2.8	16.3	7.3	2.6	7.6
<i>75% 90 Day TBills +4% / 25% MSCI ACWI IMI (Net)</i>			3.3	6.8	3.3	7.8	6.2	6.0	-0.9	12.3	5.1	6.6	7.0
Alpha Pool	218,863,824	4.2	1.8	2.5	1.8	-	-	-	1.5	14.5	-	-	-
<i>90-Day T-Bill +4%</i>			2.1	5.5	6.6	-	-	-	4.2	4.1	-	-	-
Midstream Energy	303,662,302	5.8	2.9	16.4	6.1	-	-	-	9.6	-	-	-	-
<i>Alerian Midstream Energy Index</i>			0.8	8.1	-1.2	-	-	-	11.4	-	-	-	-
Core Real Estate	321,881,000	6.2	-4.4	-8.1	-3.9	6.7	6.4	-	25.6	6.6	2.3	6.1	7.4
<i>NCREIF ODCE</i>			-3.2	-7.5	-3.1	8.4	7.5	9.5	29.5	8.0	2.2	6.4	8.4
Private Real Estate	123,608,804	2.4	3.5	9.4	13.0	16.7	12.9	13.2	31.3	12.1	4.4	9.0	5.4
			3.5	9.4	13.0	16.7	12.9	13.2	31.3	12.1	4.4	9.0	5.4
Private Equity	164,186,192	3.1	-0.1	-6.5	-5.9	13.1	10.5	10.8	23.0	41.7	-10.5	10.9	7.8
			-0.1	-6.5	-5.9	13.1	10.5	10.8	23.0	41.7	-10.5	10.9	7.8
Private Credit	245,458,300	4.7	1.3	-0.6	0.6	1.0	4.5	-	1.2	4.8	5.5	9.7	9.3
			1.3	-0.6	0.6	1.0	4.5	-	1.2	4.8	5.5	9.7	9.3

Total Fund
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	167,025,043	3.2	4.2	-0.4	-10.2	18.4	-	-	-5.4	59.9	-	-	-
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	7.2	-	-	7.2	7.2	-	-	-
Cash	-21,679,077	-0.4	0.6	3.0	2.6	0.9	1.3	1.5	-0.5	0.1	1.0	2.0	3.2

Performance and Attribution

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	5,229,051,413	100.0	2.7	4.0	-3.8	10.9	6.0	6.3	-4.5	24.1	2.9	5.4	6.5	6.3	Jun-11
<i>Policy Index</i>			3.8	5.3	-4.1	10.4	6.2	-	-6.5	24.0	3.2	6.4	7.0	-	
Equity	1,684,531,735	32.2	6.7	9.5	-6.8	16.2	6.8	8.7	-15.1	40.7	0.3	4.8	11.8	8.5	Jun-11
<i>MSCI AC World IMI (Net)</i>			6.9	9.7	-7.7	15.6	6.6	7.9	-16.5	40.9	1.2	4.6	11.1	7.7	
Domestic Equity	852,361,067	16.3	6.5	8.5	-9.0	18.3	10.3	-	-12.2	43.2	6.0	8.8	15.5	10.6	Jul-14
<i>MSCI USA IMI</i>			7.3	10.0	-8.5	18.8	10.6	-	-13.7	44.4	6.7	9.0	14.9	10.4	
Equity Beta Exposure	116,684,550	2.2	6.2	7.0	-10.5	-	-	-	-11.0	-	-	-	-	9.2	Aug-20
<i>S&P 500 Index</i>			7.5	10.0	-7.7	-	-	-	-10.6	-	-	-	-	10.7	
Mellon DB SL Stock Index Fund	492,812,772	9.4	7.5	10.0	-7.7	18.6	11.2	-	-10.6	40.8	7.5	10.4	-	11.1	Oct-17
<i>S&P 500 Index</i>			7.5	10.0	-7.7	18.6	11.2	-	-10.6	40.8	7.5	10.4	-	11.0	
PIMCO StocksPLUS	106,968,573	2.0	7.5	9.2	-9.5	18.4	10.7	12.1	-12.8	41.7	7.7	10.6	14.1	10.3	Jul-03
<i>S&P 500 Index</i>			7.5	10.0	-7.7	18.6	11.2	12.2	-10.6	40.8	7.5	10.4	14.4	9.6	
AB US Small Cap Value Equity	85,933,985	1.6	-0.4	3.9	-12.2	23.3	4.2	-	-16.1	77.5	-19.4	-6.9	13.2	6.4	Jul-15
<i>Russell 2000 Value Index</i>			-0.7	2.7	-13.0	21.0	4.5	-	-16.3	73.3	-17.5	-6.2	13.1	6.2	
Geneva Capital Small Cap Growth	49,961,187	1.0	8.4	9.4	-4.8	15.0	8.1	-	-22.1	37.6	9.3	8.6	22.7	9.7	Jul-15
<i>Russell 2000 Growth Index</i>			6.1	10.7	-10.6	13.4	4.3	-	-33.4	51.4	3.5	-0.5	21.9	5.7	
International Developed Equity	619,134,174	11.8	7.8	13.9	-2.7	14.6	3.6	-	-17.3	36.7	-5.7	-0.9	8.7	4.1	Jul-14
<i>MSCI World ex U.S. IMI Index (Net)</i>			7.6	13.3	-3.9	13.5	3.5	-	-17.7	34.8	-5.1	0.2	7.7	3.3	
Mellon DB SL World ex-US Index Fund	509,554,780	9.7	8.1	14.2	-2.4	14.8	-	-	-16.1	35.6	-5.5	-	-	4.6	Jul-18
<i>MSCI World ex U.S. IMI Index (Net)</i>			7.6	13.3	-3.9	13.5	-	-	-17.7	34.8	-5.1	0.2	-	3.7	
Cevian Capital II	37,835,395	0.7	9.9	22.0	11.3	25.4	8.5	-	-8.2	46.8	-8.2	-5.0	2.9	7.4	Dec-14
<i>MSCI Europe (Net)</i>			10.6	18.6	1.4	15.0	4.4	-	-17.6	35.1	-6.8	1.9	5.3	4.8	
American Century Non-US Small Cap	71,741,628	1.4	4.6	9.0	-10.2	-	-	-	-27.4	-	-	-	-	-3.9	Dec-20
<i>MSCI World ex U.S. Small Cap Growth Index (Net)</i>			5.4	9.2	-13.0	-	-	-	-28.6	-	-	-	-	-5.6	
Emerging Markets Equity	213,035,817	4.1	4.6	1.5	-10.1	8.7	-2.6	-	-21.9	39.5	-11.8	-0.6	2.9	0.6	Jul-14
<i>MSCI Emerging Markets IMI (Net)</i>			3.9	1.5	-10.7	9.2	-0.6	-	-24.8	43.2	-4.0	0.5	7.9	1.9	
DFA Emerging Markets Value I	77,971,643	1.5	3.7	3.2	-7.9	16.2	0.2	-	-12.9	47.6	-17.7	2.0	5.7	3.4	Mar-14
<i>MSCI Emerging Markets Value (Net)</i>			3.9	1.6	-9.4	10.0	-1.2	-	-18.6	41.6	-15.7	5.0	4.3	1.6	
AB Emerging Markets Strategic Core Equity Collective Trust	51,359,657	1.0	6.6	0.5	-11.2	4.8	-3.4	-	-25.2	33.6	-5.1	-2.6	1.2	1.7	Dec-16
<i>MSCI Emerging Markets (Net)</i>			4.0	0.8	-10.7	7.8	-0.9	-	-25.3	40.9	-3.4	1.2	8.2	4.6	
Mellon Emerging Markets Stock Index Fund	83,704,518	1.6	4.2	0.9	-11.0	-	-	-	-25.5	41.1	-	-	-	2.0	Jun-20
<i>MSCI Emerging Markets (Net)</i>			4.0	0.8	-10.7	-	-	-	-25.3	40.9	-	-	-	4.7	
Fixed Income	1,293,165,405	24.7	2.8	2.3	-5.1	0.0	1.2	1.6	-13.0	5.1	6.3	7.6	-0.1	3.1	Jun-10
<i>Fixed Income Custom Benchmark</i>			3.1	2.0	-4.5	-0.4	1.2	1.9	-11.6	4.0	5.2	8.4	-0.1	2.9	
Core Plus Fixed Income	823,458,691	15.7	2.4	-0.9	-6.1	-2.4	0.8	-	-11.4	0.8	9.3	7.9	-0.2	1.4	Jul-14
<i>Bloomberg U.S. Aggregate Index</i>			3.0	-0.1	-4.8	-2.8	0.9	-	-10.3	-0.3	8.7	7.9	-0.4	1.3	
Fixed Income Beta Exposure	373,052,129	7.1	1.6	-4.0	-	-	-	-	-	-	-	-	-	-1.7	Jun-22
<i>Bloomberg U.S. Aggregate Index</i>			3.0	-0.1	-	-	-	-	-	-	-	-	-	-1.7	
Mellon DB SL Aggregate Bond Index Fund	162,415,284	3.1	3.0	-0.1	-4.9	-2.8	0.9	1.3	-10.4	-0.4	8.8	7.9	-0.4	2.0	Jan-11
<i>Bloomberg U.S. Aggregate Index</i>			3.0	-0.1	-4.8	-2.8	0.9	1.4	-10.3	-0.3	8.7	7.9	-0.4	2.1	

HBK Opportunities Platform liquidated on 2/2/2023.



Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	165,702,164	3.2	3.1	0.1	-4.9	-1.8	1.1	1.4	-9.9	1.1	8.7	6.3	1.0	2.3	Feb-11
<i>Bloomberg U.S. Aggregate Index</i>			3.0	-0.1	-4.8	-2.8	0.9	1.4	-10.3	-0.3	8.7	7.9	-0.4	2.1	
Western Asset Core Plus	122,289,114	2.3	2.9	1.1	-5.6	-1.6	0.9	1.9	-14.5	2.4	9.3	9.4	-0.4	3.8	Jun-04
<i>Bloomberg U.S. Aggregate Index</i>			3.0	-0.1	-4.8	-2.8	0.9	1.4	-10.3	-0.3	8.7	7.9	-0.4	3.3	
High Yield/ Specialty Credit	260,844,746	5.0	3.2	5.5	-3.4	5.0	2.9	-	-10.0	13.1	-0.5	7.0	2.8	2.4	Jul-14
<i>ICE BofA U.S. High Yield Index</i>			3.7	7.1	-3.6	5.8	3.1	-	-12.7	15.6	-1.1	7.6	2.5	3.5	
Western Asset High Yield Fixed Income	164,707,494	3.1	3.5	7.3	-5.1	5.5	2.9	3.5	-14.1	16.5	-2.2	8.3	2.2	5.7	Jun-05
<i>Bloomberg US HY Ba/B 2% Cap TR</i>			3.4	7.4	-2.7	5.6	3.6	4.1	-12.4	13.4	2.1	8.8	1.8	6.0	
TCW Securitized Opportunities	96,137,252	1.8	2.5	3.0	-0.4	3.6	2.7	-	-4.0	6.4	2.2	5.2	4.3	3.3	Feb-16
<i>Bloomberg U.S. High Yield - 2% Issuer Cap</i>			3.6	7.2	-3.4	5.9	3.2	-	-12.8	15.3	0.0	7.5	2.6	5.7	
Emerging Market Debt	208,560,566	4.0	3.7	8.4	-3.0	2.3	-1.7	-	-19.8	9.1	-1.7	7.9	-4.2	0.0	Jul-14
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			3.5	6.9	-3.8	0.5	-1.4	-	-20.2	7.1	-1.1	10.8	-1.9	0.2	
Stone Harbor Emerging Markets Debt Blend Portfolio	64,653,539	1.2	2.9	7.7	-4.0	2.3	-2.1	-0.7	-20.9	9.5	-1.8	8.2	-3.1	-0.3	Aug-12
<i>50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx</i>			3.6	6.8	-3.3	0.7	-1.2	0.4	-19.5	7.2	-0.8	10.6	-1.7	0.8	
PIMCO EMD	143,907,027	2.8	4.0	8.5	-2.8	2.0	-	-	-19.2	8.7	-	-	-	-2.8	Feb-20
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			3.5	6.9	-3.8	0.5	-	-	-20.2	7.1	-	-	-	-4.4	
Commodities	197,553,350	3.8	-1.8	-4.3	-10.8	21.8	6.5	-	19.4	42.5	-11.3	-6.7	13.3	-0.1	Jul-13
<i>Bloomberg Commodity Index Total Return</i>			-5.4	-7.2	-12.5	20.8	5.4	-	24.3	45.6	-17.4	-6.8	7.3	-0.8	
Gresham MTAP Commodity Builder Fund	49,142,121	0.9	-6.4	-9.9	-12.2	21.5	5.0	-	24.7	46.8	-16.3	-9.0	12.4	-0.8	Oct-13
<i>Bloomberg Commodity Index Total Return</i>			-5.4	-7.2	-12.5	20.8	5.4	-	24.3	45.6	-17.4	-6.8	7.3	-0.8	
Wellington Commodities	148,411,229	2.8	-0.3	-2.2	-10.4	21.9	7.3	-	17.2	40.2	-7.5	-5.4	14.2	0.6	Sep-13
<i>S&P GSCI Commodity Equal Weighted</i>			-0.3	-1.0	-8.4	22.1	7.4	-	19.0	40.9	-12.4	-3.5	12.6	0.9	
Hedge Funds	530,794,535	10.2	1.4	5.2	5.7	11.1	6.9	5.6	2.9	16.1	7.0	2.5	7.6	5.9	Sep-10
<i>75% 90 Day TBills +4% / 25% MSCI ACWI (Net)</i>			3.3	6.8	3.3	7.8	6.2	6.0	-0.9	12.3	5.1	6.6	7.0	5.9	
Aristeia International Limited	69,959,516	1.3	2.6	4.1	4.1	12.3	9.0	-	1.8	21.6	8.7	9.2	2.6	5.3	May-14
Brevan Howard Fund	45,839,068	0.9	-3.4	1.8	6.4	7.1	12.7	-	15.2	6.1	20.5	12.7	7.8	7.7	Sep-13
D.E. Shaw Composite Fund	59,530,214	1.1	1.1	7.9	14.1	21.4	16.9	-	29.0	19.0	15.6	11.5	11.3	14.3	Jul-13
HBK Fund II	44,737,059	0.9	1.3	7.1	5.1	10.1	5.0	-	2.3	11.0	1.5	5.5	3.0	4.5	Nov-13
Hudson Bay Cap Structure Arbitrage Enhanced Fund	80,735,699	1.5	0.8	6.6	8.4	12.3	-	-	7.7	14.2	16.2	-	-	11.8	Jun-19
Indus Pacific Opportunities Fund	47,650,356	0.9	1.4	2.3	0.8	15.9	4.5	-	-8.2	38.0	15.8	-19.2	15.8	7.3	Jul-14
Magnetar Structured Credit Fund	7,327,545	0.1	0.9	3.1	2.7	16.8	9.0	-	1.1	38.1	-0.2	5.4	7.7	7.7	May-14
Pharo Macro Fund	61,359,040	1.2	-1.5	-1.3	-4.1	-0.7	-	-	-11.1	3.5	-	-	-	-2.0	Dec-19
PIMCO Commodity Alpha Fund	67,115,042	1.3	6.5	11.2	16.5	17.8	9.0	-	8.6	14.2	4.8	5.2	10.4	10.5	Jun-16
Sculptor Domestic Partners II LP	46,540,997	0.9	4.8	5.6	-9.2	3.5	-	-	-19.9	16.8	6.5	-	-	4.7	Feb-19
Alpha Pool	218,863,824	4.2	1.8	2.5	1.8	-	-	-	1.5	14.5	-	-	-	6.6	Jul-20
<i>90-Day T-Bill +4%</i>			2.1	5.5	6.6	-	-	-	4.2	4.1	-	-	-	5.0	
Hudson Bay	62,361,920	1.2	1.1	2.6	3.8	-	-	-	6.7	-	-	-	-	8.0	Aug-20
Davidson Kempner Institutional Partners	54,896,123	1.0	1.0	-1.1	-4.0	-	-	-	-3.4	-	-	-	-	1.6	Dec-20
HBK Fund II	43,022,754	0.8	1.5	3.8	1.4	-	-	-	1.3	-	-	-	-	4.4	Dec-20
Garda Fixed Income Relative Value Opportunity Fund	58,583,027	1.1	4.1	5.9	7.9	-	-	-	-	-	-	-	-	7.4	Sep-21

HBK Opportunities Platform liquidated on 2/2/2023.

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	303,662,302	5.8	2.8	16.1	5.6	-	-	-	9.3	-	-	-	-	29.5	Sep-20
<i>Alerian Midstream Energy Index</i>			0.8	8.1	-1.2	-	-	-	11.4	-	-	-	-	26.2	
Harvest Midstream	155,726,602	3.0	3.7	18.3	8.3	-	-	-	15.3	-	-	-	-	36.6	Aug-20
<i>Alerian Midstream Energy Index</i>			0.8	8.1	-1.2	-	-	-	11.4	-	-	-	-	25.3	
PIMCO Midstream	147,935,700	2.8	1.8	12.6	1.4	-	-	-	2.2	-	-	-	-	22.8	Sep-20
<i>50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream</i>			2.4	7.6	-1.5	-	-	-	-0.7	-	-	-	-	-	
Core Real Estate	321,881,000	6.2	-4.6	-8.4	-4.3	5.9	5.7	-	24.8	5.6	1.4	5.9	7.4	7.3	Oct-14
<i>NCREIF ODCE</i>			-3.2	-7.5	-3.1	8.4	7.5	-	29.5	8.0	2.2	6.4	8.4	8.8	
ASB Allegiance Real Estate Fund	177,580,755	3.4	-5.6	-7.4	-3.2	6.0	5.8	-	23.0	5.4	1.5	6.8	7.1	7.5	Sep-13
<i>NCREIF ODCE</i>			-3.2	-7.5	-3.1	8.4	7.5	-	29.5	8.0	2.2	6.4	8.4	9.1	
JPMCB Strategic Property Fund	144,300,244	2.8	-3.2	-9.7	-5.5	6.1	5.8	-	27.9	5.9	1.3	5.0	7.6	7.3	Jul-14
<i>NCREIF ODCE</i>			-3.2	-7.5	-3.1	8.4	7.5	-	29.5	8.0	2.2	6.4	8.4	8.9	
Private Real Estate	123,608,804	2.4	3.4	9.3	12.8	16.6	12.8	12.7	31.3	12.1	4.4	9.0	5.4	12.9	Mar-11
<i>NCREIF ODCE</i>			3.5	9.4	13.0	16.7	12.9	13.2	31.3	12.1	4.4	9.0	5.4	12.9	
Private Equity	164,186,192	3.1	-0.1	-6.5	-5.9	13.1	10.5	10.4	22.9	41.7	-10.5	10.9	7.8	10.3	Sep-10
<i>NCREIF ODCE</i>			-0.1	-6.5	-5.9	13.1	10.5	10.8	23.0	41.7	-10.5	10.9	7.8	10.5	
Private Credit	245,458,300	4.7	1.2	-0.6	0.5	1.0	4.5	-	1.2	4.8	5.5	9.7	9.3	-24.3	Dec-15
<i>NCREIF ODCE</i>			1.3	-0.6	0.6	1.0	4.5	-	1.2	4.8	5.5	9.7	9.3	6.6	
Opportunistic	167,025,043	3.2	4.2	-0.5	-10.2	18.4	-	-	-5.4	59.9	-	-	-	10.4	Jan-20
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	7.2	-	-	7.2	7.2	-	-	-	7.2	
River Birch International	5,961,528	0.1	16.2	25.9	25.3	3.3	0.1	-	-0.2	-0.7	-19.9	-0.5	2.8	-	Jul-15
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	7.2	-	-	7.2	7.2	7.2	-	-	-	
DB Investors Fund IV	25,576,934	0.5	17.8	0.3	-35.9	15.8	-	-	-34.4	95.1	-	-	-	7.9	Dec-19
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	7.2	-	-	7.2	7.2	-	-	-	7.2	
Sixth Street TAO Partners (D)	85,955,709	1.6	1.3	-0.5	2.2	15.1	-	-	9.6	39.6	-	-	-	15.1	Mar-20
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	7.2	-	-	7.2	7.2	-	-	-	7.2	
Aristeia Select Opportunities II	49,530,872	0.9	1.7	-4.9	-4.4	-	-	-	-	-	-	-	-	-0.2	Jul-21
<i>Assumed Rate of Return +3%</i>			1.8	5.4	7.2	-	-	-	7.2	-	-	-	-	7.2	
Cash	-21,679,077	-0.4	0.6	3.0	2.6	0.9	1.3	1.5	-0.5	0.1	1.0	2.0	3.2	1.4	Apr-11

HBK Opportunities Platform liquidated on 2/2/2023.

Total Fund
Total Private Equity

Kern County Employees' Retirement
Period Ending: March 31, 2023

IRR Analysis as of IRR date

Vintage Year	Manager/Fund	Estimated Market Value as of 3/31/2022	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												
2008	Abbott Capital PE VI	\$17,231,430	\$50,000,000	\$49,750,000	100%	\$250,000	\$78,095,564	\$22,959,156	1.57x	1.92x	13.0%	09/30/22
2006	Pantheon Global III	\$544,562	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$52,000,000	\$553,872	1.10x	1.11x	1.9%	12/31/22
1998	Pantheon USA III	\$45,445	\$7,500,000	\$7,335,000	98%	\$165,000	\$8,197,500	\$47,064	1.12x	1.12x	1.9%	12/31/22
2002	Pantheon USA V	\$392,019	\$25,000,000	\$24,350,000	97%	\$650,000	\$37,950,000	\$411,492	1.56x	1.57x	9.0%	12/31/22
2004	Pantheon USA VI	\$357,185	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$50,623,827	\$346,190	1.53x	1.54x	6.7%	12/31/22
2006	Pantheon USA VII	\$6,715,424	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$80,124,999	\$7,894,161	1.72x	1.86x	10.1%	12/31/22
2020	Vista Foundation Fund IV	\$17,834,565	\$25,000,000	\$18,753,571	75%	\$6,246,429	\$30,252	\$13,821,190	0.00x	0.95x	9.8%	12/31/22
2021	Crown Global Secondaries V Master S.C.Sp	\$28,138,412	\$50,000,000	\$21,250,000	43%	\$28,750,000	\$450,000	\$24,982,600	0.02x	1.35x	34.7%	12/31/22
2021	Brighton Park Capital Fund I	\$35,655,157	\$30,000,000	\$33,619,644	112%	-\$3,619,644	\$1,325,801	\$37,910,214	0.04x	1.10x	17.3%	09/30/22
2021	Warren Equity Partners Fund III	\$25,661,636	\$32,500,000	\$22,969,862	71%	\$9,530,138	\$508,290	\$24,410,915	0.02x	1.14x	23.8%	09/30/22
2021	Peak Rock Capital Fund III	\$11,225,621	\$30,000,000	\$11,109,034	37%	\$18,890,966	\$1,879,477	\$10,755,627	0.17x	1.18x	22.7%	12/31/22
2021	Level Equity Growth Partners V	\$4,543,921	\$15,000,000	\$5,139,531	34%	\$9,860,469	\$0	N/A	N/A	N/A	N/A	N/A
2021	Level Equity Opportunities Fund 2021	\$3,253,566	\$15,000,000	\$3,673,753	24%	\$11,326,247	\$0	N/A	N/A	N/A	N/A	N/A
2022	Linden Capital Partners V LP	\$5,472,902	\$22,500,000	\$5,623,610	25%	\$16,876,390	\$0	\$5,461,028	N/A	N/A	-8.7%	12/31/22
2022	Rubicon Technology Partners IV LP	\$2,681,880	\$30,000,000	\$3,214,080	11%	\$26,785,920	\$0	\$3,214,080	N/A	N/A	-69.4%	12/31/22
2022	OrbiMed Private Investments IX, LP	\$366,875	\$10,000,000	\$500,000	5%	\$9,500,000	\$0	\$366,875	N/A	N/A	27.6%	03/31/23
2022	Brighton Park Capital Fund II	\$2,249,052	\$30,000,000	\$3,239,535	11%	\$26,760,465	\$0	N/A	N/A	N/A	N/A	N/A
2022	Linden Co-Investment V LP	\$1,816,540	\$7,500,000	\$5,623,610	75%	\$1,876,390	\$0	\$1,846,267	N/A	N/A	21.8%	12/31/22
2022	Warren Equity Partners Fund IV	\$0	\$32,500,000	\$0	0%	\$32,500,000	\$0	N/A	N/A	N/A	N/A	N/A
2022	Accel-KKR Capital Partners VII	\$0	\$25,000,000	\$0	0%	\$25,000,000	\$0	N/A	N/A	N/A	N/A	N/A
2023	LGT Crown Global Secondaries Fund VI	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	N/A	N/A	N/A	N/A	N/A
2023	Parthenon Investors VII	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	N/A	N/A	N/A	N/A	N/A
Total Private Equity		\$164,186,192	\$632,500,000	\$343,126,229	54%	\$289,373,771	\$311,185,711	\$154,980,731	0.91x	1.39x		
% of Portfolio (Market Value)		3.2%										

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

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

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

Linden Co-Investment V LP and Brighton Park Capital Fund II, L.P added in Q1

Total Fund
Total Private Credit

Kern County Employees' Retirement
Period Ending: March 31, 2023

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value 3/31/2023	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib/ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ³	IRR Date
Private Credit												
2015	DC Value Recovery Fund IV ⁴	\$20,781,309	\$60,000,000	\$73,340,099	122%	-\$5,500,870	\$37,625,485	\$18,822,414	0.51x	0.80x	9.0%	12/31/22
2017	Sixth Street TAO Partners (B)	\$39,800,921	\$50,000,000	\$67,850,097	136%	-\$17,850,097	\$42,191,344	\$38,674,463	0.62x	1.21x	9.5%	12/31/22
2017	Brookfield Real Estate Finance Fund V	\$17,621,779	\$50,000,000	\$36,019,917	72%	\$13,980,083	\$26,878,678	\$19,618,101	0.75x	1.24x	7.7%	12/31/22
2018	Magnetar Constellation Fund V	\$28,836,480	\$60,000,000	\$64,905,493	108%	-\$4,905,493	\$41,583,529	\$28,836,480	0.64x	1.08x	6.3%	3/31/23
2019	H.I.G Bayside Loan Opportunity Fund V	\$42,185,573	\$60,000,000	\$35,821,497	60%	\$24,178,503	\$11,999,612	\$42,185,573	0.33x	1.51x	17.9%	3/31/23
2020	Blue Torch Credit Opportunities Fund II	\$17,526,212	\$20,000,000	\$16,613,092	83%	\$3,386,908	\$1,836,476	\$17,089,280	0.11x	1.17x	14.2%	12/31/22
2020	Fortress Credit Opportunites Fund V Expansion	\$13,938,158	\$40,000,000	\$12,688,449	32%	\$27,311,551	\$468,590	\$14,019,822	0.04x	1.14x	23.4%	12/31/22
2021	Fortress Lending Fund II	\$29,190,818	\$40,000,000	\$33,337,851	83%	\$6,662,149	\$5,527,900	\$28,599,104	0.17x	1.04x	2.9%	12/31/22
2022	Blue Torch Credit Opportunities Fund III	\$7,625,106	\$40,000,000	\$7,199,891	18%	\$32,800,109	\$0	N/A	0.00x	1.06x	N/A	N/A
2022	Fortress Lending Fund III	\$23,391,071	\$40,000,000	\$23,232,701	58%	\$16,767,299	\$1,416,992	\$24,006,650	N/A	N/A	-5.9%	12/31/22
2022	OrbiMed Royalty & Credit Opportunities IV	\$4,560,873	\$30,000,000	\$4,500,000	15%	\$25,500,000	\$0	\$4,560,873	0.00x	1.01x	11.9%	3/31/23
Total Private Credit		\$245,458,300	\$490,000,000	\$375,509,086	77%	\$122,330,143	\$169,528,608	\$236,412,760	0.45x	1.11x		
% of Portfolio (Market Value)		4.8%										

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

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

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

⁴Name changed from Colony Distressed Credit fund to DC Value Recovery Fund IV

Total Fund
Total Private Real Estate

Kern County Employees' Retirement
Period Ending: March 31, 2023

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value 3/31/2023	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	\$1,394,290	\$50,000,000	\$43,637,717	87%	\$6,362,283	\$56,824,750	\$2,659,454	1.30x	1.33x	12.3%	12/31/22
2017	Landmark Real Estate Partners VIII	\$31,009,306	\$60,000,000	\$38,464,357	64%	\$21,535,643	\$22,374,230	\$28,646,936	0.58x	1.39x	21.8%	09/30/22
2018	Long Wharf Real Estate Partners VI	\$34,044,975	\$50,000,000	\$48,196,234	96%	\$1,803,766	\$22,497,522	\$34,044,975	0.47x	1.17x	22.0%	03/31/23
2020	Covenant Apartment Fund X	\$33,907,055	\$30,000,000	\$24,007,333	80%	\$5,992,667	\$6,027,231	\$29,905,106	0.25x	1.66x	29.9%	12/31/22
2021	Singerman Real Estate Opportunity Fund IV	\$6,958,995	\$35,000,000	\$8,146,250	23%	\$26,853,750	\$0	\$8,851,934	0.00x	0.85x	21.0%	03/31/23
2022	LBA Logistics Value Fund IX, L.P.	\$8,851,934	\$40,000,000	\$8,076,923	20%	\$31,923,077	\$0	N/A	N/A	N/A	N/A	N/A
2022	Covenant Apartment Fund XI	\$7,442,250	\$30,000,000	\$3,300,000	105%	\$38,076,924	\$0	N/A	N/A	N/A	N/A	N/A
2022	KSL Capital Partners VI	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	N/A	N/A	N/A	N/A	N/A
Total Private Real Estate		\$123,608,804	\$325,000,000	\$173,828,814	53%	\$162,548,110	\$107,723,734	\$104,108,405	0.62x	1.33x		
% of Portfolio (Market Value)		2.4%										

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

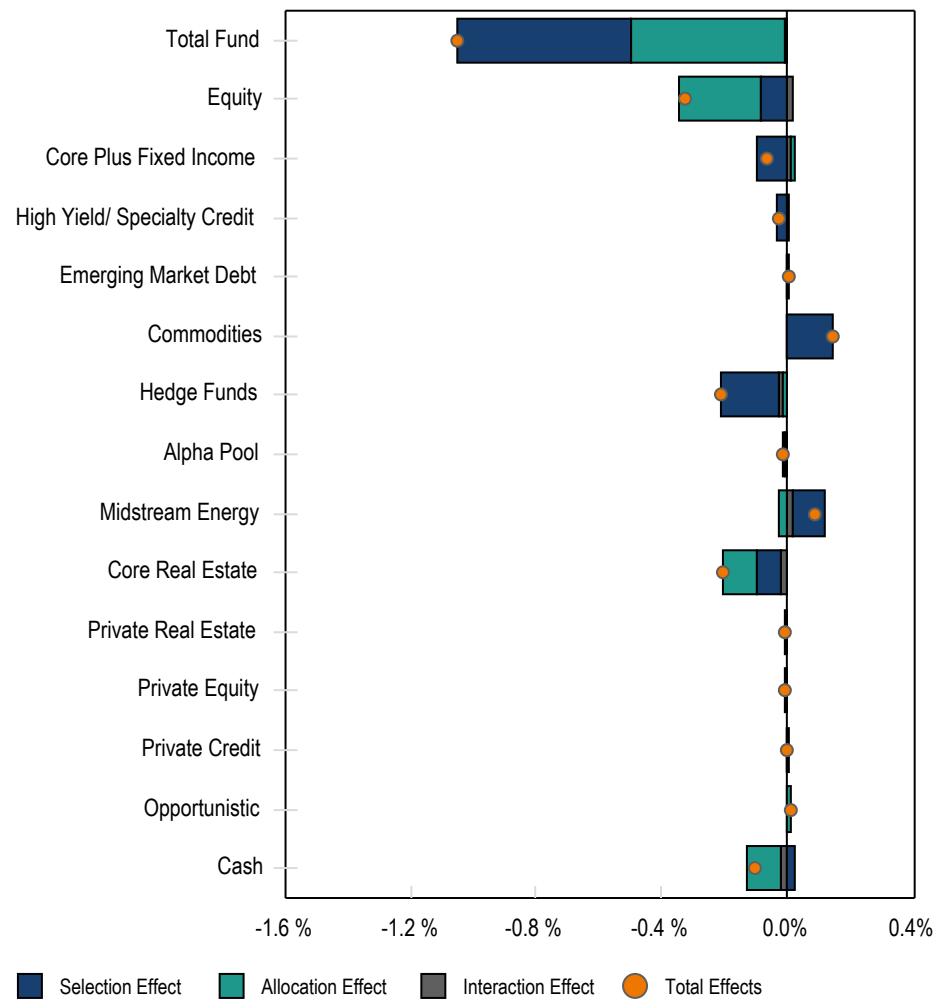
²(TVPI) is equal to (market value + capital returned) / capital called

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

Total Fund
Attribution Analysis - Asset Class Level (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

Attribution Effects
Last Three Months



Performance Attribution

	Last Three Months
Wtd. Actual Return	2.7
Wtd. Index Return	3.8
Excess Return	-1.1
Selection Effect	-0.6
Allocation Effect	-0.5
Interaction Effect	0.0

Attribution Summary
Last Three Months

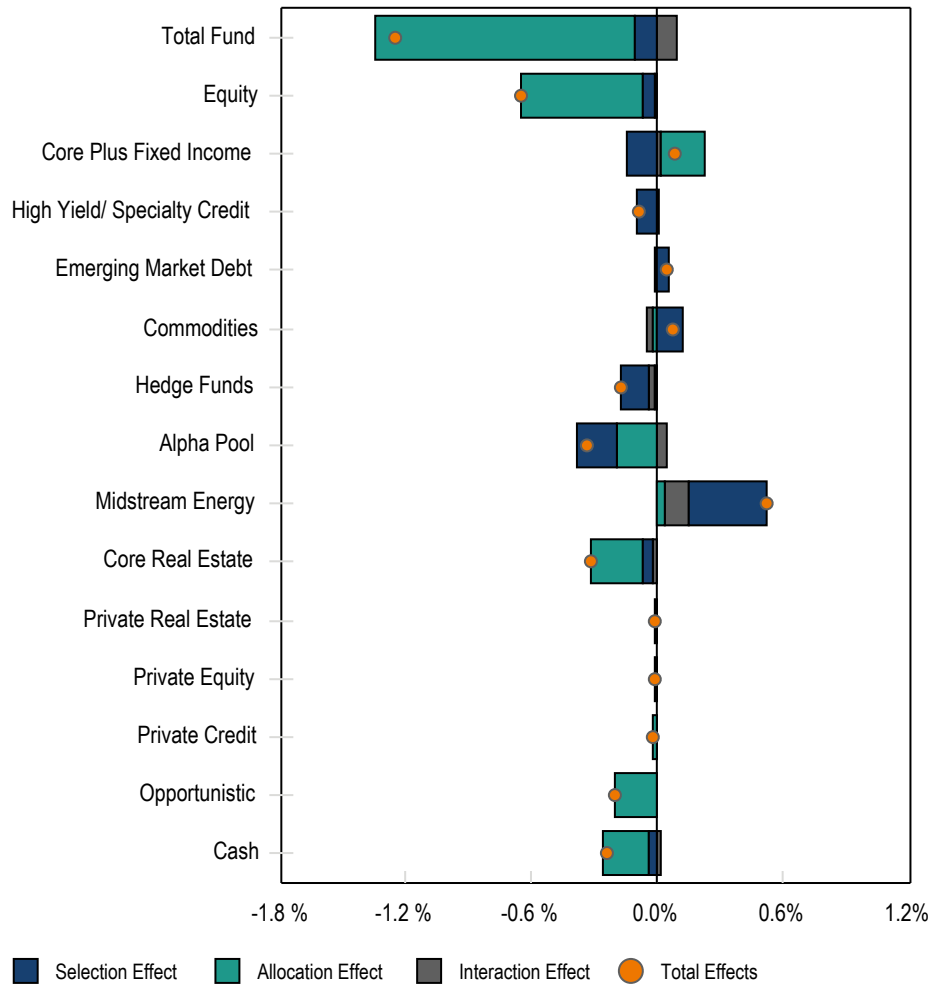
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	6.7	6.9	-0.2	-0.2	-0.3	0.0	-0.3
Core Plus Fixed Income	2.4	3.0	-0.6	-0.1	0.0	0.0	-0.1
High Yield/ Specialty Credit	3.2	3.7	-0.6	-0.1	0.0	0.0	0.0
Emerging Market Debt	3.7	3.5	0.2	0.0	0.0	0.0	0.0
Commodities	-1.8	-5.4	3.5	0.1	0.0	0.0	0.1
Hedge Funds	1.4	3.3	-1.9	-0.2	0.0	0.0	-0.2
Alpha Pool	1.8	2.1	-0.2	0.0	0.0	0.0	0.0
Midstream Energy	2.8	0.8	2.0	0.1	0.0	0.0	0.1
Core Real Estate	-4.6	-3.2	-1.4	-0.1	-0.1	0.0	-0.2
Private Real Estate	3.4	3.5	-0.1	0.0	0.0	0.0	0.0
Private Equity	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
Private Credit	1.2	1.3	0.0	0.0	0.0	0.0	0.0
Opportunistic	4.2	1.8	2.4	0.0	0.0	0.0	0.0
Cash	0.6	1.1	-0.5	0.0	-0.1	0.0	-0.1
Total Fund	2.7	3.8	-1.1	-0.6	-0.5	0.0	-1.1

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.

Total Fund
 Attribution Analysis - Asset Class Level (Net of Fees)

Kern County Employees' Retirement Association
 Period Ending: March 31, 2023

Attribution Effects
 Fiscal YTD



Performance Attribution

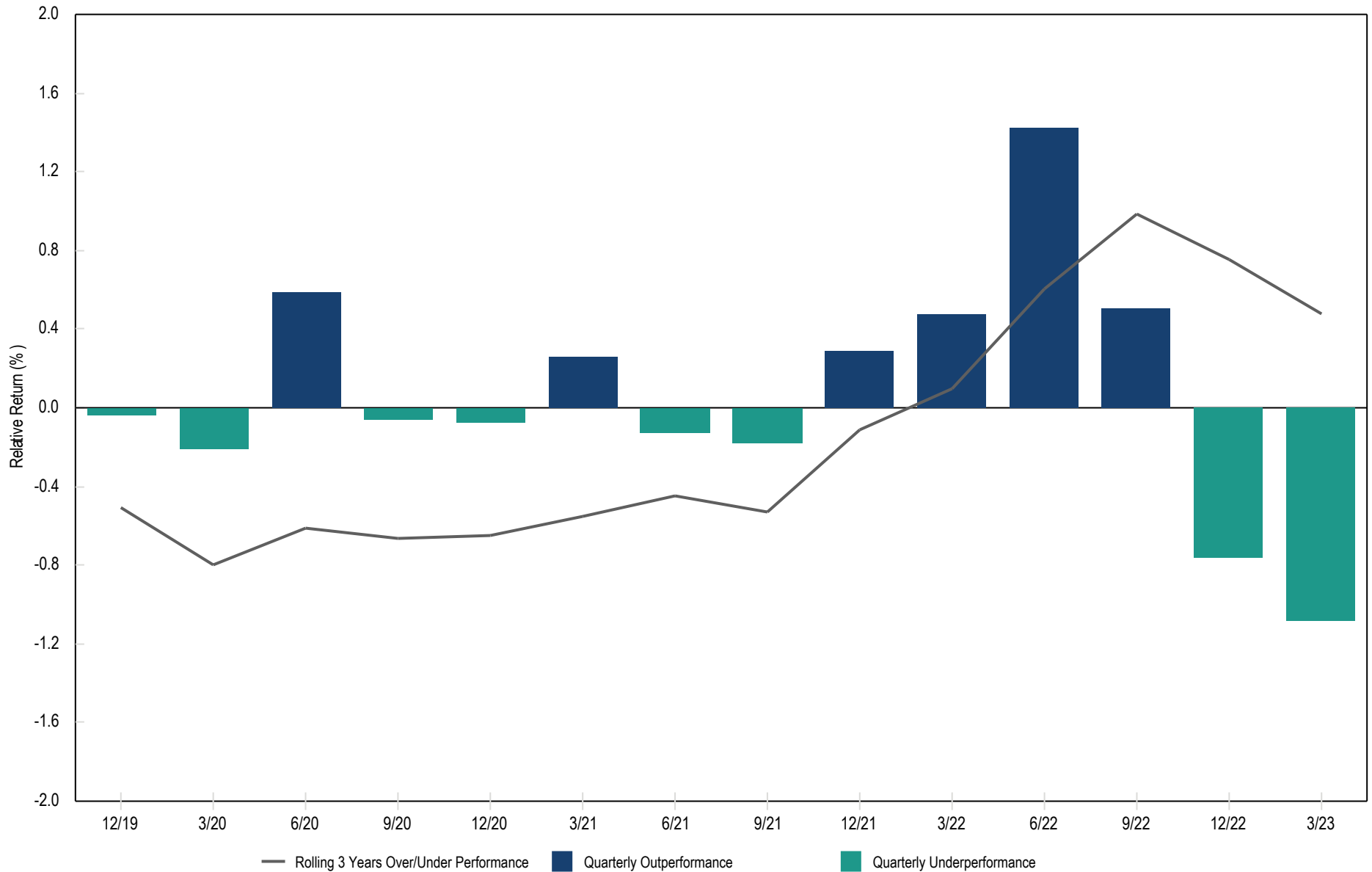
	Fiscal YTD
Wtd. Actual Return	4.0
Wtd. Index Return	5.2
Excess Return	-1.2
Selection Effect	-0.1
Allocation Effect	-1.2
Interaction Effect	0.1

Attribution Summary
 Fiscal YTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	9.5	9.7	-0.1	0.0	-0.6	0.0	-0.6
Core Plus Fixed Income	-0.9	-0.1	-0.8	-0.1	0.2	0.0	0.1
High Yield/ Specialty Credit	5.5	7.1	-1.6	-0.1	0.0	0.0	-0.1
Emerging Market Debt	8.4	6.9	1.5	0.1	0.0	0.0	0.0
Commodities	-4.3	-7.2	2.9	0.1	0.0	0.0	0.1
Hedge Funds	5.2	6.8	-1.6	-0.1	0.0	0.0	-0.2
Alpha Pool	2.5	5.5	-2.9	-0.2	-0.2	0.0	-0.3
Midstream Energy	16.1	8.1	8.0	0.4	0.0	0.1	0.5
Core Real Estate	-8.4	-7.5	-0.9	0.0	-0.2	0.0	-0.3
Private Real Estate	9.3	9.4	-0.1	0.0	0.0	0.0	0.0
Private Equity	-6.5	-6.5	0.0	0.0	0.0	0.0	0.0
Private Credit	-0.6	-0.6	0.0	0.0	0.0	0.0	0.0
Opportunistic	-0.5	5.4	-5.8	0.0	-0.2	0.0	-0.2
Cash	3.0	2.4	0.6	0.0	-0.2	0.0	-0.2
Total Fund	4.0	5.2	-1.2	-0.1	-1.2	0.1	-1.2

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.

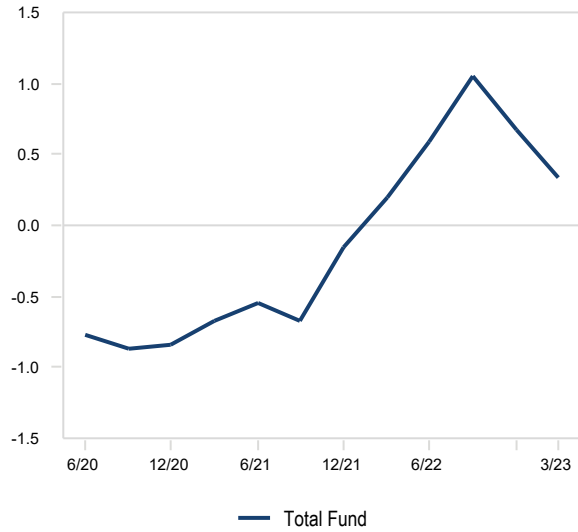
Rolling 3 Year Annualized Excess Performance



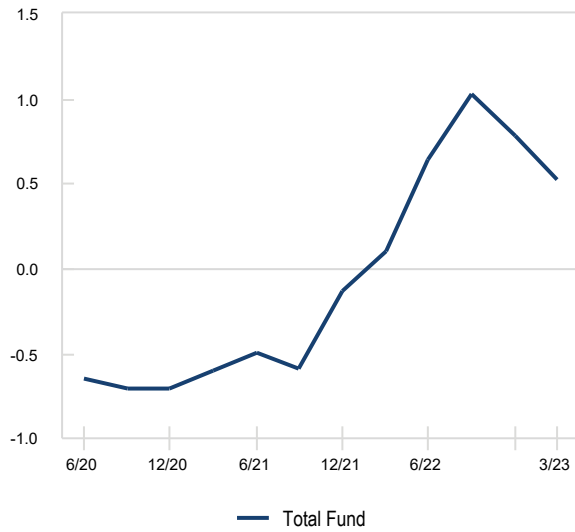
Total Fund
Rolling Risk Statistics: 3 Years (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

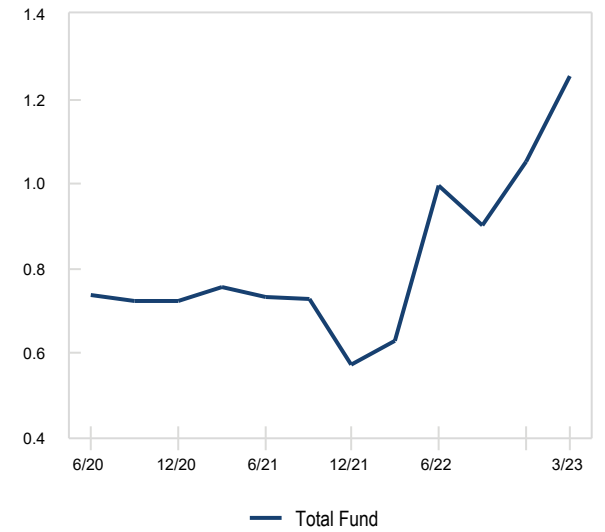
Rolling Information Ratio



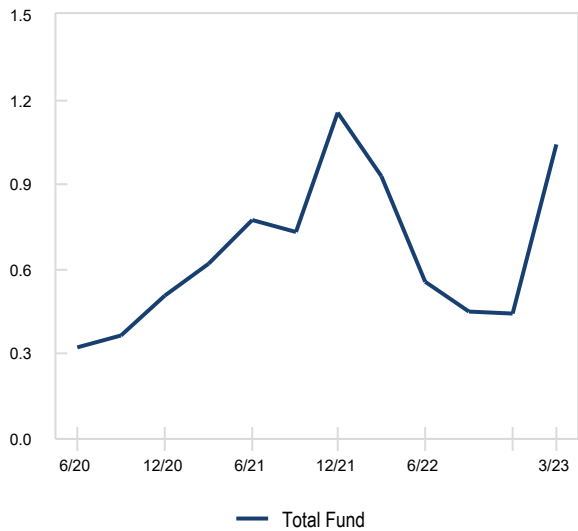
Rolling Annual Excess Benchmark Return



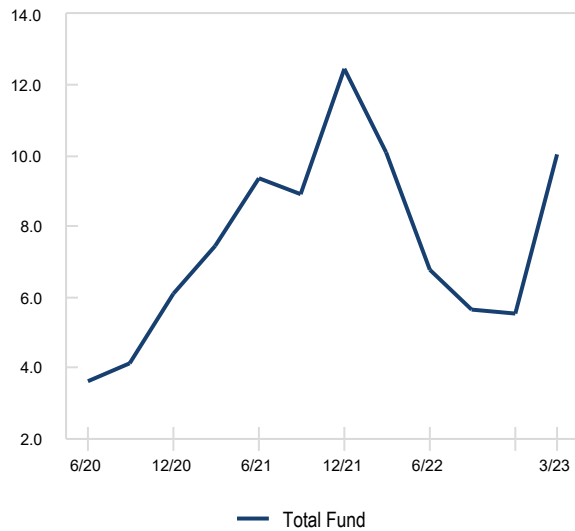
Rolling Tracking Error



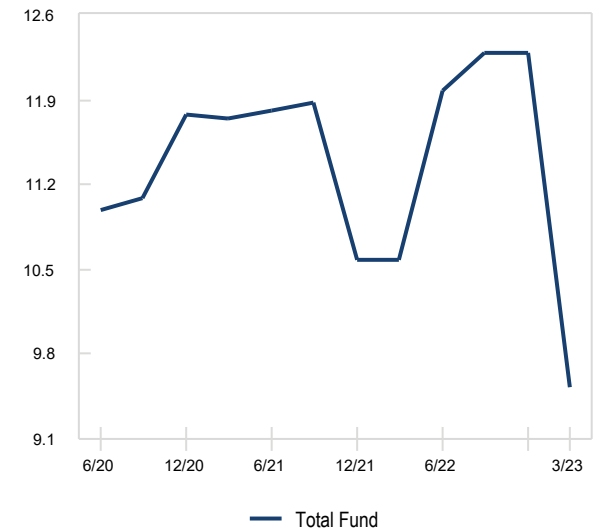
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



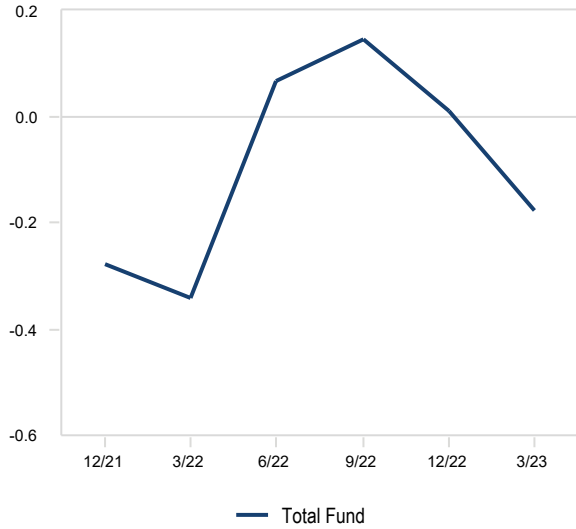
Rolling Annualized Standard Deviation



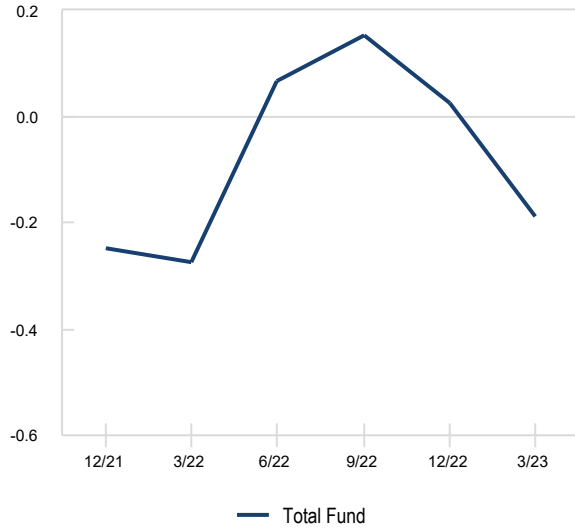
Total Fund
Rolling Risk Statistics: 5 Years (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

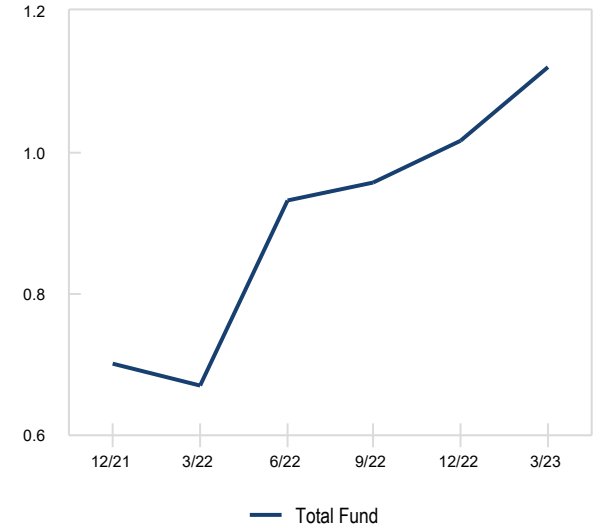
Rolling Information Ratio



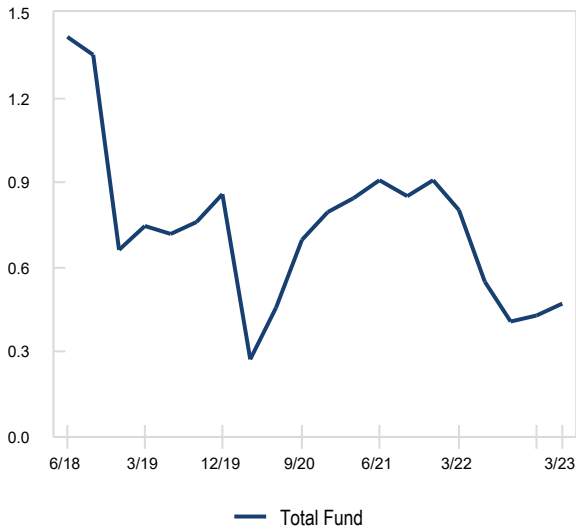
Rolling Annual Excess Benchmark Return



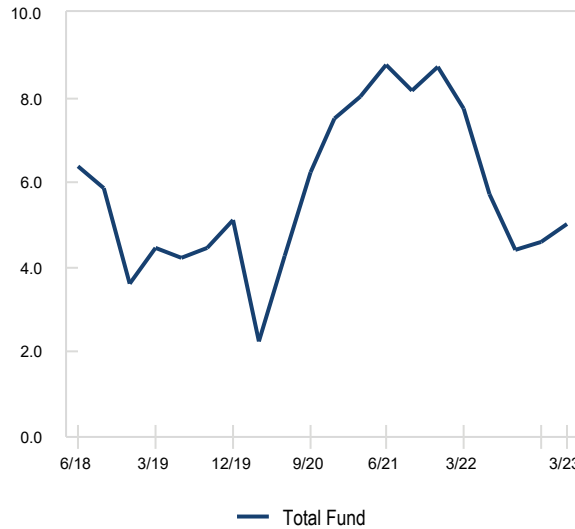
Rolling Tracking Error



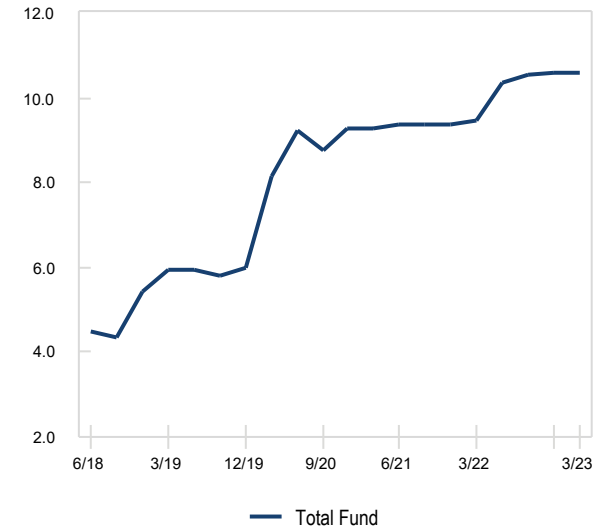
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



Rolling Annualized Standard Deviation



Cash Flows

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Equity	1,577,575,704	1,004,648	-504,548		-42,989	106,498,920	1,684,531,735
Equity Beta Exposure	108,880,200	1,004,648				6,799,702	116,684,550
Mellon DB SL Stock Index Fund	458,436,087					34,376,685	492,812,772
PIMCO StocksPLUS	99,467,229					7,501,344	106,968,573
AB US Small Cap Value Equity	86,111,927		-74			-177,868	85,933,985
Geneva Capital Small Cap Growth	46,020,563					3,940,624	49,961,187
Mellon DB SL World ex-US Index Fund	471,377,465					38,177,316	509,554,780
Fidelity Non-US Small Cap Equity	251,920		-209,067		-42,989	2,506	2,371
Cevian Capital II	34,435,773					3,399,622	37,835,395
American Century Non-US Small Cap	68,889,933		-295,160			3,146,856	71,741,628
DFA Emerging Markets Value I	75,158,678					2,812,965	77,971,643
AB Emerging Markets Strategic Core Equity Collective Trust	48,185,996					3,173,660	51,359,657
Mellon Emerging Markets Stock Index Fund	80,359,088					3,345,430	83,704,518
Transition Equity	845		-247			78	676
Fixed Income	1,232,206,332	30,829,590			-4,747,049	34,876,532	1,293,165,405
Fixed Income Beta Exposure	337,322,663	29,800,000				5,929,466	373,052,129
Mellon DB SL Aggregate Bond Index Fund	157,713,715					4,701,569	162,415,284
PIMCO Core Plus	160,665,585					5,036,579	165,702,164
Western Asset Core Plus	118,812,660					3,476,454	122,289,114
Western Asset High Yield Fixed Income	161,987,205				-3,069,882	5,790,171	164,707,494
TCW Securitized Opportunities	93,753,514					2,383,739	96,137,252
Stone Harbor Emerging Markets Debt Blend Portfolio	63,666,940	825,292			-1,654,683	1,815,991	64,653,539
PIMCO EMD	138,177,003					5,730,024	143,907,027
Transition Fixed Income	107,047	204,299			-22,484	12,539	301,401
Commodities	205,801,777			-91,422	-4,655,786	-3,501,219	197,553,350
Gresham MTAP Commodity Builder Fund	52,497,584			-21,422		-3,334,041	49,142,121
Wellington Commodities	153,304,193			-70,000	-4,655,786	-167,178	148,411,229
Hedge Funds	543,309,200		-10,012,361	-160,036	-10,039,496	7,697,228	530,794,535
Aristeia International Limited	68,181,409					1,778,107	69,959,516
Brevan Howard Fund	76,763,840		-10,012,361		-19,002,348	-1,910,064	45,839,068
D.E. Shaw Composite Fund	58,856,929					673,285	59,530,214
HBK Fund II	44,169,126					567,933	44,737,059
Hudson Bay Cap Structure Arbitrage Enhanced Fund	80,091,097					644,602	80,735,699

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Indus Pacific Opportunities Fund	37,237,546				10,000,000	412,810	47,650,356
Magnetar Structured Credit Fund	8,297,190				-1,037,149	67,504	7,327,545
Pharo Macro Fund	62,281,994					-922,954	61,359,040
PIMCO Commodity Alpha Fund	63,025,840			-160,036		4,249,237	67,115,042
Sculptor Domestic Partners II LP	44,404,229					2,136,768	46,540,997
Alpha Pool	239,505,576	799,884	-807,723		-24,837,758	4,203,845	218,863,824
Hudson Bay	61,864,015	38,286	-230,739			690,358	62,361,920
Davidson Kempner Institutional Partners	54,247,004	335,271	-203,116			516,964	54,896,123
HBK Fund II	42,476,585	52,497	-158,306			651,978	43,022,754
HBK Opportunities Platform – SPAC Series	24,757,936	17,734			-24,837,758	62,088	
Garda Fixed Income Relative Value Opportunity Fund	56,160,036	356,096	-215,562			2,282,457	58,583,027
Midstream Energy	299,392,352				-4,511,703	8,781,653	303,662,302
Harvest Midstream	152,077,589				-2,322,632	5,971,645	155,726,602
PIMCO Midstream	147,314,763				-2,189,071	2,810,008	147,935,700
Core Real Estate	340,306,582	38,414	-332,061		-3,298,243	-14,833,693	321,881,000
ASB Allegiance Real Estate Fund	189,419,041				-1,455,254	-10,383,032	177,580,755
JPMCB Strategic Property Fund	150,887,540	38,414	-332,061		-1,842,989	-4,450,661	144,300,244
Private Real Estate	119,647,273				19,913	3,941,618	123,608,804
Invesco Real Estate Value-Add Fund IV	2,659,454				-1,234,491	-30,673	1,394,290
Landmark Real Estate Partners VIII	31,724,146				-466,609	-248,231	31,009,306
Long Wharf Real Estate	34,816,611				-822,597	50,961	34,044,975
Covenant Apartment Fund X	29,905,106				12,360	3,989,589	33,907,055
Singerman Real Estate Opportunity Fund IV	8,214,827				131,250	505,857	8,851,934
LBA Logistics Value Fund IX, L.P.	7,574,005					-131,755	7,442,250
Covenant Apartment Fund XI, LP	4,753,125				2,400,000	-194,130	6,958,995
Private Equity	161,282,661	520			7,273,935	-4,370,925	164,186,192
Abbott V	2,868,708	520			-2,869,228		
Abbott VI	18,940,319				-1,000,000	-708,889	17,231,430
Pantheon Secondary III	553,872					-9,310	544,562
Pantheon III	47,064					-1,619	45,445
Pantheon V	411,492					-19,473	392,019

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Pantheon VI	346,190					10,995	357,185
Pantheon VII	7,894,161				-700,000	-478,737	6,715,424
Vista Foundation Fund IV	13,821,190				4,563,716	-550,341	17,834,565
Crown Global Secondaries V Master S.C.Sp	24,982,600				1,550,000	1,605,812	28,138,412
Brighton Park Capital Fund I	34,229,107				202,883	1,223,167	35,655,157
Warren Equity Partners Fund III	25,661,636						25,661,636
Peak Rock Capital Fund III	10,755,627					469,994	11,225,621
Level Equity Growth Partners V	4,037,203				380,516	126,202	4,543,921
Level Equity Opportunities Fund 2021	3,212,848					40,718	3,253,566
Linden Capital Partners V LP	5,461,028					11,874	5,472,902
Rubicon Technology Partners IV L.P.	3,214,080					-532,200	2,681,880
OrbiMed Private Investments IX, LP	500,000					-133,125	366,875
Brighton Park Capital Fund II, L.P	2,499,270					-250,218	2,249,052
Linden Co-Investment V LP	1,846,267					-29,727	1,816,540
Warren Equity Partners Fund IV					5,146,048	-5,146,048	
Private Credit	243,377,473			-33,710	-976,841	3,091,378	245,458,300
DC Value Recovery Fund IV	18,822,414					1,958,895	20,781,309
Sixth Street TAO Partners (B)	38,674,463				738,742	387,716	39,800,921
Brookfield Real Estate Finance Fund V	19,618,101				-1,925,871	-70,451	17,621,779
Magnetar Constellation Fund V	30,525,743			-33,710	-177,098	-1,478,455	28,836,480
H.I.G. Bayside Loan Opportunity Fund V	40,072,143				1,569,770	543,660	42,185,573
Blue Torch Credit Opportunities Fund II	17,089,280				-268,717	705,649	17,526,212
Fortress Credit Opportunites Fund V Expansion	14,019,822					-81,664	13,938,158
Fortress Lending Fund II	28,599,104				70,625	521,089	29,190,818
Fortress Lending Fund III	24,006,650				-984,292	368,713	23,391,071
OrbiMed Royalty & Credit Opportunities IV	4,560,332					541	4,560,873
Blue Torch Credit Opportunities Fund III	7,389,421					235,685	7,625,106
Opportunistic	176,377,759			-34,806	-8,873,186	-444,724	167,025,043
DB Investors Fund IV	21,705,376					3,871,558	25,576,934
Sixth Street TAO Partners (D)	90,905,157				-6,136,758	1,187,310	85,955,709
Aristeia Select Opportunities II	48,693,074			-34,806		872,604	49,530,872
River Birch International	7,537,076				-2,736,428	1,160,880	5,961,528
Cash	-30,578,931	184,539,513	-236,742,127	-14,259	54,962,315	6,154,412	-21,679,077

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Ending Market Value
Short Term Cash Account	1						1
Short Term Investment Funds	193,132,111	24,868,640	-29,687,523	-14,259	29,962,315	2,450,028	220,711,312
Parametric Cash Overlay	67,571,696	86,826,194	-72,705,891			564,614	82,256,613
Goldman Sachs Cash Account	4,384,492	47,076,842	-65,015,906				-13,554,572
Futures Offset	-446,202,863	12,461,837	-56,861,807			866,154	-489,736,679
Collateral Cash		13,306,000	-12,471,000				835,000
BlackRock Short Duration Fund	150,535,633				25,000,000	2,273,616	177,809,249

Total Fund
Cash Flow History

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

Portfolio Reconciliation

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Beginning Market Value	5,108,203,758	5,069,038,943	5,489,310,251	3,953,802,126	4,178,770,638	3,174,973,937
Contributions	667,037,506	2,569,764,302	3,381,072,527	10,076,566,898	12,742,273,550	18,713,623,832
Withdrawals	-697,950,645	-2,627,639,885	-3,445,364,412	-10,266,286,094	-13,112,366,066	-19,318,990,602
Fees	-334,232	-3,492,208	-6,807,034	-38,981,477	-65,730,424	-129,155,488
Net Cash Flows	-30,913,139	-57,875,582	-64,291,886	-189,719,195	-370,092,517	-605,366,770
Net Investment Change	151,760,794	217,888,053	-195,966,952	1,464,968,483	1,420,373,292	2,659,444,246
Ending Market Value	5,229,051,413	5,229,051,413	5,229,051,413	5,229,051,413	5,229,051,413	5,229,051,413
Net Change \$	120,847,655	160,012,470	-260,258,838	1,275,249,288	1,050,280,775	2,054,077,476

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

Total Fund
Actual Correlation Matrix

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

Correlation Matrix
3 Years Ending March 31, 2023

	A	B	C	D	E	F	G	H	I	J	K	L
A	1.00											
B	0.98	1.00										
C	0.96	0.98	1.00									
D	0.96	0.97	0.91	1.00								
E	0.81	0.81	0.70	0.80	1.00							
F	0.83	0.82	0.77	0.81	0.82	1.00						
G	0.71	0.72	0.67	0.69	0.74	0.96	1.00					
H	0.89	0.86	0.84	0.83	0.74	0.90	0.79	1.00				
I	0.80	0.78	0.70	0.81	0.82	0.91	0.79	0.80	1.00			
J	0.61	0.50	0.45	0.55	0.46	0.34	0.19	0.46	0.43	1.00		
K	0.61	0.59	0.56	0.56	0.52	0.40	0.26	0.55	0.45	0.38	1.00	
L	-0.15	-0.17	-0.10	-0.23	-0.27	-0.37	-0.36	-0.26	-0.38	0.04	-0.11	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 Interaction
- Moderate to High Interaction
- High Interaction

Total Fund
Risk Analysis - 3 Years (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	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	1.6	0.9	1.0	10.9	0.2	0.5	1.7	1.1	9.9	8.8	1.9	93.1	82.2
Equity	0.7	1.0	1.0	16.2	0.4	0.6	1.0	0.9	15.8	17.7	1.5	99.7	97.1
Domestic Equity	-0.2	1.0	1.0	18.3	-0.3	-0.4	1.2	0.9	17.9	19.2	1.6	98.5	99.1
International Developed Equity	1.2	1.0	1.0	14.6	1.0	1.2	1.0	0.8	14.4	17.8	1.4	101.8	97.8
Emerging Markets Equity	0.2	0.9	1.0	8.7	-0.2	-0.4	2.7	0.5	9.0	17.1	0.9	91.9	90.6
Fixed Income	0.4	1.0	1.0	0.0	0.4	0.4	1.0	-0.1	-0.7	6.9	-0.1	107.5	102.9
Core Plus Fixed Income	0.5	1.0	1.0	-2.4	0.4	0.3	1.0	-0.5	-3.1	6.5	-0.6	111.3	104.5
High Yield/ Specialty Credit	0.6	0.7	0.9	5.0	-0.3	-0.8	2.8	0.6	4.3	6.8	1.0	75.1	68.3
Emerging Market Debt	1.8	1.0	1.0	2.3	1.5	1.8	1.2	0.2	2.0	11.2	0.3	108.2	95.7
Commodities	3.2	0.9	0.9	21.8	0.1	1.0	6.0	1.3	20.1	14.9	2.4	92.8	77.1
Hedge Funds	7.2	0.5	0.3	11.1	0.8	3.3	3.9	2.5	9.7	3.8	10.6	86.0	-33.8
Core Real Estate	0.7	0.6	0.8	5.9	-0.6	-2.5	4.0	0.8	5.1	5.8	1.6	74.6	85.4
Private Real Estate	0.0	1.0	1.0	16.6	-1.0	0.0	0.0	1.8	15.0	8.4	5.1	99.8	100.0
Private Equity	0.0	1.0	1.0	13.1	-0.6	0.0	0.0	0.9	12.4	13.9	1.7	100.0	100.1
Private Credit	0.0	1.0	1.0	1.0	-1.0	0.0	0.0	0.0	0.2	4.0	0.1	99.8	100.1

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

	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	3 Years 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	23	23	16	16	24	24	18	18	25	25	24	24	33	33
Down Market Periods	13	13	20	20	12	12	18	18	11	11	12	12	3	3
Maximum Return	12.43	12.66	3.31	3.68	4.64	6.02	7.59	7.35	8.01	8.78	3.99	3.34	5.39	7.97
Minimum Return	-9.53	-9.65	-4.34	-4.32	-5.04	-6.81	-5.96	-5.81	-8.90	-10.77	-0.75	-1.98	-3.77	-4.97
Return	16.19	15.64	-2.43	-2.77	5.04	5.84	2.29	0.46	21.80	20.82	11.06	7.81	5.95	8.40
Excess Return	15.77	15.33	-3.14	-3.50	4.27	5.20	2.00	0.14	20.11	19.42	9.73	6.76	5.07	7.58
Excess Performance	0.56	0.00	0.34	0.00	-0.80	0.00	1.83	0.00	0.98	0.00	3.25	0.00	-2.46	0.00
RISK SUMMARY STATISTICS														
Beta	0.98	1.00	1.03	1.00	0.74	1.00	1.04	1.00	0.88	1.00	0.49	1.00	0.62	1.00
Upside Risk	15.16	15.22	4.05	3.89	5.58	7.12	8.30	7.66	13.70	13.62	4.84	4.50	5.23	8.30
Downside Risk	10.26	10.57	5.10	4.88	4.14	5.63	7.50	7.47	8.42	9.69	0.81	2.10	3.08	3.52
RISK/RETURN SUMMARY STATISTICS														
Standard Deviation	17.67	17.93	6.48	6.20	6.79	8.90	11.15	10.69	14.89	15.66	3.83	4.45	5.82	8.68
Alpha	0.70	0.00	0.46	0.00	0.64	0.00	1.84	0.00	3.18	0.00	7.10	0.00	0.75	0.00
Sharpe Ratio	0.89	0.85	-0.49	-0.57	0.63	0.58	0.18	0.01	1.34	1.23	2.46	1.51	0.84	0.86
Excess Risk	17.70	17.96	6.46	6.15	6.82	8.93	11.09	10.63	15.02	15.82	3.95	4.47	6.07	8.86
Tracking Error	1.03	0.00	0.98	0.00	2.76	0.00	1.23	0.00	5.96	0.00	3.90	0.00	4.05	0.00
Information Ratio	0.43	-	0.37	-	-0.34	-	1.51	-	0.12	-	0.76	-	-0.62	-
CORRELATION STATISTICS														
R-Squared	1.00	1.00	0.98	1.00	0.95	1.00	0.99	1.00	0.86	1.00	0.32	1.00	0.84	1.00
Actual Correlation	1.00	1.00	0.99	1.00	0.97	1.00	0.99	1.00	0.93	1.00	0.57	1.00	0.92	1.00

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

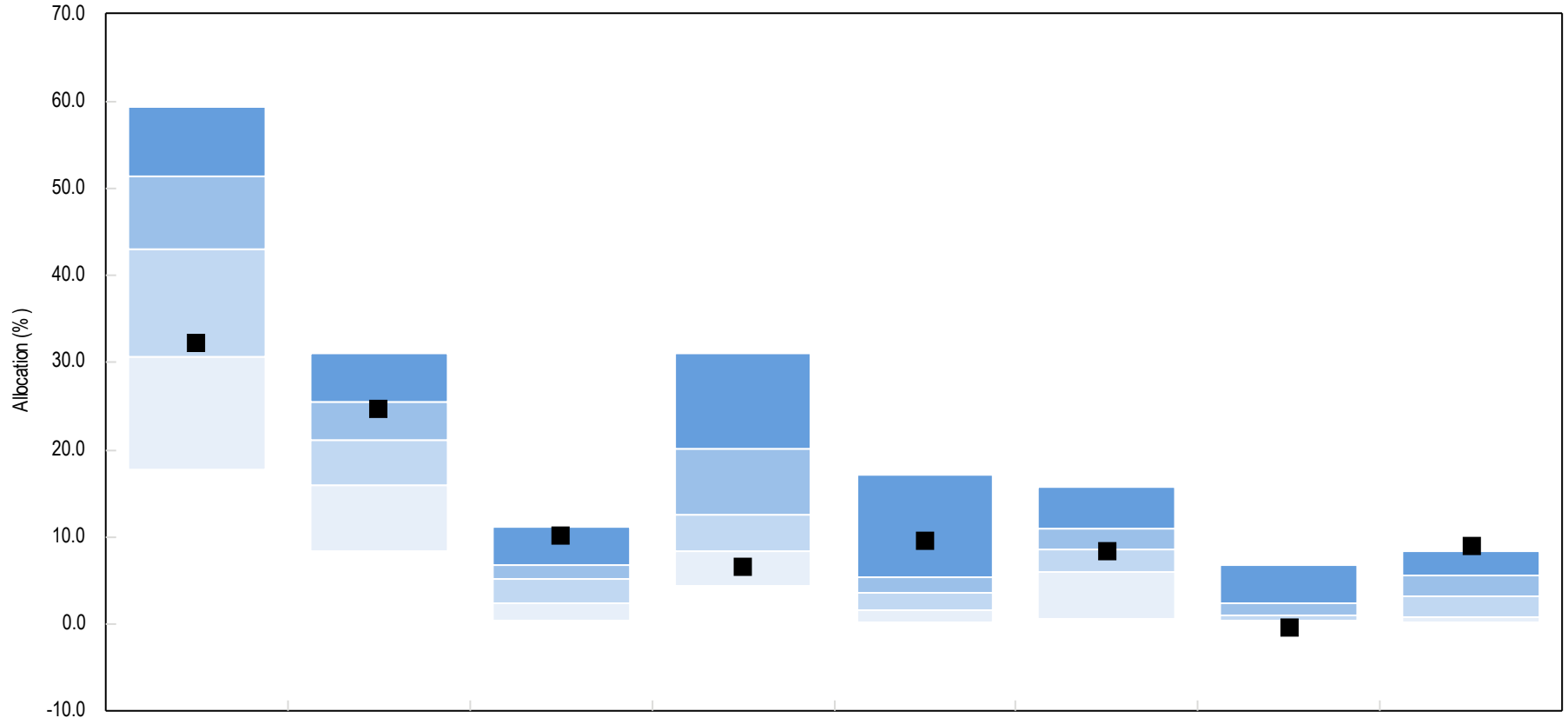
Risk Return Statistics: Last Two Years

	Midstream Energy	Alerian Midstream Energy Index	Opportunistic	Assumed Rate of Return +3%
2 Yrs				
RETURN SUMMARY STATISTICS				
Up Market Periods	14	14	24	24
Down Market Periods	10	10	0	0
Maximum Return	11.20	11.05	7.60	0.58
Minimum Return	-11.82	-12.21	-4.04	0.58
Return	21.19	18.42	2.22	7.25
Excess Return	19.89	18.09	1.37	5.75
Excess Performance	2.76	0.00	-5.03	0.00
RISK SUMMARY STATISTICS				
Beta	0.87	1.00	-	-
Upside Risk	16.22	17.57	7.77	2.03
Downside Risk	11.45	13.57	5.43	0.00
RISK/RETURN SUMMARY STATISTICS				
Standard Deviation	18.89	21.49	9.45	0.00
Alpha	4.50	0.00	-	-
Sharpe Ratio	1.05	0.84	0.14	11.77
Excess Risk	18.99	21.60	9.52	0.49
Tracking Error	4.39	0.00	9.45	0.00
Information Ratio	0.41	-	-0.46	-
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.

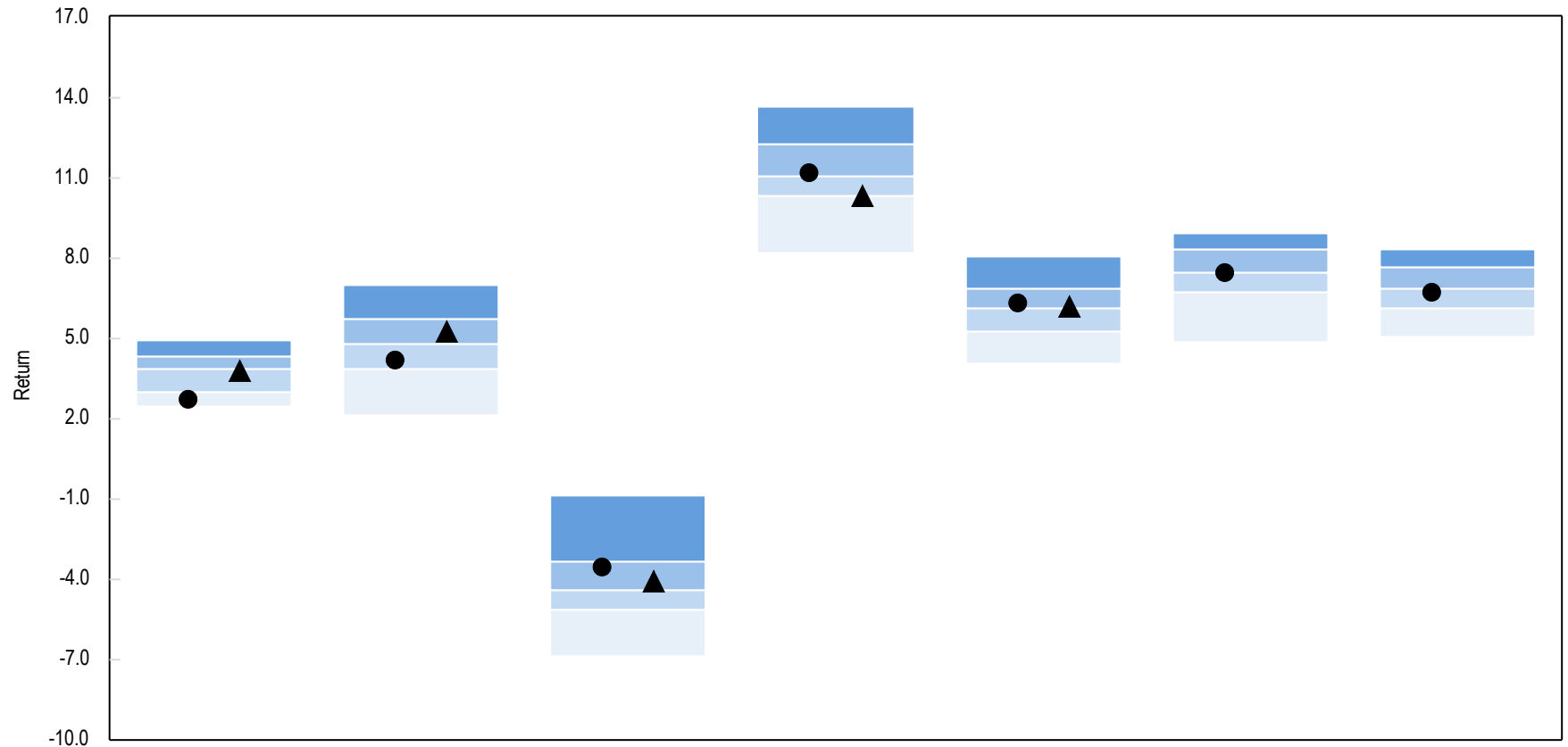
Peer Comparison

Total Plan Allocation vs. InvMetrics Public DB > \$1B
As of March 31, 2023



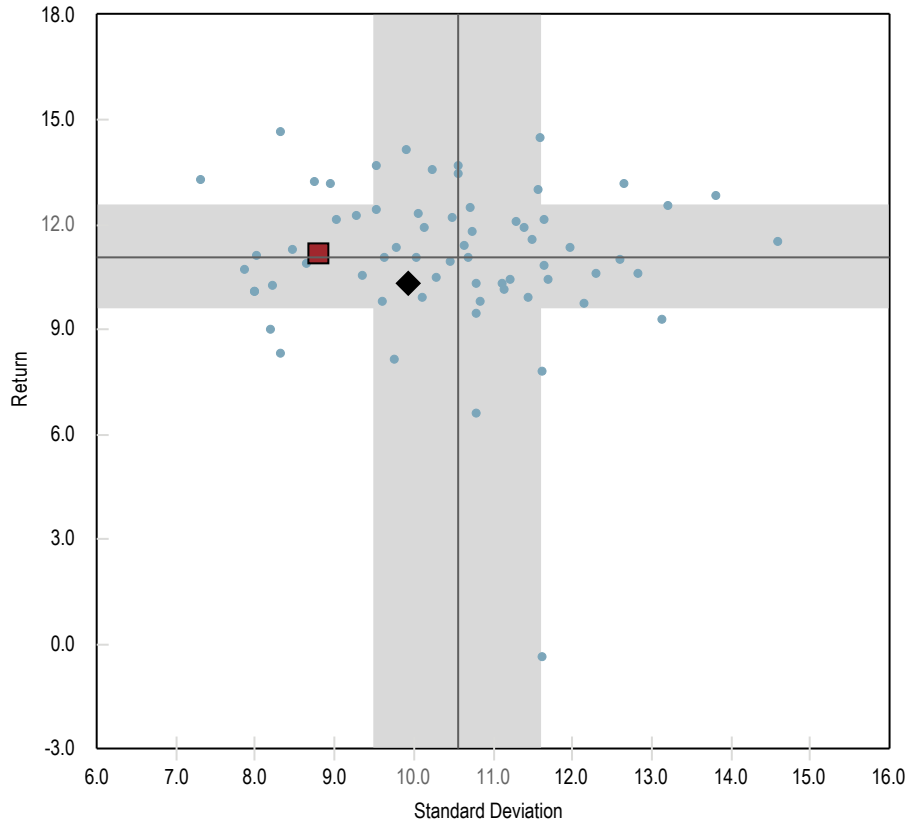
	Total Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Assets/Commod	Real Estate - Private	Cash & Equivalents	Other
■ Total Fund	32.2 (74)	24.7 (31)	10.2 (16)	6.5 (90)	9.6 (13)	8.4 (54)	-0.4	8.9 (1)
5th Percentile	59.4	31.0	11.2	31.1	17.1	15.7	6.7	8.4
1st Quartile	51.5	25.5	6.7	20.2	5.4	10.9	2.3	5.6
Median	43.2	21.2	5.2	12.6	3.6	8.5	1.0	3.1
3rd Quartile	30.6	15.9	2.4	8.4	1.5	5.9	0.5	0.8
95th Percentile	17.7	8.4	0.4	4.3	0.2	0.6	0.1	0.2
Population	65	66	27	47	32	44	47	7

Total Fund vs. InvMetrics Public DB > \$1B



	Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Total Fund	2.8 (91)	4.2 (70)	-3.5 (30)	11.2 (47)	6.3 (47)	7.5 (47)	6.7 (59)
▲ Policy Index	3.8 (55)	5.3 (40)	-4.1 (45)	10.4 (71)	6.2 (50)	-	-
5th Percentile	5.0	7.0	-0.9	13.7	8.1	8.9	8.4
1st Quartile	4.4	5.7	-3.4	12.3	6.9	8.3	7.7
Median	3.9	4.8	-4.4	11.1	6.1	7.4	6.9
3rd Quartile	3.0	3.9	-5.1	10.3	5.3	6.7	6.1
95th Percentile	2.5	2.1	-6.9	8.2	4.1	4.9	5.1
Population	76	73	68	67	66	65	61

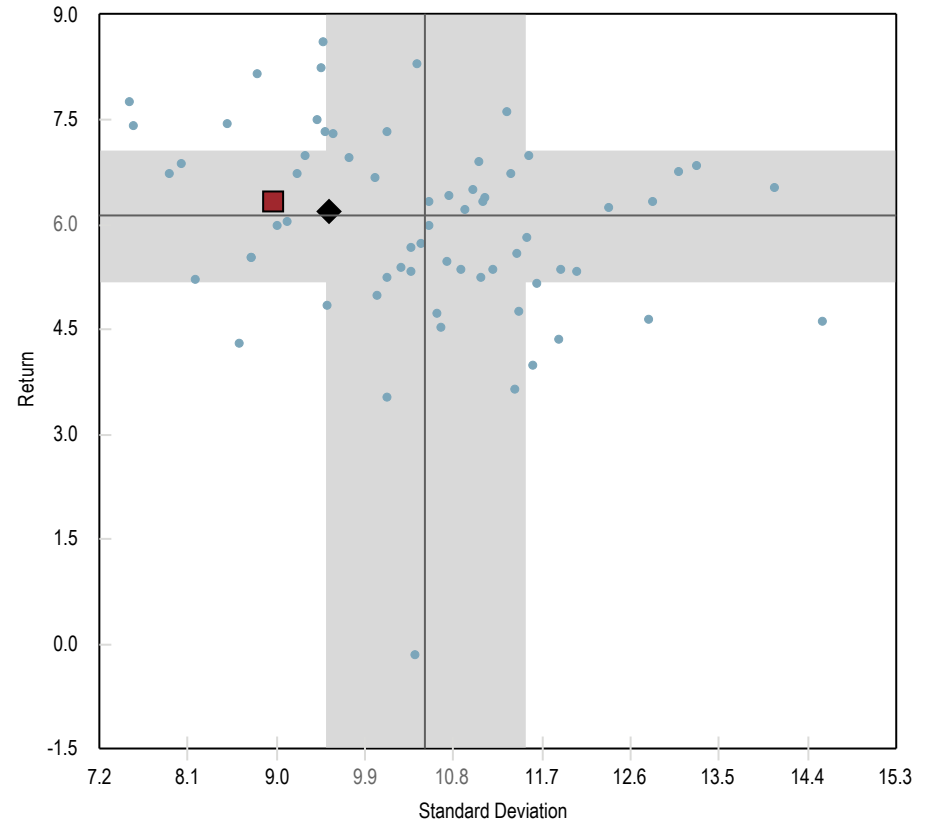
Annualized Return vs. Annualized Standard Deviation
3 Years Ending March 31, 2023



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	11.21	8.81
◆ Policy Index	10.36	9.92
— Median	11.09	10.55
Population	67	67

Annualized Return vs. Annualized Standard Deviation
5 Years Ending March 31, 2023



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	6.33	8.96
◆ Policy Index	6.20	9.54
— Median	6.13	10.51
Population	66	66

Other

Total Fund Watchlist (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

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	■	✓	✓	✓	⚠	✓	⚠	⚠	-	-
Wellington Commodities	Commodities	■	✓	✓	⚠	⚠	⚠	✓	⚠	-	-

Legend For Overall Status

No Issues	■
Watch	■
Terminate	■

Legend for Standards

Pass	✓
Fail	⚠

Legend for Concern

Provisional	P
Restricted	R
No Issues	--

Total Fund Watchlist (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

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)	Private Credit	■	-	-	Ⓟ	-	✓	-	-	-	-
Aristeia Select Opportunities II	Opportunistic	■	-	-	Ⓟ	-	-	-	-	-	-

Legend For Overall Status

No Issues	■
Watch	■
Terminate	■

Legend for Standards

Pass	✓
Fail	Ⓟ

Legend for Concern

Provisional	P
Restricted	R
No Issues	--

Total Fund
Quarterly Historical Returns (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: March 31, 2023

	2023 Q1	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3	2021 Q2	2021 Q1	2020 Q4	2020 Q3	2020 Q2
Total Fund	2.7	4.6	-3.3	-7.4	-0.8	3.6	0.5	5.5	3.5	8.8	4.4	10.7
<i>Policy Index</i>	3.8	5.4	-3.8	-8.9	-1.3	3.3	0.7	5.7	3.3	8.8	4.5	10.1

	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3	2017 Q2
Total Fund	-11.3	4.6	0.2	3.1	6.8	-6.4	2.3	0.3	-0.1	3.0	3.2	2.7
<i>Policy Index</i>	-11.1	4.6	0.8	3.0	7.0	-5.5	2.2	0.7	-0.1	3.2	3.1	2.8

	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3	2015 Q2	2015 Q1	2014 Q4	2014 Q3	2014 Q2
Total Fund	4.2	0.8	3.5	1.9	1.1	2.2	-5.4	0.7	2.4	0.8	-1.5	3.6
<i>Policy Index</i>	3.5	-	-	-	-	-	-	-	-	-	-	-

Total Fund Data Sources and Methodology

Kern County Employees' Retirement
Period Ending: March 31, 2023

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>Investment Fund or Strategy</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Investment Fund or Strategy</u>	<u>Fund Incepted</u>	<u>Data Source</u>
AB Emerging Markets Strategic Core	11/3/2016	Northern Trust	Linden Co-Investment V LP	6/30/2022	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
Bardays 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	6/30/2000	Pantheon
Blue Torch Credit Opportunities	7/24/2020	Blue Torch	Pantheon USA III	3/31/2007	Pantheon
Brevan Howard	11/1/2013	Northern Trust	Pantheon USA V	6/30/2005	Pantheon
Brighton Private Equity	3/28/2021	Brighton	Pantheon USA VI	3/31/2005	Pantheon
Brighton Park Capital Fund II, L.P.	9/30/2022	Brighton	Pantheon USA VII	3/31/2005	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	Peak Rock Capital Fund III	7/13/2021	Peak Rock
DC Value Recovery fund IV	12/28/2015	Colony	PIMCO Commodity Alpha	5/4/2016	PIMCO
Covenant Apartment Fund X	10/29/2020	Covenant	PIMCO Core Plus	1/21/2011	Northern Trust
DB Investors Fund IV	1/29/2020	DB	PIMCO EMD	2/29/2020	Northern Trust
D.E. Shaw	6/30/2013	Northern Trust	PIMCO Midstream	10/9/2020	PIMCO
DFA Emerging Markets Value I	3/7/2014	Northern Trust	PIMCO StocksPLUS	7/14/2003	PIMCO
Fortress Credit Opportunities	12/17/2020	Fortress	Fidelity Non-US Small Cap Equity	6/10/2008	Northern Trust
Fortress Lending Fund II	3/15/2021	Fortress	River Birch	8/3/2015	Northern Trust
Garda Fixed Income Relative Value Opp	9/30/2021	Garda	Rubicon Technology Partners IV LP	11/30/2022	Rubicon
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	12/31/2000	Northern Trust
HBK Fund II	11/1/2013	Northern Trust	Short Term Investment Funds	6/30/2000	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	9/30/2010	Northern Trust
Invesco Real Estate III	6/30/2013	Invesco	Transition Fixed Income	9/30/2010	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 VIII	4/29/2018	Landmark	Warren Equity III	4/1/2021	Warren
LBA Logistics Value Fund IX, L.P.	2/22/2022	LBA	Warren Equity IV	1/1/2023	Warren
Level Equity Growth Partners V	11/1/2021	Level Equity	Wellington Alternative Investments	2/9/2023	Wellington
Level Equity Opportunities Fund 2021	11/1/2021	Level Equity	Western Asset Core Plus	5/31/2004	Northern Trust
LGT Crown	2/1/2021	LGT	Western Asset High Yield Fixed income	5/31/2005	Northern Trust
Linden Capital Partners V LP	7/19/2022	Linden			

Total Fund Data Sources and Methodology

Kern County Employees' Retirement Period Ending: March 31, 2023

Policy & Custom Index Composition	
Policy Index: 4/1/2022-Present	37% MSCI ACWI IMI (Net), 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 Global Diversified, 4% Bloomberg Commodity Index, 7.5% 3-Month T-bill +4%, 2.5% MSCI ACWI (Net), 8% 91 Day T-Bill + 4%, 5% NCREIF-ODCE Gross Monthly, 5% actual time-weighted Private Equity Returns*, 5% actual time-weighted Private Credit Returns*, 5% actual time-weighted Private Real Estate Returns*, 5% Alerian Midstream, 0% Assumed Rate of Return +3%, -8% 3-Month T-bill.
Policy Index: 7/1/2021-4/1/2022	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 Aggregate
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.

Disclaimer

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.