PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30, 2023

Total Fund Review

Alameda County Employees’ Retirement Association – Non-confidential

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Verus

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777
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U.S. economics summary

— Real GDP increased at a 2.9% pace from a year ago in the third quarter (4.9% quarter-over-quarter annualized rate). The large uptick was driven by consumption, which continues to show resiliency. While many investors have expected high inflation and weaker wage growth to impact spending, a combination of pandemic related excess savings and a strong decade of household wealth expansion is likely providing a cushion against an economic slowdown.

— U.S. headline inflation ticked up during the quarter, from 3.1% to 3.7% year-over-year in September. Core CPI (ex-food & energy) continued to fall from 4.9% to 4.1%. Shelter costs jumped unexpectedly in September, which along with rising energy prices have generated fresh concerns of renewed inflation.

— The U.S. consumer has shown resiliency, with continued moderate spending levels. However, personal savings rates are nearly the lowest on record. We believe depressed savings activity, along with mild household spending and very poor sentiment, suggests high inflation is squeezing household budgets.

— The unemployment rate increased slightly during the quarter from 3.6% to 3.8%, though this appears to be due to more workers rejoining the labor force and seeking employment (a positive rather than negative development). The total size of the U.S. workforce grew by 580,000 in Q3.

— Consumer sentiment readings were mixed during Q3 but remain poor. According to the Conference Board survey, the future outlook for income, business, and labor conditions fell very sharply and are now at levels that historically have signaled recession within a year.

	Most Recent	**12 Months Prior**
Real GDP *(YoY)*	2.9% *9/30/23*	1.7% *9/30/22*
Inflation *(CPI YoY, Core)*	4.1% *9/30/23*	8.2% *9/30/22*
Expected Inflation *(5yr-5yr forward)*	2.4% *9/30/23*	2.1% *9/30/22*
Fed Funds Target Range	5.25–5.50% *9/30/23*	3.00–3.25% *9/30/22*
10-Year Rate	4.58% *9/30/23*	3.83% *9/30/22*
U-3 Unemployment	3.8% *9/30/23*	3.5% *9/30/22*
U-6 Unemployment	7.0% *9/30/23*	6.7% *9/30/22*

International economics summary

— Countries struggling to control inflation—primarily advanced economies—face a challenging path. Many central banks are grappling with high prices and slow growth, and the balancing act of fighting inflation but also trying to avoid recession. In contrast, most emerging economies are exceeding growth expectations, outside of China. Some of this strength has come from trade rotation as tensions remain between the U.S. and China and businesses rethink their trade partners.

— The IMF's October World Economic Outlook was little changed from July Projections, as global growth is still expected to slow in 2024. Regional divergences remained an emphasis, as emerging economies are projected to drive global output. India is expected to outpace all other countries with growth forecasts above 6% for both 2023 and 2024.

— Inflation in the Eurozone and United Kingdom has remained sticky, with inflation in September coming in at 4.3% and 6.7% year-over-year, respectively. Monetary policy is expected to be tighter for both the ECB and BOE, although rate decisions diverged at their respective September meetings, as the ECB raised rates by another 25 bps, while the BOE voted 5-4 to maintain their bank rate at 5.25%.

— Japan was a bright spot amongst developed economies, driven by strong exports in the second quarter. While growth was positive, the potential for an early end to ultra loose Bank of Japan (BOJ) monetary policy presents a potential headwind. A weak Japanese Yen adds to this story, as the currency has been greatly devalued, largely due to the BOJ's contrarian monetary policy relative to other major central banks.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.9% *9/30/23*	3.7% *9/30/23*	3.8% *9/30/23*
Eurozone	0.5% *6/30/23*	4.3% *9/30/23*	6.4% *8/31/23*
Japan	1.6% *6/30/23*	2.8% *9/30/23*	2.7% *8/31/23*
BRICS Nations	6.1% *6/30/23*	1.7% *9/30/23*	4.8% *12/31/22*
Brazil	3.4% *6/30/23*	5.2% *9/30/23*	7.8% *8/31/23*
Russia	4.9% *6/30/23*	6.0% *9/30/23*	3.0% *8/31/23*
India	7.8% *6/30/23*	5.0% *9/30/23*	7.1% *9/30/23*
China	4.9% *9/30/23*	0.0% *9/30/23*	5.0% *9/30/23*

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

Equity environment

— Global equities delivered negative performance during the quarter (MSCI ACWI -3.4%). Weakness in markets was broad-based, with international developed (MSCI EAFE -4.1%) slightly underperforming domestic and emerging market equities (S&P 500 -3.3%, MSCI EM -2.9%).

— Over the quarter, the valuation gap between domestic and international equites grew even larger. An analysis of international developed Price/Earnings ratios shows that all sectors currently hold a valuation discount relative to U.S. shares, and that those discounts are generally much wider than the historical average.

— Currency movements dragged portfolio performance lower for investors with unhedged foreign currency exposure. Investors with unhedged international developed equity exposure saw losses of -3.6% due to currency volatility during the quarter.

— U.S. investors continue to face a difficult environment for style factor investing. Over the past year, mega cap growth stocks have propelled the U.S. market higher, leading to dramatic outperformance of growth stocks and large cap stocks. However, value investing has delivered exceptional results in international developed markets, with value stocks outperforming growth by 11.5%.

— The Cboe VIX implied volatility index remained below-average for most of the third quarter, before rising to 17.5% to end September. Market risk has been falling fairly consistently throughout the year.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(3.3%)		21.6%	
U.S. Small Cap (Russell 2000)	(5.1%)		8.9%	
U.S. Equity (Russell 3000)	(3.3%)		20.5%	
U.S. Large Value (Russell 1000 Value)	(3.2%)		14.4%	
US Large Growth (Russell 1000 Growth)	(3.1%)		27.7%	
Global Equity (MSCI ACWI)	(3.4%)	(2.3%)	20.8%	20.4%
International Large (MSCI EAFE)	(4.1%)	(0.5%)	25.6%	24.1%
Eurozone (EURO STOXX 50)	(7.7%)	(4.3%)	39.4%	33.0%
U.K. (FTSE 100)	(1.9%)	2.2%	25.3%	16.0%
Japan (TOPIX)	(1.0%)	4.0%	25.7%	36.6%
Emerging Markets (MSCI Emerging Markets)	(2.9%)	(1.3%)	11.7%	11.1%

Source: Russell Investments, MSCI, STOXX, FTSE, JPX, as of 9/30/23

Fixed income environment

— The 10-year U.S. Treasury yield increased during the quarter from 3.81% to 4.58%—a level not seen since 2007—likely supported by *higher for longer* interest rate expectations. This has led to a flattening of the yield curve, though the curve remains inverted at -0.5% (defined as the 10-year Treasury yield minus 2-year Treasury yield).

— Rising interest rates combined with lower inflation have brought real (inflation-adjusted, based on the U.S. TIPS Inflation Breakeven Rate) 10- and 30-year Treasury yields to the highest levels in over a decade. Real yields for 10- and 30-year Treasuries finished the month at 2.24% and 2.33%, respectively. In March of 2022 these rates were negative.

— The Federal Reserve hiked interest rates by 0.25% in July but held rates steady at the September meeting as inflation moderated. Importantly, Chairman Powell signaled that additional rate hikes may be warranted if the economy remains strong and inflation above target.

— During Q3, higher quality bonds and U.S. Treasuries saw mild losses due primarily to their longer duration profile. Riskier credit performed well, with larger coupons and shorter duration contributing to positive performance.

— Longer duration investment grade corporate bonds (Bloomberg U.S. Long Corporate Credit) performed very poorly, falling by -7.3% during the quarter as rising interest rates acted as a headwind.

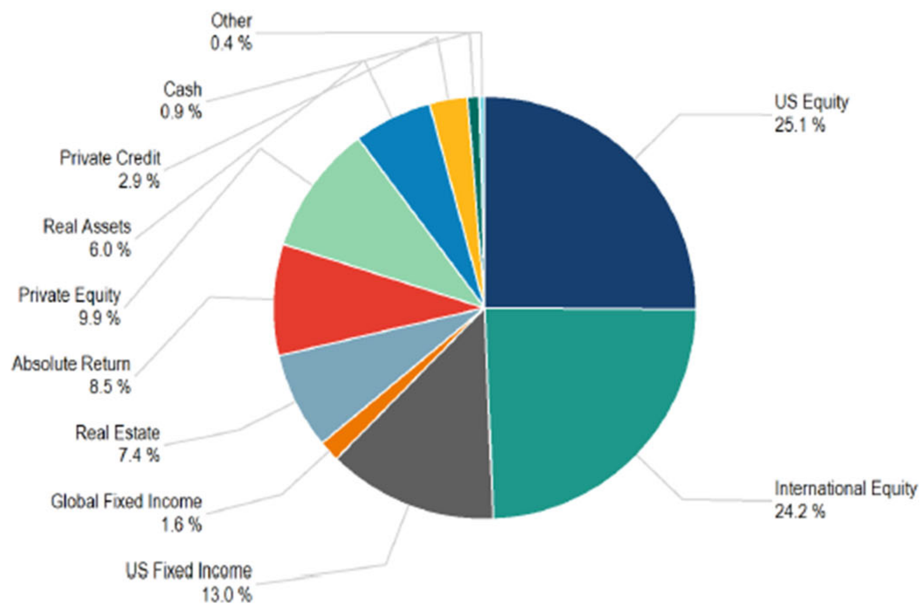
— With inflation moderating during the quarter, investors expressed optimism that the Federal Reserve would soon pause interest rate hikes. However, interest rate volatility increased during the period as concerns related to the U.S. government's budget deficit and the amount of expected issuance contributed to higher long-term bond yields.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(3.2%)	0.6%
Core Plus Fixed Income (Bloomberg U.S. Universal)	(2.9%)	1.6%
U.S. Treasuries (Bloomberg U.S. Treasury)	(3.1%)	(0.8%)
U.S. Treasuries: Long (Bloomberg U.S. Treasury 20+)	(13.0%)	(10.7%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.5%	10.3%
Bank Loans (S&P/LSTA Leveraged Loan)	3.4%	13.0%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(3.3%)	13.1%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(2.2%)	10.0%
Mortgage-Backed Securities (Bloomberg MBS)	(4.1%)	(0.2%)

Source: Bloomberg, as of 9/30/23

Total Fund review

Asset allocation

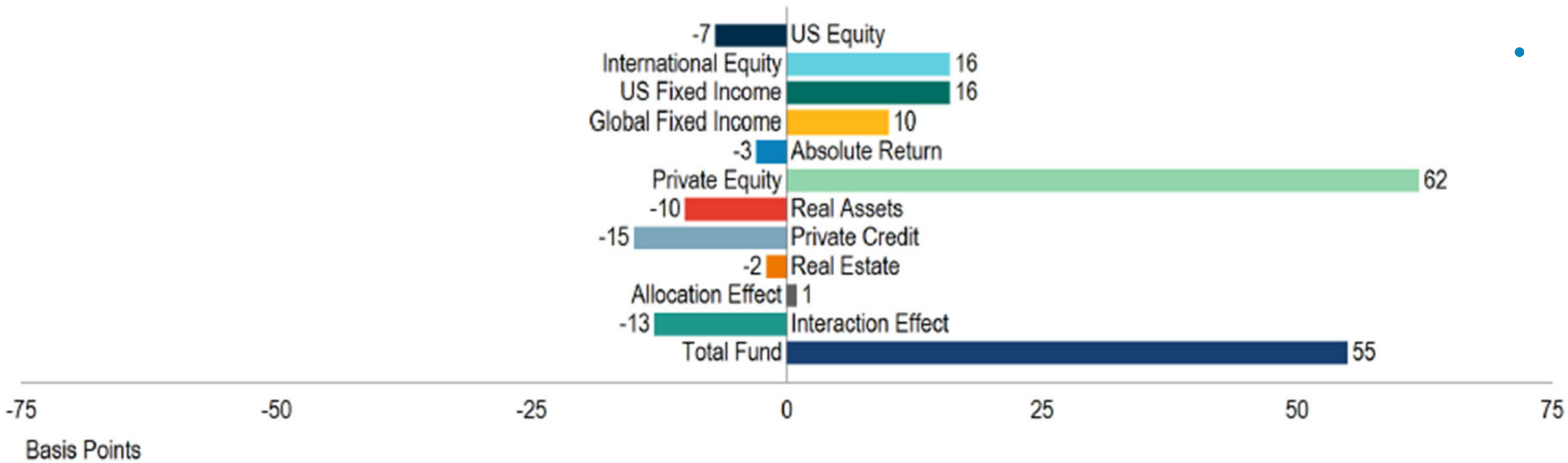


- Public markets comprise ~75% of ACERA's assets
- Majority of public markets assets are invested in equities (~50%)

	Current Balance ($)	Current Allocation (%)	Policy (%)	Difference (%)	Within IPS Range?
US Equity	2,660,694,422	25.1	24.0	1.1	Yes
International Equity	2,565,547,384	24.2	24.0	0.2	Yes
US Fixed Income	1,379,885,136	13.0	12.0	1.0	Yes
Global Fixed Income	172,963,200	1.6	2.0	-0.4	Yes
Real Estate	787,418,086	7.4	9.0	-1.6	Yes
Absolute Return	896,453,963	8.5	8.0	0.5	Yes
Private Equity	1,050,127,855	9.9	11.0	-1.1	Yes
Real Assets	632,567,735	6.0	6.0	0.0	Yes
Private Credit	304,884,497	2.9	4.0	-1.1	Yes
Cash	96,495,773	0.9	0.0	0.9	Yes
Other	38,182,564	0.4	0.0	0.4	Yes
Total	**10,585,220,615**	**100.0**	**100.0**		

Total Fund attribution

One Year as of 9/30/23



- Main source of value-add: Selection within Private Equity

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	20.12%	20.46%	-0.34%	-0.07%	0.04%	0.00%	-0.03%
International Equity	21.51%	20.82%	0.69%	0.16%	-0.11%	0.01%	0.05%
US Fixed Income	1.87%	0.64%	1.23%	0.16%	-0.22%	0.02%	-0.04%
Global Fixed Income	4.95%	1.04%	3.91%	0.10%	0.02%	-0.02%	0.11%
Absolute Return	4.25%	4.61%	-0.36%	-0.03%	-0.07%	-0.02%	-0.12%
Private Equity	7.55%	2.24%	5.31%	0.62%	0.11%	-0.10%	0.64%
Real Assets	7.26%	8.06%	-0.80%	-0.10%	0.07%	-0.06%	-0.09%
Private Credit	11.18%	15.10%	-3.92%	-0.15%	-0.05%	0.05%	-0.15%
Real Estate	-12.35%	-12.14%	-0.21%	-0.02%	0.20%	0.00%	0.18%
Total	**10.99%**	**10.44%**	**0.55%**	**0.67%**	**0.01%**	**-0.13%**	**0.55%**

Total Fund and composite performance

	Market Value ($)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund*	10,585,220,615	100.00	-2.09	0.73	11.00	6.66	5.97	7.64	7.11	9.23	Sep-85
Policy Index			-2.01	0.63	10.61	6.60	6.13	7.66	7.45	9.50	Sep-85
Total Fund w/o Overlay	10,547,038,051	99.64	-2.05	0.75	10.94	6.71	6.00	7.66	7.12	9.23	Sep-85
US Equity	2,660,694,422	25.14	-3.31	4.57	20.12	9.46	8.98	11.99	11.01	11.50	Sep-85
Russell 3000			-3.25	4.86	20.46	9.38	9.14	11.64	11.28	11.08	Sep-85
International Equity	2,565,547,384	24.24	-4.43	-1.98	21.51	3.07	3.61	5.90	4.56	7.59	Dec-90
MSCI ACWI ex USA IMI Gross			-3.39	-0.87	20.82	4.27	3.06	5.22	3.95	5.90	Dec-90
Total Fixed Income	1,552,848,336	14.67	-3.42	-3.79	2.21	-3.89	0.98	1.14	2.34	6.41	Sep-86
Fixed Income Blend			-3.16	-3.91	1.88	-5.37	-0.27	-0.24	0.94	5.44	Sep-86
US Fixed Income	1,379,885,136	13.04	-2.82	-3.40	1.87	-4.08	1.25	1.30	2.63	6.35	Sep-86
Bloomberg US Aggregate TR			-3.23	-4.05	0.64	-5.21	0.10	-0.09	1.13	5.27	Sep-86
Global Fixed Income*	172,963,200	1.63	-7.91	-6.80	4.95	-5.64	-1.40	-0.51	0.65	5.29	Nov-01
FTSE WGBI TR			-4.27	-5.98	1.04	-8.72	-2.57	-2.44	-1.19	2.73	Nov-01

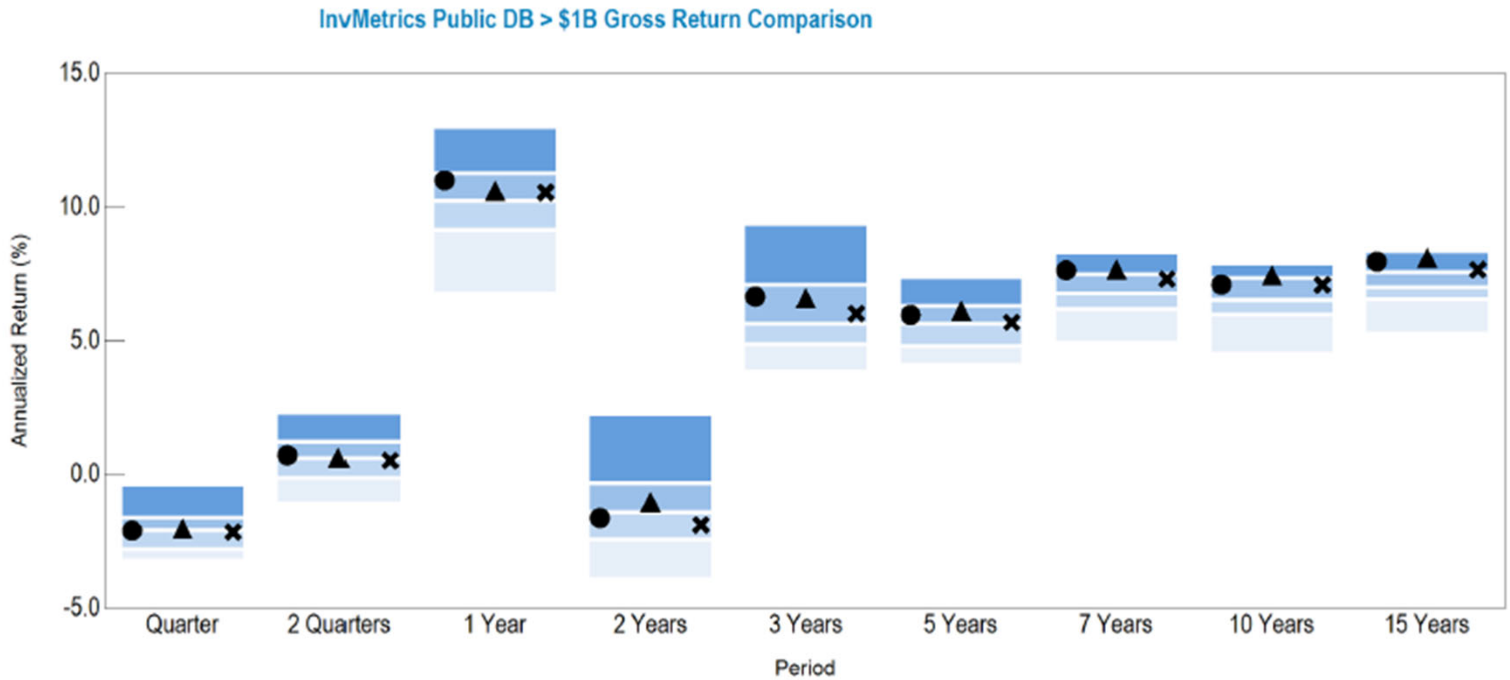
- Total Fund return lagged Policy Index return over quarter ended 9/30/23
- Biggest positive contributors to outperformance for the quarter were Private Equity and Absolute Return, Private Credit had a positive absolute return but lagged the asset class benchmark

Total Fund and composite performance (continued)

	Market Value ($)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Absolute Return	896,453,963	8.47	2.49	4.87	4.25	11.11	5.00	4.56	4.34	4.19	Sep-11
Absolute Return Blend			0.53	2.07	4.61	3.78	3.39	3.57	3.78	3.85	Sep-11
Private Equity	1,050,127,855	9.92	2.95	5.39	7.55	20.87	15.17	15.36	15.83	7.13	Nov-08
Private Equity Blend			1.47	3.53	2.24	18.69	14.89	16.23	15.31	16.95	Nov-08
Real Assets	632,567,735	5.98	-1.08	-1.49	7.26	13.61	3.48	3.44	-0.57	-1.00	Sep-11
Real Asset Blend			-3.18	-4.63	8.06	12.26	5.01	6.01	5.71	5.57	Sep-11
Private Credit	304,884,497	2.88	2.69	5.90	11.18	9.15	--	--	--	7.11	Oct-19
S&P/LSTA Leveraged Loan Index +1.75%			3.90	7.64	15.10	7.98	6.31	6.53	6.13	6.90	Oct-19
Cash	96,495,773	0.91	1.56	2.82	5.18	2.00	1.77	1.60	1.16	3.00	Sep-85
91 Day T-Bills			1.31	2.50	4.47	1.69	1.63	1.50	1.08	3.06	Sep-85
Real Estate	787,418,086	7.44	-1.56	-4.62	-12.35	7.11	5.92	6.64	8.81	6.95	Mar-86
Real Estate Blend			-1.90	-4.53	-12.14	7.13	5.65	6.37	8.15	7.64	Mar-86

- For the 3-year time-period all asset classes except International Equity outperformed their benchmarks (with Real Estate matching the benchmark return)
- For the 5-year time-period all asset classes outperformed except Real Assets and US Equity.

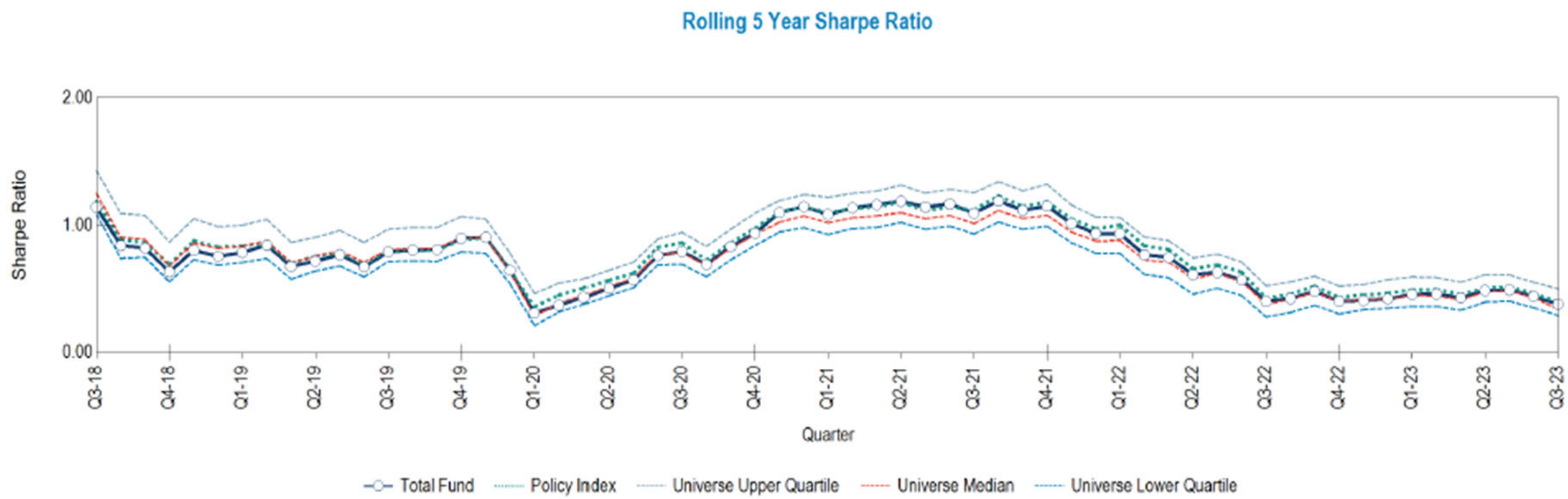
Peer universe comparison

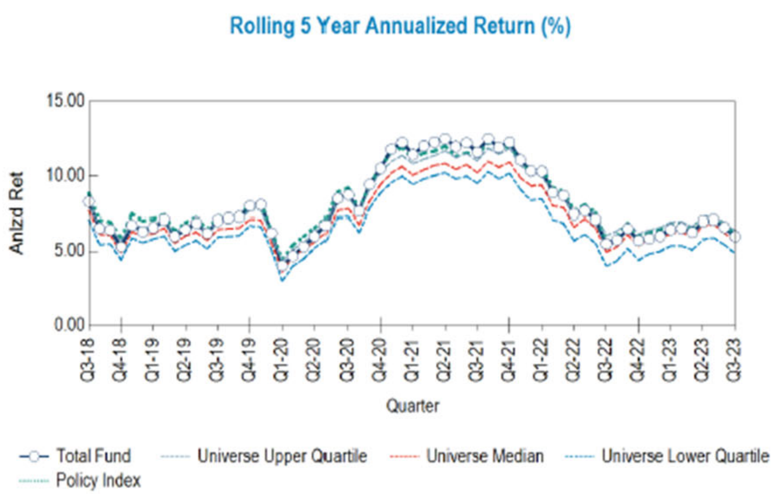


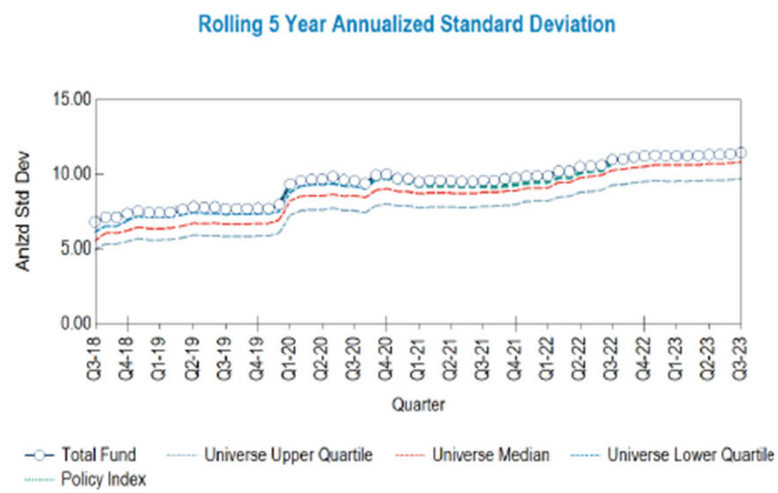
Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years		15 Years	
5th Percentile	-0.38		2.30		12.99		2.26		9.35		7.36		8.29		7.87		8.35	
25th Percentile	-1.59		1.24		11.28		-0.30		7.13		6.32		7.51		7.36		7.59	
Median	-2.06		0.62		10.25		-1.38		5.66		5.67		6.81		6.56		7.01	
75th Percentile	-2.77		-0.10		9.16		-2.41		4.90		4.83		6.20		6.01		6.57	
95th Percentile	-3.19		-1.07		6.79		-3.89		3.85		4.14		4.95		4.54		5.29	
# of Portfolios	73		73		71		70		70		70		69		66		61	
● Total Fund	-2.09	(54)	0.73	(45)	11.00	(33)	-1.62	(56)	6.66	(32)	5.97	(34)	7.64	(23)	7.11	(33)	7.97	(14)
▲ Policy Index	-2.01	(47)	0.63	(50)	10.61	(43)	-1.02	(38)	6.60	(32)	6.13	(31)	7.66	(22)	7.45	(18)	8.10	(12)
✖ Allocation Index	-2.14	(57)	0.53	(54)	10.55	(44)	-1.88	(62)	6.02	(42)	5.69	(48)	7.31	(37)	7.10	(33)	7.66	(20)

- In most periods, ACERA compares favorably vs. peers (i.e., well above median)

Risk-adjusted trend vs. peers

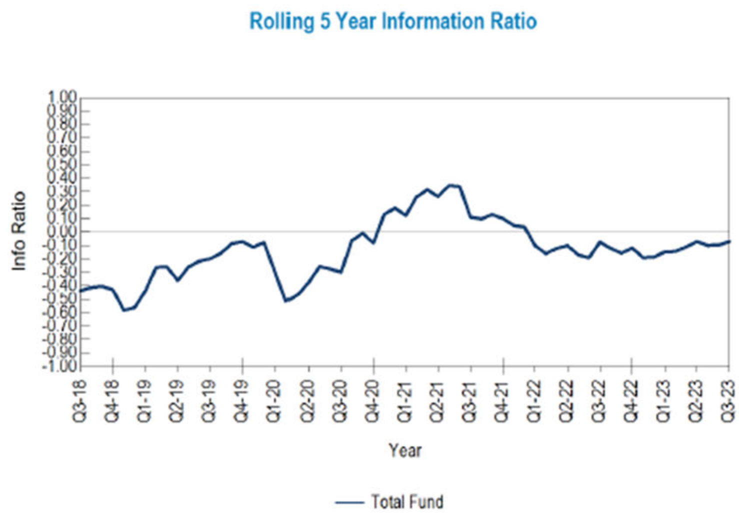


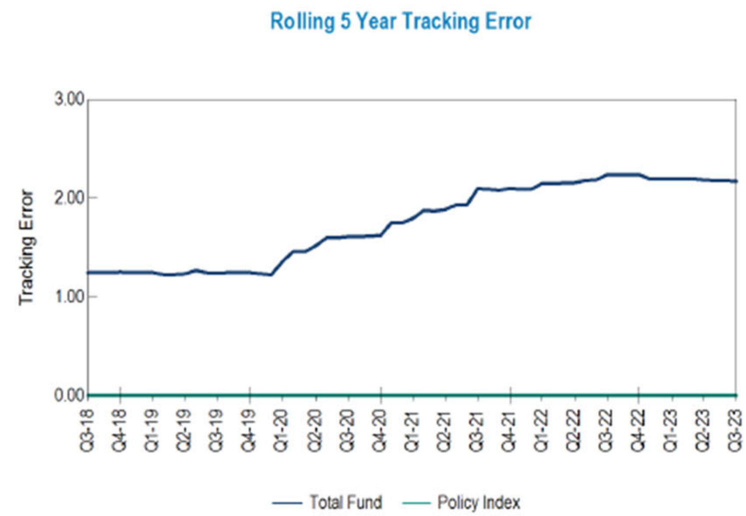




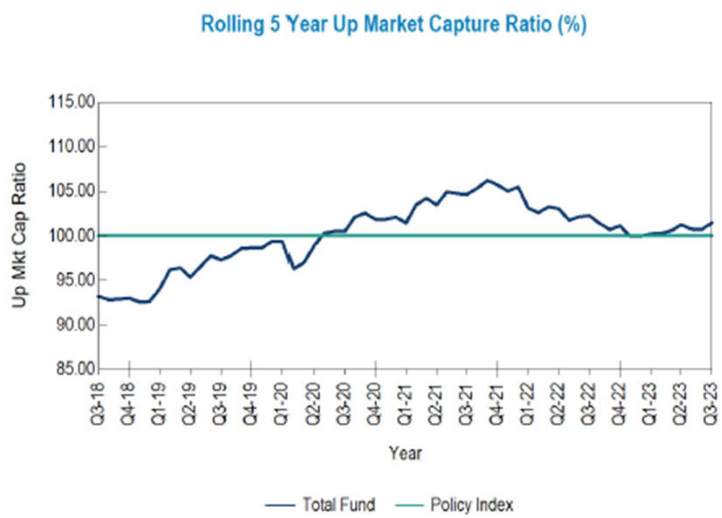
- ACERA's risk-adjusted return ratio (Sharpe) has been consistently at, or near, peer median.
- Rolling 5-year returns have been on an upswing since Q3, 2022
- Total fund volatility remains elevated relative to peers

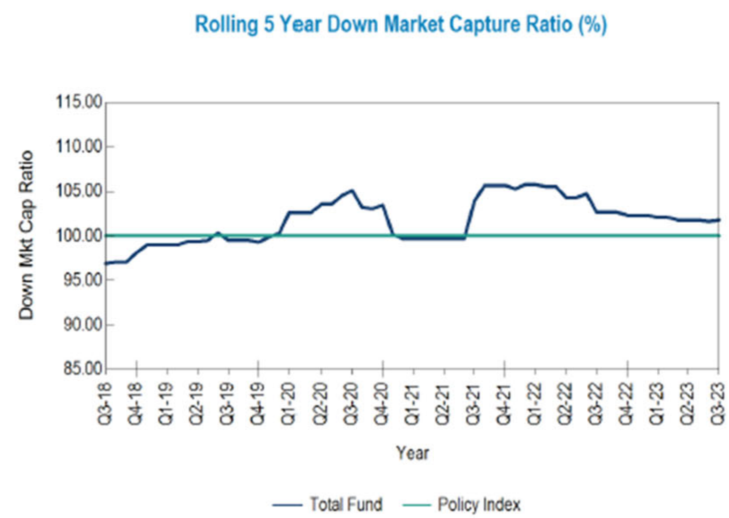
Trend in risk-adjusted metrics





- Risk-adjusted active returns have trended down recently as excess risk as increased





- The 5-year upside market capture has risen in recent quarters

Watch List

Manager	Date on Watchlist	Reason	Product Inception Date
Templeton	12/1/22	Organizational Change and Underperformance As of 9/30/23 data, Since inception net return of 4.06% vs benchmark (MSCI ACWI ex-US Small Cap) return of 4.18% and MSCI ACWI ex-US Value return of 4.25%.; 10-year gross-of fees return (3.95%) places Templeton in the 92nd percentile of ACWI ex- US Small Cap managers.	April, 2011
TCW	3/1/23	Underperformance and organizational change (recent retirements and team shift). Underperformance vs. Russell 1000 Growth benchmark occurred over 1, 3, 5, and 10-year periods, placing the firm in the lowest quartile versus peers over majority of cumulative time periods.	June, 1999

Appendix

Glossary

Active Return (aka Excess Return) – The difference between the active manager's return and the return on the manager's benchmark index.

Active Risk (aka Tracking Error) – the volatility (standard deviation) of active return.

Attribution – A process by which sources of excess/active return (e.g. active decisions by investment management professionals) are decomposed into the following effects:

- **Allocation** – The amount of excess returns attributable to allocation decisions amongst various asset classes.
- **Selection** – The amount of excess return attributable to selection of individual investments/managers within asset classes.
- **Interaction** – The amount of excess return attributable to both allocation and selection decisions acting in concert with one another.

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. 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%.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.

Glossary (cont.)

Upside Market Capture – A measure of the manager's performance in up markets relative to the market itself. A value of 110 suggests the manager performs ten percent better than the market when the market is up during the selected time period. The return for the market for each quarter is considered an up market if it is greater than or equal to zero. The Upside Capture Ratio is calculated by dividing the return of the manager during the up market periods by the return of the market for the same period. Generally, the higher the UMC Ratio, the better (If the manager's UMC Ratio is negative, it means that during that specific time period, the manager's return for that period was actually negative).[1]

Downside Market Capture - A measure of the manager's performance in down markets relative to the market itself. A value of 90 suggests the manager's loss is only nine tenths of the market's loss during the selected time period. A market is considered down if the return for the benchmark is less than zero. The Downside Capture Ratio is calculated by dividing the return of the manager during the down market periods by the return of the market during the same periods. Generally, the lower the DMC Ratio, the better (If the manager's DMC Ratio is negative, it means that during that specific time period, the manager's return for that period was actually positive).[1]

1 – Source: eVestment

Glossary (cont.)

Information Ratio – the ratio of active return to active risk, i.e., how much excess return an active manager delivers per unit of tracking error. A common basis of comparison in manager searches.

$$Active\ Return = (R_P - R_B)$$

The return difference between the portfolio return and the benchmark return

$$Active\ Risk = \sigma(R_P - R_B)$$

The volatility of the Active Return

$$Information\ Ratio = \frac{Active\ Return}{Active\ Risk}$$

Rearranging the formula…

$$(Information\ Ratio)\ x\ (Active\ Risk) = Active\ Return$$

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Hedge Fund Environment

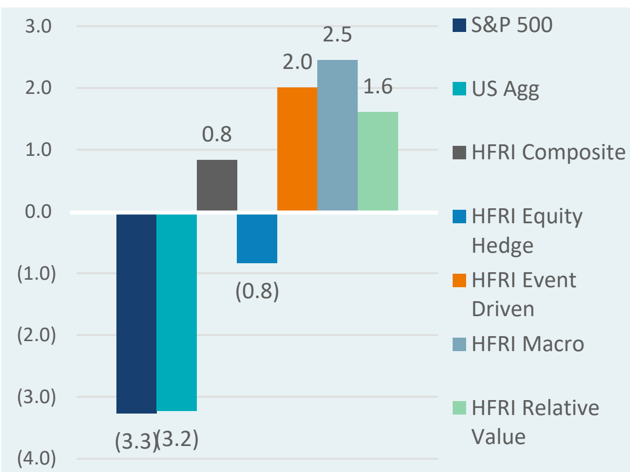
Hedge funds outperform, CTAs shine again

Hedge funds enjoyed broad outperformance vs markets in the third quarter as both stocks and bonds declined more than 3%. Most hedge fund strategies were actually positive on the quarter, reflected in the 0.8% return from the HFRI Composite Index.

Gains were led by Macro strategies while Event Driven was buoyed by a very strong quarter from Merger Arbitrage, rebounding after seeing spreads widen out earlier in the year. Popular Macro trades like short bonds and yield curve steepener paid off handsomely. Four of the last 7 quarters have seen simultaneous declines in the S&P 500 and the Bloomberg US Aggregate – in all of those, including the most recent one, CTAs have been positive.

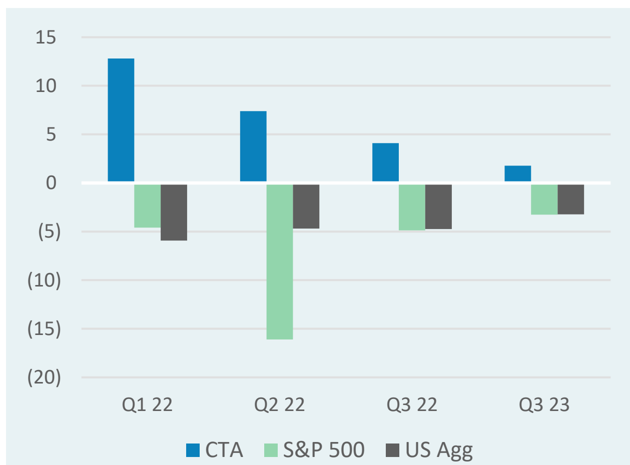
Credit-focused strategies also outperformed high yield as duration impacts were hedged and higher, typically floating rate coupons in areas like asset-backed offset any credit deterioration.

3Q 2023 QUARTERLY RETURNS



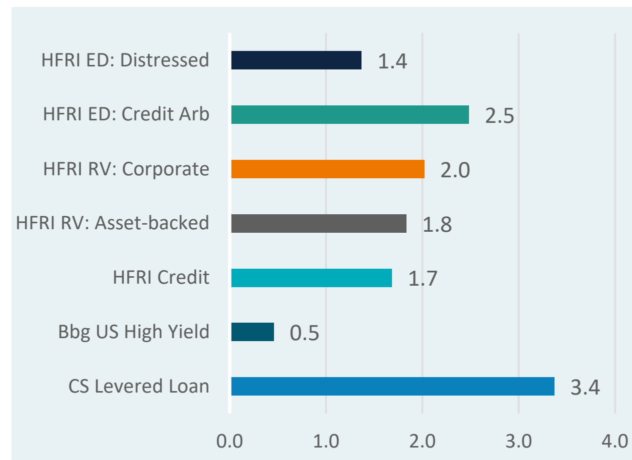
Source: HFR, MPI, as of 9/30/23

CTAS VS STOCKS/BONDS WHEN BOTH DECLINE



Source: MPI, SocGen. as of 9/30/23

3Q RETURNS FOR CREDIT STRATEGIES



Source: HFR, MPI, as of 9/30/23

ACERA Performance

Allocations

Target

Sub-categories	Target Allocations	Min./Max. Ranges
AR Portfolio	**8.0%**	**5% to 10.5%**
▪ *Fund of Funds**	*6.4%*	*4% to 8%*
▪ *Other Alternatives/Opportunistic*	*1.6%*	*0% to 4.0%*

Current (as of 9/30/2023)

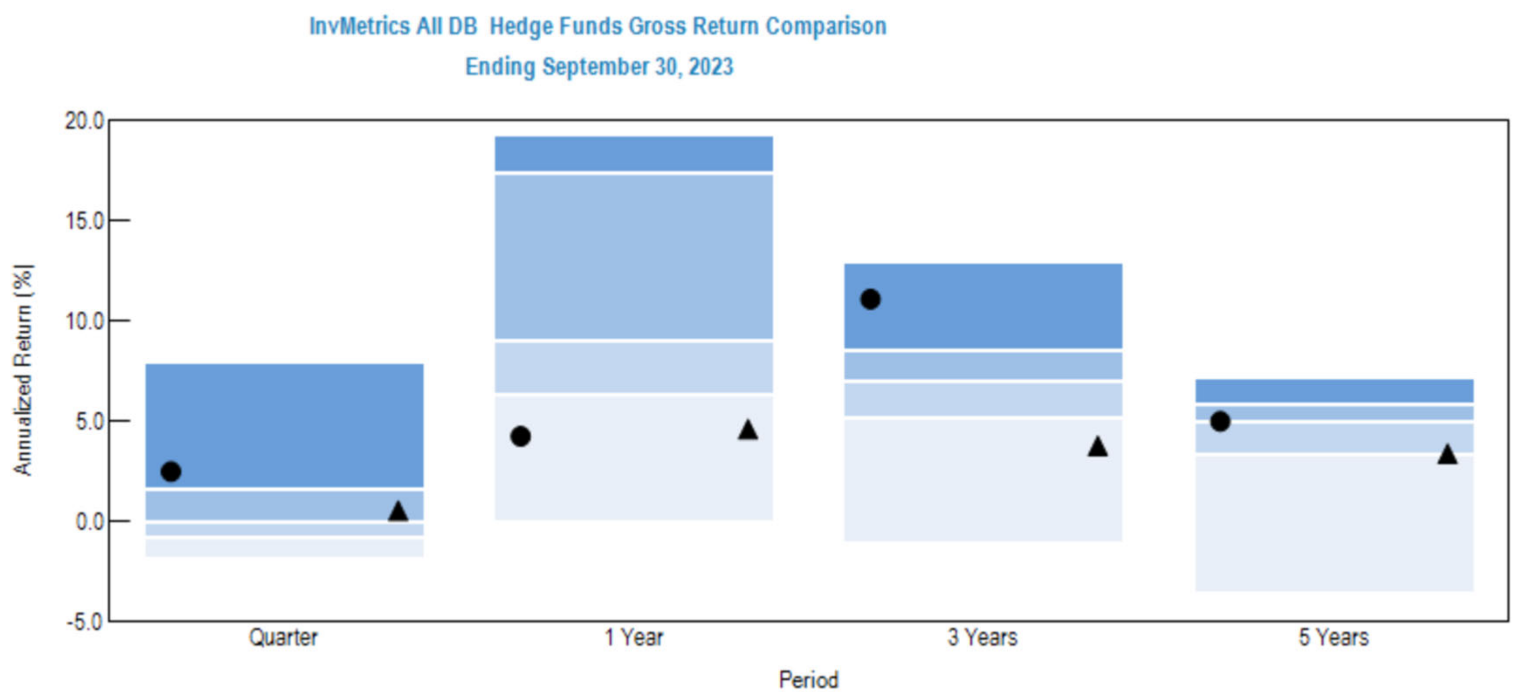
Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	**8.0%**	**5% to 10.5%**
▪ *Fund of Funds**	*6.4%*	*4% to 8%*
▪ *Other Alternatives/Opportunistic*	*1.8%*	0% to 4%

* Funding second Fund of One manage completed in two tranches August and September 2022.

Performance Summary

	Market Value ($)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	Inception (%)	Inception Date
										Ending September 30, 2023						
Absolute Return*	**896,453,963**	**100.0**	**2.5**	**5.1**	**5.1**	**4.3**	**11.1**	**5.0**	**4.3**	**6.1**	**15.0**	**-0.6**	**1.8**	**-2.2**	**4.2**	**Sep-11**
Absolute Return Blend			*0.5*	*2.8*	*2.8*	*4.6*	*3.8*	*3.4*	*3.8*	*-5.3*	*6.2*	*10.9*	*8.4*	*-4.0*	*3.9*	*Sep-11*

Relative Performance



	Return (Rank)							
5th Percentile	7.9		19.3		12.9		7.2	
25th Percentile	1.7		17.5		8.5		5.9	
Median	0.0		9.1		7.0		5.0	
75th Percentile	-0.8		6.3		5.2		3.4	
95th Percentile	-1.8		0.0		-1.1		-3.6	
# of Portfolios	126		116		100		87	
● Absolute Return	2.5	(12)	4.3	(84)	11.1	(7)	5.0	(51)
▲ Absolute Return Blend	0.5	(41)	4.6	(83)	3.8	(83)	3.4	(76)

Portfolio Statistics* (as of 9/30/2023)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.5	-25.3
Sharpe Ratio	0.49	0.68	0.60
Beta	0.27	0.07	1.00
Correlation to MSCI ACWI	0.82	0.24	1.00
Annualized StDev	4.8	4.2	14.6

*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5

Appendix

Glossary

Beta - A measure of systematic (undiversifiable) 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.

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 optimize the benefits of diversification when constructing an investment portfolio.

Internal Rate of Return (IRR) – the interest rate which is the net present value of all the cash flows (both positive and negative) of an investment.

Maximum Drawdown – the maximum loss from a peak to a trough of a portfolio before a new peak attained. Maximum drawdown measures the downside risk over a specified time period.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. 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%.

Glossary

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

Period Ending: June 30, 2023

Investment Performance Review

Private Markets

Alameda County Employees' Retirement Association

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Market Commentary

For Period Ending June 30, 2023

DEBT RELATED

- **With HY issuance up, leveraged loan issuance declined.** In the first half of 2023, US high yield issuance at $80.9 billion was up 25.9% compared to 1H 20221. US leverage loan issuance volume was $424.1 billion in 1H 2023, down 32.9% from the $632.3 billion in 1H 20221. In Europe, 1H 2023 new issue LBO Loan volume at $12.8 billion was down 40.1% from the same time in 2022 and down 90.7% from $137.7 billion peak in 20074.
- **Spreads tightened across the board except for CCC index.** US HY Credit Index spread decreased by 167 bps or down 28.2%2 versus the same period last year. BB and B index spread tightened by 141 bps and 109 bps, decreasing by 29.9%2 and 16.0%2 versus the same period last year. In the meantime, CCC index spread widened by 20.7%2 in 1H 2023 from 1H 2022.

- **Both leverage and interest coverage of large LBOs decreased in US and Europe.** Large Corp total leverage averaged 5.3x (Debt / EBITDA) in 1H 2023 for US new issue loans, down 11.5% from 5.9x in 1H 20223, and interest coverage averaged 2.7x (EBITDA / Cash Interest), down 28.8% from 3.8x in 1H 20223. Due to a significant decline in loan issuance in the last 12 months, not enough observations were tracked to compile a meaningful averages for middle market for the period ending June 30, 2023. In Europe, leverage multiples decreased 8.9% to 5.4x in the first half of 20234, down from 11.4x from peak in 20074.

GLOBAL

- **Private Markets dry powder increased globally.** In 1H 2023, global total dry powder was at $2.7 trillion, up 6.0% from 1H 20225. Global total PE ex Venture Capital dry powder was up by 6.8% to $1.3 trillion5. Global Venture Capital dry powder was up by 2.1% to $574.1 billion5. Global Private Debt dry powder was up by 2.2% to $434.4 billion5.

US BUYOUTS

- **Fundraising activity decreased.** In 1H 2023, US buyout firms raised $153.0 billion, down by 13.1% from the same time prior year5. Average fund size was up 3.7%, from $921.6 million in 1H 2022 to $956.2 million in the first half of 20235. US growth strategy raised $38.9 billion, down by 6.5% from $41.6 billion in 2021.
- **Investment activity was down.** During 1H 2023, US buyout firms invested in $376.8 billion (+6.5% from 1H 2022) into 2,342 deals (-8.3%)5. US growth strategy raised $41.5 billion5, down by 15.3% from $56.8 billion of the same time last year.
- **Dry powder increased.** In the first six months of 2023, US private equity dry powder was $853.8 billion, up by 16.7% from 1H 20225.

- **LBO price multiples down.** As of June 30, 2023, US LBO purchase price multiple (Enterprise Value / EBITDA) was at 11.8x , a 2.6% decrease from June 30, 20223.
- **Exit activity decreased.** During 1H 2023, US private equity firms exited 378 companies, representing $139.8 billion in total transaction value5. This represented a 10.8% decrease in the number of exits and a 0.7% decrease in total transaction value compared to the same time last year5.

US VENTURE CAPITAL

- **Fundraising activity dropped significantly.** US VC firms raised $33.3 billion in the first half of 2023, a 72.6% decrease from the same time last year5. 233 funds closed in the first six months in 2023, a 43.9% decrease from 1H 2022. The average US VC fund size decreased to $142.8 million by 51.2% versus the same period last year5
- **Investment activity decreased.** US VC firms deployed $85.6 billion in capital in 1H 2023, a 40.6% decrease from 1H 2022. The number of deals closed at 6,514, a 16.9% decrease from same time last year5. Average deal size decreased 28.5% from 1H 2022.
- **Dry powder increased.** In 1H 2023, US VC dry powder was at $279.8 billion, up 27.0% from 1H 20225.
- **Entry valuations and deal sizes mixed by stage:**
    - **Entry valuations.** Compared to June 30, 2022, the average pre-money valuations in 1H 2023 was: up 11.4% at $4.4 million5 for Angel stage, down 9.2% at $10.5 million5 for Seed stage, down 33.7% at $39.8 million5 for early-stage VC, and down 47.6% at $55.0 million5 for late-stage VC.
    - **Deal sizes.** Average investment per deal decreased to $8.6 million, a 41.5% decrease from prior year5. Over the past 3 years, except for the Seed stage (+55.1%), the average deal size of Angel-, Early- and Late-stage investments declined by 40.3%, 3.9%, and 27.7%, respectively5.
- **Exit activity decreased significantly with smaller transactions.** US VC firms exited 471 companies in the first half of 2023, down by 25.6% from the same time last year, but up 25.3% from three years ago5. This represented $12.0 billion in transaction value, down by 75.4% from the same period last year, and down by 73.5% from three years ago5. Largest sectors exited were Software and Commercial Products & Services.

EX US

- **Ex-US fundraising activity was up.** In 1H 2023, ex-US fundraising increased 23.0% from the same time in 2022 to $248.3 billion5. Fundraising in Asia decreased by 29.0% to $138.6 billion5, while Europe was up by 50.2% to $63.9 billion5.

- **Capital deployment decreased by VCs and Buyout managers in Europe and Asia.**
  - **In both Europe and Asia, VCs invested less capital into fewer deals.** In the first six months of 2023, number of deals closed decreased by 11.2% in Europe with 53.0% less in capital deployed at $27.9 billion. Similar to Europe, Asian VCs invested $5.6 billion, representing 78.9% less capital and 77.6% fewer deals than 1H 2022.
  - **Buyout deal activity and capital deployment dropped in Europe and in Asia.** In Europe, buyout firms transacted on $321.0 billion in aggregate value (-5.7% from 1H 2022)5. Asia buyout firms invested $1.3 billion in aggregate value (-92.6%)5.
- **Dry powder decreased ex-US.** PE dry powder outside the US decreased 3.7% to $1.1 trillion5 as of June 30, 2023. Dry powder outside the US was 3.5% less than dry powder in the US ($1.1 trillion)5.
  - **Europe VC and buyout dry powder both down.** VC at $56.8 billion and buyout at $274.7 billion were down 4.2% and 15.6% from 1H 2022, respectively5.
  - **In Asia, VC and buyout dry powder decreased in parallel with US and Europe.** VC at $204.5 billion, buyout at $160.6 billion, down 24.3% and 21.0% from 1H 2022, respectively5.
- **Purchase price multiples increased in Europe but decreased and Asia.** As of June 30, 2023, European buyout median purchase price multiples increased 9.8% to 8.1x EBITDA from the same time last year5. Asia buyout median purchase price multiples decreased 2.9% from 5.3x EBITDA from the same time last year5.
- **Exit activity increased a bit in Europe but weakened in Asia.** Europe PE aggregate exit value amounted to $135.7 billion in 1H 2023, a 3.0% increase from 1H 2022, while Asia PE exit value dropped by 24.1% to $61.5 billion[5].

Notes

1. *White & Case Debt Explorer (April 10, 2023)*
2. *Guggenheim High-Yield Bank Loan Outlook (Q1 2023)*
3. *S&P Global US LBO Review (4Q 2022)*
4. *S&P Global LCD European Leveraged Buyout Review (4Q 2022)*
5. *Pitchbook (December 31, 2022)*

* *Include Buyout, Venture Capital, Private Debt, Fund of Funds and Secondaries.*

** *Dry Power numbers are 6-month lag.*

Private Equity Portfolio

Investment Type	Policy Target	Policy Range	Market Value %	Market Value $	Unfunded Commitment $	Market Value + Unfunded $
Private Equity Portfolio	**11.0%**	**8-13%**	**9.7%**	**1,050,141,173**	**690,718,244**	**1,740,859,416**
Buyout	60.0%	30-80%	59.0%	619,598,136	401,128,340	1,020,726,476
Venture Capital	20.0%	0-40%	23.4%	245,607,801	70,378,590	315,986,391
Debt-Related/Special Situations	20.0%	0-30%	17.6%	184,935,235	219,211,315	404,146,550

Portfolio Summary

- As of June 30, 2023, the Private Equity Portfolio had a total market value of $1,050,141,173, with $619,598,136 in Buyout, $245,607,801 in Venture Capital, and $184,935,235 in Debt-Related/Special Situations. Total market value is the current reported value of investments, excluding remaining unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed $1,400,132,609 toward its Private Equity commitments. Unfunded commitments totaled $690,718,244.
- The portfolio exposure at 9.7% is below the 11.0% policy target effective January 1st, 2021, but within its 8-13% target range. Compared to December 31st, 2022, portfolio exposure is the same, and up 0.7% from June 30th, 2022. All sub-asset classes are within policy range.

Portfolio Activity

- So far in 2023, ACERA has made the following commitments:
  - $5M to Eclipse V, $50M to CD&R XII, $40M to Genstar XI, $38M to Davidson Kempner Opportunity VI, $38M to Crestline Opportunity V, $50M to Gridiron Capital V.

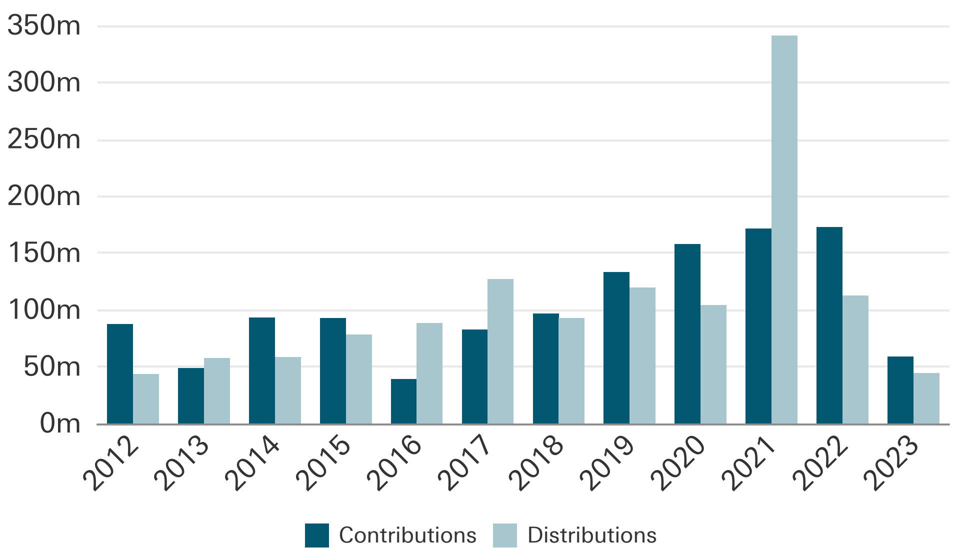
Performance

- The Total Private Equity portfolio's performance, as measured by net IRR, is 15.63%, 122 bps above the Refinitiv C/A Global All PE Benchmark 14.41%. Portfolio returns rank above median on all measures: net IRR and Total Value Multiple (TVPI), and Distribution Multiple (DPI).
- The portfolio is currently valued at $1,050,141,173. Together with $1,290,596,196 in realized distributions, the Total Value at $2,340,737,371 is $940,604,762 above $1,400,132,609 in total capital contributions, resulting in a total value multiple of 1.67x and a distribution multiple of 0.92x.

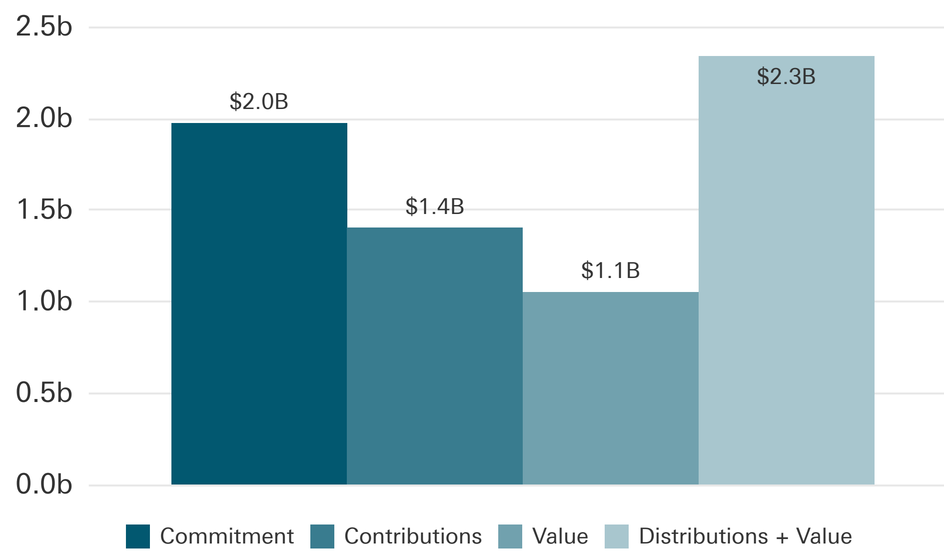
Attribution of returns:

- Buyouts is up $494,058,912 / 1.63x (Great Hill VI & Warburg Pincus XI leading), with .84x of called capital realized and distributed;
- Venture Capital is up $345,619,311 / 2.55x cost (General Catalysts VI & Khosla IV leading), with 1.45x of called capital realized and distributed.
- Debt-Related, up $100,926,537 / 1.26x cost (Centerbridge Special Credit & OHA II leading), with 0.79x of called capital realized and distributed.
- Within the Total Private Equity, the current allocation of market value exposure by strategy is 59.0% to Buyout, 23.4% to Venture Capital, and 17.6% to Debt-Related.

Cash Flows on Annual Basis as of June 30, 2023



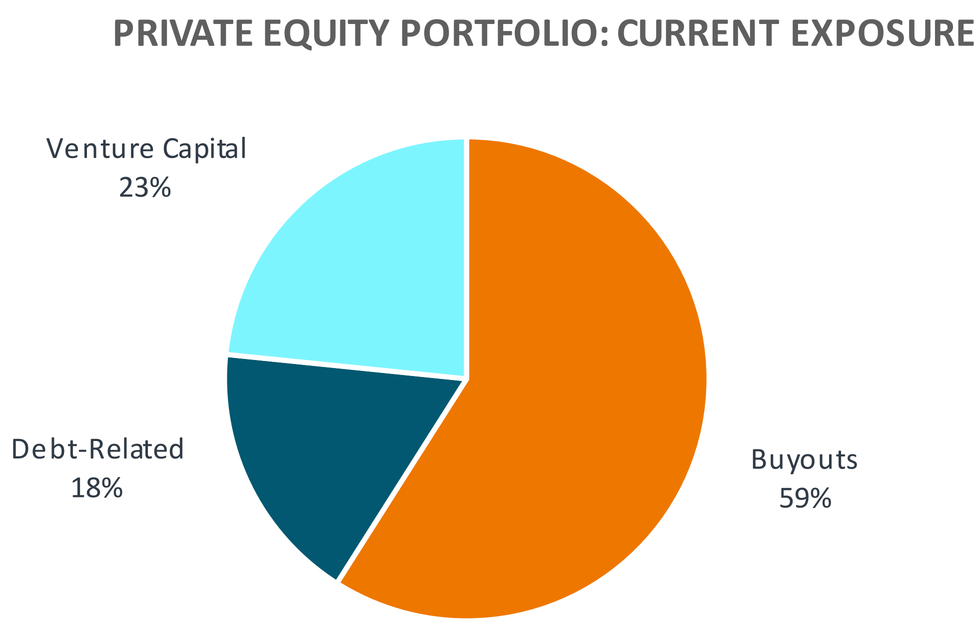
Cumulative Cash Flow and Valuation as of June 30, 2023



	1 Year	3 Year	5 Year	10 Year	Since Inception
Total Private Equity	**9.58%**	**24.09%**	**15.57%**	**18.16%**	**15.63%**
Refinitiv C/A Global All Private Equity Benchmark [1]	***-1.82%***	***21.29%***	***14.61%***	***13.72%***	***14.41%***
Buyout	**15.66%**	**27.58%**	**16.43%**	**19.22%**	**15.85%**
Refinitiv C/A Global Buyout Benchmark [1]	*2.64%*	*22.77%*	*15.71%*	*15.15%*	*15.85%*
Venture Capital	**-3.31%**	**26.32%**	**22.44%**	**23.01%**	**21.53%**
Refinitiv C/A Global Venture Capital & Growth Equity Benchmark [1]	*-10.69%*	*21.44%*	*17.79%*	*16.65%*	*17.41%*
Debt-Related / Special Situation	**5.56%**	**12.20%**	**4.60%**	**6.82%**	**9.17%**
Refinitiv C/A Global All Debt Benchmark [1]	*4.73%*	*16.33%*	*9.89%*	*9.81%*	*10.88%*

1 Benchmarks: Refinitiv C/A as of 6/30/2023, vintage 2008 through present.
2 ACERA's inception date of November 21, 2008 vs. Refiniv C/A's inception date of January 1, 2008.

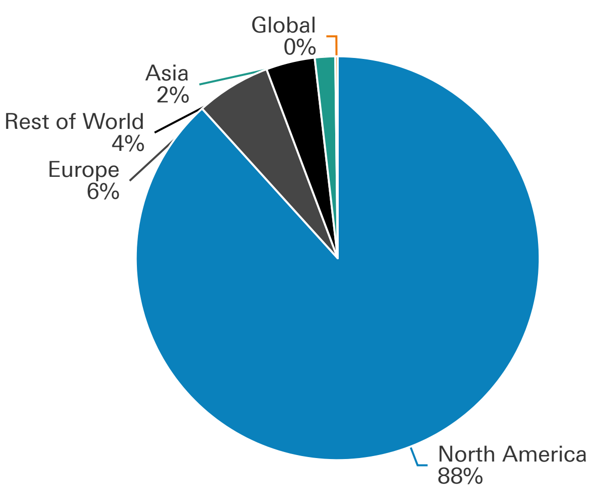
Investment Type	Commitment	Reported Value
Buyouts	$1,213,851,282	$699,051,795
Debt-Related	$578,688,092	$184,935,235
Venture Capital	$179,500,000	$166,154,142
Total	**$1,972,039,374**	**$1,050,141,173**



Geography	Reported Value
Global	$1,953,116
North America	$897,070,055
Europe	$60,856,416
Asia	$16,526,580
Rest of World	$39,739,098
Total	**$1,016,145,265**

*Values exclude AG Credit Solutions Fund II, AG CSF2A Dislocation, Centerbridge Special Credit Partners, & Partners Group Secondary 2008 due to lack of specific investment information

Reported Value by Geography

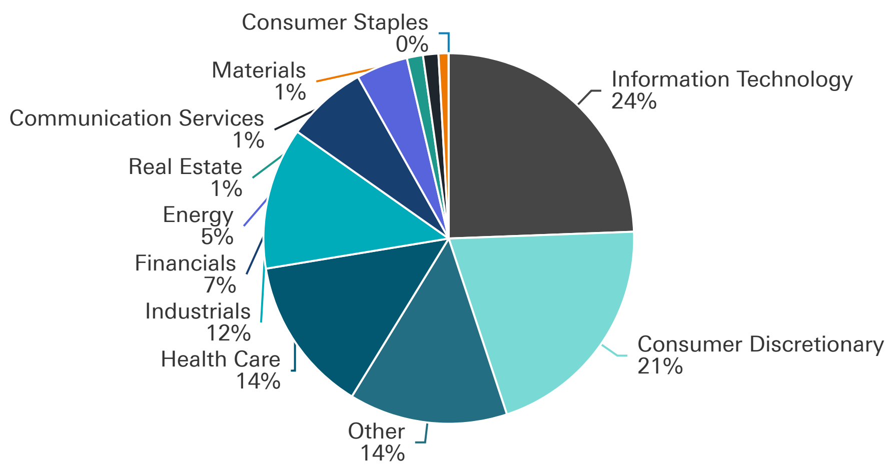


Based on the value of portfolio companies and fund reported exposures as of 6/30/2023. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

Global Industry Classification Standard	Reported Value
Communication Services	$8,538,725
Consumer Discretionary	$213,098,314
Consumer Staples	$133,810
Energy	$42,698,234
Financials	$73,521,255
Health Care	$141,780,096
Industrials	$128,735,083
Information Technology	$248,859,476
Materials	$9,104,353
Real Estate	$14,570,349
Other	$135,105,568
Total	**$1,016,145,265**

*Values exclude AG Credit Solutions Fund II, AG CSF2A Dislocation, Centerbridge Special Credit Partners, & Partners Group Secondary 2008 due to lack of specific investment information

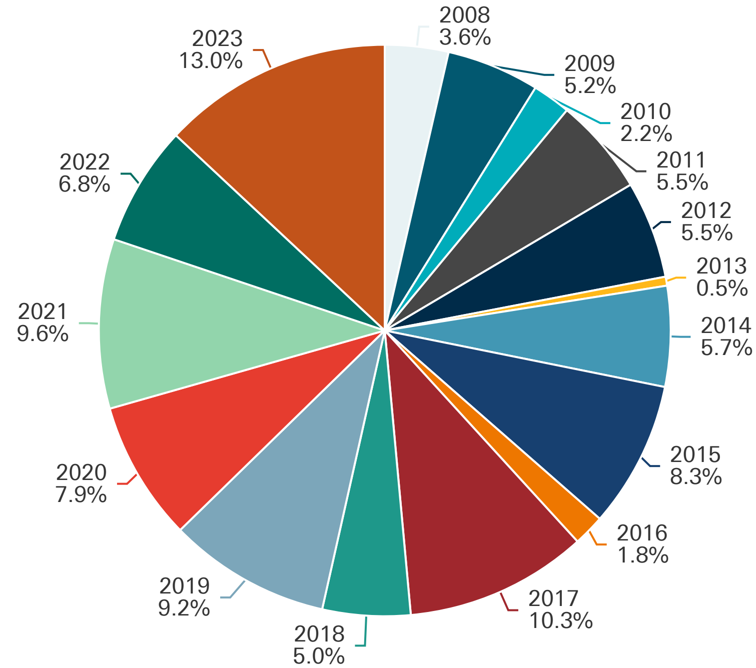
Reported Value by Industry



Based on the value of portfolio companies and fund reported exposures as of June 30, 2023. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

Vintage Year	Commitments	Reported Value
2008	$70,790,940	$8,941,234
2009	$103,500,000	$14,620,688
2010	$42,500,000	$941,794
2011	$108,189,282	$43,206,075
2012	$108,500,000	$87,889,907
2013	$10,000,000	$615,022
2014	$112,080,000	$78,418,759
2015	$163,250,000	$122,518,555
2016	$35,000,000	$26,039,613
2017	$203,522,152	$165,963,144
2018	$98,000,000	$106,772,189
2019	$181,000,000	$185,213,816
2020	$155,707,000	$102,021,555
2021	$189,000,000	$74,113,144
2022	$134,000,000	$19,169,863
2023	$257,000,000	$13,695,815
Total	**$1,972,039,374**	**$1,050,141,173**

Commitments by Vintage Year



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Private Credit Portfolio

Investment Type	Policy Target	Policy Range	Market Value %	Market Value $	Unfunded Commitment $	Market Value + Unfunded $
ACERA Plan Assets - Total				**10,881,952,307**		
Private Credit:	**4.0%**	**3-5%**	**2.7%**	**295,349,103**	**89,355,312**	**384,704,415**
Private Credit	4.0%	**3-5%**	100.0%	295,349,103	89,355,312	384,704,415

Portfolio Summary

- As of June 30, 2023, the Private Credit Portfolio had a total market value of $295,349,103. Total market value is the current reported value of investments, excluding remaining unfunded commitments.
- Since ACERA's initial allocation to Private Credit in Q3 2019, the Plan has contributed $295,871,539 toward its aggregate $375,000,000 commitments. Unfunded commitments total $89,355,312.
- The portfolio exposure at 2.7% is below the 4.0% policy target and policy range of 3-5%. Compared to December 31st, 2022, ACERA's private credit exposure is up 0.1%, and up 1.4% from December 31st, 2021.

Portfolio Activity

- So far in 2023, ACERA has made a $80M commitment to Ares Senior Direct Lending Fund III.

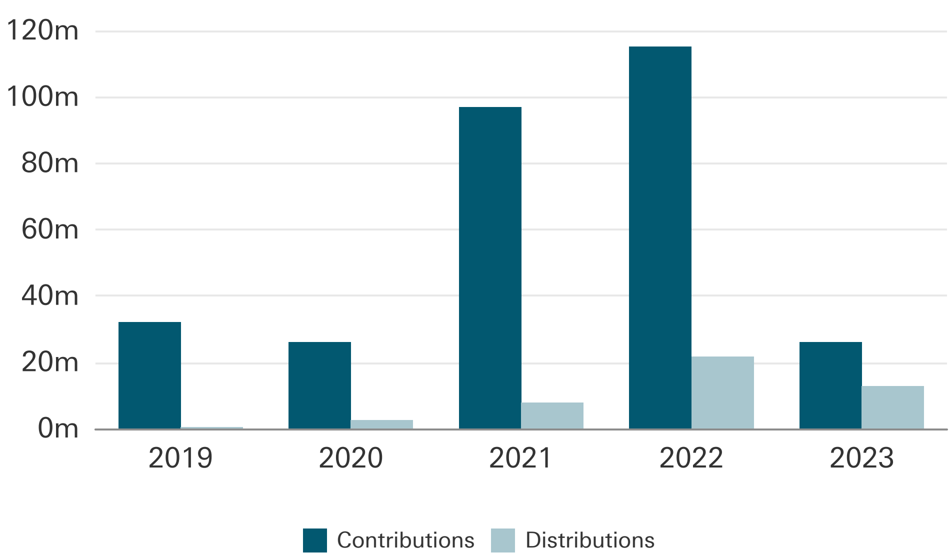
Performance

- The Private Credit's performance, as measured by net IRR, is 8.29%, 367 bps above the same cash flow invested in the Morningstar LSTA Leveraged Loan Index of 4.62%. The capital-weighted average life of investments is 1.81 years. While IRR is a meaningful measure of performance at this stage, the portfolio is still growing and not yet mature.
- The portfolio is currently valued at $295,349,103. Together with $45,118,710 in realized distributions (0.15x), the Total Value at $340,467,813 is $43,985,509 above $295,871,539 cost (1.15x TVPI), net of fees.
- Capital calls have dominated cash-flow activity thus far while new investments are made.

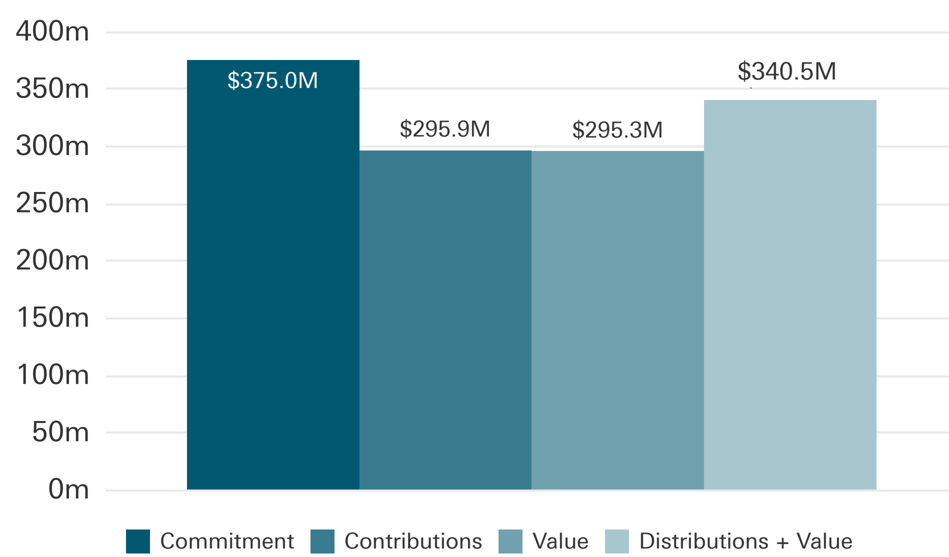
The Portfolio has five commitments to date:

Ares Senior Direct Lending Fund II, L.P.	$70.0 M
BlackRock Direct Lending Fund IX, L.P.	$75.0 M
HPS Specailty Loan Fund V, L.P.	$75.0 M
Monroe Private Credit Fund IV, L.P.	$75.0 M
Owl Rock First Lien LP	$80.0 M

Cash Flows on Annual Basis as of June 30, 2023



Cumulative Cash Flow and Valuation as of June 30, 2023



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Alameda County Employees' Retirement Association

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Outlook summary

Outlook summary

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Core real estate	Core real estate was up 7.5% in 2022, primarily due to a strong start to the year in the first two quarters. The momentum has shifted however, as rising interest rates have put downward pressure on valuations. The appraisal process has been slow to recognize this as transactions have been falling since the 3rd quarter of 2022, hampering the ability to find comparable sales. Redemption queues are as high as they've been since the GFC. We expect further write-downs to hit core real estate funds in 2023.	— Cap rates have not yet fully adjusted to the new higher interest rate environment. 4th quarter of 2022 saw a modest adjustment, but we expect more to come over the next several quarters — Core real estate returns tend to have high correlation to overall GDP growth. There are risks to weakening fundamentals if a recession materializes.	We recommend clients continue to rebalance/reduce exposure to core ODCE funds where possible, although redemption exit queues are in place for most funds. We recommend continued diversification into alternative property types to reduce existing exposures to office, which may face longer term challenges.	**Negative**
Value-add real estate	Transaction levels have slowed down dramatically as wide bid-ask spreads are persisting. Value-add GPs are seeing few opportunities right now as sellers are still reluctant to transact at the clearing prices currently being offered. Increasing borrowing costs will likely apply pressure on returns for strategies reliant upon higher leverage. An economic slowdown is expected to reduce rent growth opportunities.	— Rising interest rates will increase borrowing costs on higher leveraged value-add strategies, pressuring total returns. — Slowing rent growth as the economy cools has the potential to further reduce forecasted returns	We continue to favor strategies with limited focus on office and those less reliant on high leverage. Asset management value-add will be important as cap rate compression and market growth will be less reliable sources of return. Patience will be a virtue for management teams as transactions, when they happen today, have yet to fully adjust for higher borrowing costs.	**Neutral**
Opportunistic real estate	Over the last couple of years, pockets of stress have occurred in Covid-19 affected sectors such as office, retail and hospitality. The rising interest rate environment is producing stress and distress across the real estate spectrum as the cost of financing balloons, loan-to-values move up and lenders pull out of the market. Borrowers will be forced to get creative with financing as they often lack fresh equity capital and want to minimize their dilution. Preferred equity gap financing, structured solutions and investments in debt may see attractive opportunities. We could see the reemergence of NPL portfolios in Europe as banks shed assets to shore-up their balance sheets.	— Rising interest rates will increase borrowing costs on higher leveraged strategies, pressuring total returns. — Competition could be a challenge as large sums of capital have been raised waiting for this opportunity to emerge. — Increasing construction costs due to materials and labor may pressure development strategies.	Non-core funds with vintage years during periods of economic stress tend to be some of the best performing vintages. The impact from higher rates will likely create more attractive entry points. Loans coming due at higher borrowing costs and at higher loan-to-values sets the stage for opportunities to provide rescue capital. GPs with experience in distressed situations and those able to be flexible up and down the cap stack are viewed favorably.	**Positive**
Real estate debt	Lending rates have increased, both from floating rate base rates as well as spreads. Traditional lending sources (banks and insurance companies) are retreating from writing loans as they move to reduce risk across their balance sheets. The wall of maturities coming due over the next few years will need refinancing and private lenders are well positioned to take advantage of the opportunity.	— Rising rates, while generally positive for lending strategies, could also decrease transaction volumes and therefore increase competition for deals. — Loan defaults are also on the horizon so having capabilities to structure workouts will be important	Senior lending strategies look attractive as borrowing costs have risen, both in base rates and spreads. Private capital providers look attractive as there will be less competition from traditional lending sources.	**Positive**

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
REITs	REITs were down 27.0% in 2022, reflecting an implied cap rate increase across sectors. REITs rallied back in early 2023, erasing about half of the loss they experienced in 2022 but have more recently sold-off again as financials have come under pressure. While REITs valuations are somewhat pricing in a higher rate environment, we would not characterize the current valuations as cheap or compelling.	— REITs have higher leverage than core real estate — Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short periods. — REITs are sensitive to economic decline and general equity market volatility.	Verus believes REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage and higher exposures to non-core sectors. Active management is preferred. REIT valuations are currently at a slight discount; however, this has been volatile and difficult to time. If we see a substantial sell-off in 2023, we could pivot to a positive outlook, but we are not there yet.	**Neutral**
Commodities	Commodities had another impressive year in 2022, led by the energy sector, which was up +36% for the year. The asset classes final year returns masked what was a highly volatile year as Fed rate rises began putting pressure on inflation forces. While still early in the year, commodities are experiencing selling pressure as central banks continue to tighten monetary policy in order to stamp out inflation.	— Central banks have signaled their primary goal is to contain inflation which, if successful, would be a headwind for commodities. — Investors have benefitted from steep backwardation in oil-related commodities, but as front month contracts move lower, the curve trade is likely to erode.	Verus does not view commodity futures as an attractive asset class to hold long term. As an inflation hedge, commodities are one of the best exposures to own that benefits from early stages of inflation. We are even more cautious about a position in commodities this year and would consider reallocating some of your exposure to more attractive segments of the market.	Negative
TIPS	Rising inflation has led to positive total returns and outperformance of TIPS relative to nominal bonds. Breakeven rates have risen sharply following the lows in 2020, especially in 5-year break-evens. Currently, TIPS have a negative yield and are susceptible to rising rates though that can be offset if inflation continues to exceed market expectations. The other concern is the unwinding of the Fed balance sheet where TIPS are widely held, putting additional selling pressure on the bonds.	— Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. — Continued low rates creates a high cost of carry.	Low absolute current yields and uncertain inflation expectations has led to low total return expectations for TIPS, especially relative to other real asset investment opportunities. If inflation continues higher, TIPS could provide protection to portfolios.	**Neutral**

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Core Infrastructure	Performance in core infrastructure was strong in 2022, as capital flowed into the sector and valuations improved, especially for energy-related assets. Along with performance, the high inflationary environment increased LP interest in the asset class. Fundraising continues to increase as more managers offer evergreen fund structures. We expect the higher interest rate environment to be a headwind to valuations and would not be surprised to see write-downs beginning to ripple through the open-end market in 2023. While relatively resilient to recessionary forces, sub-sectors linked to GDP like transportation and logistics may also face challenges.	— Strong fundraising trends in infrastructure has elevated valuations and increased competition for high quality assets. — Infrastructure assets provide varying degrees of inflation protection. While some assets have contracted annual revenue increases tied to CPI, many others have pre-determined increases at 2-3% or no adjustments at all. — Core assets are sensitive to interest rates and with inflation trending down, increased costs of capital could erode margins and push valuations lower.	Entry today is less attractive given rich valuations and an elevated interest rate environment. We prefer allocations to value-add, although core can still maintain defense characteristics from sectors less exposed to GDP risk. We would recommend waiting on new commitments to core open-end infrastructure funds until we get a better sense for the path of interest rates and/or we begin to see funds adjust valuations lower to account for the higher cost of capital environment.	**Negative**
Value-add Infrastructure	Transaction activity has been robust the past 12 months, despite the rising rate environment. As inflation slows and cost of capital stays elevated, we would expect that to cool as buyers adjust valuations lower. There remains a significant capital need for more modern infrastructure in order to keep up with the digital economy and electrification of the grid. We would be cautious about strategies that expose investors to technology risk and/or commercialization risk in both sectors.	— Many GPs that have been successful in the sector have grown rapidly, raising $15+ billion-dollar funds. Deploying this amount of capital while still delivering alpha becomes a challenge for most private market managers. — Increased interest rates will have two affects: eroding margins as the cost of debt increases and increasing cap rates as investors demand a higher equity return. The change in expectations around what is "market value" is likely to slow transactions.	The asset class offers a compelling return profile that aligns well with long duration pools of capital. Value-add infrastructure comes with higher operational/execution risk than core so investors should expect a broader range of outcomes and greater emphasis on manager selection. Given the shift in interest rate environment, we expect valuations to improve but that transition could be bumpy.	**Neutral**
Energy Transition	New development projects of renewable assets will continue to accelerate as solar and wind farms are now the cheapest form of new build electricity. Outside of traditional solar & wind, there are potentially higher returning opportunities for newer technologies such as battery storage and CC&S. Policies like the Inflation Reduction Act will act as a catalyst, increasing adoption and making technologies more viable. Growth in electric vehicles is expected to strain our existing power generation capabilities and transmission infrastructure which presents an investment opportunity but does challenge the transition away from hydrocarbons.	— The market is becoming more competitive with over 4x as much capital fundraised today as compared to the last decade. — Several approaches that reduce our carbon emissions such as green hydrogen and carbon capture technology are nascent and commercially unproven. Investments in this space will take venture-like risk and rely on significant cost reductions as well as favorable policy regimes to be successful.	Energy demand growth will increase opportunities in the energy transition sector but the opportunity to achieve an attractive return remains difficult given competition. Sectors like EV infrastructure and Distributed Energy Resources offer decreased technology risk and attractive markets for growth. Tailwinds for the strategy make for interesting opportunities though we are seeing risk underpriced in the marketplace so backing the right manager will be critical.	**Neutral**

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Oil & Gas	Much of what we wrote about Oil/Gas investing in 2022 still applies now. The one crucial difference is that tightening central bank policy now brings demand uncertainty and higher financing costs for producers. Reinvestment in new oil & gas supply is still an issue, even with higher commodity prices, as E&P companies favor returning cash to investors and governments place additional burdens on hydrocarbon extraction. There remains tailwinds in favor of commodity producers but the demand picture from slowing economic activity adds additional risk. We still believe that private markets capital that funded a lot of the growth in energy production will continue to shrink as institutions shift capital towards cleaner forms of energy.	— Oil/gas producers made record profits in 2022, though those are set to come down as commodity prices fall and operating costs skyrocket. The temptation to allocate capital to the sector is understandable but for private capital investors, we still believe the exit risk is too high for us to gain comfort. Older oil/gas funds are still struggling for liquidity and absent a complete reversal of a low carbon future, we think that will only get worse 7-10 years down the road as funds investing today look for an exit. — Longer-term, oil demand is expected to decline as non-carbon sources of power outcompete hydrocarbons.	Higher commodity prices continue to reward owners of commodity producers with record profits. There was a time when investing in oil/gas funds was a reasonable strategy, albeit highly cyclical. Today, the challenges in liquidity, regulatory policy and demand uncertainty make underwriting formidable. For investors with a confident view on the direction of energy commodity prices, we would consider public market investment opportunities in E&P over an illiquid private fund investment.	**Negative**
Midstream Energy / MLPs	Midstream indices were up around 30% in 2022, outperforming most other sectors. The last two Outlooks highlighted the challenges that private midstream funds would face in deploying capital to traditional gathering and processing deals and that was largely accurate. Public midstream companies are outcompeting private funds with a lower cost of capital and the opportunity set is narrower today than it was 10 years ago. While we were negative on the midstream asset class last year, we still find it challenging to recommend an investment in an asset class with long-term demand uncertainty.	— The public midstream market appears stronger and more attractive than it has been in recent years but the long-term outlook for the asset class remains weak. The near-term performance for the asset class is likely to be attractive but tactical trades into the asset class have been incredibly challenging to time. After two years of exceptionally high returns, MLPs are still trailing listed infrastructure by a wide margin on a 5-, 7- and 10-year basis.	We retain a negative outlook for midstream energy, despite the positive tailwinds that higher oil/gas prices could bring to this sector in the near-term. Longer-term, we think the unknown risks remain too high for our comfort.	**Negative**

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Mining	There has been a lot of hype around demand growth in industrial metals as the transition to clean energy moves forward. Notable price jumps in metals/minerals like Lithium, Cobalt and Copper over the past few years as demand has surged lend credibility to the story. We see the same long-term trends as others and have been positive on the sector for many years. Industrial metals did soften in 2022 and are down so far in 2023 though long-term the tailwinds of demand appear intact. That said, a global economic slowdown and uncertainty around China consumption has put near-term pressure on many mining commodities. We still prefer the tailwinds of mining to petroleum but would not be surprised if prices cool off in 2023.	— Global GDP growth and the economy in China are the two biggest risks in the sector. China represents a disproportionately large buyer of industrial metals, so its economy and industrial output have a large impact on metal prices. — Recycling, substitution and more efficient extraction methods are always a concern as commodity prices move higher. High commodity prices tend to end the same way, with lower commodity prices as either demand falls or with unexpected surges in supply. — Investors need to be keenly aware of the jurisdictions that they have exposure to, and the companies track record on ESG issues.	Longer-term, we believe the demand outlook looks favorable for several industrial metals. We would not be surprised to see near-term price weakness as new supply comes online but that could be a more interesting entry point. The mining majors are flush with cash which could trigger an M&A cycle which would be good for the junior miners. However, there are a host of idiosyncratic risks in funding mining operations outside of the macro-economic environment. We will look for skilled GPs with a track record of successfully managing these risks while generating attractive returns.	**Positive**
Timberland	Timberland was up 12.9% in 2022, most of which was appreciation driven. Unlike other commodity sectors that experienced meaningfully higher prices, sawtimber prices, at least for southern pine, were up a modest 1.6% in 2022. Income, as a component of the NCREIF Timberland return, was actually lower in 2022 than it was in 2021. Land values went up in 2022 due to lower discount rates but we question how sustainable that will be if cash flows are flat to negative YoY. Housing starts have collapsed in the past 12 months as mortgage rates more than doubled, which is a bearish sign for lumber demand. Overall, we do not see returns keeping up with their 2021 and 2022 levels for the asset class.	— Projected lower inflation levels, slowing housing construction and higher input costs are just some of the issues creating headwinds for the asset class. The Southern U.S. timber region has yet to see the sawtimber price appreciation that other regions have experienced and appear set to miss out on the surging lumber prices that hit consumer the last few years. — Liquidity has been an issue for the asset class for the better part of a decade and fundraising trends have yet to improve to the point that we could see transactions becoming robust.	Despite the last two years of above average returns, we would continue to avoid allocations to timberland. There are more attractive options available in real assets and many that have cash flows that justify the higher valuation. Fundraising has been slow to non-existent for closed-end timber funds for several years which has resulted in a slow transaction market.	**Negative**

Outlook summary (continued)

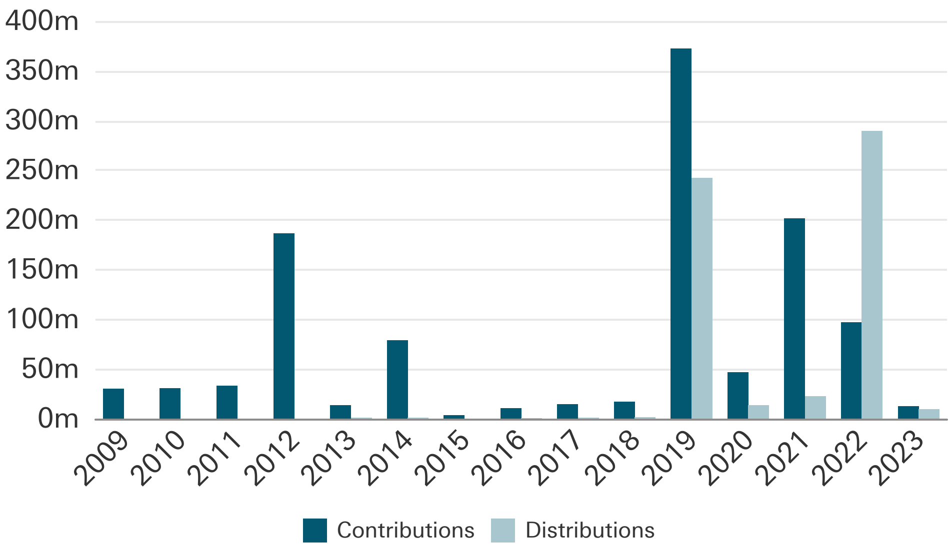
Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Agriculture	After several years of flat cropland prices, 2021 and 2022 saw a meaningful jump in land values on the back of higher commodity prices. Supply disruptions from Covid and more recently, the War in Ukraine, sent grain prices to multi-decade highs that have begun to stabilize in 2023. Fundraising has been slow in the last few years as income returns remained unattractive, and investors favored other asset classes. Still, agriculture investments remain a reasonable hedge against inflation and provide a stable return profile from land appreciation and yield. Structural drivers are making agriculture more attractive as global demand rises and the amount of arable land remains relatively stable.	— Agriculture is a highly illiquid asset class that is not suited to tactical investment opportunities. The asset class does look more attractive today, relative to recent history, but enthusiasm should be tempered given the long hold periods (>10 years) and volatile commodity prices. We would recommend diversifying across crop types and geography within the U.S. — The War in Ukraine has revealed the extent to which Eastern Europe and Ukraine have been major suppliers of certain grains and their disruptions impact on global commodities. It has also highlighted the risk that comes from investing outside stable markets like the U.S. While Ukraine was not a preferred destination for U.S. institutional investors in agriculture, the returns available in emerging economies are not high enough to overcome the currency and economic/political risk.	Agriculture crops are broadly broken down into row and permanent crops with row crops benefiting the most from recent supply disruptions. Row crops also make up around 75% of all acreage planted in the U.S. so liquidity and market depth is greater, relative to permanent crops. That said, row crops have lower income potential and less value-add optionality. For investors seeking pure-play cropland investments, we would recommend diversifying across row and permanent crops focused on the U.S. market. The fragmented nature of farmland in the U.S. has made scaling a challenge so we would be weary of strategies seeking to deploy large pools of capital (>$1B). We also view agriculture investments where crop and land are a component of a broader value-add investment strategy as attractive.	**Neutral**

Real Asset Portfolio Performance

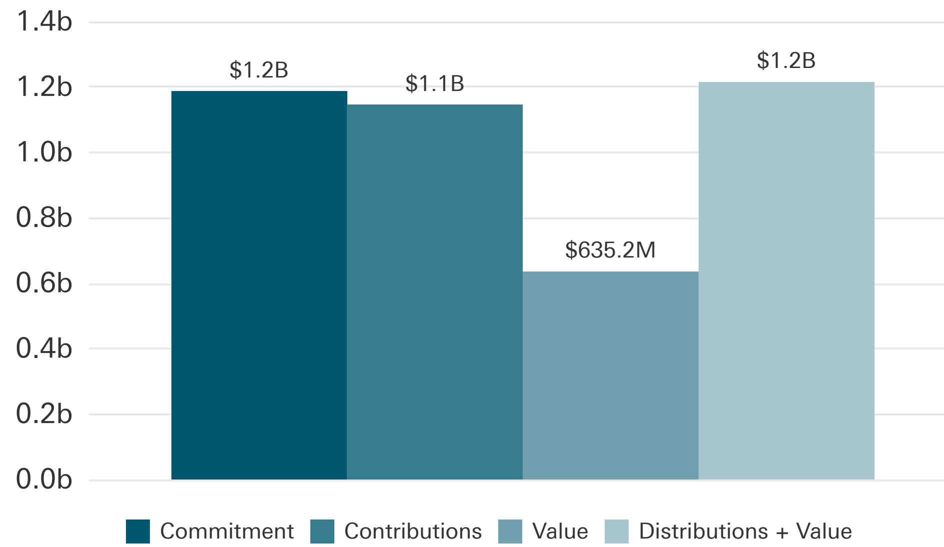
Performance

- ACERA's Real Asset Pool has produced a 1.28% IRR since inception. The portfolios performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and poor returns from a couple early energy funds. That said, the portfolio is beginning to see the success of more recent fund investments in natural resources and infrastructure that have matured and are delivering top quartile or near top quartile returns.

Cash Flows on Annual Basis as of June 30, 2023



Cumulative Cash Flow and Valuation as of June 30, 2023

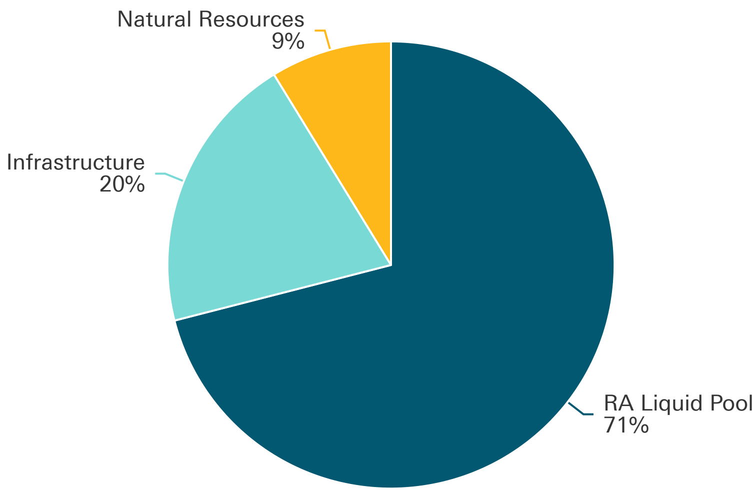


	1 Year	3 Year	5 Year	10 Year	Since Inception
Natural Resources Funds	**0.50%**	**28.02%**	**6.77%**	**1.29%**	**1.01%**
S&P Global Natural Resources Index [1]	*8.80%*	*21.03%*	*6.90%*	*6.77%*	*5.82%*
Infrastructure Funds	**7.54%**	**10.99%**	**9.94%**		**10.43%**
S&P Global Infrastructure Index [1]	*0.51%*	*3.13%*	*1.35%*		*1.20%*
Liquid Pool Funds	**-8.97%**	**14.64%**	**4.32%**	**0.86%**	**0.39%**
Bloomberg Commodity Index [1]	*-8.16%*	*19.79%*	*7.27%*	*1.23%*	*0.49%*
Total Real Assets	**-3.65%**	**14.70%**	**5.20%**	**1.80%**	**1.28%**
Blended Real Assets Benchmark [2]	*3.38%*	*10.65%*	*3.87%*	*3.70%*	*3.39%*

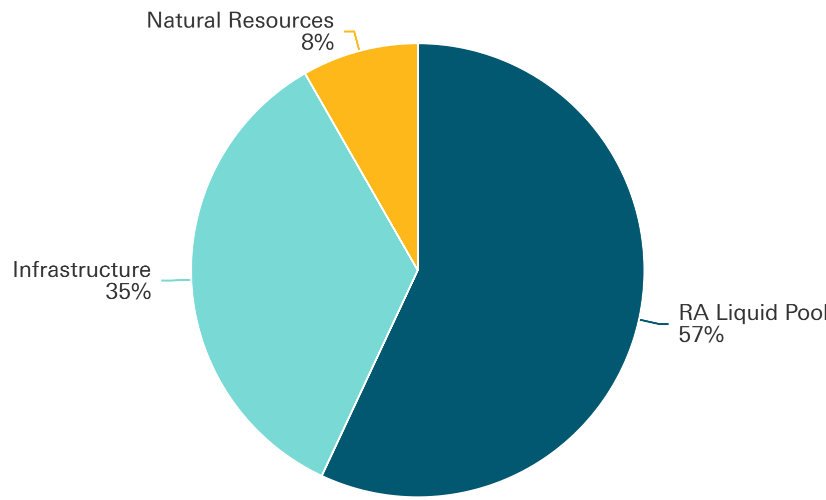
1 Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 6/30/2023. Analysis provided by Addepar.
2 Blended Real Assets Benchmark calculated on a time-weighted return basis. Blended returns are weighted as follows: 60% S&P Global Infrastruture Index, 35% S&P Global Natural Resources Index, and 5% Bloomberg Commodity Index.

Investment Type	Commitment	Reported Value
Infrastructure	$240,000,000	$220,706,588
Natural Resources	$104,000,000	$52,666,914
RA Liquid Pool	$842,235,893	$361,852,529
Total	**$1,186,235,893**	**$635,226,032**

Commitment Exposure by Fund Type



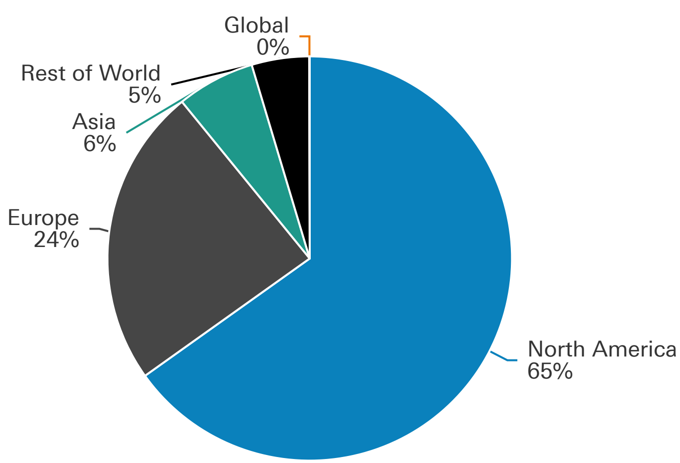
Current Exposure by Fund Type



Geography	Value (USD)
Global	$98,314
North America	$151,019,990
Europe	$55,581,942
Asia	$14,484,845
Rest of World	$10,636,230
Total	**$231,821,321**

** Excludes open-end vehicles and liquid assets*

Reported Value by Geography

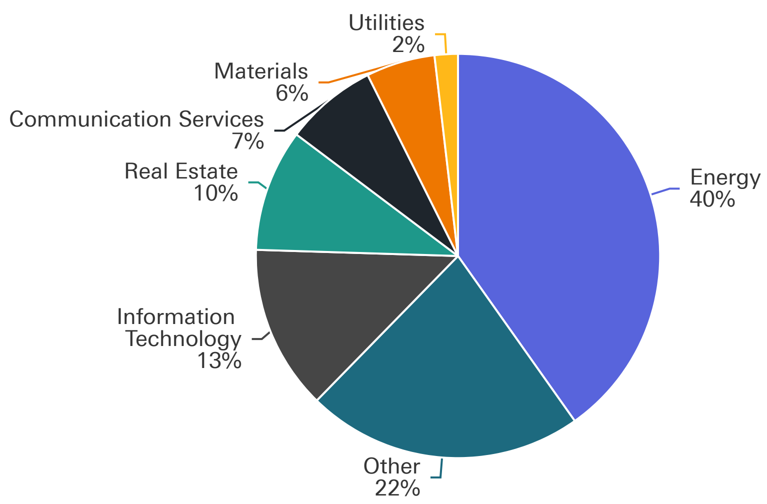


Based on the value of portfolio companies and fund reported exposures as of June 30, 2023. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

Global Industry Classification Standard	Reported Value
Communication Services	$17,085,043
Energy	$93,179,895
Information Technology	$30,529,638
Materials	$12,764,292
Real Estate	$22,659,903
Utilities	$4,315,442
Other	$51,287,107
Total	**$231,821,321**

** Excludes open-end vehicles and liquid assets*

Reported Value by Industry

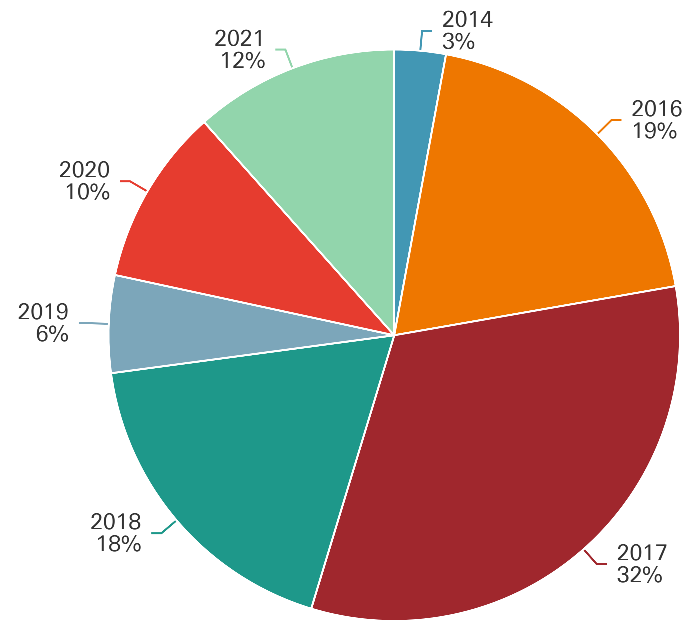


Based on the value of portfolio companies and fund reported exposures as of June 30, 2023. Differences between reported value and the total portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed GICS breakdown.

Vintage Year	Commitments	Reported Value
2010	$24,000,000	$0
2014	$15,000,000	$6,729,848
2016	$35,000,000	$44,846,518
2017	$75,000,000	$75,215,687
2018	$40,000,000	$42,156,351
2019	$30,000,000	$12,764,292
2020	$30,000,000	$23,241,613
2021	$55,000,000	$26,867,012
Total	**$304,000,000**	**$231,821,321**

** Excludes open-end vehicles and liquid assets*

Current Exposure by Vintage Year



Callan

December 2023

Semi-Annual ending 2Q 2023 Performance Measurement Report

Callan

Avery Robinson, CAIA
Senior Vice President

Aaron Quach
Vice President

U.S. Private Real Estate Performance: 2Q23

Income returns positive but appreciation returns negative once again

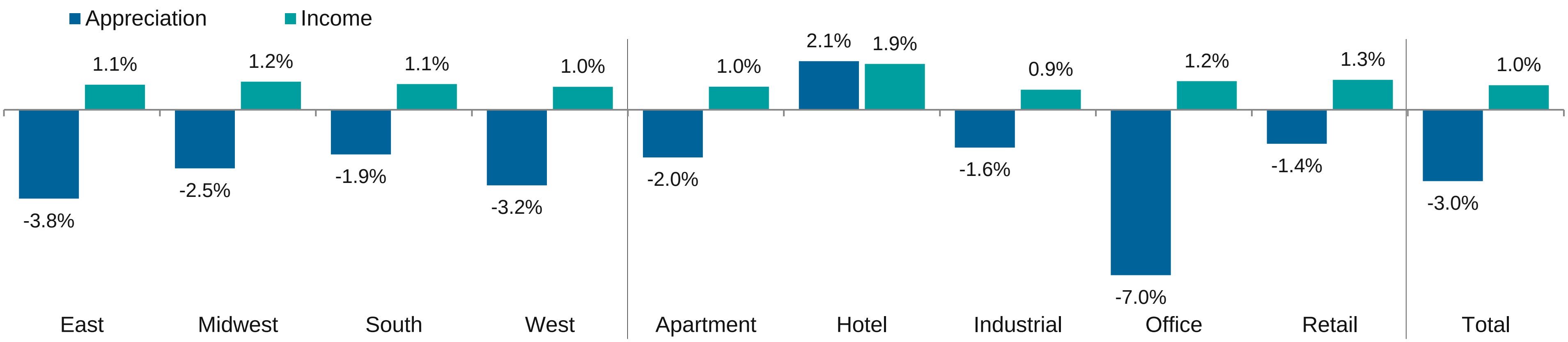
Valuations reflect higher interest rates

- Income returns were positive across sectors and regions.
- All property sectors and regions, except for Hotel, experienced negative appreciation.
- Valuations are reflective of higher interest rates, which have put upward pressure on capitalization rate and discount rate assumptions.
- Return dispersion by manager within the ODCE Index was due to the composition of underlying portfolios.

	Last Quarter	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	-2.9%	-6.2%	-10.7%	7.0%	5.6%	7.8%
Income	0.7%	1.3%	2.5%	2.8%	3.0%	3.4%
Appreciation	-3.6%	-7.4%	-13.0%	4.2%	2.5%	4.3%
NCREIF Property Index	-2.0%	-3.8%	-6.6%	6.8%	5.9%	7.8%
Income	1.0%	2.1%	4.0%	4.1%	4.2%	4.6%
Appreciation	-3.0%	-5.8%	-10.3%	2.6%	1.6%	3.1%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



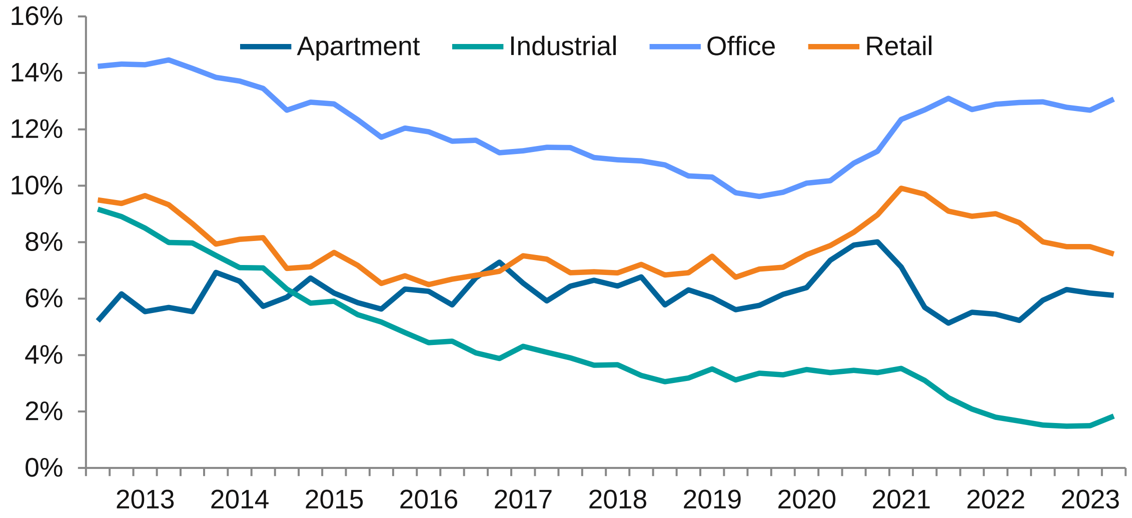
Source: NCREIF, ODCE return is net

U.S. Private Real Estate Market Trends

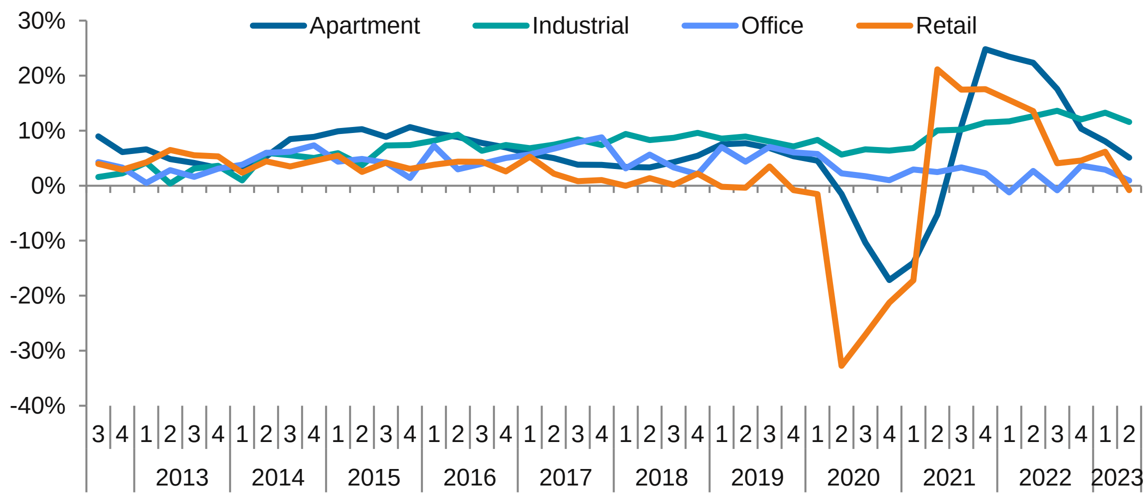
The market is shifting, with mixed results for vacancy and net operating income growth

- Vacancy rates declined marginally in Apartment and Retail, while increasing slightly in Industrial.
- Office vacancy rates increased during the quarter and the sector remains challenged.
- Net operating income growth, while still positive, decreased slightly in Apartments and Industrial.
- NOI Growth in Retail turned negative—albeit slightly—for the first time since 2020.
- Office NOI growth continued to decrease. There continues to be bifurcation in the office market with highly amenitized, newer vintage buildings experiencing positive rent growth while older commodity buildings struggle.
- Overall fundamentals remain strong in Industrial, Apartment, Grocery-Anchored Retail, and alternative sectors such as self storage, manufactured housing, and single-family rental.

Vacancy by Property Type



NCREIF Property Index Rolling 4-Quarter NOI Growth by Property Type

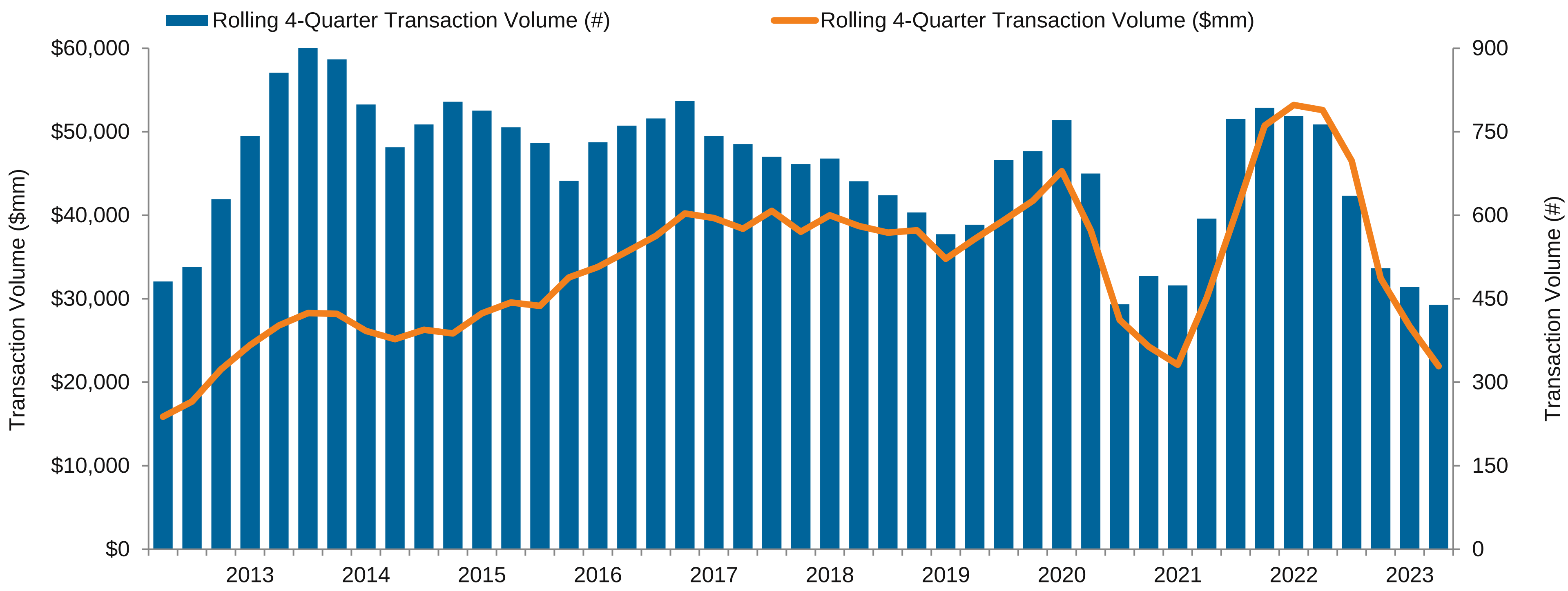


Source: NCREIF

U.S. Private Real Estate Market Trends

Pricing and transaction volumes decline through 2Q23

NCREIF Rolling 4-Quarter Transaction Totals Through 6/30/23



- Transaction volume continues to decrease on a rolling four-quarter basis and is now below five-year averages.
- In 2Q23 transaction volume decreased on a quarter-over-quarter basis; transaction volume is significantly lower compared to 2Q22.
- The rise in interest rates is the driving force behind the slowdown in transactions. A bid-ask spread remains and price discovery continues to occur among market participants. Sectors that are in favor, such as multi-family and industrial, are more liquid.

Source: NCREIF

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending June 30, 2023 ("Quarter").

Funding Status as of June 30, 2023

	($) Millions	(%)
ACERA Plan Assets	10,876.588	100.00%
Real Estate Target[(1)]	978.893	9.00%
Plan's Real Estate Market Value	785.009	7.22%
Net Unfunded Commitments	109.323	1.01%
RE Market Value & Unfunded Commitments	894.333	8.22%
Remaining Allocation	193.884	1.78%

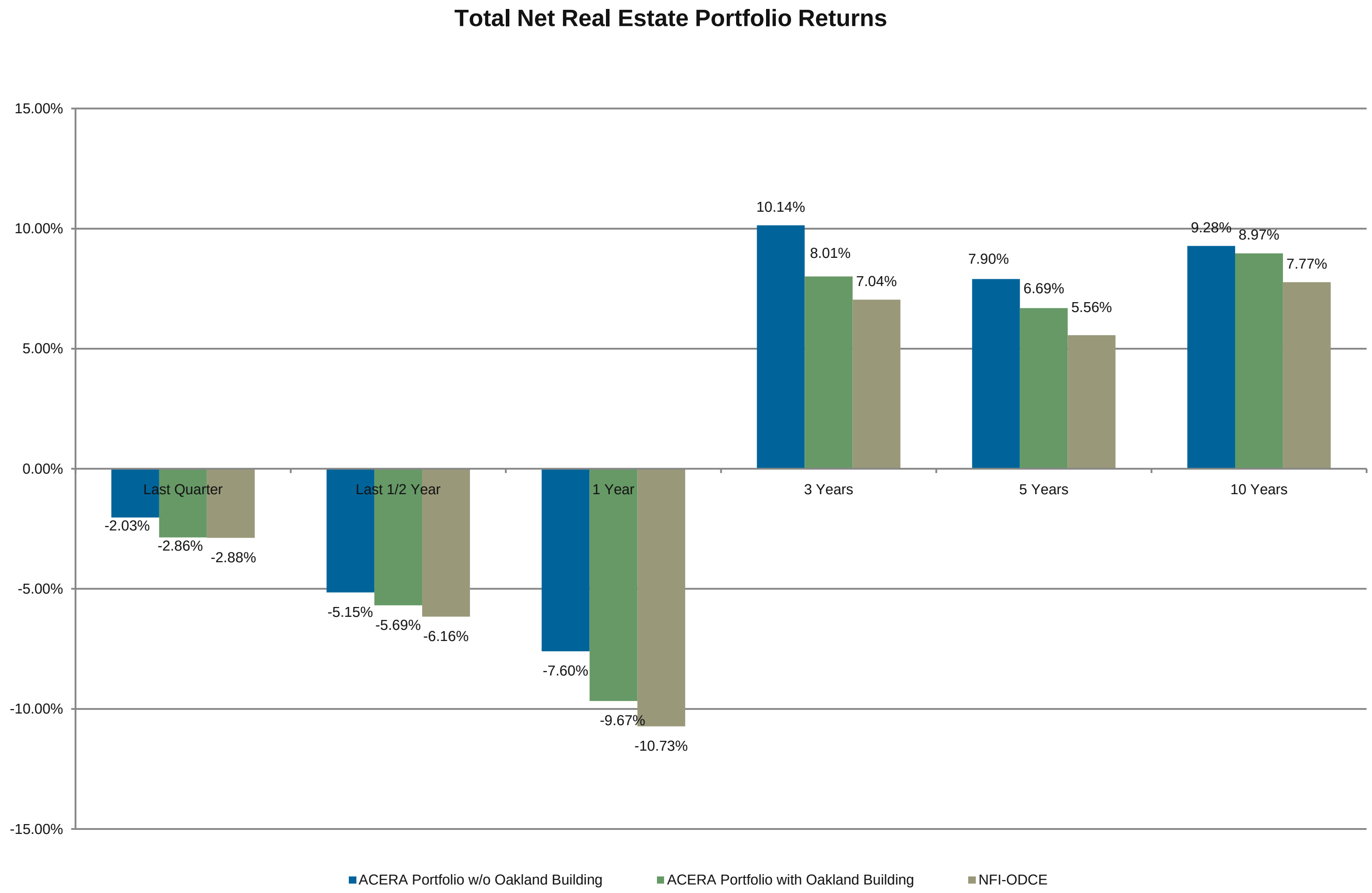
Portfolio Composition

Portfolio Composition	Target	Funded	Funded & Committed
Core	60% - 100%	46.07%	40.44%
Core-Plus	0% - 30%	27.26%	23.93%
Value-Add	0% - 30%	17.84%	20.33%
Opportunistic	0% - 15%	8.82%	15.30%

(1) The real estate target changed from 8% to 9% effective 6/30/2021.

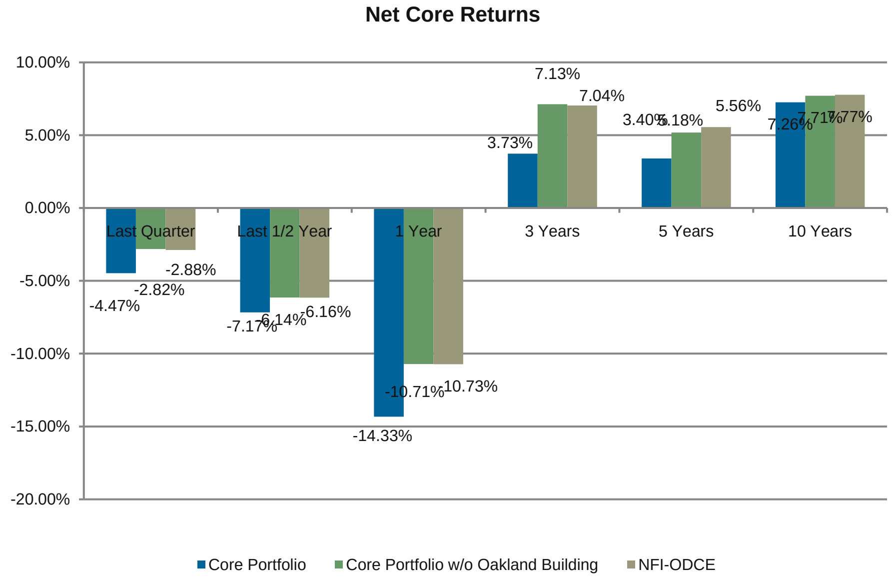
Portfolio Net Returns

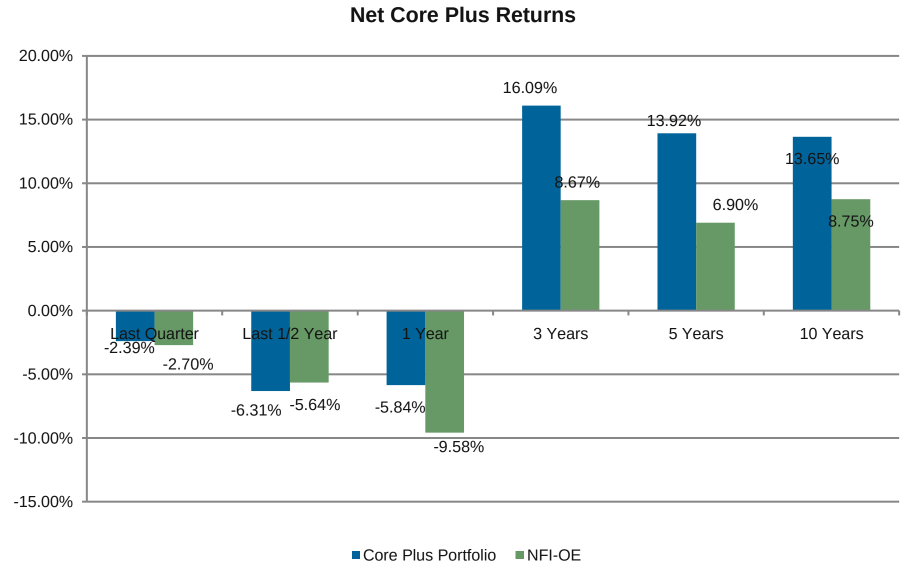
For Period Ended June 30, 2023

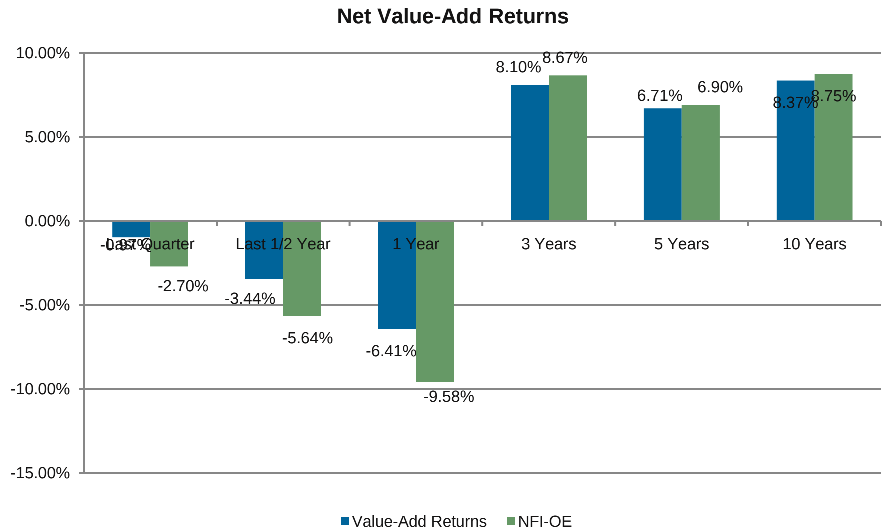


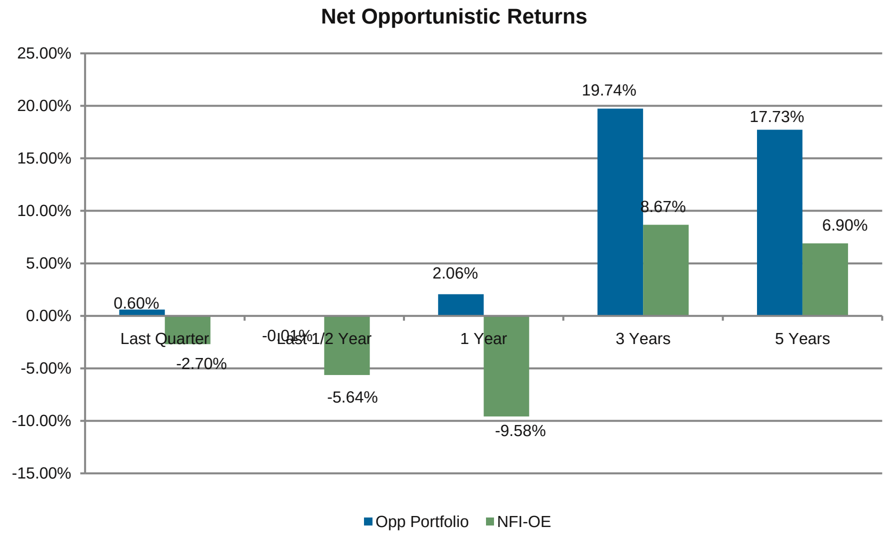
Portfolio Returns by Style

For Period Ended June 30, 2023









Portfolio Returns by Style

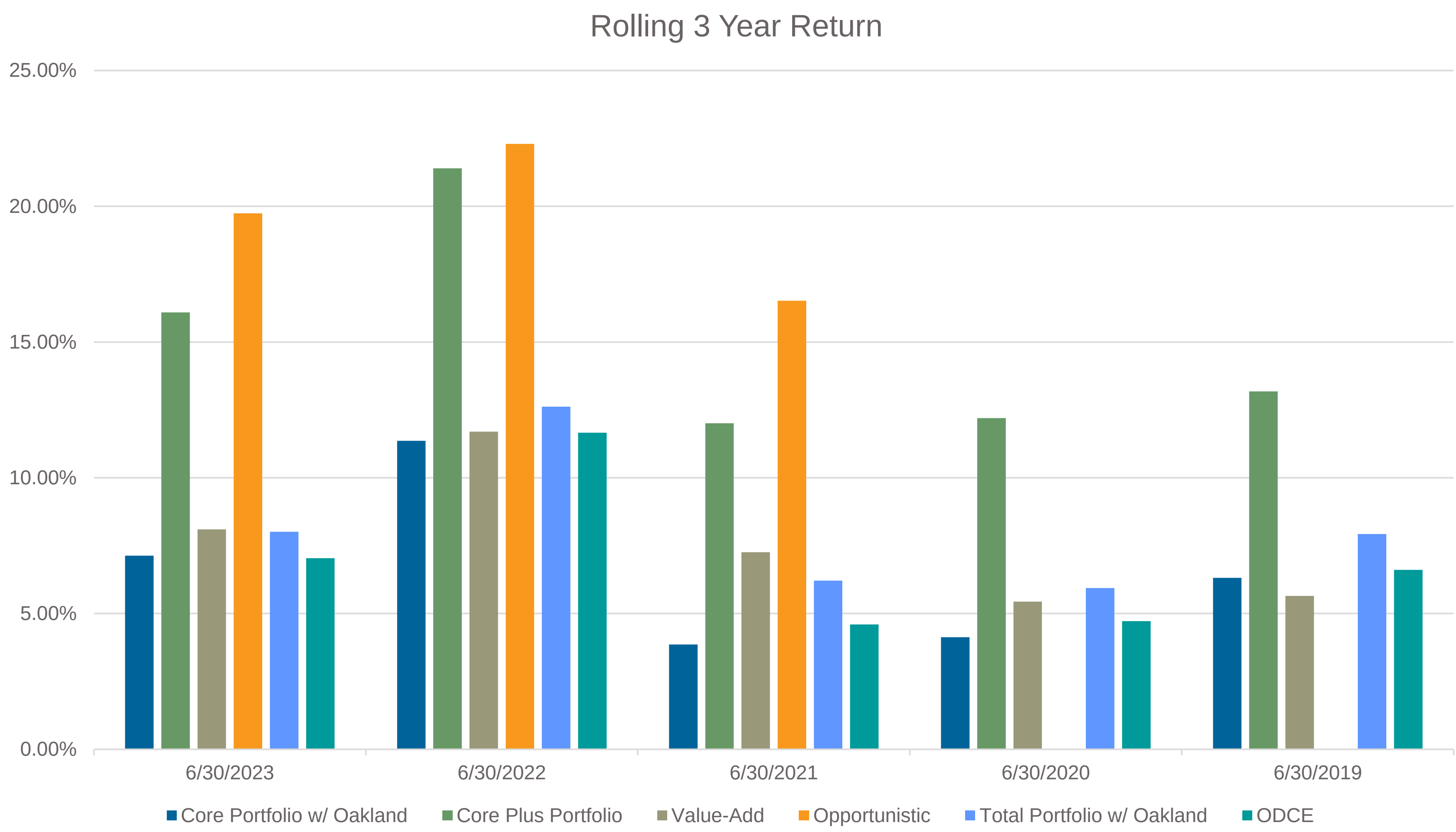
For Period Ended June 30, 2023

Net Portfolio w/o Oakland Building	Last Quarter	Last 1/2 Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	-2.82%	-6.14%	-10.71%	7.13%	5.18%	7.71%
Core Plus Portfolio	-2.39%	-6.31%	-5.84%	16.09%	13.92%	13.65%
Value-Add Portfolio	-0.97%	-3.44%	-6.41%	8.10%	6.71%	8.37%
Opportunistic Portfolio	0.60%	-0.01%	2.06%	19.74%	17.73%	--
Total Portfolio w/o Oakland Building	**-2.03%**	**-5.15%**	**-7.60%**	**10.14%**	**7.90%**	**9.28%**
Net Total Portfolio	Last Quarter	Last 1/2 Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	-4.47%	-7.17%	-14.33%	3.73%	3.40%	7.26%
Core Plus Portfolio	-2.39%	-6.31%	-5.84%	16.09%	13.92%	13.65%
Value-Add Portfolio	-0.97%	-3.44%	-6.41%	8.10%	6.71%	8.37%
Opportunistic Portfolio	0.60%	-0.01%	2.06%	19.74%	17.73%	--
Total Portfolio	**-2.86%**	**-5.69%**	**-9.67%**	**8.01%**	**6.69%**	**8.97%**

Rolling 3 Year Returns

For Period Ended June 30, 2023

Total Net Real Estate Portfolio Returns



Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio overperformed the NFI-ODCE Value Weight Index (Net) by 2 bps for the half year ending 06/30/2023.
- PRISA SA was the strongest performer over the half year period.
- UBS Trumbull Property Fund was the largest detractor from performance over the last half year.

Core Plus Portfolio

- The Core Plus Portfolio underperformed the NFI-OE Value Weight Index (Net).

Value-Add Portfolio

- The Value-Add Portfolio outperformed the NFI-OE Value Weight Index.
- Artemis Healthcare Fund II and Heitman Value Partners IV were the primary drivers of performance.

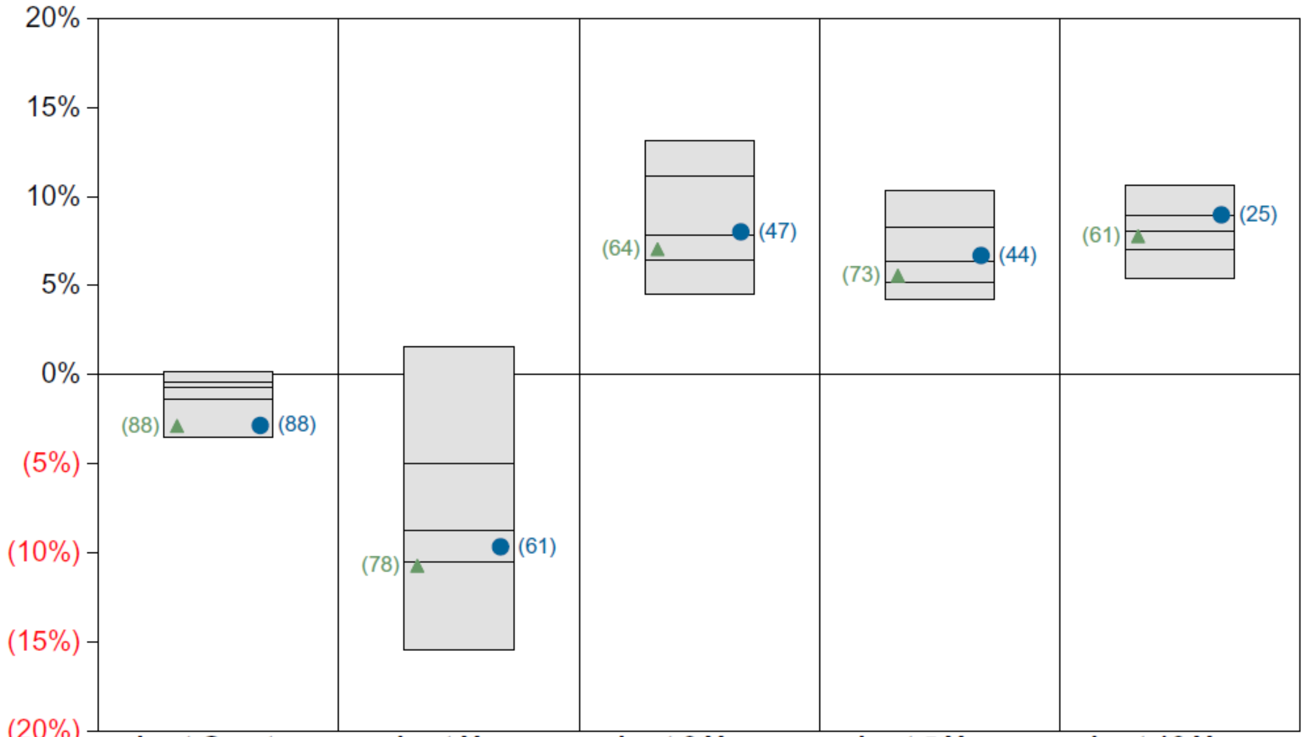
Opportunistic Portfolio

- The Opportunistic Portfolio outperformed the NFI-OE Value Weight Index for the period.
- AEW Partners VIII and Starwood Distressed Opp Fund XII were the primary drivers of performance.

Performance vs. Peer Group

For Period Ended June 30, 2023

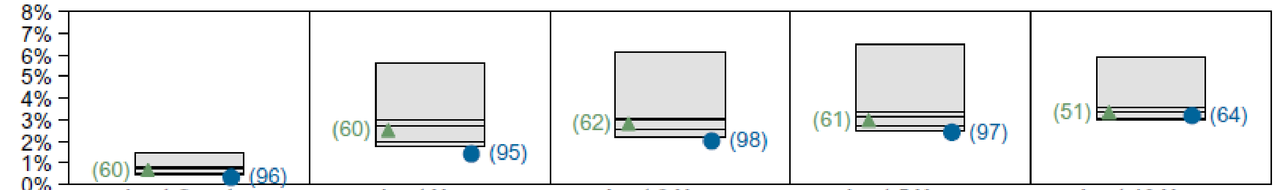
Performance vs Callan Open End Core Cmmingled Real Est



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	0.15	1.56	13.14	10.32	10.60
25th Percentile	(0.44)	(5.00)	11.16	8.27	8.91
Median	(0.76)	(8.78)	7.86	6.32	8.04
75th Percentile	(1.37)	(10.51)	6.46	5.18	7.04
90th Percentile	(3.54)	(15.45)	4.49	4.22	5.42
ACERA Total RE Portfolio ●	(2.86)	(9.67)	8.01	6.69	8.97
NCREIF NFI-ODCE Val Wt Nt ▲	(2.88)	(10.73)	7.04	5.56	7.77

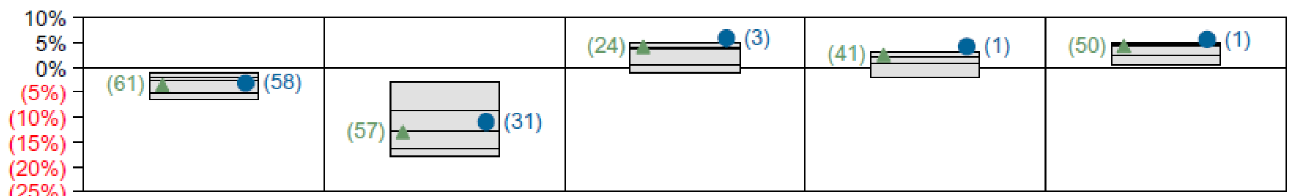
Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE
Periods ended June 30, 2023



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.49	5.62	6.12	6.45	5.88
25th Percentile	0.81	2.96	3.07	3.32	3.60
Median	0.77	2.69	2.99	3.14	3.36
75th Percentile	0.52	1.96	2.57	2.70	3.04
90th Percentile	0.43	1.72	2.22	2.47	2.97
ACERA Total RE Portfolio ●	0.32	1.41	2.01	2.41	3.18
NCREIF NFI-ODCE Val Wt Nt ▲	0.67	2.52	2.81	2.97	3.35

Appreciation Rankings vs Callan OE Core Cmngld RE
Periods ended June 30, 2023

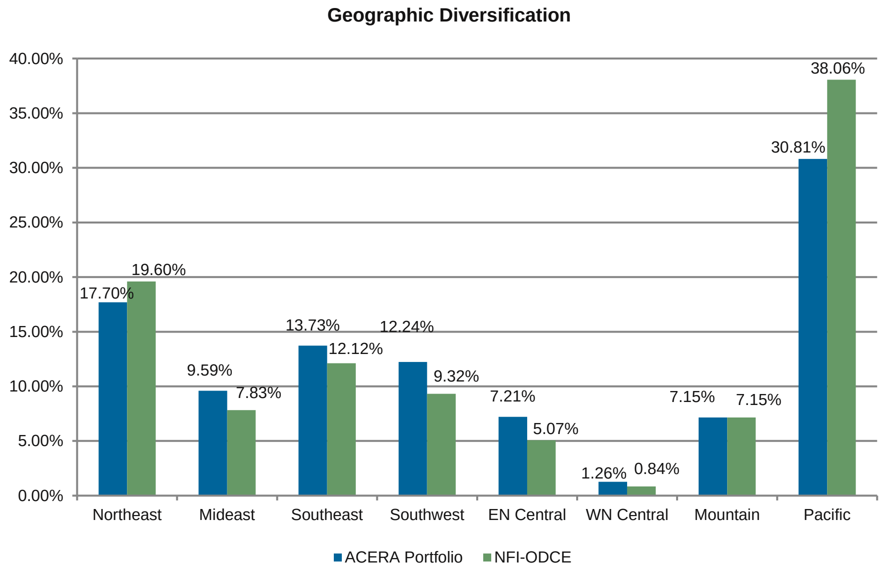


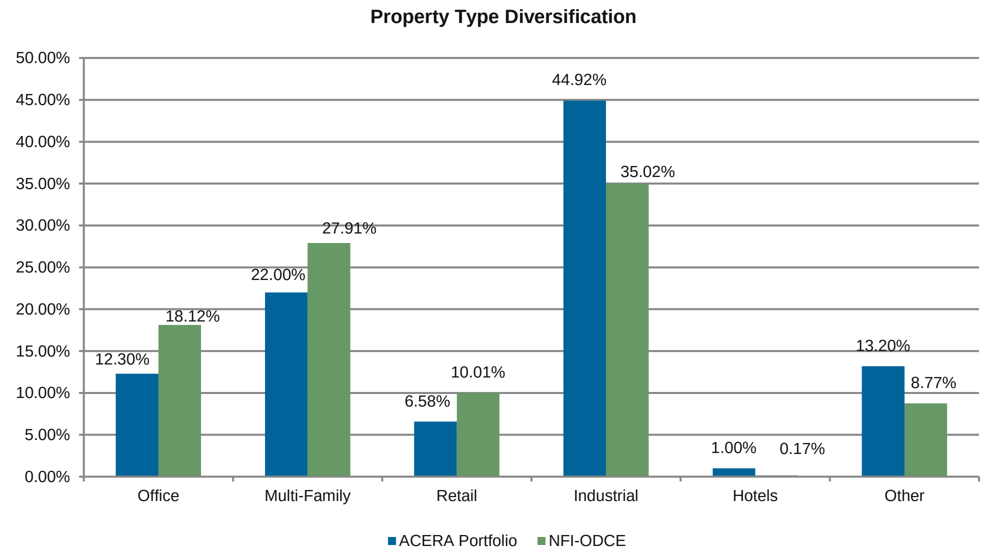
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	(1.04)	(2.94)	5.00	3.23	4.87
25th Percentile	(2.11)	(8.61)	4.11	2.94	4.74
Median	(2.69)	(12.71)	3.79	2.22	4.31
75th Percentile	(5.04)	(16.42)	0.40	0.87	2.50
90th Percentile	(6.45)	(17.78)	(0.93)	(2.06)	0.53
ACERA Total RE Portfolio ●	(3.18)	(10.96)	5.93	4.20	5.66
NCREIF NFI-ODCE Val Wt Nt ▲	(3.55)	(13.00)	4.15	2.54	4.32

Diversification & Debt

Diversification – Total Portfolio (excluding Oakland Building)

– The ACERA Portfolio is well diversified by both property type and region.





Debt Compliance

– The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of June 30, 2023, the loan-to-value (“LTV”) ratio of the Portfolio was 35.16%.

APPENDIX

Definitions

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. Cap rate = Net operating income / Current market value (Sale price) of the asset.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return ("INC"): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return ("APP"): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return ("TGRS"): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return ("TNET"): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

Definitions

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Definitions

Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

Definitions

Cash Flow Statements

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

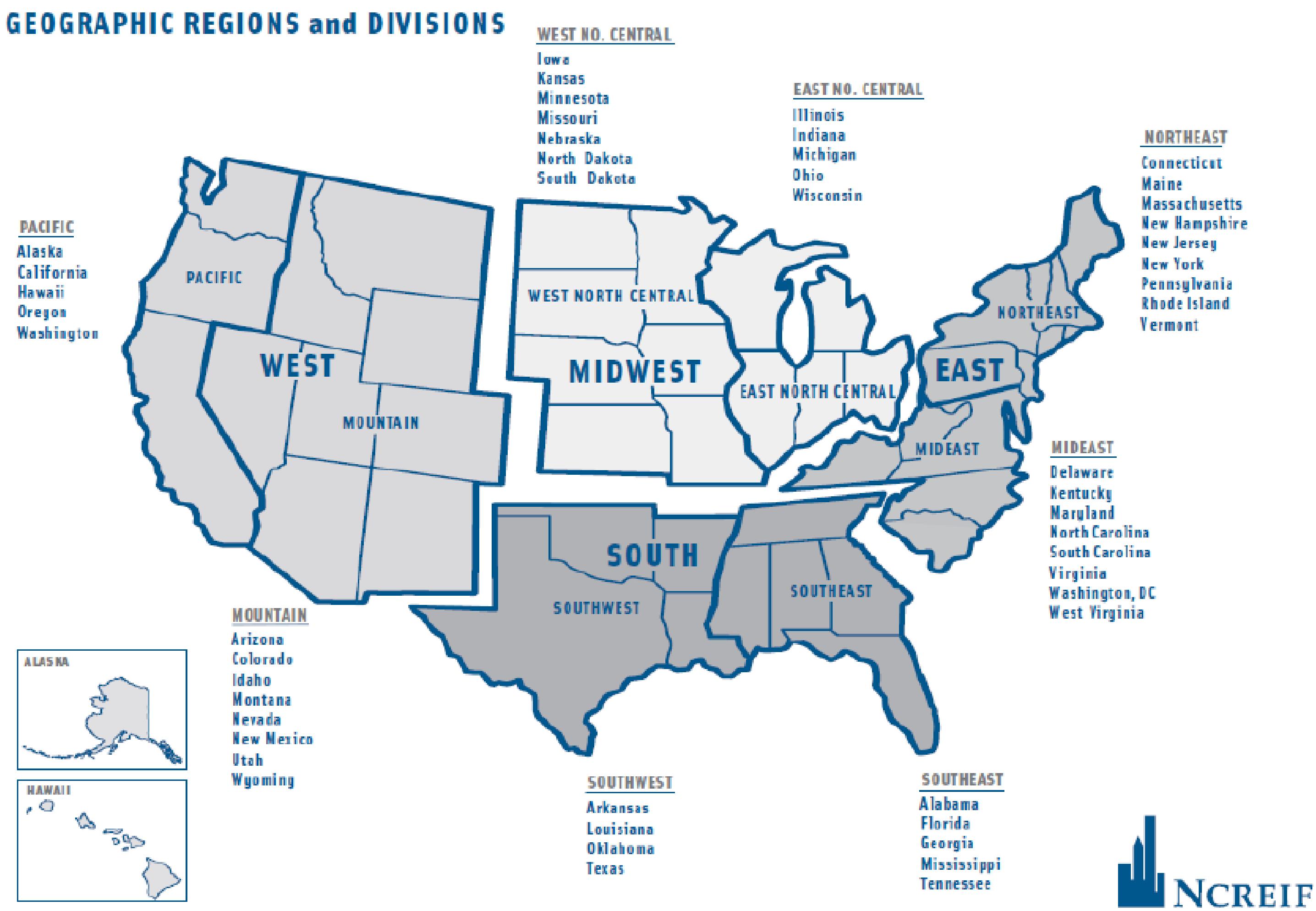
Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

NCREIF Region Map



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