

Kern County Employees' Retirement Association

Investment Performance Review

Period Ending: June 30, 2023



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Total Fund
Portfolio Reconciliation

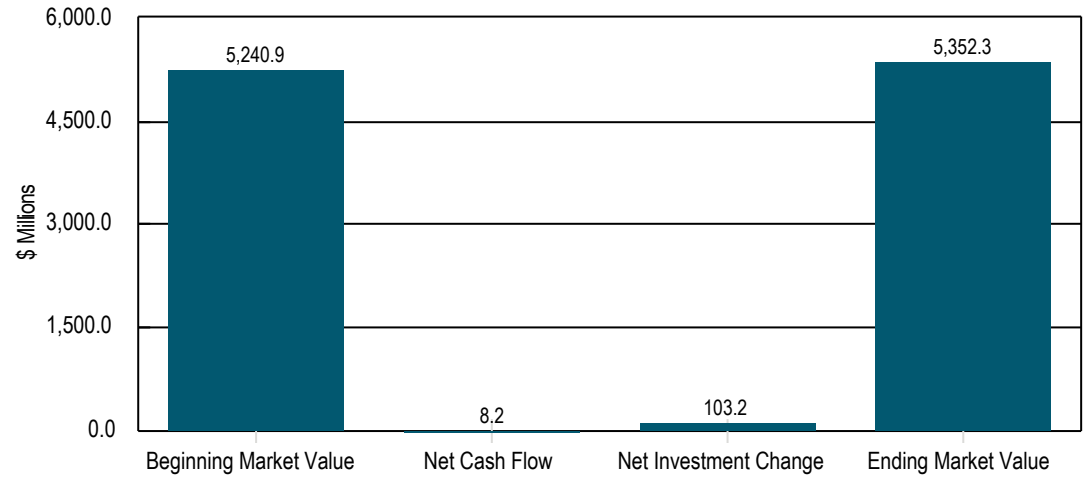
Kern County Employees' Retirement Association
Period Ending: June 30, 2023

Portfolio Reconciliation

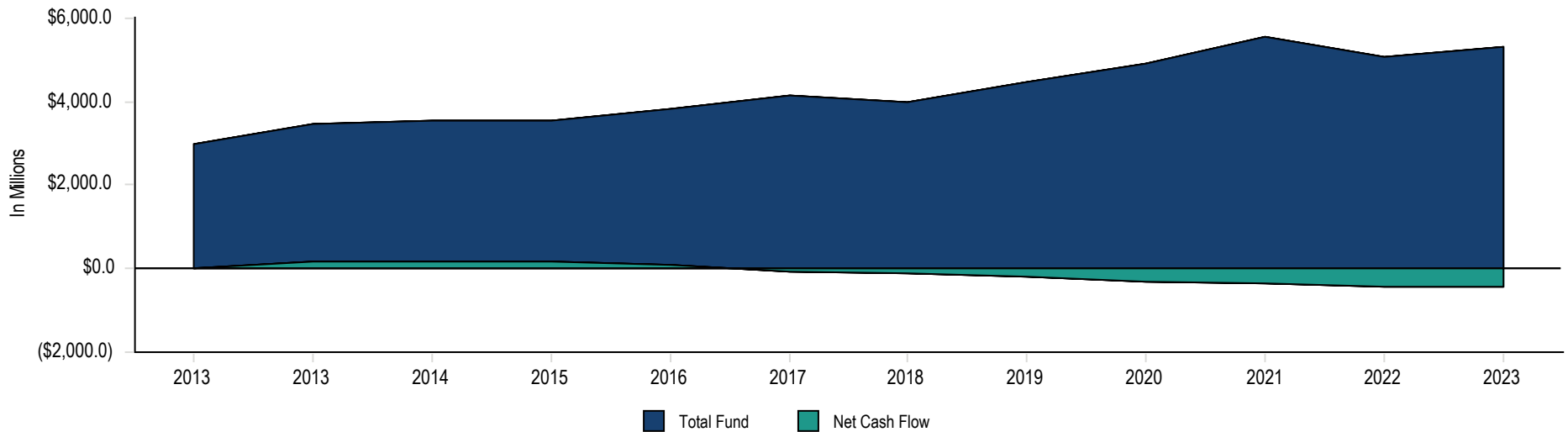
Last Three Months

Beginning Market Value	\$5,240,888,799
Net Cash Flows	\$8,186,646
Net Investment Change	\$103,191,295
Ending Market Value	\$5,352,263,309

Change in Market Value
Last Three Months



Market Value History



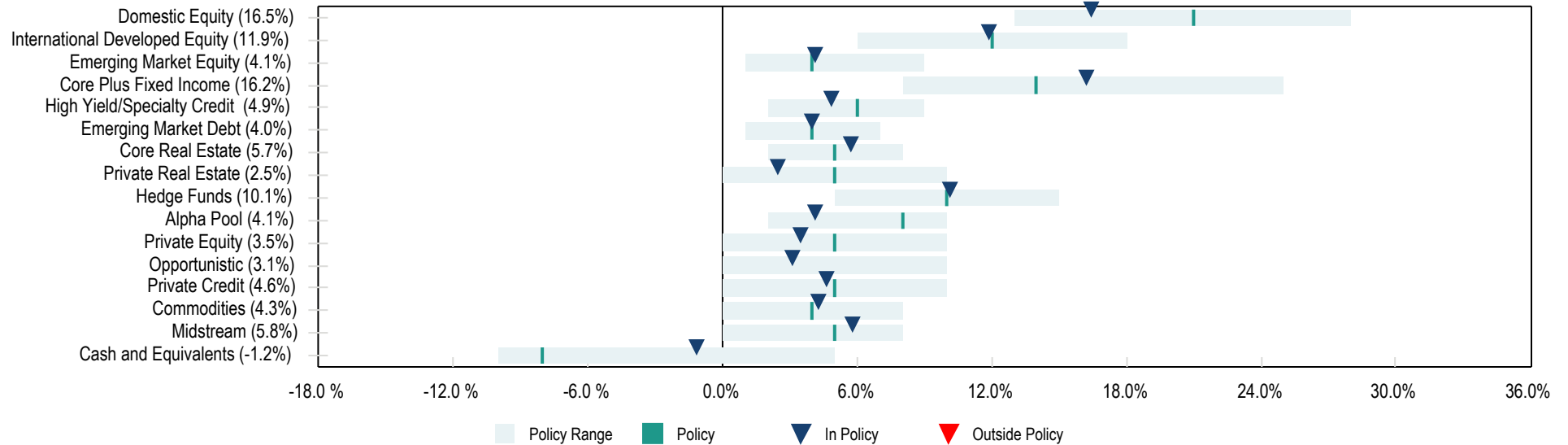
Total Fund

Asset Allocation vs. Policy

Kern County Employees' Retirement Association
 Period Ending: June 30, 2023

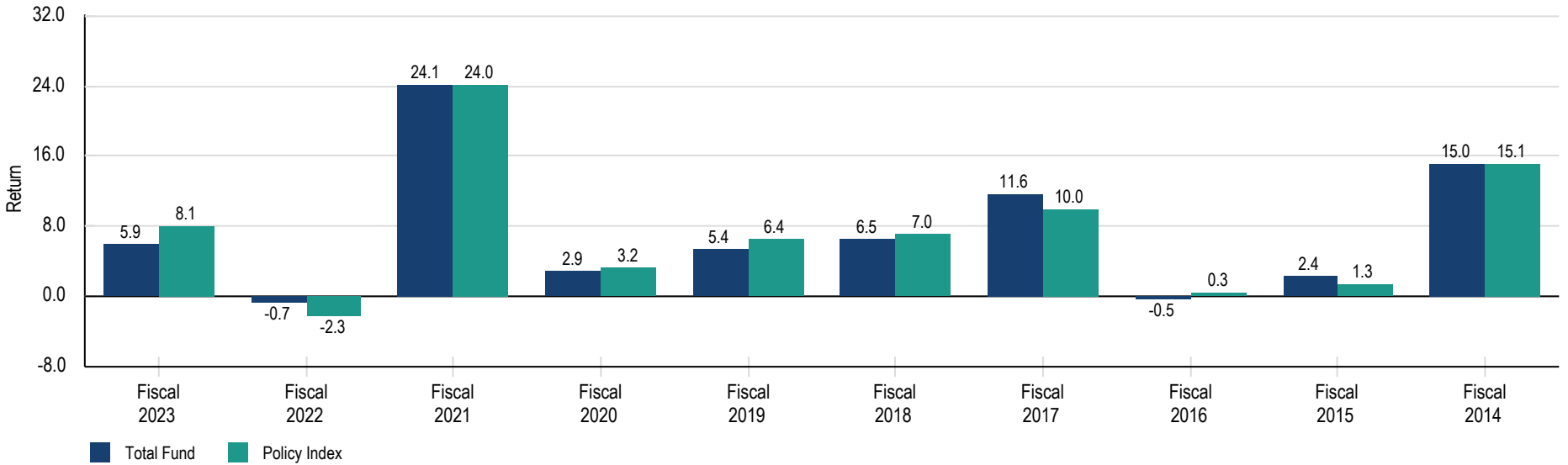
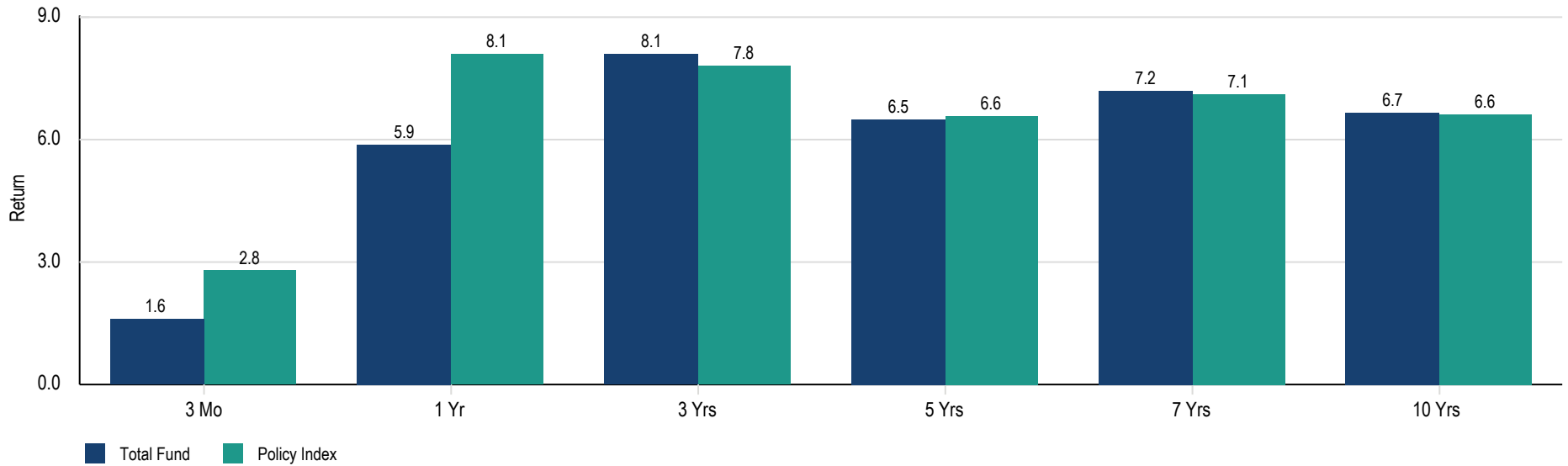
	Current Balance (\$)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Equity	1,735,774,667	32.4	37.0	-4.6	26.0 - 48.0	Yes
Fixed Income	1,340,709,034	25.0	24.0	1.0	14.0 - 34.0	Yes
Core Real Estate	305,434,791	5.7	5.0	0.7	2.0 - 8.0	Yes
Hedge Funds	541,710,718	10.1	10.0	0.1	5.0 - 15.0	Yes
Alpha Pool	221,475,636	4.1	8.0	-3.9	2.0 - 10.0	Yes
Private Equity	187,538,440	3.5	5.0	-1.5	0.0 - 10.0	Yes
Private Credit	246,629,415	4.6	5.0	-0.4	0.0 - 10.0	Yes
Private Real Estate	132,005,447	2.5	5.0	-2.5	0.0 - 10.0	Yes
Commodities	228,214,624	4.3	4.0	0.3	0.0 - 8.0	Yes
Opportunistic	167,584,245	3.1	0.0	3.1	0.0 - 10.0	Yes
Midstream	308,467,836	5.8	5.0	0.8	0.0 - 8.0	Yes
Cash and Equivalents	-63,281,544	-1.2	-8.0	6.8	-10.0 - 5.0	Yes
Total	5,352,263,309	100.0	100.0	0.0		

Executive Summary



Total Fund
Performance vs. Policy (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 2023



Total Fund
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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	5,352,263,309	100.0	1.6	6.1	6.1	8.4	6.8	7.1	-3.5	24.4	3.2	5.7	6.8
<i>Policy Index</i>			2.8	8.1	8.1	7.8	6.6	6.6	-6.6	24.0	3.2	6.4	7.0
<i>InvMetrics Public DB > \$1B Rank</i>			92	82	82	57	46	67	25	89	20	62	97
Equity	1,735,774,667	32.4	5.3	15.9	15.9	11.7	8.1	9.7	-14.9	41.2	0.7	5.3	12.4
<i>MSCI AC World IMI (Net)</i>			5.9	16.1	16.1	11.0	7.6	8.6	-16.5	40.9	1.2	4.6	11.1
Domestic Equity	880,499,588	16.5	7.8	17.8	17.8	14.2	11.6	-	-12.0	43.6	6.3	9.2	16.1
<i>MSCI USA IMI</i>			8.4	19.2	19.2	14.1	11.5	-	-13.7	44.4	6.7	9.0	14.9
International Developed Equity	636,266,854	11.9	2.8	17.2	17.2	9.9	4.5	-	-17.2	37.0	-5.5	-0.6	9.1
<i>MSCI World ex U.S. IMI Index (Net)</i>			2.7	16.3	16.3	8.9	4.2	-	-17.7	34.8	-5.1	0.2	7.7
Emerging Markets Equity	219,007,388	4.1	2.9	5.3	5.3	5.2	0.8	-	-21.4	40.6	-10.9	0.4	4.0
<i>MSCI Emerging Markets IMI (Net)</i>			1.6	3.2	3.2	3.6	1.4	-	-24.8	43.2	-4.0	0.5	7.9
Fixed Income	1,340,709,034	25.0	0.1	3.1	3.1	-1.7	1.8	2.3	-12.7	5.4	6.6	7.9	0.2
<i>Fixed Income Custom Benchmark</i>			-0.1	1.9	1.9	-2.1	1.3	2.1	-11.6	4.0	5.2	8.4	-0.1
Core Plus Fixed Income	866,318,648	16.2	-1.1	-0.9	-0.9	-3.9	1.0	-	-11.2	1.0	9.5	8.0	0.0
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-4.0	0.8	-	-10.3	-0.3	8.7	7.9	-0.4
High Yield/ Specialty Credit	260,789,377	4.9	1.8	7.9	7.9	3.5	3.6	-	-9.5	13.6	0.0	7.5	3.3
<i>ICE BofA U.S. High Yield Index</i>			1.6	8.9	8.9	3.2	3.2	-	-12.7	15.6	-1.1	7.6	2.5
Emerging Market Debt	213,298,532	4.0	2.8	11.7	11.7	-0.6	1.0	-	-19.6	9.4	-1.2	8.5	-3.6
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			2.3	9.4	9.4	-2.2	0.5	-	-20.2	7.1	-1.1	10.8	-1.9
Commodities	228,214,624	4.3	-2.6	-6.3	-6.3	17.3	6.2	0.2	20.1	43.5	-10.7	-6.2	13.7
<i>Bloomberg Commodity Index Total Return</i>			-2.6	-9.6	-9.6	17.8	4.7	-1.0	24.3	45.6	-17.4	-6.8	7.3
Hedge Funds	541,710,718	10.1	1.7	7.5	7.5	8.7	7.2	6.2	2.8	16.3	7.3	2.6	7.6
<i>75% 3 Month T-Bill +4% / 25% MSCI ACWI IMI</i>			2.6	7.2	7.2	5.8	5.8	5.9	-1.7	12.3	5.1	6.6	7.0
Alpha Pool	221,475,636	4.1	-1.4	-0.9	-0.9	4.8	-	-	1.5	14.5	-	-	-
<i>3 Month T-Bill +4%</i>			1.9	6.7	6.7	4.3	-	-	3.2	3.1	-	-	-
Midstream Energy	308,467,836	5.8	3.2	20.1	20.1	-	-	-	9.6	-	-	-	-
<i>Alerian Midstream Energy Index</i>			3.7	12.2	12.2	-	-	-	11.4	-	-	-	-
Core Real Estate	305,434,791	5.7	-4.1	-11.9	-11.9	5.7	5.1	-	25.6	6.6	2.3	6.1	7.4
<i>NCREIF ODCE</i>			-2.7	-10.0	-10.0	8.0	6.5	-	29.5	8.0	2.2	6.4	8.4
Private Real Estate	132,005,447	2.5	-0.9	8.0	8.0	16.7	12.6	12.8	31.3	12.1	4.4	9.0	5.4
			-0.9	8.0	8.0	16.7	12.6	12.8	31.3	12.1	4.4	9.0	5.4
Private Equity	187,538,440	3.5	3.1	-0.5	-0.5	20.1	11.5	11.2	23.0	41.7	-10.5	10.9	7.8
			3.1	-0.5	-0.5	20.1	11.5	11.2	23.0	41.7	-10.5	10.9	7.8
Private Credit	246,629,415	4.6	2.3	2.8	2.8	2.9	4.8	-	1.2	4.8	5.5	9.7	9.3
			2.3	2.8	2.8	2.9	4.8	-	1.2	4.8	5.5	9.7	9.3

Policy Index: 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 and actual weights and returns of private asset classes to nearest 1%. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund
Executive Summary (Gross of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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	167,584,245	3.1	1.1	0.6	0.6	15.0	-	-	-5.4	59.9	-	-	-
Assumed Rate of Return +3%			1.8	7.2	7.2	7.2	-	-	7.2	7.2	-	-	-
Cash	-63,281,544	-1.2	0.5	2.3	2.3	0.7	1.0	1.5	-0.2	0.1	1.0	2.0	3.2
3 Month T-Bill			1.2	3.6	3.6	1.3	1.6	1.0	0.2	0.1	1.6	2.3	1.4

Performance and Attribution

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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	5,352,263,309	100.0	1.6	5.9	5.9	8.1	6.5	6.7	-3.8	24.1	2.9	5.4	6.5	6.4	Jun-11
<i>Policy Index</i>			2.8	8.1	8.1	7.8	6.6	6.6	-6.6	24.0	3.2	6.4	7.0	6.3	
Equity	1,735,774,667	32.4	5.2	15.7	15.7	11.4	7.8	9.3	-15.1	40.7	0.3	4.8	11.8	8.8	Jun-11
<i>MSCI AC World IMI (Net)</i>			5.9	16.1	16.1	11.0	7.6	8.6	-16.5	40.9	1.2	4.6	11.1	8.0	
Domestic Equity	880,499,588	16.5	7.7	17.6	17.6	13.9	11.3	-	-12.2	43.2	6.0	8.8	15.5	11.3	Jul-14
<i>MSCI USA IMI</i>			8.4	19.2	19.2	14.1	11.5	-	-13.7	44.4	6.7	9.0	14.9	11.1	
Equity Beta Exposure	88,867,350	1.7	8.7	19.2	19.2	-	-	-	-11.0	-	-	-	-	12.5	Aug-20
<i>S&P 500 Index</i>			8.7	19.6	19.6	-	-	-	-10.6	-	-	-	-	12.9	
Mellon DB SL Stock Index Fund	535,890,546	10.0	8.7	19.6	19.6	14.6	12.3	-	-10.6	40.8	7.5	10.4	-	12.2	Oct-17
<i>S&P 500 Index</i>			8.7	19.6	19.6	14.6	12.3	-	-10.6	40.8	7.5	10.4	-	12.1	
PIMCO StocksPLUS	116,372,909	2.2	8.8	18.8	18.8	13.7	11.8	12.9	-12.8	41.7	7.7	10.6	14.1	10.6	Jul-03
<i>S&P 500 Index</i>			8.7	19.6	19.6	14.6	12.3	12.9	-10.6	40.8	7.5	10.4	14.4	9.9	
AB US Small Cap Value Equity	86,479,259	1.6	0.4	4.3	4.3	15.8	3.1	-	-16.1	77.5	-19.4	-6.9	13.2	6.3	Jul-15
<i>Russell 2000 Value Index</i>			3.2	6.0	6.0	15.4	3.5	-	-16.3	73.3	-17.5	-6.2	13.1	6.4	
Geneva Capital Small Cap Growth	52,889,523	1.0	5.7	15.6	15.6	7.4	8.0	-	-22.1	37.6	9.3	8.6	22.7	10.1	Jul-15
<i>Russell 2000 Growth Index</i>			7.1	18.5	18.5	6.1	4.2	-	-33.4	51.4	3.5	-0.5	21.9	6.4	
International Developed Equity	636,266,854	11.9	2.8	17.1	17.1	9.8	4.3	-	-17.3	36.7	-5.7	-0.9	8.7	4.3	Jul-14
<i>MSCI World ex U.S. IMI Index (Net)</i>			2.7	16.3	16.3	8.9	4.2	-	-17.7	34.8	-5.1	0.2	7.7	3.5	
Mellon DB SL World ex-US Index Fund	526,402,690	9.8	3.3	17.9	17.9	10.3	-	-	-16.1	35.6	-5.5	-	-	5.1	Jul-18
<i>MSCI World ex U.S. IMI Index (Net)</i>			2.7	16.3	16.3	8.9	4.2	-	-17.7	34.8	-5.1	0.2	-	4.0	
Cevian Capital II	38,875,436	0.7	2.7	25.3	25.3	19.1	8.1	-	-8.2	46.8	-8.2	-5.0	2.9	7.5	Dec-14
<i>MSCI Europe (Net)</i>			2.7	21.8	21.8	10.7	5.2	-	-17.6	35.1	-6.8	1.9	5.3	5.0	
American Century Non-US Small Cap	70,988,728	1.3	-1.0	7.9	7.9	-	-	-	-27.4	-	-	-	-	-3.9	Dec-20
<i>MSCI World ex U.S. Small Cap Growth Index (Net)</i>			0.3	9.5	9.5	-	-	-	-28.6	-	-	-	-	-4.9	
Emerging Markets Equity	219,007,388	4.1	2.8	4.6	4.6	4.4	0.0	-	-21.9	39.5	-11.8	-0.6	2.9	0.9	Jul-14
<i>MSCI Emerging Markets IMI (Net)</i>			1.6	3.2	3.2	3.6	1.4	-	-24.8	43.2	-4.0	0.5	7.9	2.0	
DFA Emerging Markets Value I	81,560,166	1.5	4.6	7.9	7.9	11.5	3.1	-	-12.9	47.6	-17.7	2.0	5.7	3.9	Mar-14
<i>MSCI Emerging Markets Value (Net)</i>			2.5	4.1	4.1	6.3	1.2	-	-18.6	41.6	-15.7	5.0	4.3	1.8	
AB Emerging Markets Strategic Core Equity Collective Trust	53,147,634	1.0	3.5	5.0	5.0	1.6	-0.6	-	-25.2	33.6	-5.1	-2.6	1.2	2.3	Dec-16
<i>MSCI Emerging Markets (Net)</i>			0.9	1.7	1.7	2.3	0.9	-	-25.3	40.9	-3.4	1.2	8.2	4.6	
Mellon Emerging Markets Stock Index Fund	84,299,588	1.6	0.7	1.6	1.6	2.2	-	-	-25.5	41.1	-	-	-	2.0	Jun-20
<i>MSCI Emerging Markets (Net)</i>			0.9	1.7	1.7	2.3	-	-	-25.3	40.9	-	-	-	4.6	
Fixed Income	1,340,709,034	25.0	0.0	2.9	2.9	-2.0	1.5	2.1	-13.0	5.1	6.3	7.6	-0.1	3.1	Jun-10
<i>Fixed Income Custom Benchmark</i>			-0.1	1.9	1.9	-2.1	1.3	2.1	-11.6	4.0	5.2	8.4	-0.1	2.9	
Core Plus Fixed Income	866,318,648	16.2	-1.1	-1.0	-1.0	-4.0	0.8	-	-11.4	0.8	9.3	7.9	-0.2	1.4	Jul-14
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-4.0	0.8	-	-10.3	-0.3	8.7	7.9	-0.4	1.2	
Fixed Income Beta Exposure	418,880,253	7.8	-1.5	-2.5	-2.5	-	-	-	-	-	-	-	-	-0.2	Jun-22
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-	-	-	-	-	-	-	-	-2.3	
Mellon DB SL Aggregate Bond Index Fund	161,044,998	3.0	-0.9	-0.9	-0.9	-4.0	0.7	1.5	-10.4	-0.4	8.8	7.9	-0.4	1.9	Jan-11
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-4.0	0.8	1.5	-10.3	-0.3	8.7	7.9	-0.4	2.0	

Policy Index: 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 timeweighted 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 and actual weights and returns of private asset classes to nearest 1%. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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	164,488,299	3.1	-0.8	-0.7	-0.7	-3.3	0.9	1.7	-9.9	1.1	8.7	6.3	1.0	2.2	Feb-11
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-4.0	0.8	1.5	-10.3	-0.3	8.7	7.9	-0.4	2.0	
Western Asset Core Plus	121,905,098	2.3	-0.4	0.8	0.8	-4.1	1.1	2.2	-14.5	2.4	9.3	9.4	-0.4	3.7	Jun-04
<i>Bloomberg U.S. Aggregate Index</i>			-0.8	-0.9	-0.9	-4.0	0.8	1.5	-10.3	-0.3	8.7	7.9	-0.4	3.2	
High Yield/ Specialty Credit	260,789,377	4.9	1.7	7.5	7.5	3.0	3.1	-	-10.0	13.1	-0.5	7.0	2.8	2.5	Jul-14
<i>ICE BofA U.S. High Yield Index</i>			1.6	8.9	8.9	3.2	3.2	-	-12.7	15.6	-1.1	7.6	2.5	3.5	
Western Asset High Yield Fixed Income	165,365,884	3.1	2.0	9.5	9.5	3.1	3.0	3.9	-14.1	16.5	-2.2	8.3	2.2	5.8	Jun-05
<i>Bloomberg US HY Ba/B 2% Cap TR</i>			1.4	8.9	8.9	2.6	3.7	4.5	-12.4	13.4	2.1	8.8	1.8	6.0	
TCW Securitized Opportunities	95,423,493	1.8	1.3	4.4	4.4	2.2	2.8	-	-4.0	6.4	2.2	5.2	4.3	3.4	Feb-16
<i>Bloomberg U.S. High Yield - 2% Issuer Cap</i>			1.8	9.1	9.1	3.1	3.3	-	-12.8	15.3	0.0	7.5	2.6	5.7	
Emerging Market Debt	213,298,532	4.0	2.7	11.2	11.2	-1.0	0.6	-	-19.9	9.1	-1.7	7.9	-4.2	0.3	Jul-14
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			2.3	9.4	9.4	-2.2	0.5	-	-20.2	7.1	-1.1	10.8	-1.9	0.5	
Stone Harbor Emerging Markets Debt Blend Portfolio	65,594,366	1.2	2.9	10.8	10.8	-1.4	0.4	0.4	-20.9	9.5	-1.8	8.2	-3.1	-0.1	Aug-12
<i>50 JPM GBI-EM Global Div/ 40 JPM EMBI Global Div/ 10 JPM Corporate EM Bond Idx</i>			2.3	9.2	9.2	-2.0	0.7	1.3	-19.5	7.2	-0.8	10.6	-1.7	1.0	
PIMCO EMD	147,704,166	2.8	2.6	11.3	11.3	-0.8	-	-	-19.2	8.7	-	-	-	-1.9	Feb-20
<i>50 JPM EMBI Global Div / 50 JPM GBI EM Global Div</i>			2.3	9.4	9.4	-2.2	-	-	-20.2	7.1	-	-	-	-3.4	
Commodities	228,214,624	4.3	-2.8	-7.0	-7.0	16.5	5.5	-0.4	19.4	42.5	-11.3	-6.7	13.3	-0.4	Jul-13
<i>Bloomberg Commodity Index Total Return</i>			-2.6	-9.6	-9.6	17.8	4.7	-1.0	24.3	45.6	-17.4	-6.8	7.3	-1.0	
Gresham MTAP Commodity Builder Fund	48,242,779	0.9	-1.8	-11.5	-11.5	17.5	4.3	-	24.7	46.8	-16.3	-9.0	12.4	-0.9	Oct-13
<i>Bloomberg Commodity Index Total Return</i>			-2.6	-9.6	-9.6	17.8	4.7	-	24.3	45.6	-17.4	-6.8	7.3	-1.1	
Wellington Commodities	179,971,845	3.4	-3.0	-5.2	-5.2	15.9	6.4	-	17.2	40.2	-7.5	-5.4	14.2	0.3	Sep-13
<i>S&P GSCI Commodity Equal Weighted</i>			-4.6	-5.5	-5.5	16.6	6.0	-	19.0	40.9	-12.4	-3.5	12.6	0.4	
Hedge Funds	541,710,718	10.1	1.5	6.8	6.8	8.4	6.9	5.6	2.8	16.1	7.0	2.5	7.6	5.9	Sep-10
<i>75% 3 Month T-Bill +4% / 25% MSCI ACWI (net)</i>			2.5	7.2	7.2	5.8	5.8	5.9	-1.7	12.3	5.1	6.6	7.0	5.8	
Aristeia International Limited	70,900,266	1.3	1.3	5.5	5.5	9.3	9.2	-	1.8	21.6	8.7	9.2	2.6	5.3	May-14
Brevan Howard Fund	54,344,819	1.0	-2.7	-1.0	-1.0	6.6	10.4	-	15.2	6.1	20.5	12.7	7.8	7.2	Sep-13
D.E. Shaw Composite Fund	61,264,742	1.1	2.9	11.0	11.0	19.4	17.0	14.3	29.0	19.0	15.6	11.5	11.3	14.3	Jul-13
HBK Fund II	45,043,642	0.8	0.6	7.8	7.8	7.0	5.5	-	2.3	11.0	1.5	5.5	3.0	4.5	Nov-13
Hudson Bay Cap Structure Arbitrage Enhanced Fund	81,574,491	1.5	1.0	7.7	7.7	9.9	-	-	7.7	14.2	16.2	-	-	11.3	Jun-19
Indus Pacific Opportunities Fund	46,377,701	0.9	-2.7	-0.4	-0.4	8.0	3.4	-	-8.2	38.0	15.8	-19.2	15.8	6.7	Jul-14
Pharo Macro Fund	62,959,707	1.2	2.6	1.2	1.2	-2.3	-	-	-11.1	3.5	-	-	-	-1.1	Dec-19
PIMCO Commodity Alpha Fund	71,393,658	1.3	6.4	18.3	18.3	13.6	10.1	-	8.6	14.2	4.8	5.2	10.4	11.1	Jun-16
Sculptor Domestic Partners II LP	47,851,693	0.9	3.0	8.8	8.8	0.6	-	-	-19.9	16.8	6.5	-	-	5.1	Feb-19
Alpha Pool	221,475,636	4.1	-1.4	-0.9	-0.9	4.8	-	-	1.5	14.5	-	-	-	4.8	Jul-20
<i>3 Month T-Bill +4%</i>			1.9	6.7	6.7	4.3	-	-	3.2	3.1	-	-	-	4.3	
Hudson Bay	63,009,820	1.2	-1.5	-1.1	-1.1	-	-	-	6.7	-	-	-	-	6.0	Aug-20
Davidson Kempner Institutional Partners	55,433,498	1.0	-1.6	-4.1	-4.1	-	-	-	-3.4	-	-	-	-	0.2	Dec-20
HBK Fund II	43,317,590	0.8	-1.9	-1.0	-1.0	-	-	-	1.3	-	-	-	-	2.1	Dec-20
Garda Fixed Income Relative Value Opportunity Fund	59,714,728	1.1	-0.7	3.6	3.6	-	-	-	-	-	-	-	-	5.0	Sep-21

Policy Index: 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 timeweighted 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 and actual weights and returns of private asset classes to nearest 1%. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund
Performance (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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	308,467,836	5.8	3.0	19.3	19.3	-	-	-	9.3	-	-	-	-	27.8	Sep-20
<i>Alerian Midstream Energy Index</i>			3.7	12.2	12.2	-	-	-	11.4	-	-	-	-	25.2	
Harvest Midstream	156,842,353	2.9	2.2	20.9	20.9	-	-	-	15.3	-	-	-	-	33.9	Aug-20
<i>Alerian Midstream Energy Index</i>			3.7	12.2	12.2	-	-	-	11.4	-	-	-	-	24.4	
PIMCO Midstream	151,625,483	2.8	3.9	16.9	16.9	-	-	-	2.2	-	-	-	-	22.2	Sep-20
<i>50/25/25 Alerian Midstream/ ICE BofA US Pipeline/ ICE BofA US HY Midstream</i>			2.3	10.1	10.1	-	-	-	-0.7	-	-	-	-	-	
Core Real Estate	305,434,791	5.7	-4.2	-12.3	-12.3	4.9	4.4	-	24.8	5.6	1.4	5.9	7.4	6.6	Oct-14
<i>NCREIF ODCE</i>			-2.7	-10.0	-10.0	8.0	6.5	-	29.5	8.0	2.2	6.4	8.4	8.2	
ASB Allegiance Real Estate Fund	165,428,514	3.1	-6.2	-13.1	-13.1	4.1	4.1	-	23.0	5.4	1.5	6.8	7.1	6.6	Sep-13
<i>NCREIF ODCE</i>			-2.7	-10.0	-10.0	8.0	6.5	-	29.5	8.0	2.2	6.4	8.4	8.6	
JPMCB Strategic Property Fund	140,006,277	2.6	-1.8	-11.3	-11.3	6.3	5.0	-	27.9	5.9	1.3	5.0	7.6	6.8	Jul-14
<i>NCREIF ODCE</i>			-2.7	-10.0	-10.0	8.0	6.5	-	29.5	8.0	2.2	6.4	8.4	8.3	
Private Real Estate	132,005,447	2.5	-0.9	7.9	7.9	16.7	12.6	12.3	31.3	12.1	4.4	9.0	5.4	12.5	Mar-11
			-0.9	8.0	8.0	16.7	12.6	12.8	31.3	12.1	4.4	9.0	5.4	12.5	
Private Equity	187,538,440	3.5	3.1	-0.5	-0.5	20.1	11.5	10.8	22.9	41.7	-10.5	10.9	7.8	10.7	Sep-10
			3.1	-0.5	-0.5	20.1	11.5	11.2	23.0	41.7	-10.5	10.9	7.8	10.8	
Private Credit	246,629,415	4.6	2.8	3.2	3.2	3.0	4.8	-	1.2	4.8	5.5	9.7	9.3	-23.3	Dec-15
			2.3	2.8	2.8	2.9	4.8	-	1.2	4.8	5.5	9.7	9.3	6.9	
Opportunistic	167,584,245	3.1	1.1	0.6	0.6	15.0	-	-	-5.4	59.9	-	-	-	9.9	Jan-20
<i>Assumed Rate of Return +3%</i>			1.8	7.2	7.2	7.2	-	-	7.2	7.2	-	-	-	7.3	
River Birch International	5,106,669	0.1	16.1	46.1	46.1	-	-	-	-	-	-	-	-	60.2	Jun-22
<i>Assumed Rate of Return +3%</i>			1.8	7.2	7.2	-	-	-	-	-	-	-	-	7.2	
DB Investors Fund IV	23,394,069	0.4	-8.5	-8.3	-8.3	5.5	-	-	-34.4	95.1	-	-	-	4.6	Dec-19
<i>Assumed Rate of Return +3%</i>			1.8	7.2	7.2	7.2	-	-	7.2	7.2	-	-	-	7.2	
Sixth Street TAO Partners (D)	90,733,476	1.7	4.9	4.4	4.4	16.9	-	-	9.6	39.6	-	-	-	15.5	Mar-20
<i>Assumed Rate of Return +3%</i>			1.8	7.2	7.2	7.2	-	-	7.2	7.2	-	-	-	7.2	
Aristeia Select Opportunities II	48,350,031	0.9	-2.4	-7.2	-7.2	-	-	-	-	-	-	-	-	-1.4	Jul-21
<i>Assumed Rate of Return +3%</i>			1.8	7.2	7.2	-	-	-	7.2	-	-	-	-	7.2	
Cash	-63,281,544	-1.2	0.5	2.2	2.2	0.7	1.0	1.5	-0.2	0.1	1.0	2.0	3.2	1.3	Apr-11
<i>3 Month T-Bill</i>			1.2	3.6	3.6	1.3	1.6	1.0	0.2	0.1	1.6	2.3	1.4	0.8	

Policy Index: 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 timeweight 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 and actual weights and returns of private asset classes to nearest 1%. All data prior to 2Q 2011 has been provided by the investments managers. FY: 6/30. The Equity and Fixed Income Beta Exposure return includes overlay cash and an implied hurdle rate also applied to the Alpha pool.

Total Fund
Total Private Equity

Kern County Employees' Retirement
Period Ending: June 30, 2023

IRR Analysis as of IRR date

Vintage Year	Manager/Fund	Estimated Market Value as of 6/30/2022	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												
2008	Abbott Capital PE VI	\$17,490,181	\$50,000,000	\$49,750,000	100%	\$250,000	\$78,095,564	\$17,231,430	1.57x	1.92x	12.8%	03/31/23
2006	Pantheon Global III	\$553,189	\$50,000,000	\$47,300,000	95%	\$2,700,000	\$52,000,000	\$544,562	1.10x	1.11x	1.9%	03/31/23
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	\$383,462	\$25,000,000	\$24,350,000	97%	\$650,000	\$37,950,000	\$392,019	1.56x	1.57x	9.0%	03/31/23
2004	Pantheon USA VI	\$335,737	\$35,000,000	\$33,075,000	95%	\$1,925,000	\$50,623,827	\$357,185	1.53x	1.54x	6.7%	03/31/23
2006	Pantheon USA VII	\$6,907,588	\$50,000,000	\$46,600,000	93%	\$3,400,000	\$80,424,999	\$6,715,424	1.73x	1.87x	10.1%	03/31/23
2020	Vista Foundation Fund IV	\$18,058,075	\$25,000,000	\$18,753,571	75%	\$6,246,429	\$30,252	\$17,834,565	0.00x	0.96x	-2.9%	03/31/23
2021	Crown Global Secondaries V Master S.C.Sp	\$28,568,244	\$50,000,000	\$21,250,000	43%	\$28,750,000	\$1,550,000	\$28,138,412	0.07x	1.42x	31.2%	03/31/23
2021	Brighton Park Capital Fund I	\$36,029,946	\$30,000,000	\$28,421,941	95%	\$1,578,059	\$1,325,801	\$35,655,157	0.05x	1.31x	14.9%	03/31/23
2021	Warren Equity Partners Fund III	\$29,397,592	\$32,500,000	\$24,279,276	75%	\$8,220,724	\$508,290	\$29,397,592	0.02x	1.23x	20.5%	06/30/23
2021	Peak Rock Capital Fund III	\$11,921,302	\$30,000,000	\$11,319,783	38%	\$18,680,217	\$2,021,657	\$11,921,302	0.18x	1.23x	25.3%	06/30/23
2021	Level Equity Growth Partners V	\$6,697,065	\$15,000,000	\$6,715,768	45%	\$8,284,232	\$0	\$6,697,065	0.00x	1.00x	2.6%	06/30/23
2021	Level Equity Opportunities Fund 2021	\$5,529,388	\$15,000,000	\$5,529,385	37%	\$9,470,615	\$0	\$5,529,388	0.00x	1.00x	12.9%	06/30/23
2022	Linden Capital Partners V LP	\$7,984,801	\$22,500,000	\$7,885,783	35%	\$14,614,217	\$0	\$7,984,801	N/A	N/A	10.3%	06/30/23
2022	Rubicon Technology Partners IV LP	\$3,277,938	\$30,000,000	\$3,895,697	13%	\$26,104,303	\$0	\$3,214,080	N/A	N/A	-69.4%	12/31/22
2022	OrbiMed Private Investments IX, LP	\$320,186	\$10,000,000	\$500,000	5%	\$9,500,000	\$0	\$320,186	N/A	N/A	32.0%	06/30/23
2022	Brighton Park Capital Fund II	\$3,071,866	\$30,000,000	\$4,174,920	14%	\$25,825,080	\$0	N/A	N/A	N/A	N/A	N/A
2022	Linden Co-Investment V LP	\$3,910,712	\$7,500,000	\$7,499,177	100%	\$823	\$0	\$1,846,267	N/A	N/A	21.8%	12/31/22
2022	Warren Equity Partners Fund IV	\$7,055,723	\$32,500,000	\$2,820,069	9%	\$29,679,931	\$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
2023	WEP Co-Invest IV	\$0	\$10,000,000	\$0	0%	\$10,000,000	\$0	N/A	N/A	N/A	N/A	N/A

Total Private Equity	\$187,538,440	\$642,500,000	\$351,455,371	55%	\$281,044,629	\$312,727,891	\$173,826,499	0.89x	1.42x
% of Portfolio (Market Value)	3.5%								

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 is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

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: June 30, 2023

IRR Analysis as of IRR date												
Vintage Year	Manager/Fund	Estimated Market Value 6/30/2023	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	\$18,526,925	\$74,360,749	\$73,340,099	99%	\$1,020,650	\$40,330,120	\$20,781,309	0.55x	0.80x	N/A	3/31/23
2017	Sixth Street TAO Partners (B)	\$41,404,117	\$108,035,958	\$84,519,175	78%	\$23,516,783	\$43,279,572	\$39,800,921	0.51x	1.00x	9.7%	3/31/23
2017	Brookfield Real Estate Finance Fund V	\$16,752,621	\$50,000,000	\$36,019,917	72%	\$13,980,083	\$27,359,025	\$16,752,621	0.76x	1.22x	6.8%	6/30/23
2018	Magnetar Constellation Fund V	\$28,113,131	\$60,000,000	\$56,445,318	94%	\$3,554,682	\$41,583,529	\$28,113,131	0.74x	1.23x	5.9%	6/30/23
2019	H.I.G Bayside Loan Opportunity Fund V	\$43,519,452	\$60,000,000	\$35,821,497	60%	\$24,178,503	\$12,786,586	\$43,519,452	0.36x	1.57x	17.4%	6/30/23
2020	Blue Torch Credit Opportunities Fund II	\$16,313,371	\$20,000,000	\$16,613,092	83%	\$3,386,908	\$3,652,640	\$17,526,212	0.22x	1.20x	14.2%	3/31/23
2020	Fortress Credit Opportunites Fund V Expansion	\$15,507,751	\$40,000,000	\$13,968,710	35%	\$26,031,290	\$468,590	\$15,507,751	0.03x	1.14x	21.2%	6/30/23
2021	Fortress Lending Fund II	\$28,566,610	\$40,000,000	\$33,337,851	83%	\$6,662,149	\$7,124,926	\$28,566,610	0.21x	1.07x	10.0%	6/30/23
2022	Blue Torch Credit Opportunities Fund III	\$7,764,429	\$40,000,000	\$7,199,891	18%	\$32,800,109	\$83,928	\$7,625,106	0.01x	1.09x	20.1%	3/31/23
2022	Fortress Lending Fund III	\$23,889,989	\$40,000,000	\$23,232,701	58%	\$16,767,299	\$2,175,812	\$23,889,989	0.09x	1.12x	11.8%	6/30/23
2022	OrbiMed Royalty & Credit Opportunities IV	\$6,271,019	\$30,000,000	\$5,983,980	20%	\$24,016,020	\$0	\$4,560,873	0.00x	1.05x	11.9%	3/31/23
2023	Ares Senior Direct Lending III	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	\$0	N/A	N/A	N/A	N/A
2023	Cerberus Business Finance V	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	\$0	N/A	N/A	N/A	N/A
2023	Ares Pathfinder II	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	\$0	N/A	N/A	N/A	N/A
2023	Silver Point – Specialty Credit Fund III	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	\$0	N/A	N/A	N/A	N/A
Total Private Credit		\$246,629,415	\$562,396,707	\$386,482,230	69%	\$175,914,477	\$178,844,730	\$246,643,975	0.46x	1.10x		
% of Portfolio (Market Value)		4.6%										

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

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

³Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

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: June 30, 2023

IRR Analysis as of IRR date												
Vintage		Estimated Market Value	Total	Capital	%	Remaining	Capital		Distrib./	Tot. Value/	Net IRR	IRR
Year	Manager/Fund	6/30/2023	Commitment	Called	Called	Commitment	Returned	Market Value as of IRR date	Paid-In (DPI) ¹	Paid-In (TVPI) ²	Since Inception ³	Date
Private Real Estate												
2014	Invesco Real Estate Value-Add Fund IV	\$945,682	\$50,000,000	\$43,637,717	87%	\$6,362,283	\$56,824,750	\$945,682	1.30x	1.32x	10.5%	06/30/23
2017	Landmark Real Estate Partners VIII	\$31,583,306	\$60,000,000	\$40,705,385	68%	\$19,294,615	\$23,327,214	\$31,009,306	0.57x	1.35x	18.5%	03/31/23
2018	Long Wharf Real Estate Partners VI	\$34,525,266	\$50,000,000	\$49,405,352	99%	\$594,648	\$22,893,954	\$34,525,266	0.46x	1.16x	19.5%	06/30/23
2020	Covenant Apartment Fund X	\$33,947,463	\$30,000,000	\$24,007,333	80%	\$5,992,667	\$6,380,981	\$33,947,463	0.27x	1.68x	23.2%	06/30/23
2021	Singerman Real Estate Opportunity Fund IV	\$8,944,617	\$35,000,000	\$8,146,250	23%	\$26,853,750	\$0	\$8,944,617	0.00x	1.10x	17.6%	06/30/23
2022	LBA Logistics Value Fund IX, L.P.	\$10,287,850	\$40,000,000	\$11,153,846	28%	\$28,846,154	\$0	\$10,287,850	0.00x	0.92x	-11.9%	06/30/23
2022	Covenant Apartment Fund XI	\$9,819,829	\$30,000,000	\$6,300,000	21%	\$38,076,924	\$3,112	N/A	N/A	N/A	N/A	N/A
2022	KSL Capital Partners VI	\$1,951,434	\$30,000,000	\$2,016,241	7%	\$27,983,759	\$64,806	N/A	N/A	N/A	N/A	N/A
2022	Landmark Real Estate Partners IX	\$0	\$40,000,000	\$0	0%	\$40,000,000	\$0	N/A	N/A	N/A	N/A	N/A
2023	Merit Hill V	\$0	\$30,000,000	\$0	0%	\$30,000,000	\$0	N/A	N/A	N/A	N/A	N/A
Total Private Real Estate		\$132,005,447	\$395,000,000	\$185,372,124	47%	\$224,004,800	\$109,494,818	\$119,660,184	0.59x	1.30x		
% of Portfolio (Market Value)		2.5%										

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

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

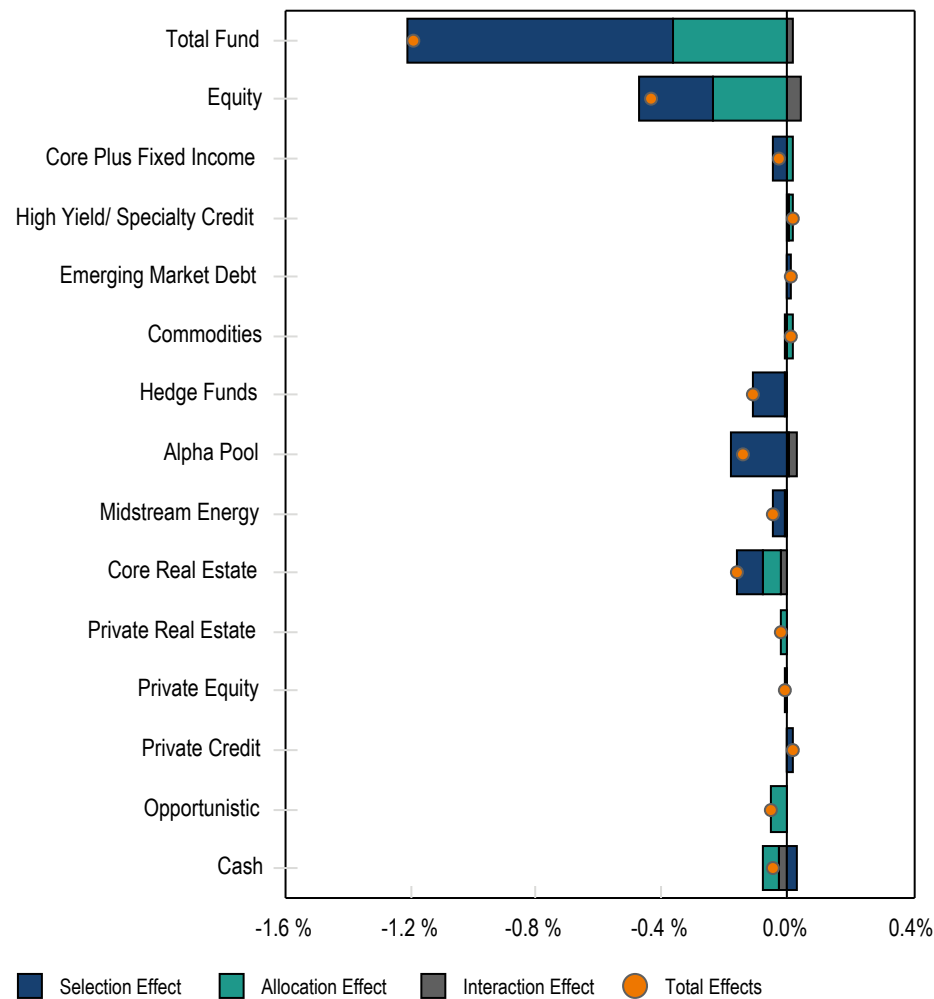
³Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR is provided by the Fund manager and is reflective of the Fund IRR, rather than KCERA's specific IRR.

KSL Capital Partners VI funded in Q2

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

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
Last Three Months



Performance Attribution

	Last Three Months
Wtd. Actual Return	1.6
Wtd. Index Return	2.8
Excess Return	-1.2
Selection Effect	-0.8
Allocation Effect	-0.4
Interaction Effect	0.0

Attribution Summary
Last Three Months

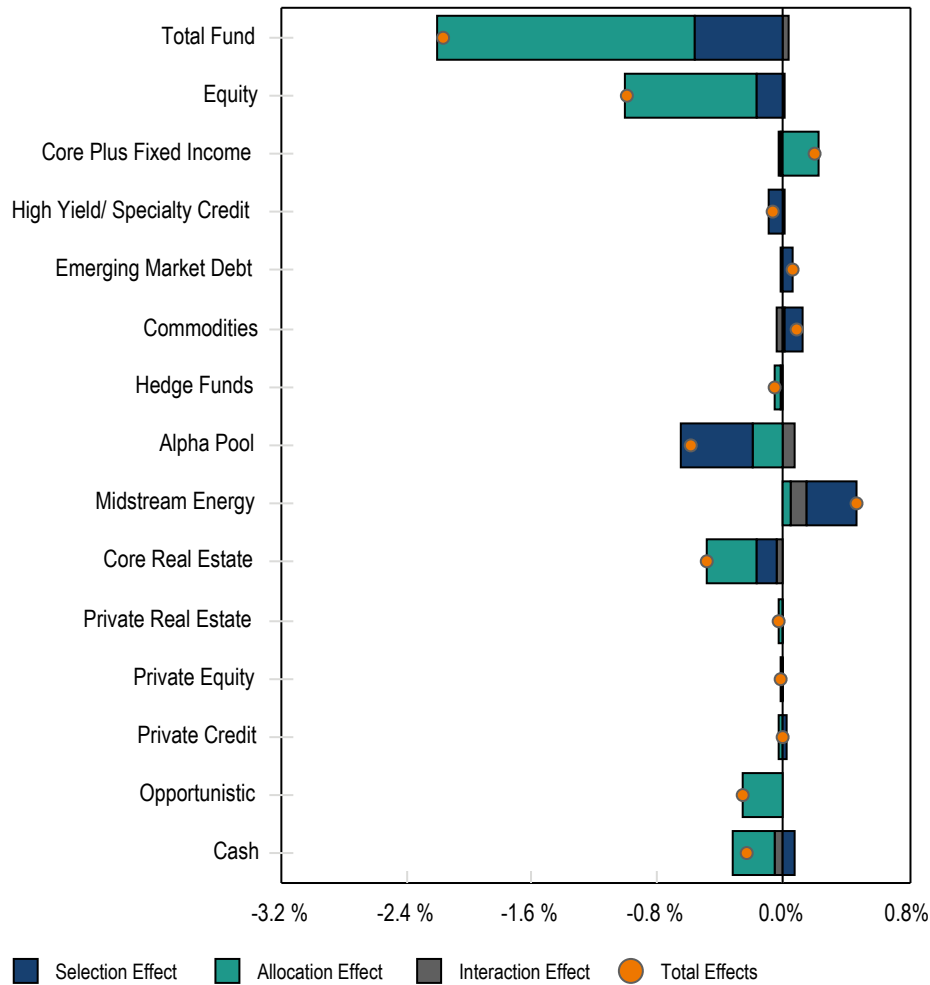
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	5.2	5.9	-0.6	-0.3	-0.2	0.0	-0.4
Core Plus Fixed Income	-1.1	-0.8	-0.2	-0.1	0.0	0.0	0.0
High Yield/ Specialty Credit	1.7	1.6	0.1	0.0	0.0	0.0	0.0
Emerging Market Debt	2.7	2.3	0.3	0.0	0.0	0.0	0.0
Commodities	-2.8	-2.6	-0.2	0.0	0.0	0.0	0.0
Hedge Funds	1.5	2.5	-1.0	-0.1	0.0	0.0	-0.1
Alpha Pool	-1.4	2.1	-3.5	-0.2	0.0	0.0	-0.1
Midstream Energy	3.0	3.7	-0.7	-0.1	0.0	0.0	0.0
Core Real Estate	-4.2	-2.7	-1.6	-0.1	-0.1	0.0	-0.2
Private Real Estate	-0.9	-0.9	0.0	0.0	0.0	0.0	0.0
Private Equity	3.1	3.1	0.0	0.0	0.0	0.0	0.0
Private Credit	2.8	2.3	0.4	0.0	0.0	0.0	0.0
Opportunistic	1.1	1.8	-0.7	0.0	-0.1	0.0	-0.1
Cash	0.5	1.2	-0.7	0.0	-0.1	0.0	0.0
Total Fund	1.6	2.8	-1.2	-0.8	-0.4	0.0	-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.

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

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

Attribution Effects
Fiscal YTD



Performance Attribution

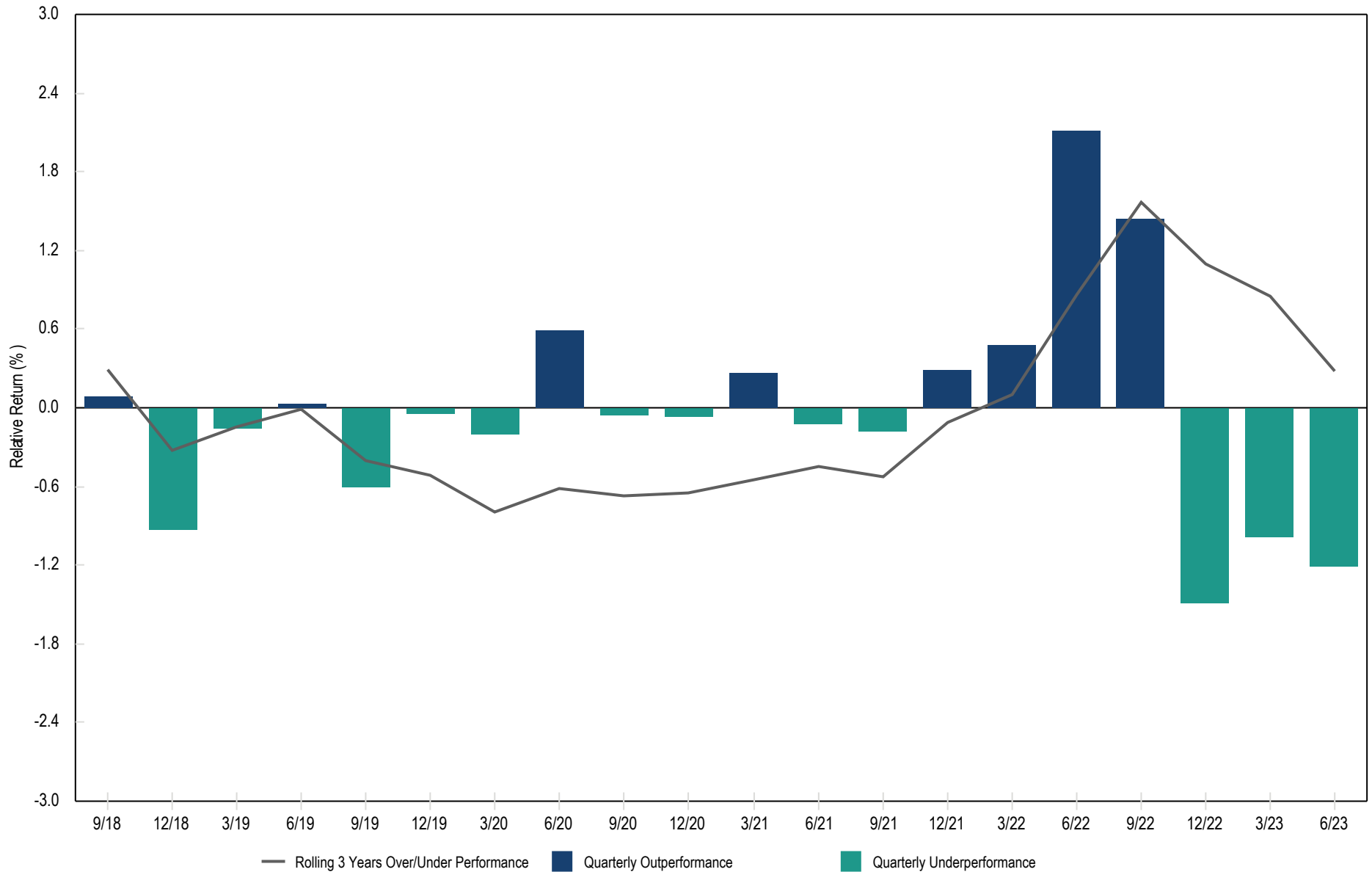
	Fiscal YTD
Wtd. Actual Return	5.9
Wtd. Index Return	8.1
Excess Return	-2.2
Selection Effect	-0.6
Allocation Effect	-1.6
Interaction Effect	0.0

Attribution Summary
Fiscal YTD

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Equity	15.7	16.1	-0.4	-0.3	-0.8	0.0	-1.0
Core Plus Fixed Income	-1.0	-0.9	-0.1	-0.1	0.2	0.0	0.2
High Yield/ Specialty Credit	7.5	8.9	-1.4	-0.1	0.0	0.0	-0.1
Emerging Market Debt	11.2	9.4	1.8	0.1	0.0	0.0	0.1
Commodities	-7.0	-9.6	2.6	0.1	0.0	0.0	0.1
Hedge Funds	6.8	7.2	-0.4	0.0	0.0	0.0	-0.1
Alpha Pool	-0.9	7.7	-8.5	-0.5	-0.2	0.1	-0.6
Midstream Energy	19.3	12.2	7.1	0.3	0.0	0.1	0.5
Core Real Estate	-12.3	-10.0	-2.3	-0.2	-0.3	0.0	-0.5
Private Real Estate	7.9	8.0	-0.1	0.0	0.0	0.0	0.0
Private Equity	-0.5	-0.5	0.0	0.0	0.0	0.0	0.0
Private Credit	3.2	2.8	0.4	0.0	0.0	0.0	0.0
Opportunistic	0.6	7.2	-6.7	0.0	-0.2	0.0	-0.2
Cash	2.2	3.6	-1.3	0.1	-0.3	-0.1	-0.2
Total Fund	5.9	8.1	-2.2	-0.6	-1.6	0.0	-2.2

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.

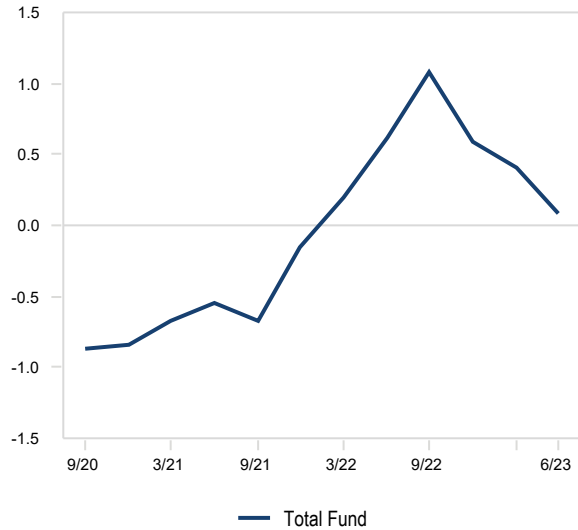
Rolling 3 Year Annualized Excess Performance



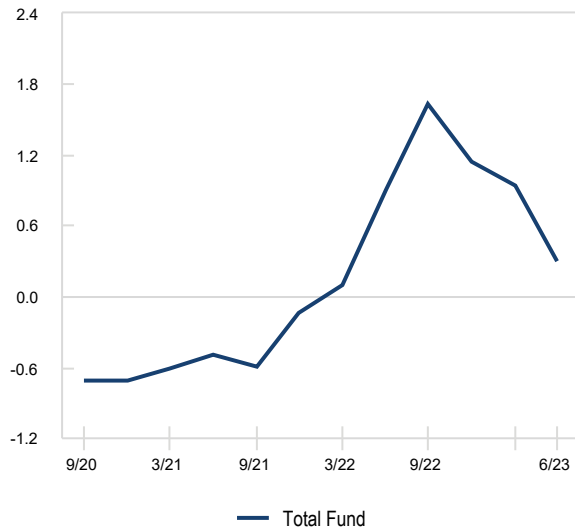
Total Fund
Rolling Risk Statistics: 3 Years (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

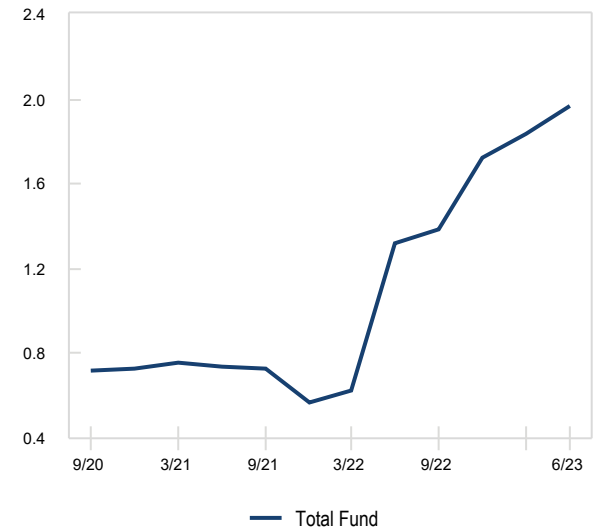
Rolling Information Ratio



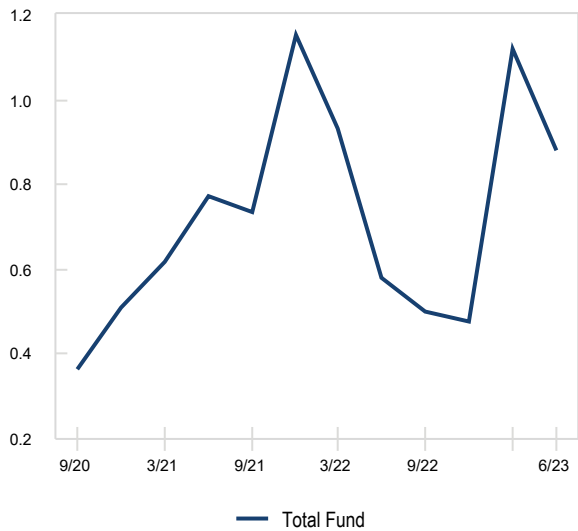
Rolling Annual Excess Benchmark Return



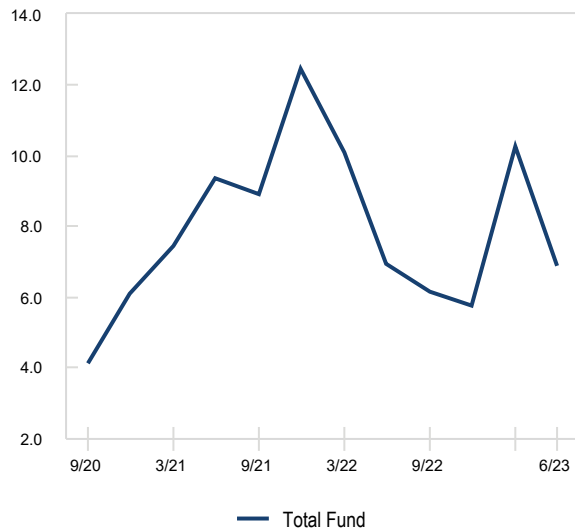
Rolling Tracking Error



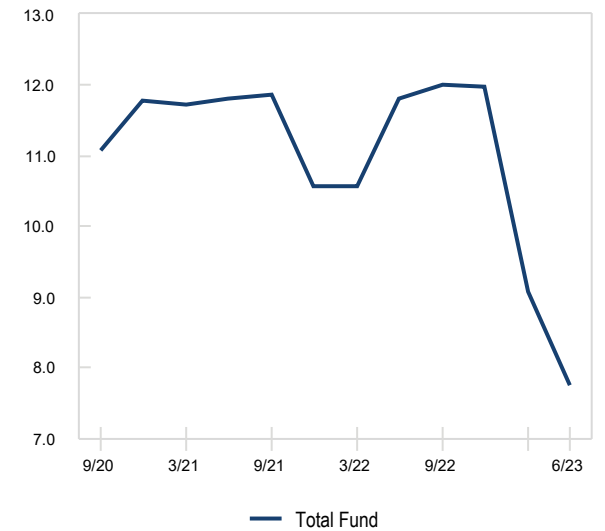
Rolling Sharpe Ratio



Rolling Annual Excess Risk Free Return



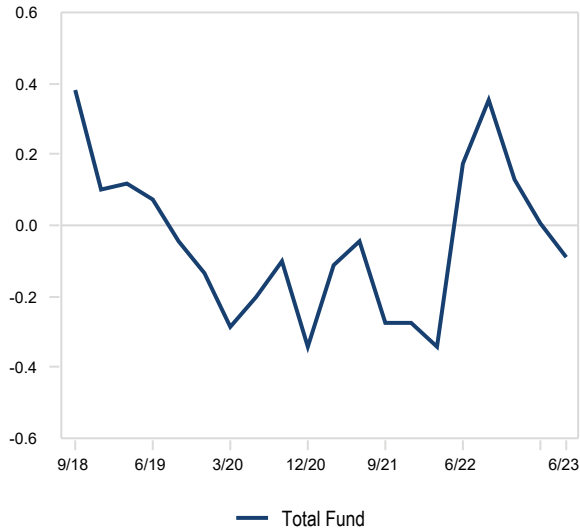
Rolling Annualized Standard Deviation



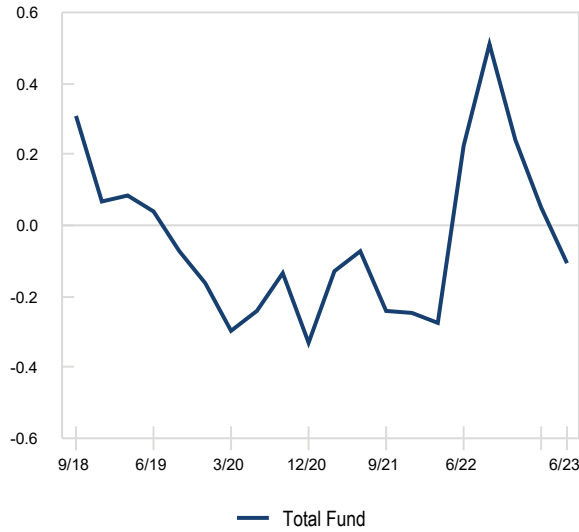
Total Fund
Rolling Risk Statistics: 5 Years (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

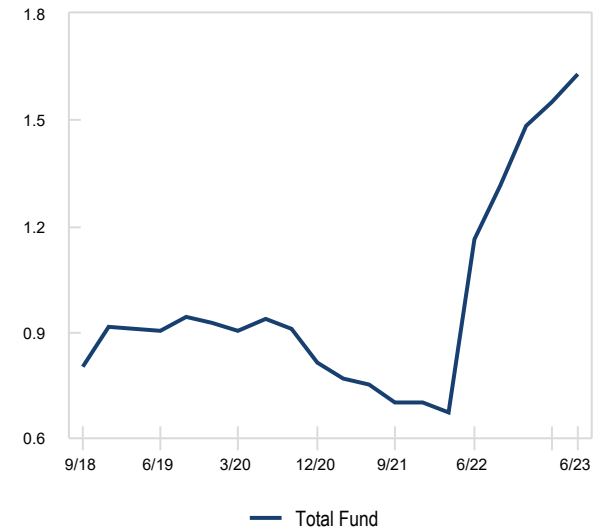
Rolling Information Ratio



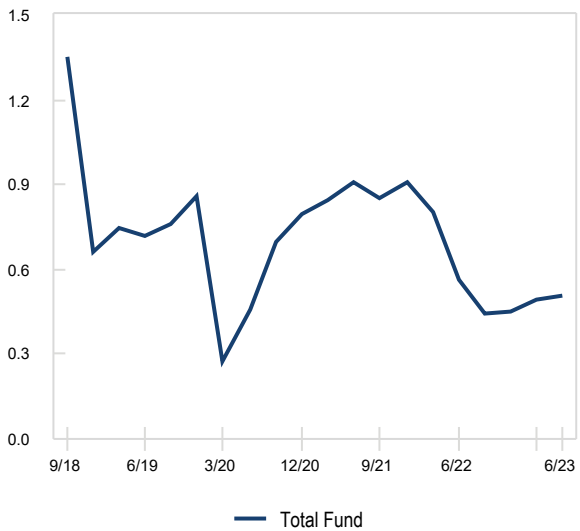
Rolling Annual Excess Benchmark Return



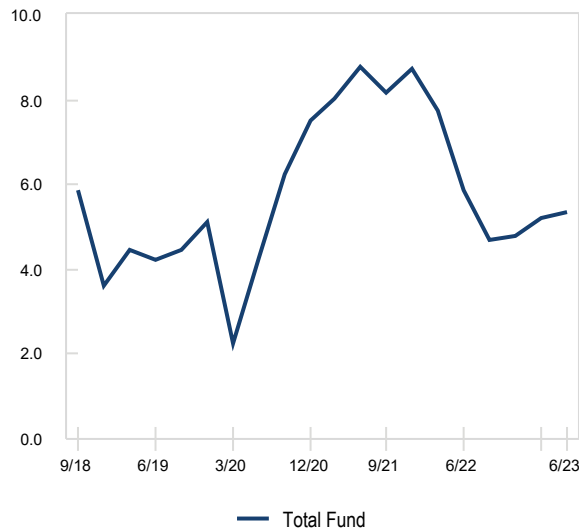
Rolling Tracking Error



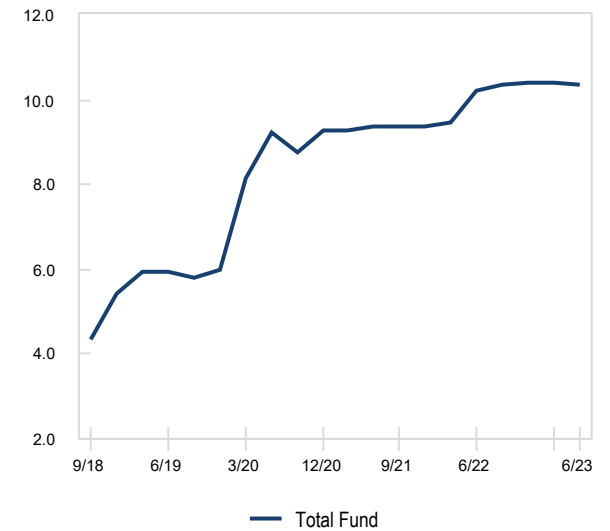
Rolling Sharpe Ratio



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: June 30, 2023

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Equity	1,684,531,735	874,180	-35,519,936		-1,357,464	87,246,151	1,735,774,667
Equity Beta Exposure	116,684,550	874,180	-35,519,436		-1,355,100	8,183,156	88,867,350
Mellon DB SL Stock Index Fund	492,812,772					43,077,775	535,890,546
PIMCO StocksPLUS	106,968,573					9,404,337	116,372,909
AB US Small Cap Value Equity	85,933,985		-129			545,403	86,479,259
Geneva Capital Small Cap Growth	49,961,187		-354			2,928,690	52,889,523
Mellon DB SL World ex-US Index Fund	509,554,780					16,847,909	526,402,690
Fidelity Non-US Small Cap Equity	2,371		-18		-2,364	10	
Cevian Capital II	37,835,395					1,040,041	38,875,436
American Century Non-US Small Cap	71,741,628					-752,900	70,988,728
DFA Emerging Markets Value I	77,971,643					3,588,524	81,560,166
AB Emerging Markets Strategic Core Equity Collective Trust	51,359,657					1,787,978	53,147,634
Mellon Emerging Markets Stock Index Fund	83,704,518					595,070	84,299,588
Transition Equity	676					160	837
Fixed Income	1,293,165,405	57,933,501	-1,611,356	126,904	-9,879,495	974,075	1,340,709,034
Fixed Income Beta Exposure	373,052,129	57,890,137	-1,611,356		-4,278,500	-6,172,158	418,880,253
Mellon DB SL Aggregate Bond Index Fund	162,415,284					-1,370,286	161,044,998
PIMCO Core Plus	165,702,164					-1,213,865	164,488,299
Western Asset Core Plus	122,289,114					-384,016	121,905,098
Western Asset High Yield Fixed Income	164,707,494				-2,652,752	3,311,142	165,365,884
TCW Securitized Opportunities	96,137,252			126,904	-1,963,554	1,122,891	95,423,493
Stone Harbor Emerging Markets Debt Blend Portfolio	64,653,539	43,364			-984,666	1,882,129	65,594,366
PIMCO EMD	143,907,027					3,797,139	147,704,166
Transition Fixed Income	301,401				-22	1,098	302,477
Commodities	197,553,350				35,000,000	-4,338,726	228,214,624
Gresham MTAP Commodity Builder Fund	49,142,121					-899,342	48,242,779
Wellington Commodities	148,411,229				35,000,000	-3,439,384	179,971,845
Hedge Funds	540,806,896	10,159		-96,708	-7,404,359	8,394,729	541,710,718
Aristeia International Limited	69,959,516					940,750	70,900,266
Brevan Howard Fund	55,851,429	10,159				-1,516,769	54,344,819
D.E. Shaw Composite Fund	59,530,214					1,734,528	61,264,742
HBK Fund II	44,737,059					306,583	45,043,642
Hudson Bay Cap Structure Arbitrage Enhanced Fund	80,735,699					838,792	81,574,491

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Indus Pacific Opportunities Fund	47,650,356					-1,272,655	46,377,701
Magnetar Structured Credit Fund	7,327,545				-7,404,359	76,814	
Pharo Macro Fund	61,359,040					1,600,667	62,959,707
PIMCO Commodity Alpha Fund	67,115,042			-96,708		4,375,324	71,393,658
Sculptor Domestic Partners II LP	46,540,997					1,310,695	47,851,693
Alpha Pool	219,047,320				5,450,104	-3,021,787	221,475,636
Hudson Bay	62,361,920				1,603,345	-955,445	63,009,820
Davidson Kempner Institutional Partners	54,896,123				1,406,304	-868,929	55,433,498
HBK Fund II	43,022,754				1,105,718	-810,882	43,317,590
HBK Opportunities Platform – SPAC Series	183,496				-183,496		
Garda Fixed Income Relative Value Opportunity Fund	58,583,027				1,518,232	-386,531	59,714,728
Midstream Energy	303,662,302				-4,724,373	9,529,907	308,467,836
Harvest Midstream	155,726,602				-2,563,685	3,679,436	156,842,353
PIMCO Midstream	147,935,700				-2,160,688	5,850,471	151,625,483
Core Real Estate	321,881,000		-312,521		-2,936,380	-13,197,308	305,434,791
ASB Allegiance Real Estate Fund	177,580,755				-1,187,888	-10,964,353	165,428,514
JPMCB Strategic Property Fund	144,300,244		-312,521		-1,748,492	-2,232,955	140,006,277
Private Real Estate	123,608,804				9,507,043	-1,110,400	132,005,447
Invesco Real Estate Value-Add Fund IV	1,394,290					-448,608	945,682
Landmark Real Estate Partners VIII	31,009,306				1,288,044	-714,044	31,583,306
Long Wharf Real Estate	34,044,975				416,254	64,037	34,525,266
Covenant Apartment Fund X	33,907,055				-353,750	394,158	33,947,463
Singerman Real Estate Opportunity Fund IV	8,851,934				131,250	-38,567	8,944,617
LBA Logistics Value Fund IX, L.P.	7,442,250				3,076,923	-231,323	10,287,850
Covenant Apartment Fund XI, LP	6,958,995				2,996,888	-136,054	9,819,829
KSL Capital Partners VI					1,951,434		1,951,434
Private Equity	165,827,721	4,235,654			12,305,881	5,169,184	187,538,440
Abbott VI	17,231,430					258,751	17,490,181
Pantheon Secondary III	544,562					8,627	553,189
Pantheon III	45,445						45,445
Pantheon V	392,019					-8,557	383,462

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Pantheon VI	357,185					-21,448	335,737
Pantheon VII	6,715,424				-300,000	492,164	6,907,588
Vista Foundation Fund IV	17,834,565					223,510	18,058,075
Crown Global Secondaries V Master S.C.Sp	28,138,412				-1,100,000	1,529,832	28,568,244
Brighton Park Capital Fund I	35,655,157				321,217	53,572	36,029,946
Warren Equity Partners Fund III	27,303,165				1,309,413	785,014	29,397,592
Peak Rock Capital Fund III	11,225,621				68,569	627,112	11,921,302
Level Equity Growth Partners V	4,543,921				1,576,237	576,907	6,697,065
Level Equity Opportunities Fund 2021	3,253,566				1,855,632	420,190	5,529,388
Linden Capital Partners V LP	5,472,902				2,262,173	249,726	7,984,801
Rubicon Technology Partners IV L.P.	2,681,880				681,618	-85,560	3,277,938
OrbiMed Private Investments IX, LP	366,875					-46,689	320,186
Brighton Park Capital Fund II, L.P	2,249,052				935,385	-112,571	3,071,866
Linden Co-Investment V LP	1,816,540				1,875,568	218,604	3,910,712
Warren Equity Partners Fund IV		4,235,654			2,820,069		7,055,723
Private Credit	245,458,300				-4,495,048	5,666,163	246,629,415
DC Value Recovery Fund IV	20,781,309				-2,704,635	450,251	18,526,925
Sixth Street TAO Partners (B)	39,800,921				968,605	634,591	41,404,117
Brookfield Real Estate Finance Fund V	17,621,779				-480,347	-388,811	16,752,621
Magnetar Constellation Fund V	28,836,480					-723,349	28,113,131
H.I.G. Bayside Loan Opportunity Fund V	42,185,573				-786,974	2,120,853	43,519,452
Blue Torch Credit Opportunities Fund II	17,526,212				-1,816,164	603,323	16,313,371
Fortress Credit Opportunitis Fund V Expansion	13,938,158				1,280,261	289,332	15,507,751
Fortress Lending Fund II	29,190,818				-1,597,026	972,818	28,566,610
Fortress Lending Fund III	23,391,071				-758,820	1,257,738	23,889,989
OrbiMed Royalty & Credit Opportunities IV	4,560,873				1,483,980	226,166	6,271,019
Blue Torch Credit Opportunities Fund III	7,625,106				-83,928	223,251	7,764,429
Opportunistic	167,025,043				-1,280,313	1,839,516	167,584,245
DB Investors Fund IV	25,576,934					-2,182,865	23,394,069
Sixth Street TAO Partners (D)	85,955,709				532,212	4,245,555	90,733,476
Aristeia Select Opportunities II	49,530,872					-1,180,841	48,350,031
River Birch International	5,961,528					-5,961,528	

Total Fund
Net Cash Flow: Last 1 Quarter

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

	Estimated Beginning Market Value	Contributions	Withdrawals	Fees	Net Transfers	Net Investment Change	Estimated Ending Market Value
Cash	-21,679,077	199,593,102	-217,016,138	-33,627	-30,185,596	6,039,792	-63,281,544
Short Term Investment Funds	220,711,312	74,605,452	-85,305,638	-33,627	-30,185,596	2,526,112	182,318,015
Parametric Cash Overlay	82,256,613	34,743,563	-37,632,511				79,367,664
Goldman Sachs Cash Account	-13,554,572	49,411,195	-33,424,069				2,432,554
Futures Offset	-489,736,679	40,832,893	-59,818,920			975,104	-507,747,603
Collateral Cash	835,000		-835,000				
BlackRock Short Duration Fund	177,809,249					2,538,577	180,347,826

Total Fund
Cash Flow History

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

Portfolio Reconciliation

	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Beginning Market Value	5,240,888,799	5,061,358,140	5,061,358,140	4,409,659,712	4,178,221,441	3,006,340,464
Contributions	368,758,185	2,959,971,119	2,959,971,119	9,979,430,928	13,039,142,389	19,012,108,878
Withdrawals	-360,571,539	-3,005,659,444	-3,005,659,444	-10,195,960,221	-13,390,239,667	-19,460,437,617
Fees	-3,431	-3,538,093	-3,538,093	-35,598,840	-62,450,330	-129,201,373
Net Cash Flows	8,186,646	-45,688,324	-45,688,324	-216,529,293	-351,097,278	-448,328,739
Net Investment Change	103,187,864	336,593,493	336,593,493	1,159,132,890	1,525,139,147	2,794,251,584
Ending Market Value	5,352,263,309	5,352,263,309	5,352,263,309	5,352,263,309	5,352,263,309	5,352,263,309
Net Change \$	111,374,510	290,905,169	290,905,169	942,603,597	1,174,041,869	2,345,922,845

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: June 30, 2023

Correlation Matrix
3 Years Ending June 30, 2023

	A	B	C	D	E	F	G	H	I	J	K	L
A	1.00											
B	0.98	1.00										
C	0.95	0.98	1.00									
D	0.95	0.97	0.90	1.00								
E	0.80	0.80	0.68	0.80	1.00							
F	0.79	0.80	0.74	0.79	0.81	1.00						
G	0.65	0.68	0.62	0.66	0.70	0.96	1.00					
H	0.86	0.85	0.82	0.82	0.73	0.89	0.77	1.00				
I	0.79	0.80	0.71	0.82	0.87	0.91	0.78	0.78	1.00			
J	0.66	0.56	0.50	0.59	0.52	0.33	0.18	0.47	0.41	1.00		
K	0.58	0.52	0.49	0.53	0.45	0.27	0.10	0.47	0.37	0.48	1.00	
L	-0.12	-0.19	-0.14	-0.22	-0.27	-0.34	-0.31	-0.25	-0.39	0.06	-0.05	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: June 30, 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	1.7	0.8	1.0	8.1	0.1	0.3	2.4	0.9	6.9	7.8	1.5	86.8	75.5
Equity	0.6	1.0	1.0	11.4	0.3	0.4	1.1	0.7	11.0	16.8	1.0	99.9	98.0
Domestic Equity	0.0	1.0	1.0	13.9	-0.1	-0.2	1.2	0.7	13.5	18.1	1.2	98.7	98.6
International Developed Equity	1.0	1.0	1.0	9.8	0.8	0.9	1.0	0.6	9.6	17.6	0.9	101.2	97.7
Emerging Markets Equity	1.0	0.9	1.0	4.4	0.3	0.8	2.5	0.3	4.4	16.4	0.4	94.2	89.4
Fixed Income	0.2	1.0	1.0	-2.0	0.2	0.1	0.8	-0.5	-3.1	6.5	-0.6	103.7	101.4
Core Plus Fixed Income	0.0	1.0	1.0	-4.0	-0.1	-0.1	0.7	-0.8	-5.2	6.2	-1.0	104.9	103.5
High Yield/ Specialty Credit	0.6	0.7	0.9	3.0	-0.1	-0.2	2.7	0.3	1.9	6.4	0.4	73.7	66.9
Emerging Market Debt	1.4	1.0	1.0	-1.0	1.2	1.3	1.1	-0.2	-1.7	10.4	-0.2	106.1	96.2
Commodities	0.9	0.9	0.9	16.5	-0.2	-1.3	5.5	1.0	15.3	15.0	1.7	87.5	81.5
Hedge Funds	5.8	0.4	0.2	8.4	0.3	1.4	3.9	2.1	6.9	3.1	7.1	68.6	-32.5
Core Real Estate	-0.2	0.6	0.8	4.9	-0.8	-3.0	4.1	0.6	3.8	6.2	1.0	73.6	99.2
Private Real Estate	0.0	1.0	1.0	16.7	-1.0	0.0	0.0	1.7	14.6	8.4	5.0	99.8	100.0
Private Equity	0.0	1.0	1.0	20.1	-0.6	0.0	0.0	1.5	17.8	11.5	7.3	100.0	100.3
Private Credit	0.1	1.0	1.0	3.0	0.7	0.1	0.2	0.5	1.8	3.4	1.0	99.9	94.1

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

Risk Return Statistics: Last Three Years

Period Ending: June 30, 2023

	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% 3 Month T-Bill +4% / 25% MSCI ACWI (net)	Core Real Estate	NCREIF ODCE-monthly
RETURN SUMMARY STATISTICS														
Up Market Periods	22	22	14	14	23	23	17	17	24	24	23	23	33	33
Down Market Periods	14	14	22	22	13	13	19	19	12	12	13	13	3	3
Maximum Return	12.43	12.66	3.41	3.68	4.80	6.02	7.56	7.35	7.67	8.78	3.26	3.34	5.39	7.97
Minimum Return	-9.42	-9.65	-4.27	-4.32	-5.04	-6.81	-5.99	-5.81	-8.90	-10.77	-0.75	-2.23	-3.77	-4.97
Return	11.40	10.97	-4.03	-3.97	3.03	3.21	-0.96	-2.24	16.54	17.82	8.42	5.77	4.95	7.99
Excess Return	10.99	10.65	-5.17	-5.12	1.93	2.25	-1.69	-3.01	15.26	16.56	6.89	4.45	3.76	6.82
Excess Performance	0.43	0.00	-0.06	0.00	-0.18	0.00	1.28	0.00	-1.28	0.00	2.65	0.00	-3.05	0.00
RISK SUMMARY STATISTICS														
Beta	0.98	1.00	1.02	1.00	0.74	1.00	1.02	1.00	0.87	1.00	0.37	1.00	0.64	1.00
Upside Risk	13.78	13.88	3.80	3.74	4.93	6.30	7.16	6.80	12.93	13.53	3.85	4.03	5.23	8.30
Downside Risk	10.28	10.59	5.08	4.93	4.15	5.66	7.54	7.49	9.00	10.20	0.81	2.38	3.66	3.74
RISK/RETURN SUMMARY STATISTICS														
Standard Deviation	16.82	17.12	6.24	6.09	6.38	8.41	10.40	10.11	15.02	16.14	3.15	4.38	6.22	8.80
Alpha	0.57	0.00	0.03	0.00	0.60	0.00	1.38	0.00	0.94	0.00	6.20	0.00	-0.18	0.00
Sharpe Ratio	0.65	0.62	-0.83	-0.85	0.30	0.27	-0.16	-0.30	1.01	1.01	2.11	1.02	0.57	0.75
Excess Risk	16.82	17.11	6.20	6.04	6.38	8.40	10.28	9.98	15.17	16.33	3.26	4.38	6.57	9.05
Tracking Error	1.08	0.00	0.67	0.00	2.66	0.00	1.09	0.00	5.50	0.00	3.84	0.00	4.05	0.00
Information Ratio	0.31	-	-0.08	-	-0.12	-	1.22	-	-0.24	-	0.64	-	-0.76	-
CORRELATION STATISTICS														
R-Squared	1.00	1.00	0.99	1.00	0.95	1.00	0.99	1.00	0.88	1.00	0.27	1.00	0.83	1.00
Actual Correlation	1.00	1.00	0.99	1.00	0.97	1.00	0.99	1.00	0.94	1.00	0.52	1.00	0.91	1.00

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

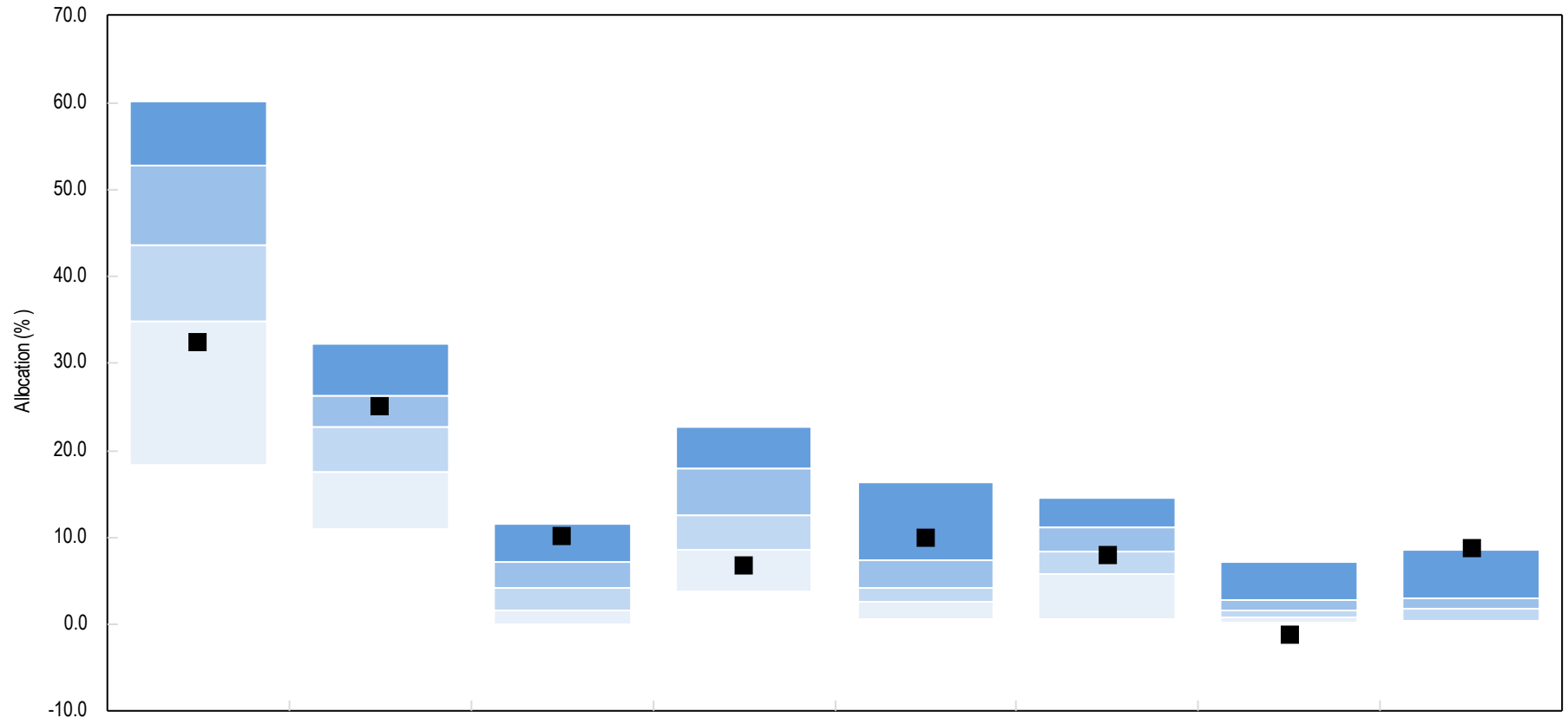
Risk Return Statistics: Last Two Years

	Midstream Energy	Alerian Midstream Energy Index	Opportunistic	Assumed Rate of Return +3%
2 Yrs				
RETURN SUMMARY STATISTICS				
Up Market Periods	13	13	24	24
Down Market Periods	11	11	0	0
Maximum Return	11.14	11.05	5.19	0.58
Minimum Return	-11.84	-12.21	-4.04	0.58
Return	14.20	11.79	-2.48	7.25
Excess Return	13.28	11.74	-4.06	5.17
Excess Performance	2.41	0.00	-9.73	0.00
RISK SUMMARY STATISTICS				
Beta	0.85	1.00	-	-
Upside Risk	15.41	17.12	1.60	2.03
Downside Risk	11.73	14.09	5.54	0.00
RISK/RETURN SUMMARY STATISTICS				
Standard Deviation	18.87	21.82	7.80	0.00
Alpha	3.64	0.00	-	-
Sharpe Ratio	0.70	0.54	-0.52	9.16
Excess Risk	18.94	21.90	7.80	0.56
Tracking Error	4.76	0.00	7.80	0.00
Information Ratio	0.32	-	-1.18	-
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.

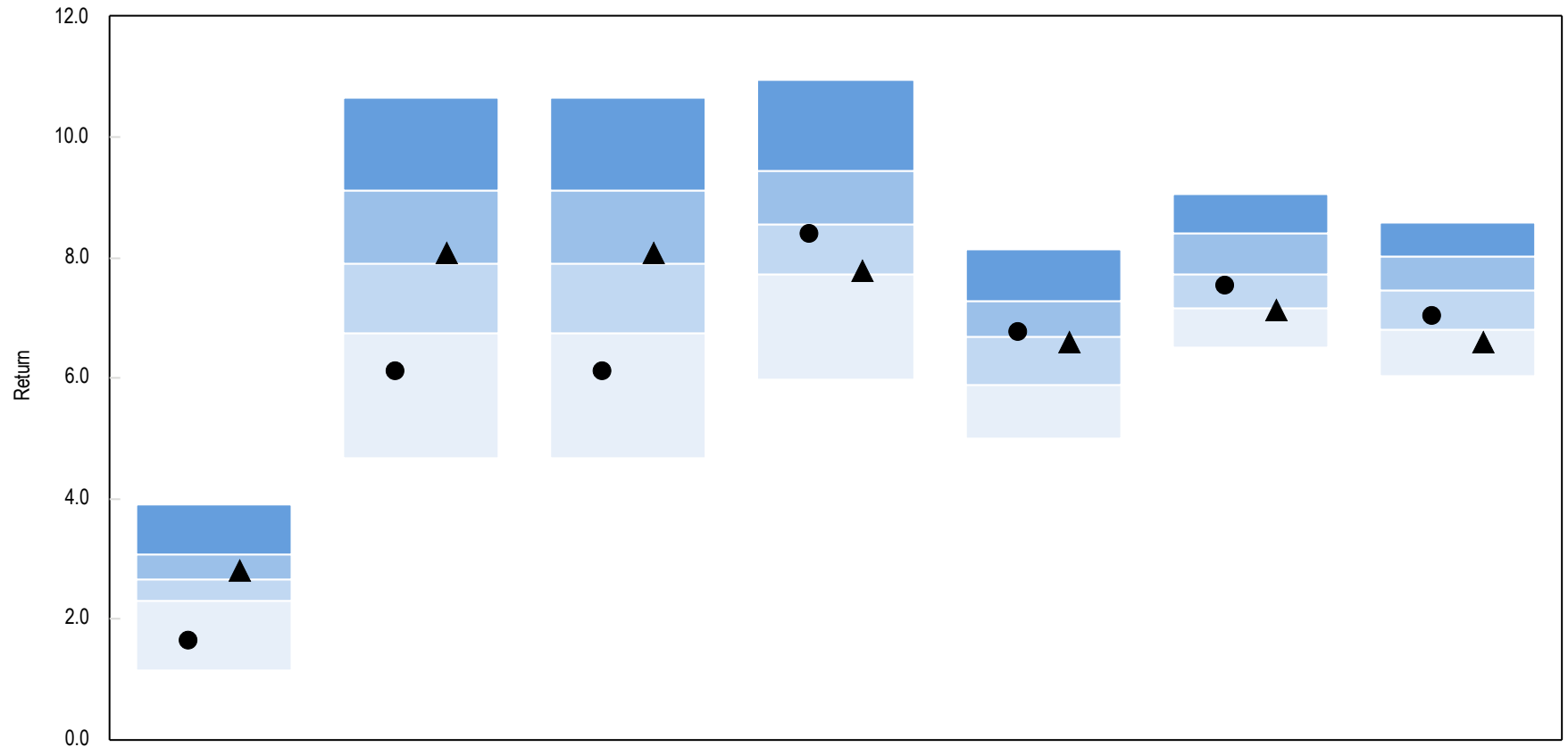
Peer Comparison

Total Plan Allocation vs. InvMetrics Public DB > \$1B
As of June 30, 2023



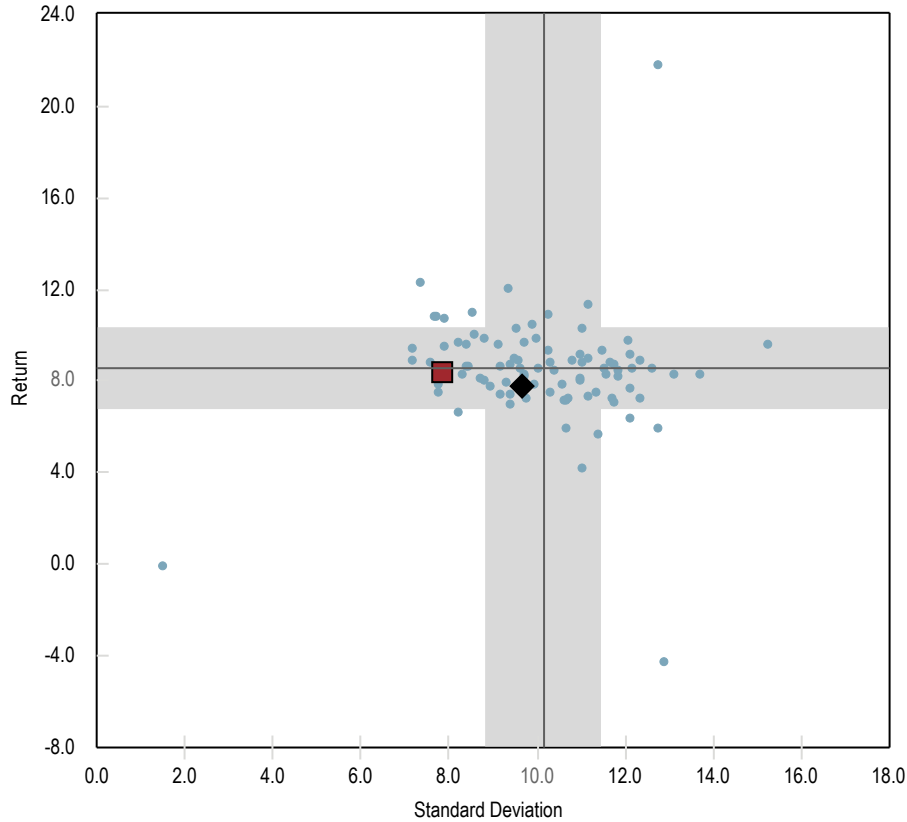
	Total Equity	Total Fixed Income	Hedge Funds	Private Equity	Real Assets/Commod	Real Estate - Private	Cash & Equivalents	Other
■ Total Fund	32.4 (83)	25.0 (32)	10.1 (12)	6.9 (90)	10.0 (15)	8.0 (61)	-1.2	8.7 (1)
5th Percentile	60.2	32.2	11.5	22.7	16.4	14.6	7.2	8.5
1st Quartile	52.9	26.3	7.1	17.9	7.4	11.1	2.7	2.9
Median	43.7	22.7	4.2	12.5	4.2	8.4	1.5	1.8
3rd Quartile	35.0	17.6	1.6	8.7	2.5	5.7	0.7	0.3
95th Percentile	18.3	11.0	0.0	3.7	0.5	0.5	0.2	0.2
Population	86	88	44	65	51	59	70	13

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



	Quarter	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Total Fund	1.6 (92)	6.1 (82)	6.1 (82)	8.4 (57)	6.8 (46)	7.5 (58)	7.1 (67)
▲ Policy Index	2.8 (39)	8.1 (47)	8.1 (47)	7.8 (74)	6.6 (58)	7.1 (78)	6.6 (86)
5th Percentile	3.9	10.7	10.7	11.0	8.2	9.1	8.6
1st Quartile	3.1	9.1	9.1	9.4	7.3	8.4	8.0
Median	2.7	7.9	7.9	8.6	6.7	7.7	7.5
3rd Quartile	2.3	6.8	6.8	7.7	5.9	7.2	6.8
95th Percentile	1.2	4.7	4.7	6.0	5.0	6.5	6.0
Population	104	100	100	90	89	88	84

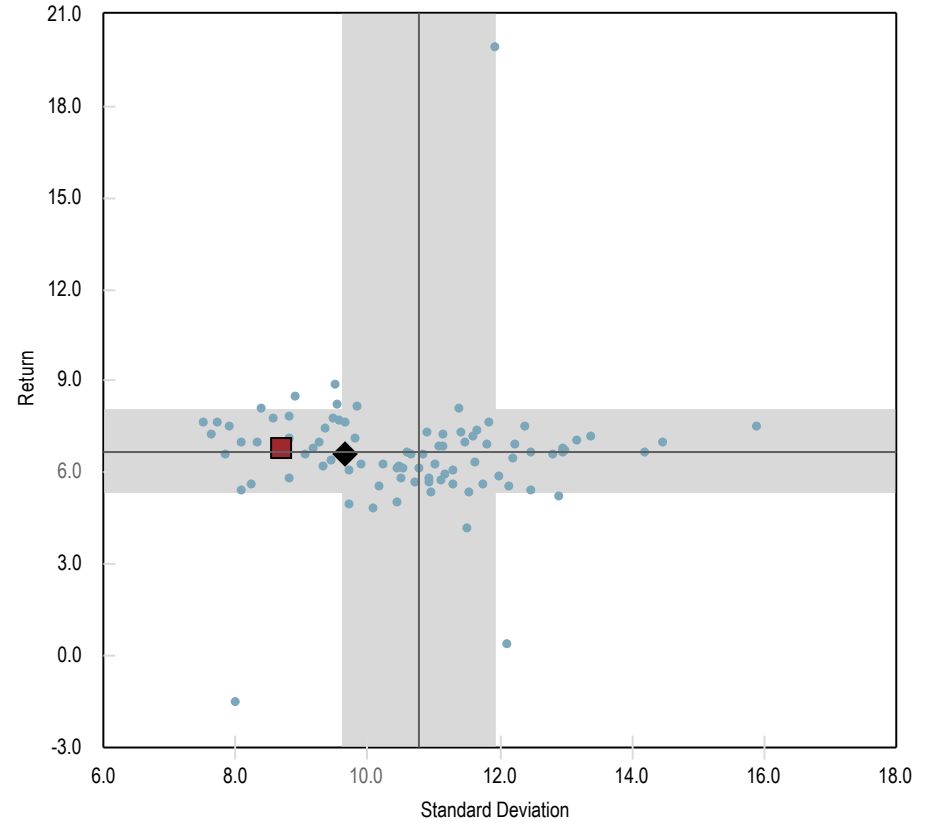
Annualized Return vs. Annualized Standard Deviation
3 Years Ending June 30, 2023



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	8.41	7.84
◆ Policy Index	7.81	9.67
— Median	8.56	10.14
Population	90	90

Annualized Return vs. Annualized Standard Deviation
5 Years Ending June 30, 2023



● InvMetrics Public DB > \$1B

	Return	Standard Deviation
■ Total Fund	6.80	8.70
◆ Policy Index	6.59	9.64
— Median	6.70	10.78
Population	89	89

Other

Total Fund
Watchlist (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 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: June 30, 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	■	-	-	P	-	✓	-	✓	-	-
Brevan Howard Fund	Hedge Funds	■	-	-	P	-	✓	-	✓	-	-
D.E. Shaw Composite Fund	Hedge Funds	■	-	-	✓	-	✓	-	✓	-	-
HBK Fund II	Hedge Funds	■	-	-	P	-	✓	-	P	-	-
Hudson Bay Cap Structure Arbitrage Enhanced Fund	Hedge Funds	■	-	-	P	-	✓	-	✓	-	-
Indus Pacific Opportunities Fund	Hedge Funds	■	-	-	P	-	✓	-	P	-	-
Magnetar Structured Credit Fund	Hedge Funds	■	-	-	P	-	✓	-	✓	-	-
PIMCO Commodity Alpha Fund	Hedge Funds	■	P	✓	✓	P	P	✓	✓	-	-
River Birch International	Opportunistic	■	-	-	-	-	-	-	-	-	-
Sculptor Domestic Partners II LP	Hedge Funds	■	-	-	✓	-	P	-	-	-	-
Harvest Midstream	Midstream	■	✓	✓	✓	-	-	-	-	-	-
PIMCO Midstream	Midstream	■	✓	✓	✓	-	-	-	-	-	-
ASB Allegiance Real Estate Fund	Core Real Estate	■	-	-	P	-	P	-	P	-	-
JPMCB Strategic Property Fund	Core Real Estate	■	-	-	P	-	P	-	P	-	-
Invesco Real Estate Value-Add Fund IV	Private Real Estate	■	-	-	P	-	P	-	P	-	-
Landmark Real Estate Partners VIII	Private Real Estate	■	-	-	-	-	-	-	-	-	P
DB Investors Fund IV	Opportunistic	■	-	-	P	-	P	-	-	-	-
Sixth Street TAO Partners (D)	Private Credit	■	-	-	P	-	✓	-	-	-	-
Aristeia Select Opportunities II	Opportunistic	■	-	-	P	-	-	-	-	-	-

Legend For Overall Status

No Issues	■
Watch	■
Terminate	■

Legend for Standards

Pass	✓
Fail	P

Legend for Concern

Provisional	P
Restricted	R
No Issues	--

Total Fund
Quarterly Historical Returns (Net of Fees)

Kern County Employees' Retirement Association
Period Ending: June 30, 2023

	2023 Q2	2023 Q1	2022 Q4	2022 Q3	2022 Q2	2022 Q1	2021 Q4	2021 Q3	2021 Q2	2021 Q1	2020 Q4	2020 Q3
Total Fund	1.6	2.7	3.9	-2.4	-6.8	-0.8	3.6	0.5	5.5	3.5	8.8	4.4
<i>Policy Index</i>	2.8	3.7	5.4	-3.9	-8.9	-1.3	3.3	0.7	5.7	3.3	8.8	4.5

	2020 Q2	2020 Q1	2019 Q4	2019 Q3	2019 Q2	2019 Q1	2018 Q4	2018 Q3	2018 Q2	2018 Q1	2017 Q4	2017 Q3
Total Fund	10.7	-11.3	4.6	0.2	3.1	6.8	-6.4	2.3	0.3	-0.1	3.0	3.2
<i>Policy Index</i>	10.1	-11.1	4.6	0.8	3.0	7.0	-5.5	2.2	0.7	-0.1	3.2	3.1

	2017 Q2	2017 Q1	2016 Q4	2016 Q3	2016 Q2	2016 Q1	2015 Q4	2015 Q3	2015 Q2	2015 Q1	2014 Q4	2014 Q3
Total Fund	2.7	4.2	0.8	3.5	1.9	1.1	2.2	-5.4	0.7	2.4	0.8	-1.5
<i>Policy Index</i>	2.8	3.5	0.5	2.9	2.2	1.8	1.4	-4.9	0.4	2.0	0.4	-1.4

Total Fund Data Sources and Methodology

Kern County Employees' Retirement Period Ending: June 30, 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 VI	3/31/2008	Abbott Capital	Magnetar Constellation	11/14/2018	Magnetar
American Century Non-US Small Cap	12/15/2020	American Century	Magnetar Structured Credit	5/1/2014	Magnetar
Aristeia International Limited	5/1/2014	Northern Trust	Mellon Aggregate Bond Index Fund	1/14/2011	Mellon
ASB Real Estate	9/30/2013	ASB	Mellon EB DV Stock Index	10/18/2017	Mellon
Barclays Capital Aggregate Rebalancing Overlay	6/15/2022	Parametric	Mellon EB DV World ex-US Index	8/1/2018	Mellon
BlackRock Short Duration Fund	9/8/2021	BlackRock	Myriad Opportunities Offshore	5/19/2016	Northern Trust
Blue Torch Credit Opportunities	7/24/2020	Blue Torch	OrbiMed Royalty & Credit Opportunities	9/12/2022	OrbiMed
Brevan Howard	11/1/2013	Northern Trust	Pantheon Global III	6/30/2000	Pantheon
Brighton Private Equity	3/28/2021	Brighton	Pantheon USA III	3/31/2007	Pantheon
Brighton Park Capital Fund II, L.P.	9/30/2022	Brighton	Pantheon USA V	6/30/2005	Pantheon
Brookfield Real Estate Finance Fund V	12/18/2017	Northern Trust	Pantheon USA VI	3/31/2005	Pantheon
Cevian Capital II	12/30/2014	Northern Trust	Pantheon USA VII	3/31/2005	Pantheon
DC Value Recovery fund IV	12/28/2015	Colony	Parametric Overlay/ Cap Efficiency Program	7/31/2020	Parametric
Covenant Apartment Fund X	10/29/2020	Covenant	Peak Rock Capital Fund III	7/13/2021	Peak Rock
DB Investors Fund IV	1/29/2020	DB	PIMCO Commodity Alpha	5/4/2016	PIMCO
D.E. Shaw	6/30/2013	Northern Trust	PIMCO Core Plus	1/21/2011	Northern Trust
DFA Emerging Markets Value I	3/7/2014	Northern Trust	PIMCO EMD	2/29/2020	Northern Trust
Fortress Credit Opportunities	12/17/2020	Fortress	PIMCO Midstream	10/9/2020	PIMCO
Fortress Lending Fund II	3/15/2021	Fortress	PIMCO StocksPLUS	7/14/2003	PIMCO
Garda Fixed Income Relative Value Opp	9/30/2021	Garda	Fidelity Non-US Small Cap Equity	6/10/2008	Northern Trust
Geneva Capital Small Cap Growth	7/22/2015	Geneva	River Birch	8/3/2015	Northern Trust
Gresham MTAP Commodity	9/3/2013	Gresham	Rubicon Technology Partners IV LP	11/30/2022	Rubicon
Harvest Midstream	9/28/2020	Harvest Midstream	Singerman Real Estate Opportunity Fund IV	10/27/2021	Singerman
HBK Fund II	11/1/2013	Northern Trust	Sculptor Enhanced Domestic Partners	3/26/2019	Sculptor
Henderson Smallcap Growth	7/22/2015	Northern Trust	Short Term Cash Account	12/31/2000	Northern Trust
H.I.G Bayside Loan Opportunities Fund V	7/24/2019	H.I.G. Capital	Short Term Investment Funds	6/30/2000	Northern Trust
Hudson Bay	6/7/2019	Northern Trust	Stone Harbor Emerging Markets Debt	8/8/2012	Stone Harbor
Indus Pacific Opportunities	6/30/2014	Northern Trust	TAO Contingent	4/16/2020	TPG Sixth Street
Invesco Real Estate III	6/30/2013	Invesco	TCW Securitized Opportunities	2/3/2016	TCW
Invesco Real Estate IV	12/18/2015	Invesco	Transition Equity	9/30/2010	Northern Trust
J.P. Morgan Strategic Property	7/2/2014	J.P. Morgan	Transition Fixed Income	9/30/2010	Northern Trust
KSL Capital Partners VI	4/26/2023	KSL Capital	TSSP Adjacent Opportunities Partners	11/17/2017	TPG Sixth Street
Landmark Real Estate Partners VIII	4/29/2018	Landmark	Vista Equity Partners	7/24/2020	Vista Equity
LBA Logistics Value Fund IX, L.P.	2/22/2022	LBA	Warren Equity III	4/1/2021	Warren
Level Equity Growth Partners V	11/1/2021	Level Equity	Warren Equity IV	1/1/2023	Warren
Level Equity Opportunities Fund 2021	11/1/2021	Level Equity	Wellington Alternative Investments	2/9/2023	Wellington
LGT Crown	2/1/2021	LGT	Western Asset Core Plus	5/31/2004	Northern Trust
Linden Capital Partners V LP	7/19/2022	Linden	Western Asset High Yield Fixed income	5/31/2005	Northern Trust

Total Fund Data Sources and Methodology

Kern County Employees' Retirement Period Ending: June 30, 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.

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