

Callan



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Fourth Quarter 2022 Summary Investment Presentation

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Economic and Capital Markets Review

Equity and Fixed Income Markets Down Together in 2022

Declines for both stocks and bonds for three straight quarters are extremely unusual

Global equity markets down sharply in 2022 despite rebound in 4Q

- Similar impact across all equity market segments: developed, emerging, small cap

Fixed income down with sharply higher inflation and interest rates

- Bloomberg Aggregate: -13% for the year, worst year ever for the index by a wide margin
- CPI-U: +6.5% for the year ended Dec. 2022
- ▶ Number of times stocks and bonds have been down together
 - 38 quarters in almost 100 years, about 10% of the quarters
 - But just twice on annual basis
- ▶ Inflation at highest rate in decades
- ▶ Economic data show growth hit ‘pause’
 - GDP rose 2.9% in 4Q22, after a 3.2% rise in 3Q, a 0.6% drop in 2Q, and a 1.6% decline in 1Q.

Returns for Periods ended 12/31/22

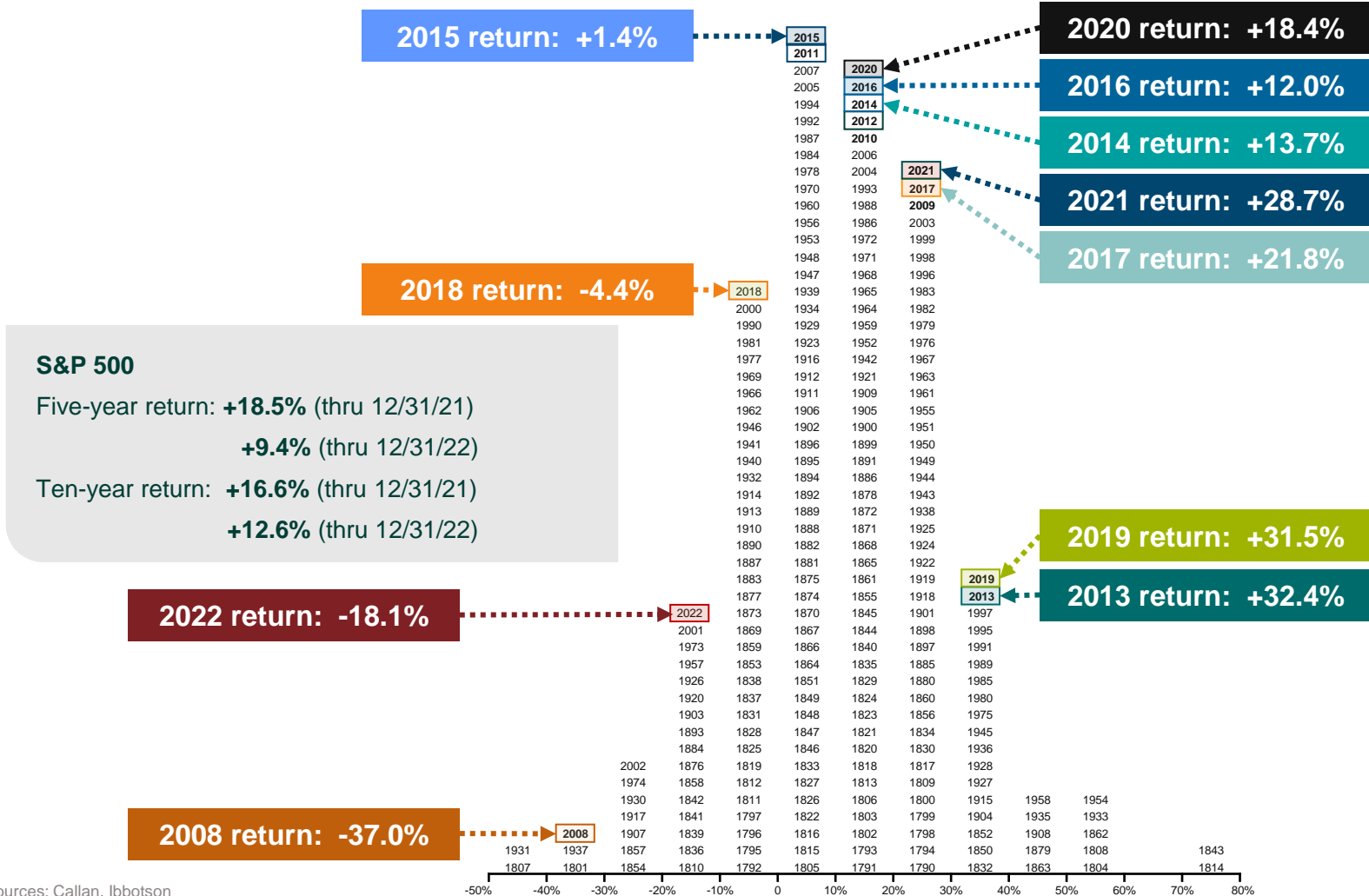
	Quarter	Year to Date	1 Year	5 Years	10 Years	25 Years
U.S. Equity						
Russell 3000	7.18	-19.21	-19.21	8.79	12.13	7.68
S&P 500	7.56	-18.11	-18.11	9.42	12.56	7.64
Russell 2000	6.23	-20.44	-20.44	4.13	9.01	7.13
Global ex-U.S. Equity						
MSCI World ex USA	16.18	-14.29	-14.29	1.79	4.59	4.65
MSCI Emerging Markets	9.70	-20.09	-20.09	-1.39	1.44	--
MSCI ACWI ex USA Small Cap	13.31	-19.97	-19.97	0.67	5.24	6.87
Fixed Income						
Bloomberg Aggregate	1.87	-13.01	-13.01	0.02	1.06	3.97
90-day T-Bill	0.84	1.46	1.46	1.26	0.76	1.91
Bloomberg Long Gov/Credit	2.61	-27.09	-27.09	-1.21	1.57	5.38
Bloomberg Global Agg ex-US	6.81	-18.70	-18.70	-3.07	-1.64	2.71
Real Estate						
NCREIF Property	-3.50	5.53	5.53	7.46	8.82	9.04
FTSE Nareit Equity	5.24	-24.37	-24.37	3.68	6.53	7.87
Alternatives						
CS Hedge Fund Index	0.92	1.06	1.06	4.25	4.24	5.81
Cambridge Private Equity*	-1.84	-3.77	-3.77	16.84	15.31	14.31
Bloomberg Commodity	2.22	16.09	16.09	6.44	-1.28	1.87
Gold Spot Price	9.22	-0.13	-0.13	6.88	0.86	7.64
Inflation - CPI-U	0.00	6.45	6.45	3.78	2.60	2.47

*Cambridge PE data through 09/30/22.

Sources: Bloomberg, Callan, Cambridge, Credit Suisse, FTSE Russell, MSCI, NCREIF, S&P Dow Jones Indices

Stock Market Returns by Calendar Year

2022 YTD performance in perspective: History of the U.S. stock market (233 years of returns)



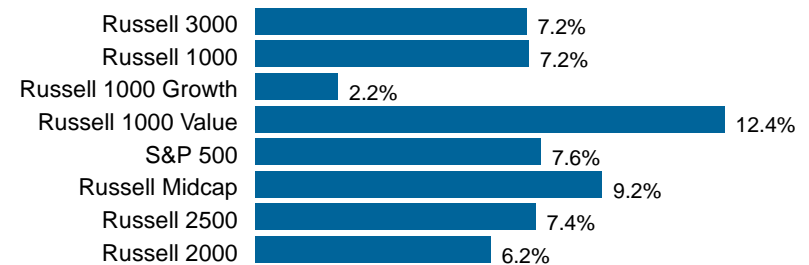
Sources: Callan, Ibbotson

U.S. Equity Performance: 4Q22

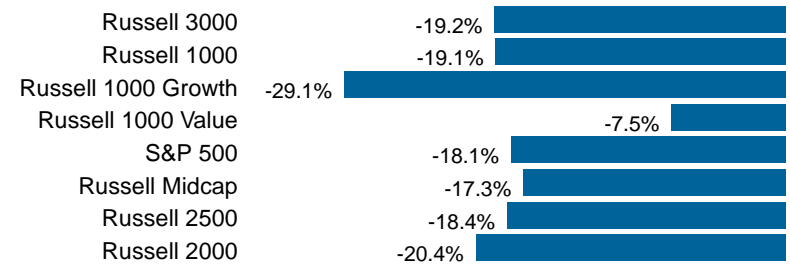
Markets retrace in December after gains in the prior two months

- ▶ The S&P 500 Index posted positive returns in both October and November but fell in December. The index was up 7.6% during 4Q22 but ended 2022 down 18.1%.
- ▶ Energy was the best-performing sector during the quarter and 2022, returning 23% and 66% respectively. Consumer Discretionary and Communication Services were the only two sectors that posted negative returns in 4Q.
- ▶ Value stocks outperformed growth across the market capitalization spectrum, and for both 4Q and the full year.
- ▶ Large cap stocks (Russell 1000) outperformed small caps (Russell 2000) last quarter and for the year.
- ▶ Continued macroeconomic concerns (e.g., inflation, potential recession, geopolitical issues) led to higher volatility and a down-year for U.S. equities.

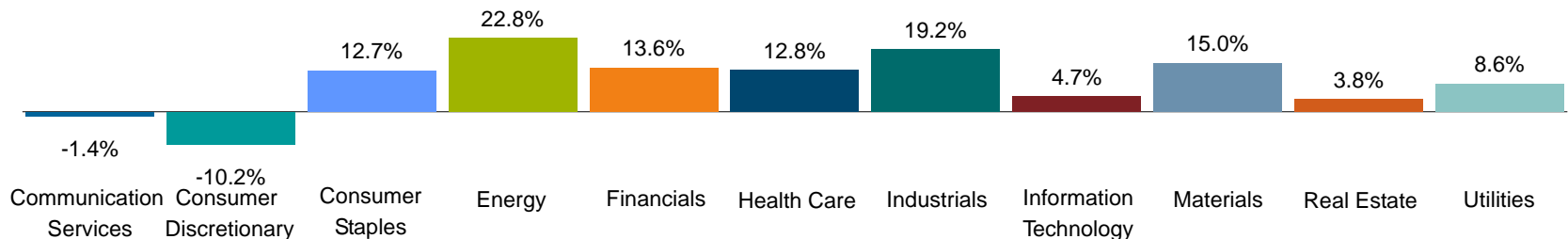
U.S. Equity Returns: Quarter Ended 12/31/22



U.S. Equity Returns: One Year Ended 12/31/22



Industry Sector Quarterly Performance (S&P 500) as of 12/31/22



Sources: FTSE Russell, S&P Dow Jones Indices

Global/Global ex-U.S. Equity Performance: 4Q22

Ending on a high note

4Q22 was a bright spot during a tough calendar year in global and global ex-U.S. equity markets.

Encouraging signs

- ▶ Lower-than-expected U.S. inflation data buoyed market optimism at the end of the year.
- ▶ The Fed slowed its pace of tightening with further slowing expected in 2023.
- ▶ China reversed its zero-COVID policies, prompting exuberance from investors.

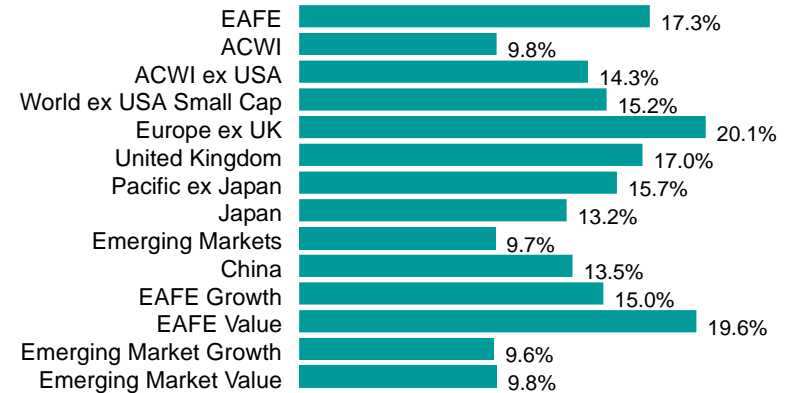
Growth vs. value

- ▶ Value outpaced growth across developed and emerging markets.
 - Economically sensitive sectors (e.g., Financials and Industrials) benefited from the anticipation of improved growth; Energy was the largest outperformer.

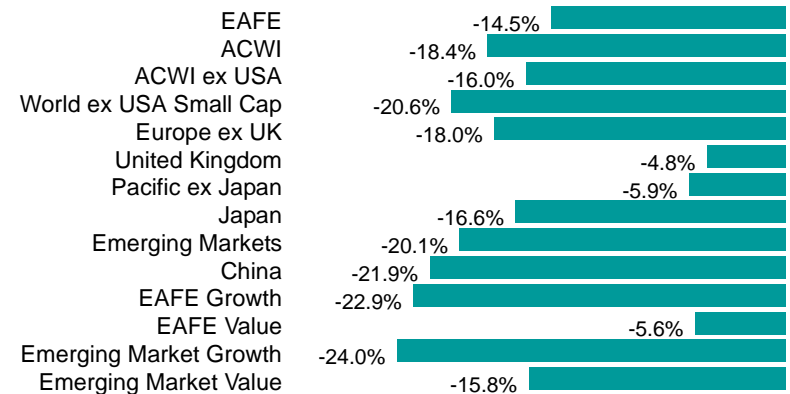
U.S. dollar vs. other currencies

- ▶ After reaching a multi-decade high, the dollar fell against all major currencies with signs of inflation easing.
 - Despite the 7.7% decline in 4Q22, the dollar still gained nearly 8% over the full year.

Global Equity Returns: Quarter Ended 12/31/22



Global Equity Returns: One Year Ended 12/31/22



Source: MSCI

U.S. Fixed Income Performance: 4Q22

Bonds were up in 4Q but 2022 results remain negative

- ▶ Aggregate: positive return driven by coupon income and spread tightening; interest rates rose modestly
- ▶ Rates were volatile intra-quarter
 - UST 10-year yield: high 4.22% on 11/7; low 3.42% on 12/7
 - Curve remained inverted at quarter-end; 10-year yield 3.88% and 2-year yield 4.41%; most since 1981
- ▶ Fed raised rates, bringing target to 4.25%-4.50%
 - Median expectation from Fed is 5.1% for year-end 2023
 - Inflation showed signs of moderating but job market remained tight with solid wage growth

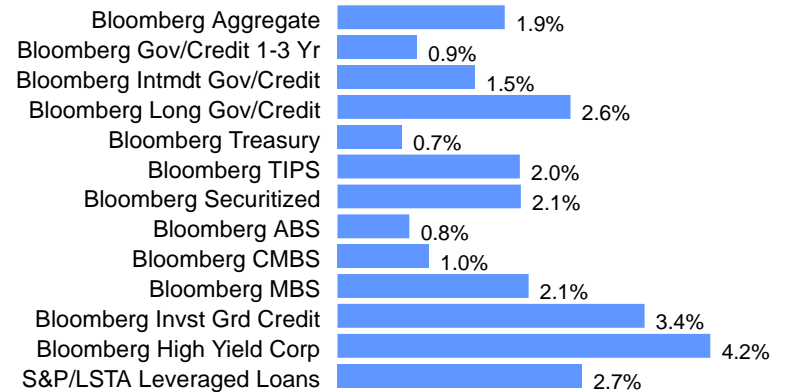
Corporates and mortgages outperformed Treasuries in 4Q but underperformed for the year

- ▶ 4Q: Corporates +289 bps excess return; RMBS +110 bps
- ▶ 2022: Corporates -125 bps excess return; RMBS -223 bps
- ▶ RMBS had worst month ever (September: -191 bps) and best month ever (November: +135 bps) in excess returns.

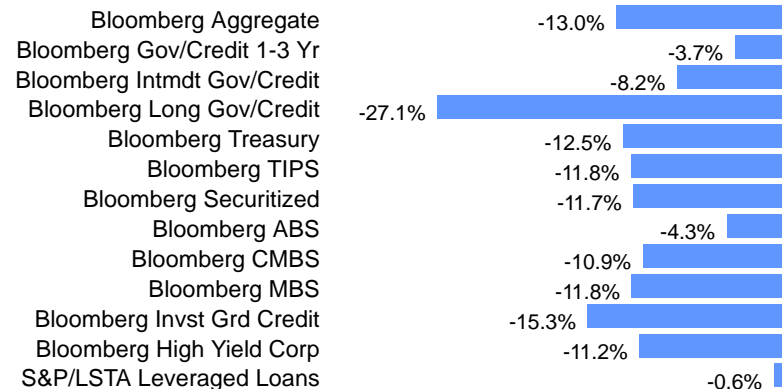
Valuations fair

- ▶ While absolute yields are higher, spreads have not widened materially and most are close to historical averages.
- ▶ An economic slowdown/recession could impact credit spreads.
- ▶ Higher yields boosting forward-looking return outlooks across sectors

U.S. Fixed Income Returns: Quarter Ended 12/31/22



U.S. Fixed Income Returns: One Year Ended 12/31/22



Sources: Bloomberg, S&P Dow Jones Indices

U.S. Private Real Estate Performance: 4Q22

Appreciation returns negative once again

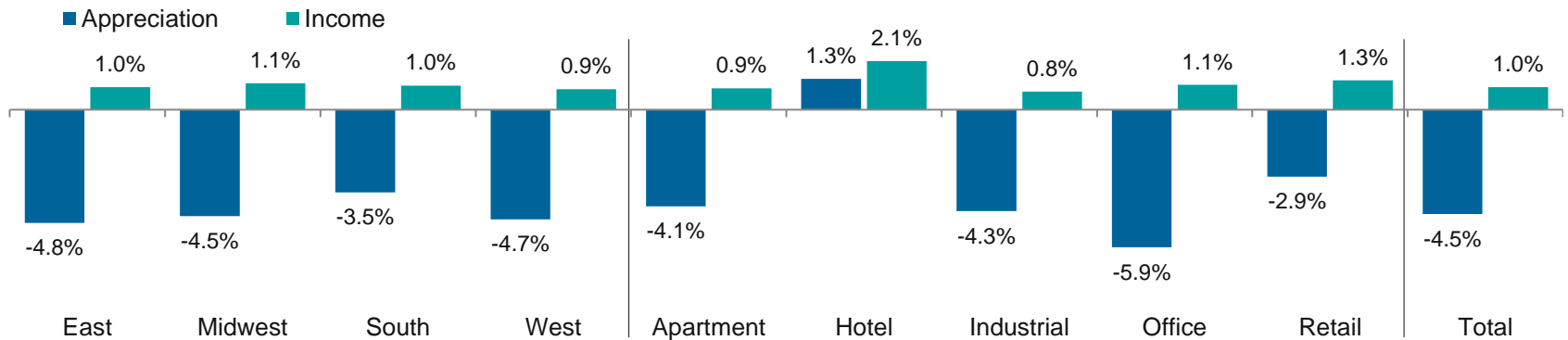
Negative appreciation in four major sectors

- ▶ 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 Year	Last 3 Years	Last 5 Years	Last 10 Years
NCREIF ODCE	-5.2%	6.6%	9.0%	7.7%	9.1%
Income	0.6%	2.6%	2.9%	3.0%	3.4%
Appreciation	-5.8%	3.9%	6.0%	4.6%	5.5%
NCREIF Property Index	-3.5%	5.5%	8.1%	7.5%	8.8%
Income	1.0%	3.9%	4.1%	4.3%	4.7%
Appreciation	-4.5%	1.6%	3.8%	3.1%	4.0%

Returns are geometrically linked

NCREIF Property Index Quarterly Returns by Region and Property Type



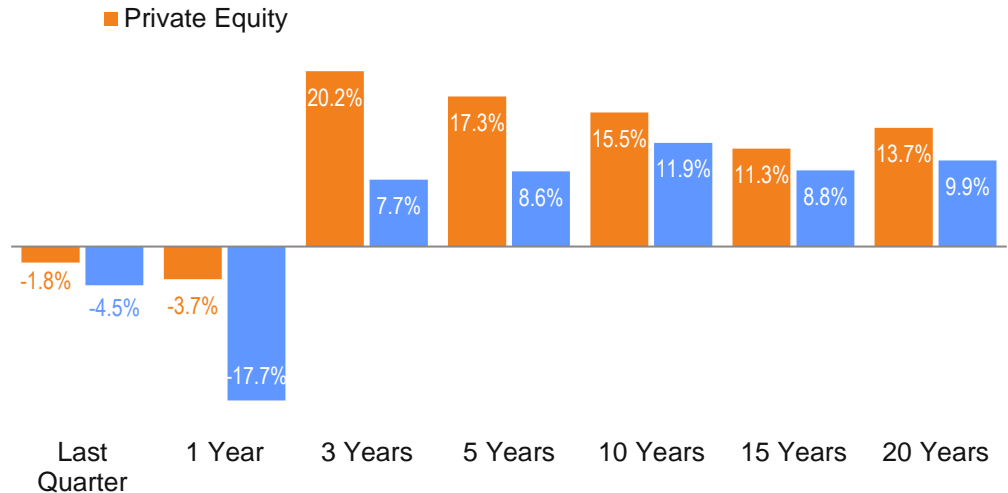
Source: NCREIF, ODCE return is net

Private Equity Performance

Smoothing effect in 3Q22 private equity returns

- ▶ As is typical for the asset class, private equity returns have experienced a smoothing effect in 2022 compared to the sharp declines seen in the public markets.
- ▶ Private equity was only down about a third as much as the public markets during 2022, on a PME basis.
- ▶ Portfolio companies are typically valued internally by the manager on a quarterly basis. Valuations are based on the operating metrics of the company, recent comparable transactions, and public market comps.
- ▶ Venture capital and growth equity experienced the sharpest declines so far this year, given their technology focus as well as post-IPO public equity holdings.

Net IRRs as of 09/30/22



Net IRRs by Strategy as of 09/30/22

Strategy	Last Quarter	1 Year	3 Years	5 Years	10 Years	20 Years
Venture Capital	-2.7%	-9.1%	28.4%	23.8%	19.4%	12.4%
Growth Equity	-1.8%	-9.4%	20.8%	18.4%	15.7%	14.3%
Buyouts	-1.9%	-1.4%	18.5%	16.1%	15.2%	14.7%
Mezzanine	0.2%	5.0%	11.8%	11.1%	11.3%	11.1%
Credit Opportunities	0.7%	3.9%	8.4%	7.2%	8.3%	9.9%
Control-Oriented Distressed	-0.2%	11.3%	19.4%	13.8%	12.7%	11.9%
Total Private Equity	-1.8%	-3.7%	20.2%	17.3%	15.5%	13.7%

Source: Refinitiv/Cambridge

Private Equity Overview

Fundraising slows and timelines become extended

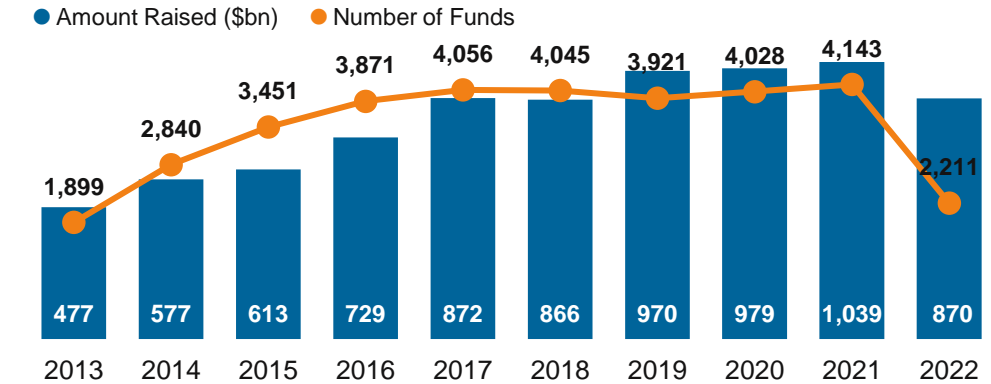
Fundraising slows

- ▶ In terms of dollars raised, fundraising down 16% in 2022, compared to the prior year
- ▶ Significantly fewer funds closed this year, with fundraising concentrated in larger funds: “flight to quality”
- ▶ Fundraising timelines extending due to so many funds in the market, slowing distributions, and constrained LP commitment budgets because of the “denominator effect,” delaying many final closes

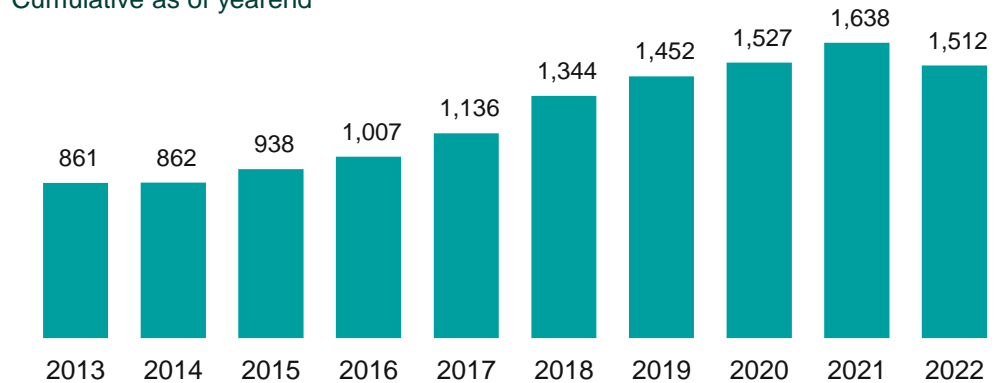
Dry powder levels off

- ▶ Level of dry powder influenced by two factors: fundraising and capital deployment
- ▶ Dry powder peaked in 2021 at \$1.6 trillion due to strong annual fundraising levels
- ▶ Dry powder dropped in 2022 due to a slower fundraising environment

Annual Fundraising



Dry Powder (\$bn) Cumulative as of yearend



Source: PitchBook

Private Equity Key Themes

Investors grappling with 'denominator effect'

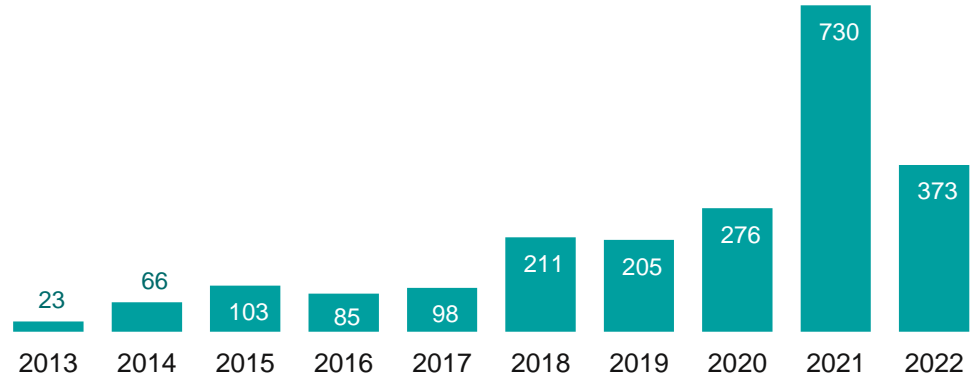
Denominator effect

- ▶ Due to the smoothing effect in short-term private equity performance
- ▶ Occurs when public equity allocations drop (pulling down the denominator), but PE allocations do not drop as far (the numerator)
 - Private equity now a larger percentage of a portfolio
- ▶ Investors unable to rebalance these illiquid exposures; now overallocated to private equity

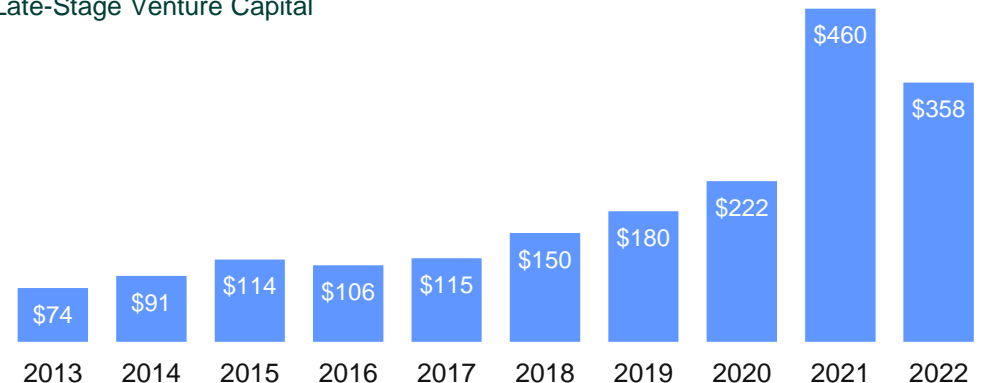
The fading unicorn

- ▶ The number of unicorn deals (financing rounds valued >\$1 billion) spiked in 2021 amid a frenzy of activity within late-stage venture capital
- ▶ Many venture-backed companies looking to delay their next financing round to avoid a down round, resulting in layoffs and cost cuts across the industry
- ▶ Late-stage activity and valuations have normalized in 2022, although still elevated compared to earlier years

Number of Unicorn Deals



Median Pre-Money Valuation (\$m)
Late-Stage Venture Capital

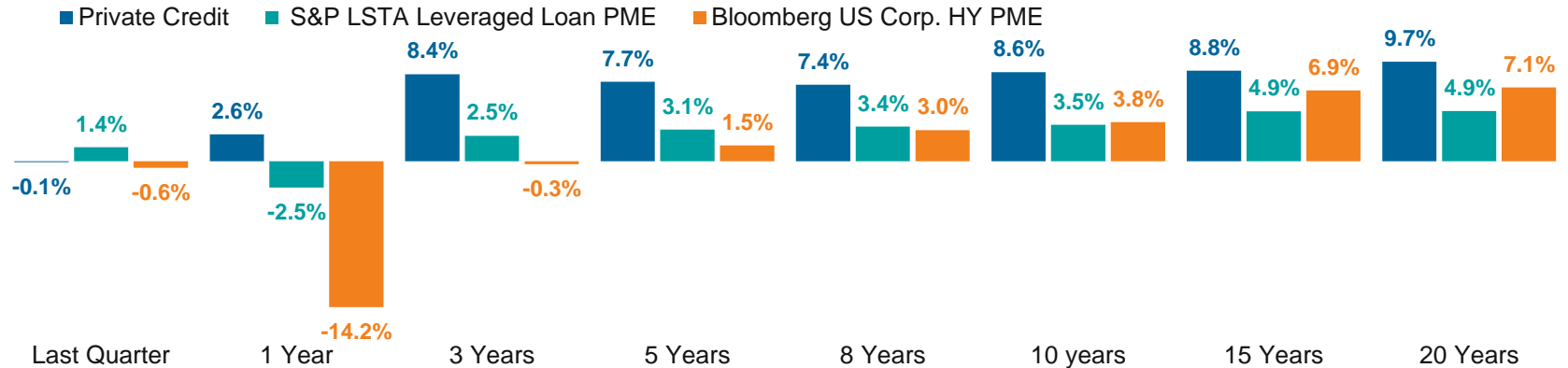


Source: PitchBook

Private Credit Market Overview

Performance over time and compared to relevant indices

Pooled Horizon Net IRRs as of 9/30/22



Pooled Horizon Net IRRs by Strategy as of 9/30/22

Strategy	Last Quarter	1 Year	3 Years	5 Years	8 Years	10 Years	15 Years	20 Years
Senior Debt	-2.4%	-3.5%	4.6%	5.1%	5.7%	5.9%	6.3%	6.1%
Mezzanine	0.2%	5.0%	11.8%	11.1%	10.8%	11.3%	10.5%	11.3%
Credit Opportunities	0.7%	3.9%	8.4%	7.2%	6.6%	8.3%	8.6%	9.7%
Total Private Credit	-0.1%	2.6%	8.4%	7.7%	7.4%	8.6%	8.8%	9.7%

- ▶ Private credit performance varies across sub-asset class and underlying return drivers. On average, the asset class has generated net IRRs of 8% to 10% for trailing periods ended Sept. 30, 2022. Higher-risk strategies performed better than lower-risk strategies.

*PME: Public market equivalent, a benchmark that applies the cash flows of the private credit funds to a public market index and then calculates an IRR.

Source: Refinitiv/Cambridge

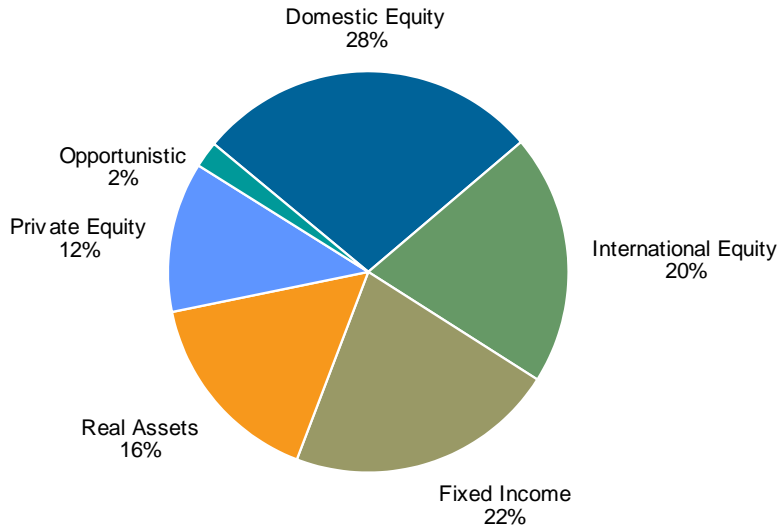
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MCERA Total Fund Review

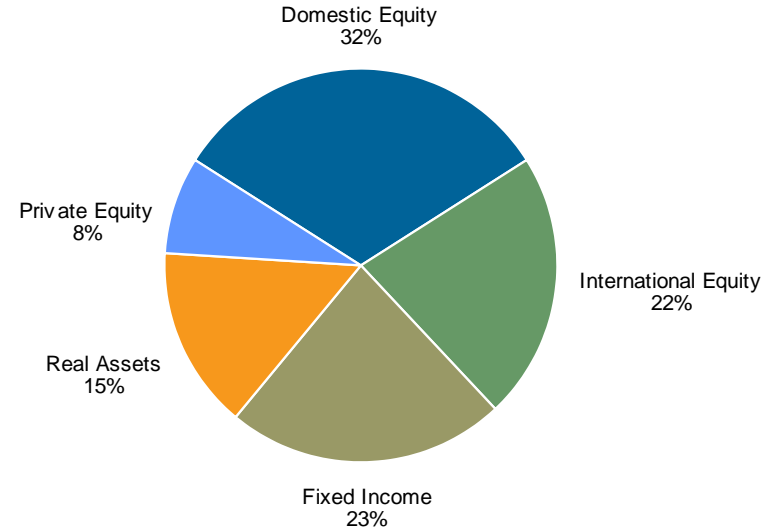
Total Fund Asset Allocation

As of December 31, 2022

Actual Asset Allocation



Target Asset Allocation



Asset Class	\$000s Actual	Weight Actual	Min Target	Target	Max Target	Percent Difference	\$000s Difference
Domestic Equity	827,105	27.8%	28.0%	32.0%	36.0%	(4.2%)	(124,645)
International Equity	601,373	20.2%	19.0%	22.0%	25.0%	(1.8%)	(52,954)
Fixed Income	647,814	21.8%	20.0%	23.0%	26.0%	(1.2%)	(36,256)
Real Assets	475,410	16.0%	12.0%	15.0%	18.0%	1.0%	29,277
Private Equity	360,001	12.1%	0.0%	8.0%	12.0%	4.1%	122,064
Opportunistic	62,514	2.1%	0.0%	0.0%	5.0%	2.1%	62,514
Total	2,974,217	100.0%		100.0%			

Total Fund Asset Distribution

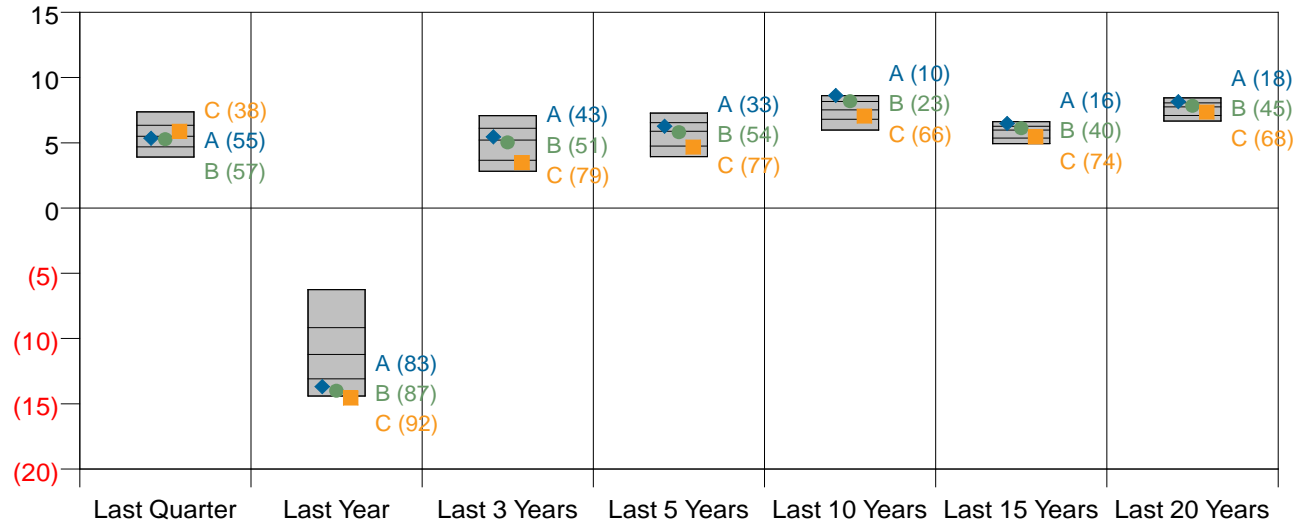
	December 31, 2022			September 30, 2022		
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Domestic Equity	\$827,104,991	27.81%	\$(684,377)	\$62,943,058	\$764,846,310	27.05%
Parametric Domestic Equity Futures (1)	-41,238,865	(1.39%)	3,115,223	(2,087,079)	-42,267,009	(1.50%)
SSGA Russell 1000 Index (2)	645,335,745	21.70%	(2,840,105)	44,041,484	604,134,366	21.37%
DFA Small Cap Core	223,008,111	7.50%	(959,495)	20,988,653	202,978,953	7.18%
International Equity	\$601,373,392	20.22%	\$(14,961,375)	\$81,118,483	\$535,216,284	18.93%
Morgan Stanley Value	182,278,462	6.13%	0	28,251,162	154,027,300	5.45%
Artisan Partners Growth	177,639,655	5.97%	0	24,653,412	152,986,243	5.41%
TimesSquare Intl Small Cap	95,396,278	3.21%	(188,784)	11,353,895	84,231,167	2.98%
FIAM Select Emerging Equity	95,491,601	3.21%	0	8,562,217	86,929,384	3.07%
Parametric International Equity Futures	50,567,396	1.70%	(14,772,591)	8,297,797	57,042,190	2.02%
Fixed Income	\$647,813,959	21.78%	\$12,520,352	\$3,824,545	\$631,469,062	22.34%
Wellington Core Plus	280,094,086	9.42%	(2,680,304)	7,077,817	275,696,573	9.75%
Western Core Plus	295,829,628	9.95%	143,143,860	921,214	151,764,554	5.37%
Colchester Global	0	0.00%	(133,387,358)	(1,854,657)	135,242,015	4.78%
Parametric Fixed Income Futures	71,890,245	2.42%	5,444,154	(2,319,829)	68,765,920	2.43%
Real Assets	\$475,409,515	15.98%	\$(2,283,014)	\$803,152	\$476,889,377	16.87%
Real Estate	\$256,970,623	8.64%	\$(2,187,438)	\$(12,637,351)	\$271,795,412	9.61%
Woodmont	18,099,990	0.61%	0	0	18,099,990	0.64%
UBS Trumbull Property Fund	109,932,429	3.70%	(933,919)	(6,044,133)	116,910,481	4.14%
AEW Core Property Trust	128,938,204	4.34%	(1,253,519)	(6,593,218)	136,784,941	4.84%
Public Real Assets	\$218,438,892	7.34%	\$(95,576)	\$13,440,503	\$205,093,965	7.25%
INVESCO Commodities Fund	54,968,803	1.85%	(95,576)	3,556,967	51,507,412	1.82%
BlackRock TIPS Index Fund	55,750,067	1.87%	0	1,029,178	54,720,889	1.94%
KBI Global Resources Fund	56,400,899	1.90%	0	6,538,831	49,862,067	1.76%
Blackrock REIT Index Fund	51,319,124	1.73%	0	2,315,527	49,003,597	1.73%
Opportunistic (3)	\$62,514,375	2.10%	\$7,393,509	\$1,398,627	\$53,722,238	1.90%
CarVal Credit Value V	22,389,031	0.75%	6,618,343	330,732	15,439,956	0.55%
Fortress Credit Opps Fund V	11,571,353	0.39%	870,249	0	10,701,104	0.38%
Varde Dislocation Fund	28,553,991	0.96%	(95,083)	1,067,895	27,581,178	0.98%
Private Equity (4)	\$360,001,254	12.10%	\$(4,888,452)	\$(0)	\$364,889,706	12.91%
Abbott ACE VI	38,978,454	1.31%	(2,490,981)	(0)	41,469,435	1.47%
Abbott ACE VII	42,422,872	1.43%	(2,792,015)	0	45,214,887	1.60%
Abbott 2016	69,485,150	2.34%	(800,000)	0	70,285,150	2.49%
Abbott 2017	20,699,132	0.70%	531,295	(0)	20,167,837	0.71%
Abbott 2021	8,382,674	0.28%	668,750	0	7,713,924	0.27%
Pathway PPEF 2008	47,820,266	1.61%	(1,019,054)	0	48,839,320	1.73%
Pathway PE I-7	35,167,273	1.18%	(96,042)	(0)	35,263,315	1.25%
Pathway PE I-8	63,644,878	2.14%	(420,046)	0	64,064,924	2.27%
Pathway PE I-9	16,698,327	0.56%	57,501	0	16,640,826	0.59%
Pathway PE I-10	16,702,228	0.56%	1,472,140	(0)	15,230,088	0.54%
Total Fund	\$2,974,217,485	100.0%	\$(2,903,357)	\$150,087,866	\$2,827,032,976	100.0%

Colchester removed
in October

Total Fund Performance – Annualized

Returns for Periods Ended December 31, 2022

Group: Callan Public Fund Sponsor - Large (>1B)



	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years	Last 15 Years	Last 20 Years
10th Percentile	7.38	(6.24)	7.08	7.29	8.62	6.62	8.45
25th Percentile	6.35	(9.16)	6.12	6.54	8.18	6.28	8.07
Median	5.51	(11.21)	5.22	5.89	7.53	5.99	7.76
75th Percentile	4.69	(13.08)	3.66	4.76	6.81	5.37	7.10
90th Percentile	3.91	(14.40)	2.82	3.95	5.99	4.94	6.68

MCERA Total Fund - Gross	◆ A	5.35	(13.68)	5.46	6.27	8.63	6.50	8.16
MCERA Total Fund - Net	● B	5.27	(14.00)	5.03	5.81	8.20	6.11	7.83
MCERA Total Fund Target	■ C	5.89	(14.56)	3.49	4.67	7.06	5.46	7.36

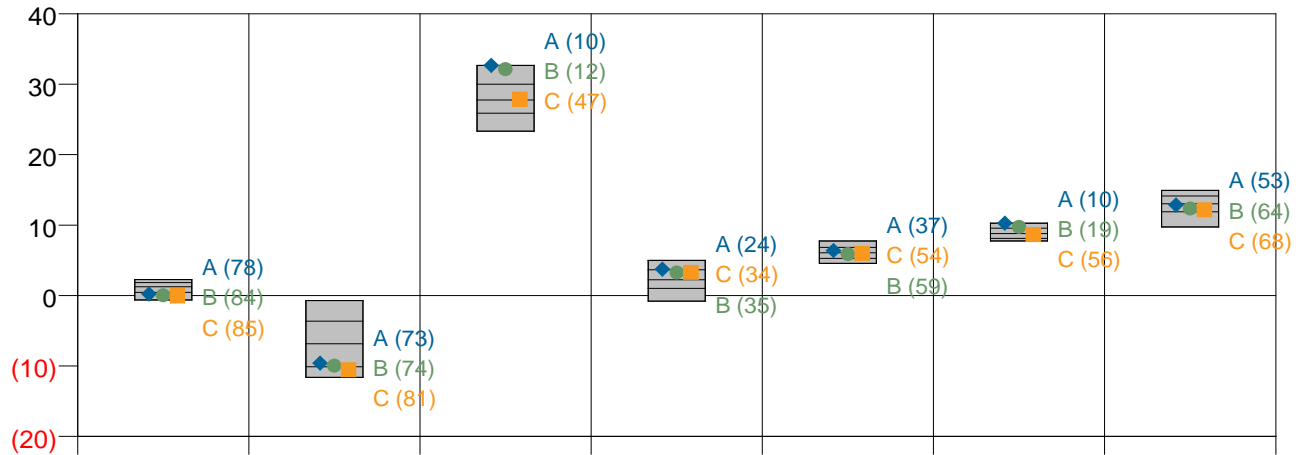
Note: Fortress 4Q22 data not available yet.

Current Quarter Target = 32.0% Russell 3000 Index, 22.0% MSCI ACWI ex US IMI Index, 11.5% Bloomberg Aggregate Index, 5.8% Bloomberg Intermediate Credit Index, 5.8% FTSE World Government Bond Index, 8.0% NCREIF NFI-ODCE Equal Weight Net, 1.8% Bloomberg Commodity Price Index, 1.8% S&P Global Natural Resources Index, 1.8% S&P DJ US Select REIT Index, 1.8% Bloomberg US TIPS Index, 4.8% Russell 3000 Index (Lagged) and 3.2% MSCI ACWI ex US IMI Index (Lagged).

Total Fund Performance – Fiscal Year

Fiscal Year Returns

Group: Callan Public Fund Sponsor - Large (>1B)



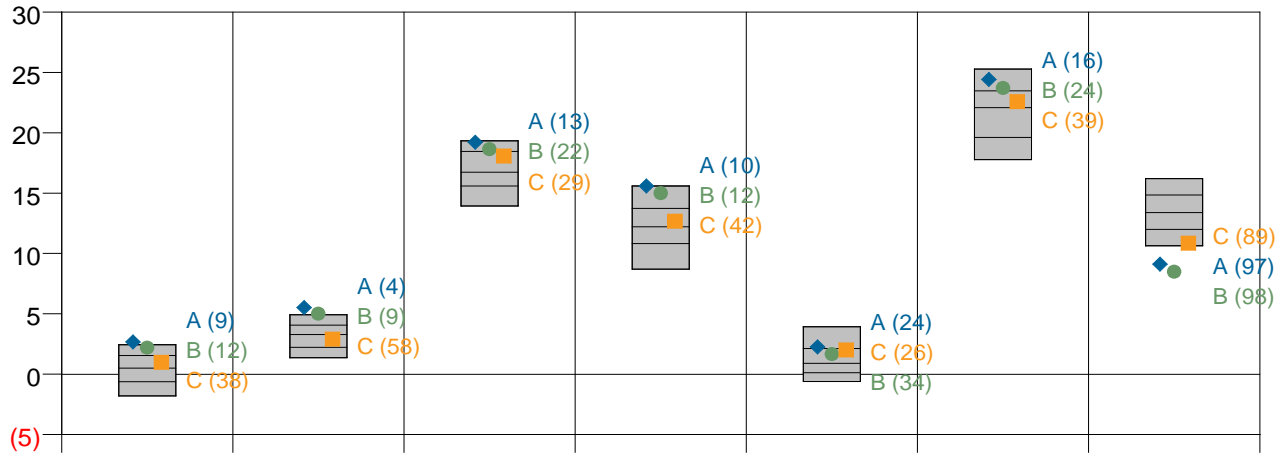
	Fiscal YTD 2023	Fiscal Year 2022	Fiscal Year 2021	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017
10th Percentile	2.28	(0.70)	32.70	4.99	7.76	10.29	14.95
25th Percentile	1.86	(3.63)	30.02	3.66	6.86	9.56	14.14
Median	1.25	(6.83)	27.79	2.25	6.08	8.81	13.04
75th Percentile	0.46	(10.10)	25.89	1.04	5.28	8.13	11.89
90th Percentile	(0.61)	(11.60)	23.33	(0.78)	4.56	7.76	9.73

MCERA Total Fund - Gross	◆ A	0.22	(9.60)	32.69	3.74	6.39	10.29	12.88
MCERA Total Fund - Net	● B	0.04	(9.95)	32.15	3.26	5.88	9.74	12.37
MCERA Total Fund Target	■ C	(0.05)	(10.52)	27.89	3.29	5.99	8.67	12.20

Total Fund Performance – Fiscal Year

Fiscal Year Returns

Group: Callan Public Fund Sponsor - Large (>1B)



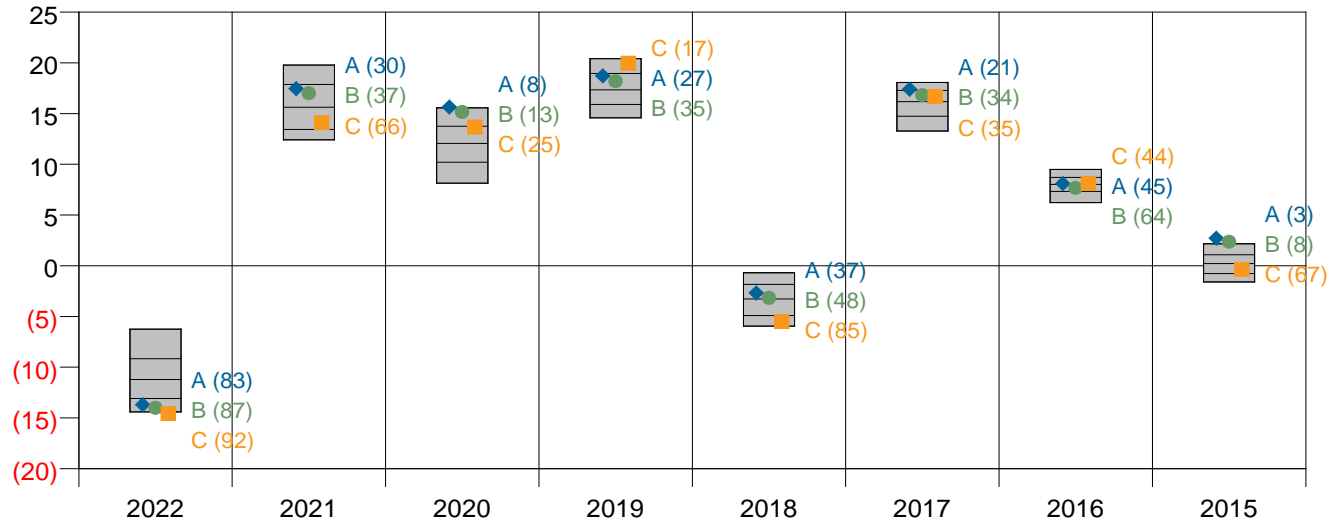
	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Fiscal Year 2013	Fiscal Year 2012	Fiscal Year 2011	Fiscal Year 2010
10th Percentile	2.44	4.92	19.33	15.59	3.93	25.29	16.21
25th Percentile	1.55	4.08	18.46	13.74	2.13	23.48	14.86
Median	0.50	3.29	16.74	12.22	0.90	22.09	13.39
75th Percentile	(0.62)	2.22	15.59	10.82	0.12	19.62	12.00
90th Percentile	(1.80)	1.38	13.95	8.70	(0.60)	17.79	10.64

MCERA Total Fund - Gross	◆ A	2.68	5.52	19.22	15.60	2.26	24.42	9.11
MCERA Total Fund - Net	● B	2.19	5.02	18.65	15.01	1.67	23.71	8.49
MCERA Total Fund Target	■ C	0.98	2.91	18.09	12.68	2.02	22.58	10.87

Total Fund Performance – Calendar Years

Returns for Periods Ended December 31, 2022

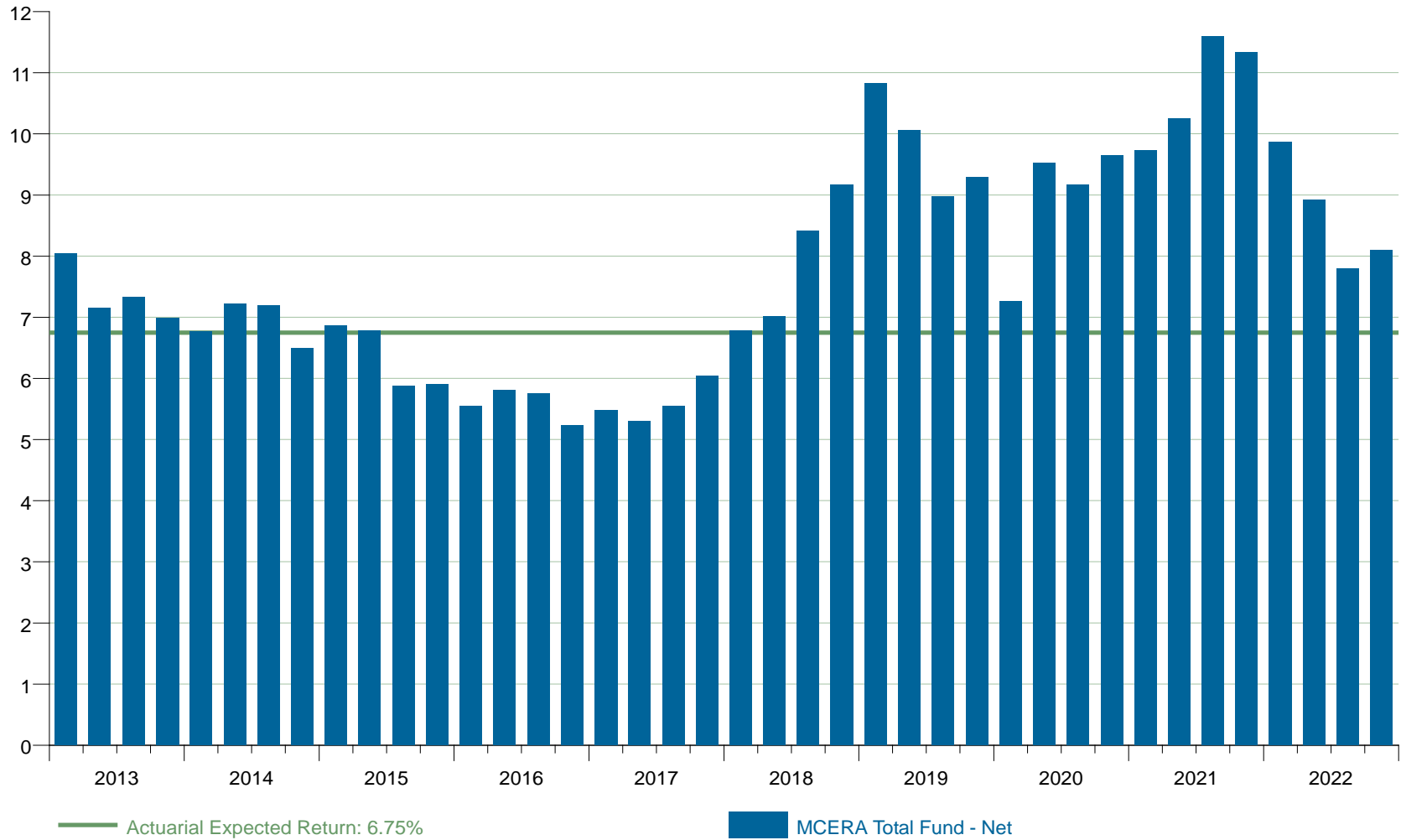
Group: Callan Public Fund Sponsor - Large (>1B)



	2022	2021	2020	2019	2018	2017	2016	2015
10th Percentile	(6.24)	19.79	15.58	20.43	(0.67)	18.07	9.50	2.17
25th Percentile	(9.16)	17.88	13.76	18.95	(1.82)	17.29	8.71	1.10
Median	(11.21)	15.63	12.06	17.35	(3.26)	16.18	8.02	0.22
75th Percentile	(13.08)	13.44	10.21	15.91	(4.90)	14.75	7.33	(0.75)
90th Percentile	(14.40)	12.42	8.14	14.59	(5.94)	13.29	6.23	(1.60)

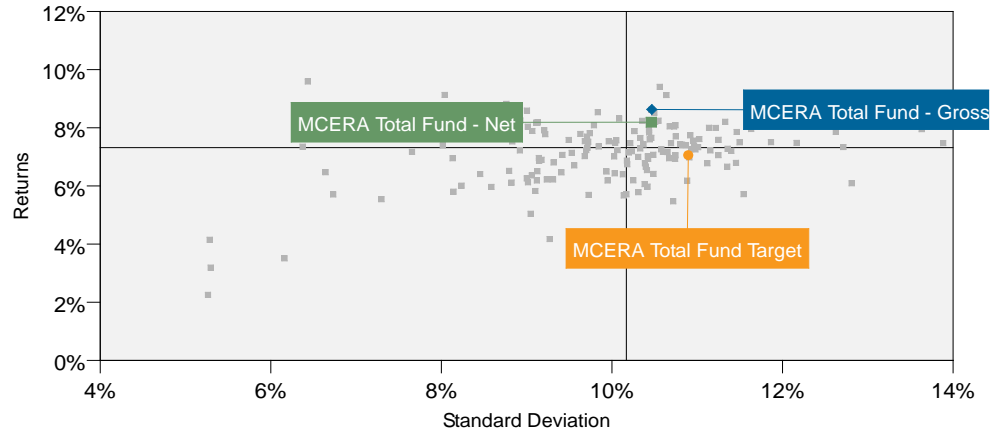
Total Fund - Gross	◆ A	(13.68)	17.47	15.66	18.73	(2.68)	17.41	8.10	2.73
MCERA Total Fund - Net	● B	(14.00)	17.01	15.16	18.19	(3.16)	16.81	7.68	2.37
Total Fund Target	■ C	(14.56)	14.12	13.68	19.97	(5.49)	16.68	8.13	(0.34)

Annualized 10 Year Total Fund Net Returns (Quarterly Roll)

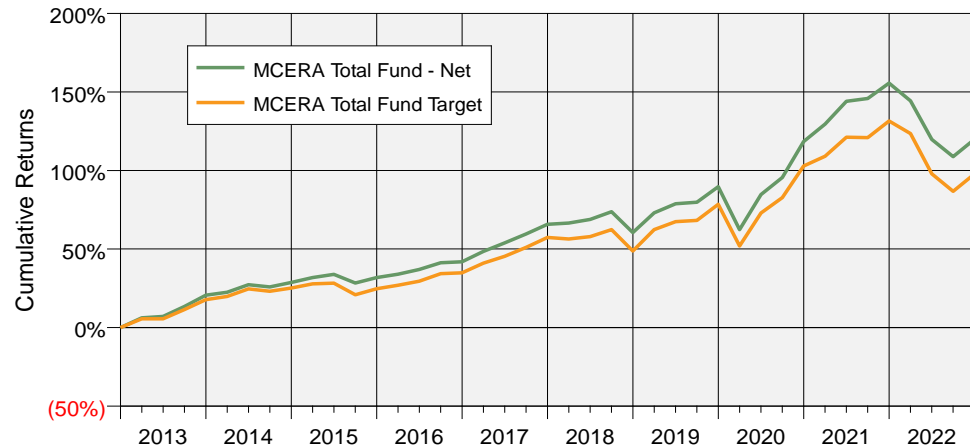


Total Fund – Cumulative Returns Relative to Target

Ten Year Annualized Risk vs. Return
As of December 31, 2022



Total Fund Cumulative Returns vs. Target
10 Years Ended December 31, 2022



Watchlist

Investment Manager Monitoring Summary Report Active Managers as of December 31, 2022




Investment Manager	Organization/ Team	3 Year Performance vs Benchmark	3 Year Performance vs Peers	5 Year Performance vs Benchmark	5 Year Performance vs Peers	Qualify for Watchlist?	Date Added
DFA Small Cap Core Equity <i>Russell 2000 Index</i>				N/A	N/A		
Morgan Stanley International Value Equity <i>MSCI EAFE Index</i>						Yes	4Q17
Artisan International Growth Equity <i>MSCI EAFE Index</i>						Yes	4Q17
TimesSquare International Small Cap Equity <i>MSCI EAFE Small Cap Index</i>				N/A	N/A		
Fidelity Emerging Markets Equity <i>MSCI Emerging Markets Index</i>		N/A	N/A	N/A	N/A		
Wellington Core Plus Fixed Income <i>Bloomberg U.S Aggregate Index</i>						No	
Western Asset Core Plus Fixed Income <i>Bloomberg U.S Aggregate Index</i>		N/A	N/A	N/A	N/A		
Invesco Balanced Risk Commodity Fund <i>Bloomberg Commodity Index</i>						Yes	4Q20
KBI Global Natural Resources Fund <i>S&P Global Natural Resource Index</i>			N/A		N/A	No	
UBS Trumbull Property Fund* <i>NFI-ODCE Index</i>		N/A	N/A	N/A	N/A		4Q19

*UBS Trumbull Property Fund placed on watch for organizational concerns. Quantitative criteria for private market portfolios under review by Governance Committee.

Quantitative Criteria

If a manager trails its relevant benchmark by more than 100 basis points (net of fees) and ranks in the bottom quartile of its peer universe (gross of fees ranking) for the trailing three years, or if a manager trails its relevant benchmark (net of fees) or ranks below median of its peer universe (gross of fees ranking) for the trailing five years, then the manager may be placed on the Watchlist.

Color Code

	meets watch list criteria, no concerns, no actions recommended
	concerns exist, no actions recommended
	violates watch list criteria, concerns exist, action to be determined

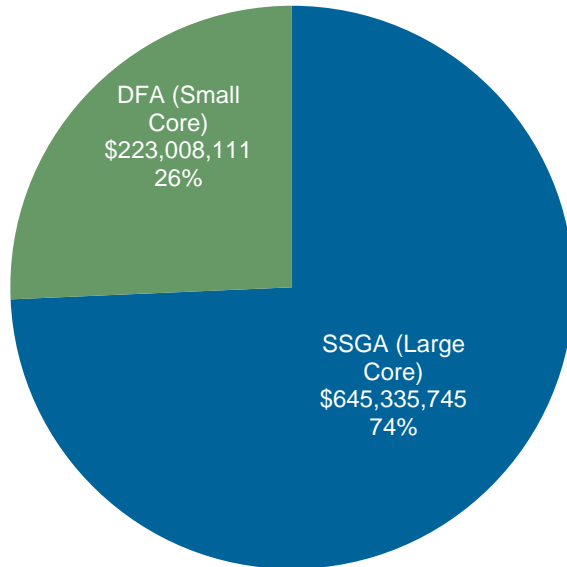
Watchlist

Investment Manager	3 Year Net Return Trails Benchmark by more than 100 bps (relative return shown in bps)	<u>AND</u>	3 Year Gross Return Ranks 75th - 100th%	<u>OR</u>	5 Year Net Return Trails Benchmark (relative return shown in bps)	<u>OR</u>	5 Year Gross Return Ranks 50th - 100th%	Qualify for Watchlist (Quantitative)
DFA Small Cap Core Equity <i>Russell 2000 Index</i>	481		22nd		N/A		N/A	No
Morgan Stanley International Value Equity <i>MSCI EAFE Index</i>	-44		76th		-37		27th	Yes
Artisan International Growth Equity <i>MSCI EAFE Index</i>	-257		84th		41		50th	Yes
TimesSquare International Small Cap Equity <i>MSCI EAFE Small Cap Index</i>	-429		95th		N/A		N/A	Yes
Fidelity Emerging Markets Equity <i>MSCI Emerging Markets Index</i>	N/A		N/A		N/A		N/A	No
Wellington Core Plus Fixed Income <i>Bloomberg U.S Aggregate Index</i>	92		43rd		80		38th	No
Western Asset Core Plus Fixed Income <i>Bloomberg U.S Aggregate Index</i>	N/A		N/A		N/A		N/A	No
Invesco Balanced Risk Commodity Fund <i>Bloomberg Commodity Index</i>	-69		63rd		-92		77th	Yes
KBI Global Natural Resources Fund <i>S&P Global Natural Resource Index</i>	302		N/A		286		N/A	No
UBS Trumbull Property Fund <i>NCREIF NFI-ODCE Index</i>	Quantitative criteria for private markets portfolios under review by Governance Committee. On watch due to organizational changes.							Under Review

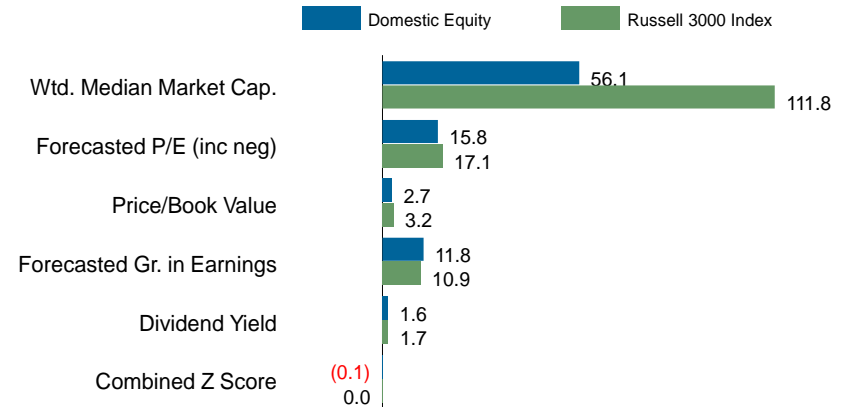
Callan

MCERA Asset Class Review

Domestic Equity Composite



Portfolio Characteristics as of December 31, 2022

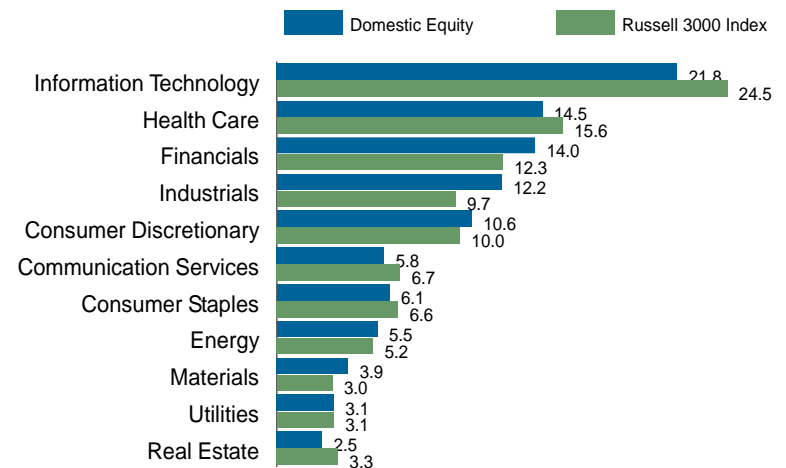


Style Exposure Matrix

Holdings as of December 31, 2022

	-- Domestic Equity				-- Russell 3000 Index			
	Value	Core	Growth	Total	Value	Core	Growth	Total
Large	14.9% (100)	17.5% (94)	29.8% (100)	62.2% (294)	18.7% (100)	21.9% (94)	37.3% (100)	77.9% (294)
Mid	5.1% (179)	5.7% (202)	6.1% (204)	17.0% (585)	5.3% (181)	5.0% (202)	5.2% (207)	15.5% (590)
Small	4.8% (240)	6.8% (357)	6.0% (278)	17.6% (875)	1.5% (300)	2.3% (507)	2.0% (372)	5.8% (1179)
Micro	1.5% (385)	1.2% (249)	0.6% (130)	3.3% (764)	0.2% (264)	0.4% (456)	0.2% (164)	0.8% (884)
Total	26.3% (904)	31.2% (902)	42.5% (712)	100.0% (2518)	25.7% (845)	29.6% (1259)	44.7% (843)	100.0% (2947)

Sector Allocation as of December 31, 2022



Domestic Equity Composite

Returns and Rankings for Periods Ended December 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Domestic Equity - Net	8.22	(17.43)	8.08	9.00	12.02
Domestic Equity Target	7.18	(19.21)	7.07	8.79	12.13
SSGA - Net	7.28	(19.06)	6.79	8.89	12.30
Large Cap Blended Benchmark	7.24	(19.13)	6.78	8.89	12.29
Ranking vs. Large Cap Equity	57	55	58	49	53
DFA Small Core - Net	10.24	(12.97)	7.91	--	--
Russell 2000 Index	6.23	(20.44)	3.10	4.13	9.01
Ranking vs. Small Cap Equity	33	21	22	--	--

Returns and Rankings for Calendar Years

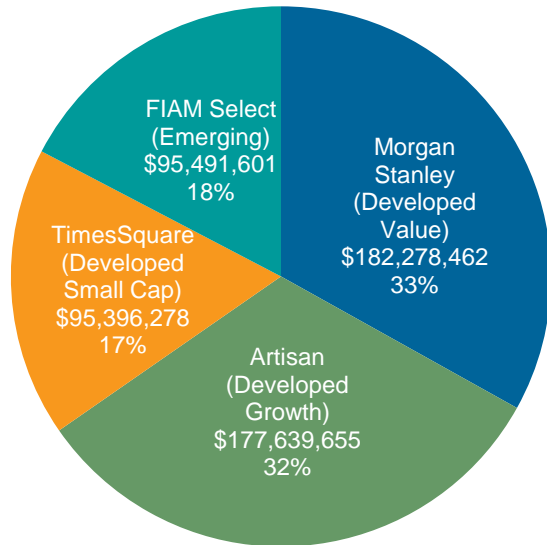
	2022	2021	2020	2019	2018	2017
Domestic Equity - Net	(17.43)	29.74	17.85	28.77	(5.34)	20.61
Domestic Equity Target	(19.21)	25.66	20.89	31.02	(5.24)	21.13
SSGA - Net	(19.06)	27.16	18.33	31.43	(4.38)	21.83
Large Cap Blended Benchmark	(19.13)	27.15	18.40	31.49	(4.38)	21.83
Ranking vs. Large Cap Equity	55	49	53	43	46	51
DFA Small Core - Net	(12.97)	29.22	11.74	21.77	--	--
Russell 2000 Index	(20.44)	14.82	19.96	25.52	(11.01)	14.65
Ranking vs. Small Cap Equity	21	21	54	71	--	--

- The domestic equity composite outperformed the benchmark over the quarter and year. DFA's relative outperformance has been positive for the composite's relative returns.
- DFA outperformed its benchmark over the fourth quarter and last year due to its exclusion of stocks with the lowest profitability and highest relative prices.

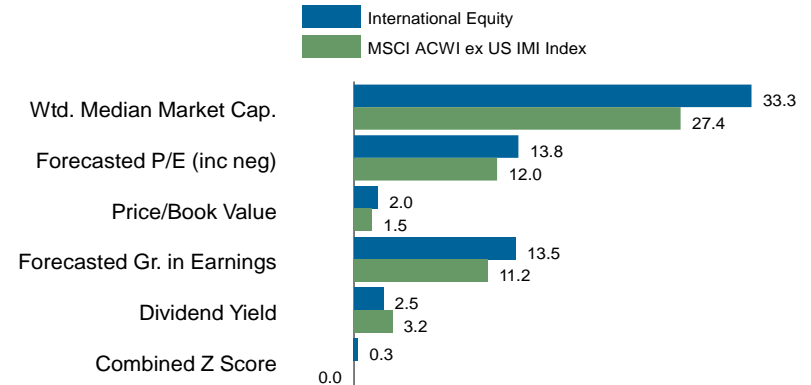
The Domestic Equity Target is comprised of 51.1% S&P/BARRA Value, 22.2% S&P 500, 15.6% Russell 2000 and 11.1% S&P/BARRA Growth through 12/31/1999, 80% S&P 500 and 20% Russell 2000 from 12/31/1999 to 06/30/2010, and 100% Russell 3000 from 06/30/2010 to present.

The Large Cap Blended Benchmark consists of the S&P 500 Index to 7/31/2021 and the Russell 1000 Index thereafter.

International Equity Composite



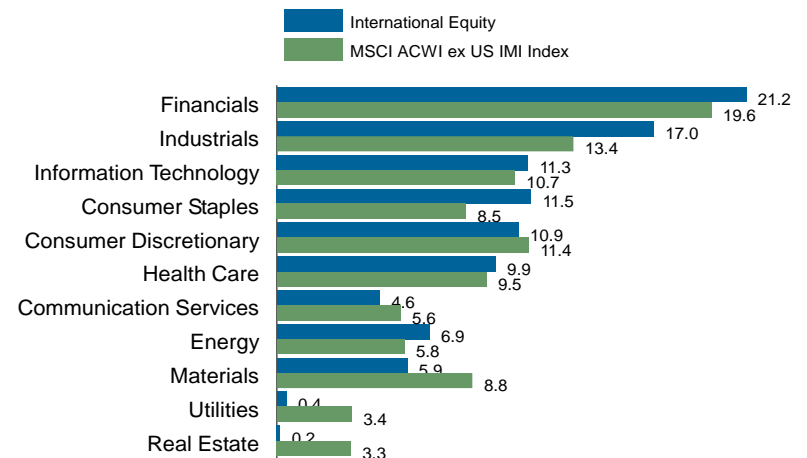
Portfolio Characteristics as of December 31, 2022



Region & Style Exposure Matrix Holdings as of December 31, 2022

Region	International Equity				MSCI ACWI ex US IMI Index			
	Value	Core	Growth	Total	Value	Core	Growth	Total
Europe	13.8% (28)	12.8% (31)	32.3% (63)	58.9% (122)	12.4%	11.4%	16.2%	40.0%
N. America	0.7% (1)	1.7% (3)	6.5% (10)	9.0% (14)	1.5%	2.0%	1.5%	5.0%
Pacific	0.9% (4)	1.5% (5)	8.4% (25)	10.8% (34)	9.1%	7.6%	8.5%	25.1%
Emerging	3.5% (30)	8.9% (44)	8.9% (41)	21.3% (115)	8.1%	10.5%	11.3%	29.9%
Total	18.9% (63)	24.9% (83)	56.1% (139)	100.0% (285)	31.0%	31.5%	37.5%	100.0%

Sector Allocation as of December 31, 2022



International Equity Composite

Returns and Rankings for Periods Ended December 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
International Equity - Net	14.82	(19.28)	(1.99)	0.12	4.07
International Equity - Target	14.15	(16.58)	0.20	0.85	3.98
MSIM - Net	18.18	(13.62)	0.43	1.17	4.16
MSCI EAFE Index	17.34	(14.45)	0.87	1.54	4.67
Ranking vs. Non-US Developed Value Equity	69	92	76	27	64
Artisan - Net	16.11	(19.08)	(1.70)	1.95	4.62
MSCI EAFE Index	17.34	(14.45)	0.87	1.54	4.67
Ranking vs. Non-US Developed Growth Equity	12	28	84	50	68
TimesSquare - Net	13.49	(26.82)	(5.22)	--	--
MSCI EAFE Small Cap	15.79	(21.39)	(0.93)	(0.05)	6.21
Ranking vs. International Small Cap Equity	71	74	95	--	--
FIAM Select EM - Net	9.85	(23.89)	--	--	--
MSCI Emerging Markets Index	9.70	(20.09)	(2.69)	(1.39)	1.44
Ranking vs. Emerging Markets Equity	53	70	--	--	--

Returns and Rankings for Periods Ended December 31, 2022

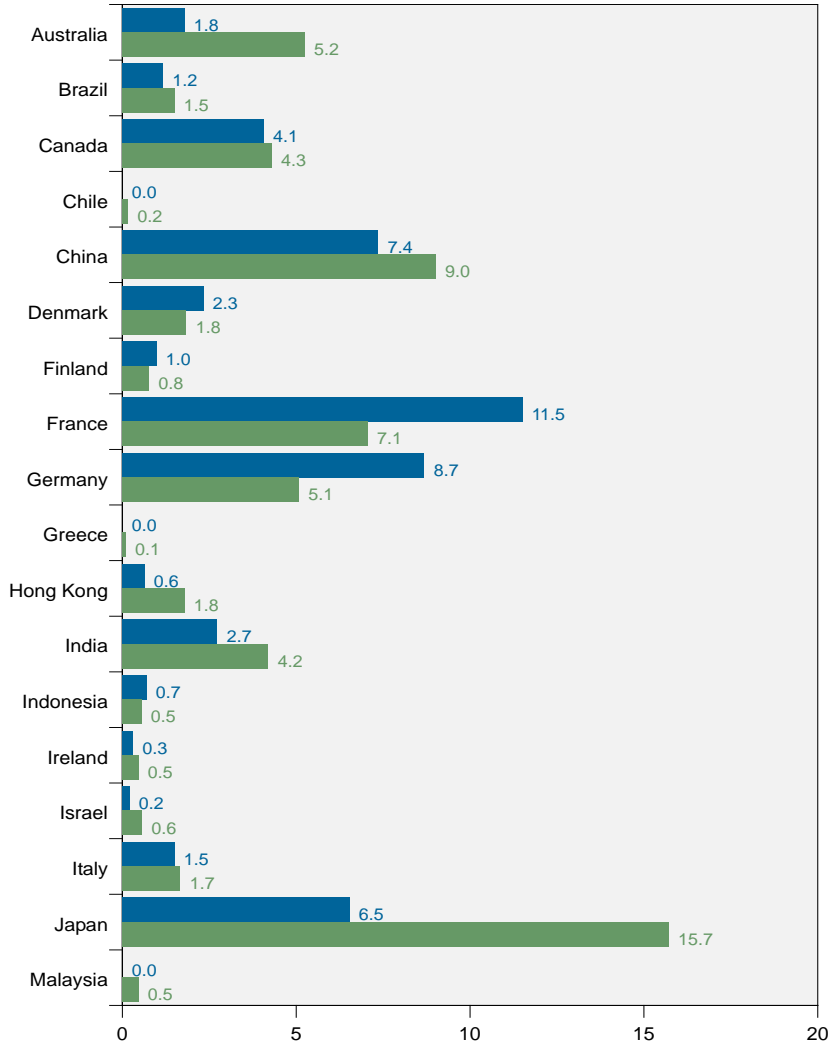
	2022	2021	2020	2019	2018
International Equity - Net	(19.28)	5.28	10.79	23.52	(13.50)
International Equity - Target	(16.58)	8.53	11.12	21.63	(14.76)
MSIM - Net	(13.62)	4.70	12.00	20.93	(13.46)
MSCI EAFE Index	(14.45)	11.26	7.82	22.01	(13.79)
Ranking vs. Non-US Developed Value Equity	92	98	1	34	14
Artisan - Net	(19.08)	8.59	8.09	29.62	(10.53)
MSCI EAFE Index	(14.45)	11.26	7.82	22.01	(13.79)
Ranking vs. Non-US Developed Growth Equity	28	60	96	26	13
TimesSquare - Net	(26.82)	2.18	13.87	--	--
MSCI EAFE Small Cap	(21.39)	10.10	12.34	24.96	(17.89)
Ranking vs. International Small Cap Equity	74	93	39	--	--
FIAM Select EM - Net	(23.89)	--	--	--	--
MSCI Emerging Markets Index	(20.09)	(2.54)	18.31	18.44	(14.57)
Ranking vs. Emerging Markets Equity	70	--	--	--	--

- The International Equity composite outperformed on a relative basis during the last quarter but trailed over the last year.
 - Morgan Stanley: stock selection in consumer staples and industrials were the top contributors to performance for the quarter and year.
 - Artisan: underperformed over the year as growth stocks were out of favor. Additionally, Artisan's underperformance primarily stems from 1Q22 with the outbreak of the Russia-Ukraine war. The market swung swiftly from growth to value stocks, and Artisan also owned two Russian names.
 - TimesSquare: the portfolio's quality growth style has weighed on performance.
 - FIAM: slight outperformance versus the benchmark over the last quarter was helped by materials and financials stock selection. Chinese stock selection in IT and health care were large detractors during the year.

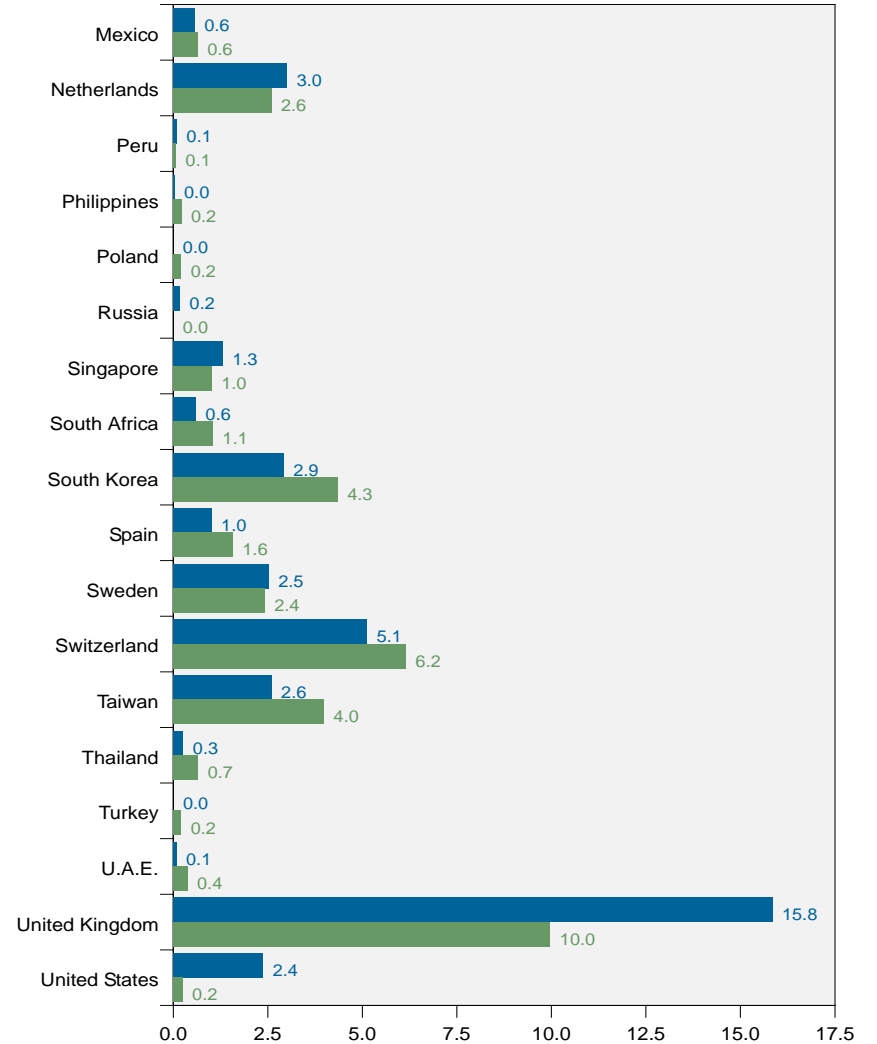
The International Equity Target is comprised of 100% MSCI EAFE Index through 06/30/2010, and 100% MSCI ACWI ex-US IMI Index thereafter.

International Equity Composite

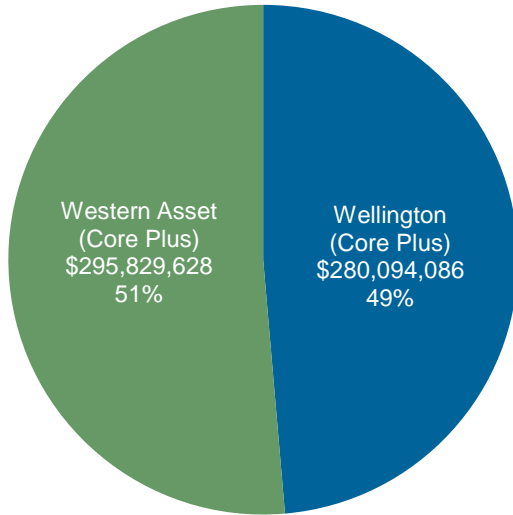
Country Allocations as of September 30, 2022



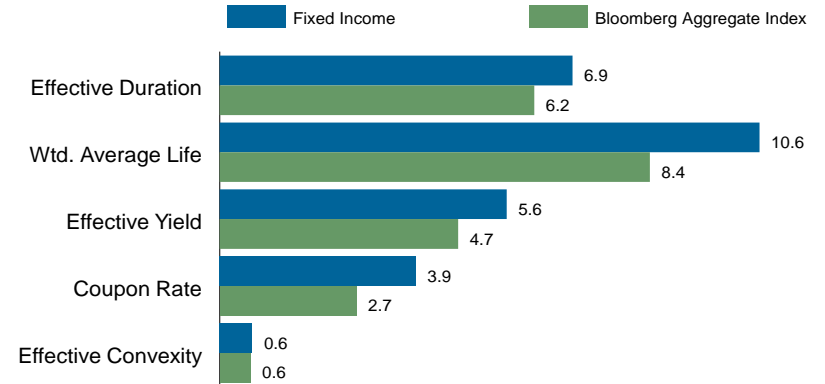
-- International Equity
-- MSCI ACWI ex US IMI Index



Fixed Income Composite

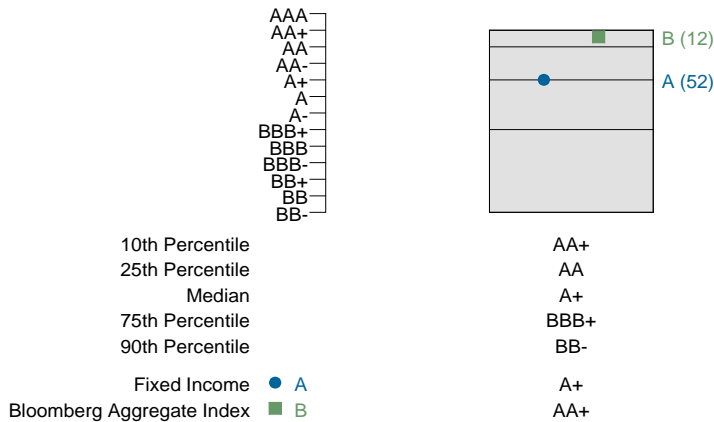


Portfolio Characteristics as of December 31, 2022

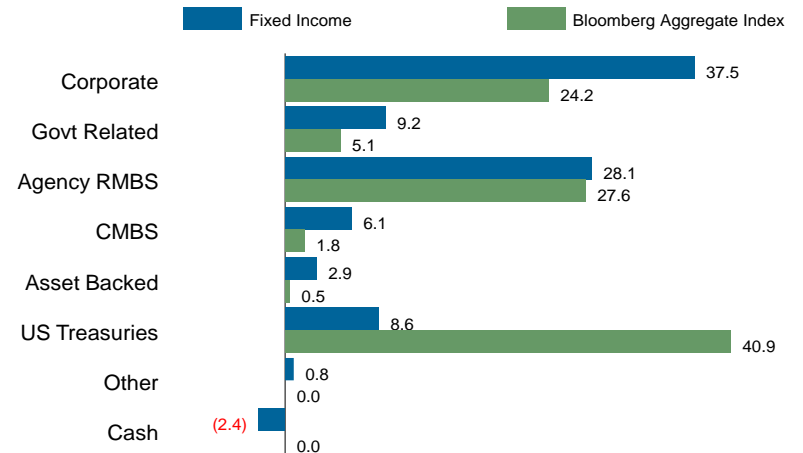


Quality Rating as of December 31, 2022

Total Domestic Fixed Income Database



Sector Allocation as of December 31, 2022



Fixed Income Composite

Returns and Rankings for Periods Ended December 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Fixed Income - Net	0.28	(15.56)	(2.82)	(0.13)	1.14
Fixed Income Target	1.87	--	--	--	--
Wellington - Net	2.54	(13.68)	(1.97)	0.63	1.85
Bloomberg Aggregate Index	1.87	(13.01)	(2.71)	0.02	1.06
Ranking vs. Core Plus Fixed Income	19	63	43	38	47
Western Asset - Net	0.37	(11.71)	(1.10)	1.14	2.00
Western Asset Blended Benchmark	0.37	(11.01)	(1.93)	0.65	1.38

Returns and Rankings for Calendar Years

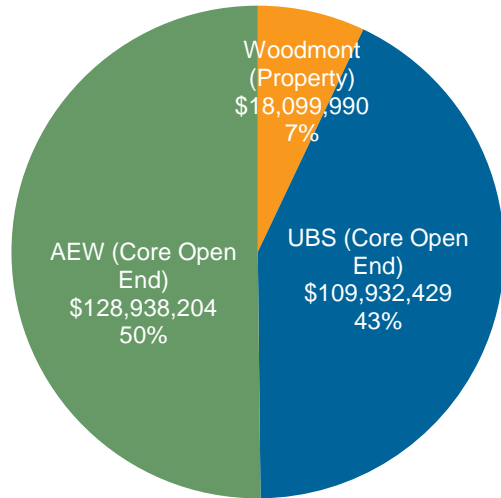
	2022	2021	2020	2019	2018	2017
Fixed Income - Net	(15.56)	(2.50)	11.47	8.60	(0.34)	5.15
Fixed Income Target	--	--	--	--	--	--
Wellington - Net	(13.68)	(0.71)	9.93	9.95	(0.39)	4.87
Bloomberg Aggregate Index	(13.01)	(1.54)	7.51	8.72	0.01	3.54
Ranking vs. Core Plus Fixed Income	63	64	26	44	42	41
Western Asset - Net	(11.71)	(0.43)	10.03	9.82	(0.35)	4.13
Western Asset Blended Benchmark	(11.01)	(1.03)	7.08	9.52	0.01	3.67

- The Fixed Income composite underperformed during the quarter and last year versus the benchmark.
 - Wellington: while investment grade credit and high yield allocations helped in the fourth quarter, they detracted from relative performance during the year.
 - Western Asset: underperformance during the year was partially due to overweights in consumer cyclicals and banking.
- It was decided to restructure the fixed income allocation to 100% U.S. Core Plus managed by Wellington and Western Asset. Colchester was terminated in October and the assets were moved to Western Asset. They repositioned their current portfolio to Core Plus in November.

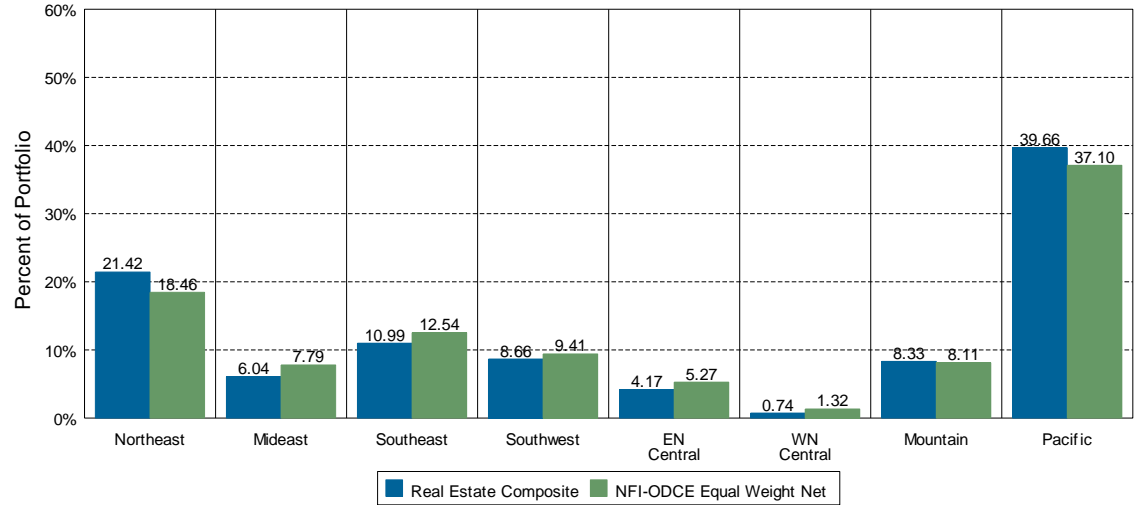
Fixed Income Target is comprised of 100% Bloomberg Aggregate Index until March 2014, 50% Bloomberg Aggregate Index, 25% Bloomberg Intermediate Credit Index, and 25% FTSE World Government Bond Index until November 2022, and 100% Bloomberg Index thereafter.

Western Asset Blended Benchmark is comprised of the Bloomberg US Aggregate Index until March 2014, the Bloomberg US Intermediate Credit Index to 11/6/2022, and the Bloomberg US Aggregate Index thereafter.

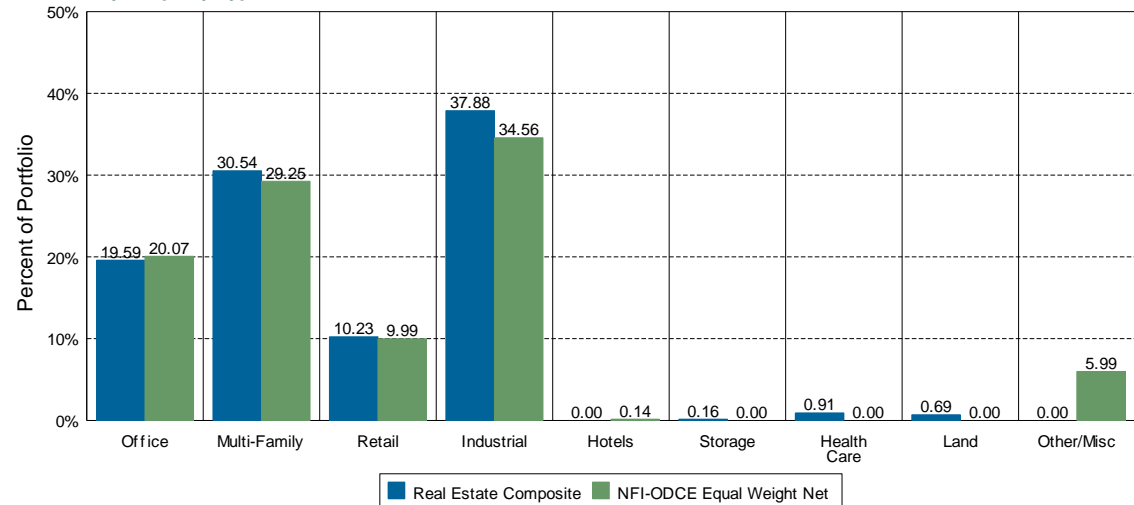
Real Estate Composite



Diversification by Geographic Region as of December 31, 2022



Diversification by Property Type as of December 31, 2022



Real Estate Composite

Returns and Rankings for Periods Ended December 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
Real Estate - Net	(4.84)	6.20	6.42	5.25	9.26
Real Estate Target	(5.08)	7.56	9.72	8.31	9.41
AEW Core Property Trust - Net	(5.03)	7.95	9.52	8.11	--
NFI-ODCE Equal Wt Net Index	(5.08)	7.56	9.72	8.31	9.46
Ranking vs. Core Open End Funds	70	71	65	64	--
UBS Trumbull Property Fund - Net	(5.36)	5.21	5.00	3.59	--
NFI-ODCE Equal Wt Net Index	(5.08)	7.56	9.72	8.31	9.46
Ranking vs. Core Open End Funds	77	89	94	100	--

Returns and Rankings for Calendar Years

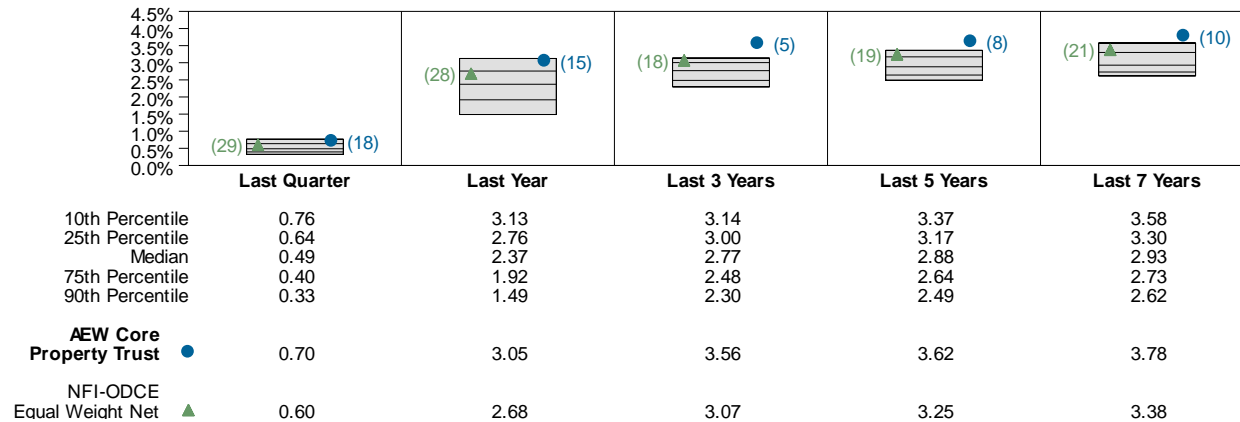
	2022	2021	2020	2019	2018	2017
Real Estate - Net	6.20	16.16	(2.29)	0.64	6.46	5.66
Real Estate Target	7.56	21.88	0.75	5.18	7.30	6.92
AEW Core Property Trust - Net	7.95	21.00	0.57	5.29	6.77	6.99
NFI-ODCE Equal Wt Net Index	7.56	21.88	0.75	5.18	7.30	6.92
Ranking vs. Core Open End Funds	71	59	66	71	76	43
UBS Trumbull Property Fund - Net	5.21	15.41	(4.68)	(2.88)	6.12	5.32
NFI-ODCE Equal Wt Net Index	7.56	21.88	0.75	5.18	7.30	6.92
Ranking vs. Core Open End Funds	89	89	96	96	89	85

- The AEW Core Property Trust's current leverage is 25% (NFI-ODCE leverage: 22.7%).
 - All sectors produced negative returns for AEW during the quarter.
- The UBS Trumbull Property Fund's current leverage is 19.1%.
 - During the quarter, retail produced positive returns, but all other sectors were negative.

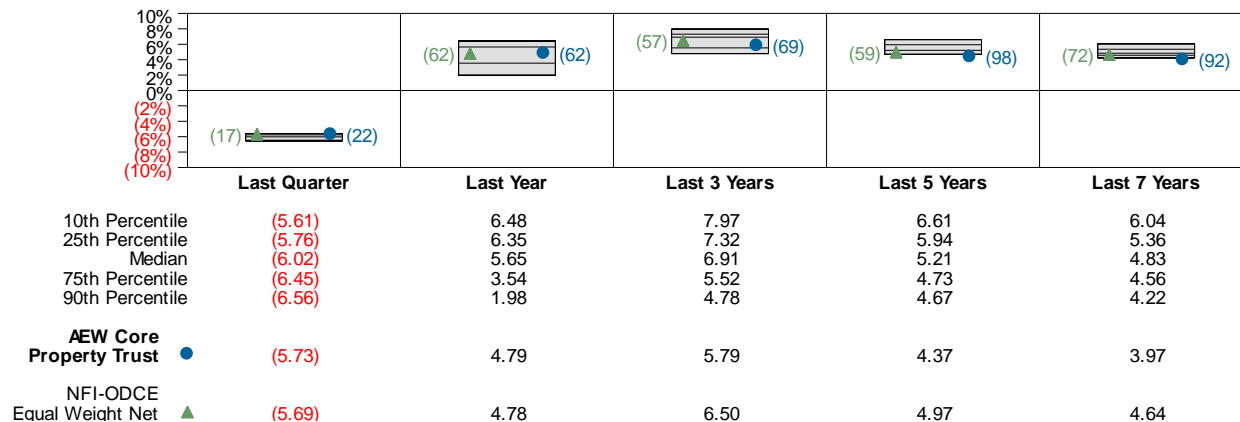
The Real Estate Target is comprised of the NCREIF Classic Index through 12/31/2004, NCREIF Total Property Index through 12/31/2014, and the NFI-ODCE Equal Weight Net thereafter.

AEW Income and Appreciation Returns

Income Rankings vs Callan Real Estate ODCE Periods ended December 31, 2022

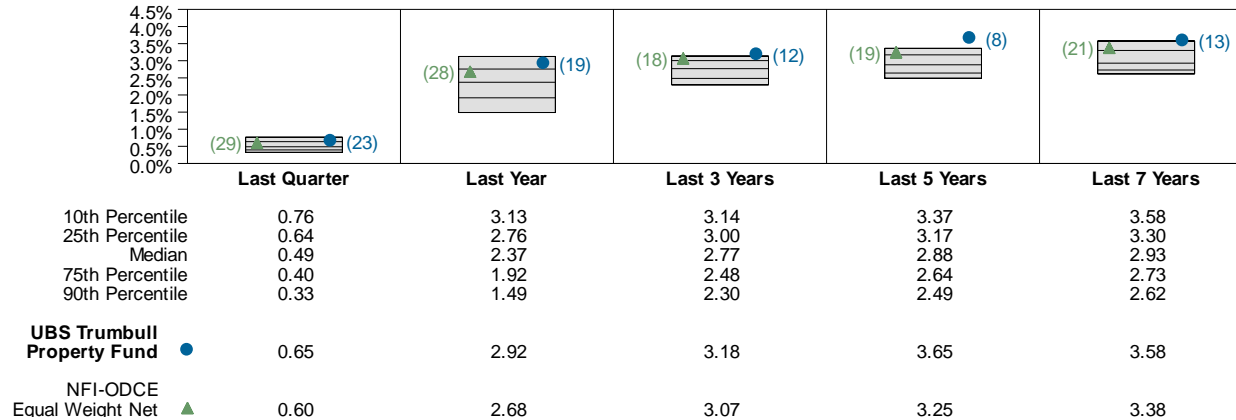


Appreciation Rankings vs Callan Real Estate ODCE Periods ended December 31, 2022

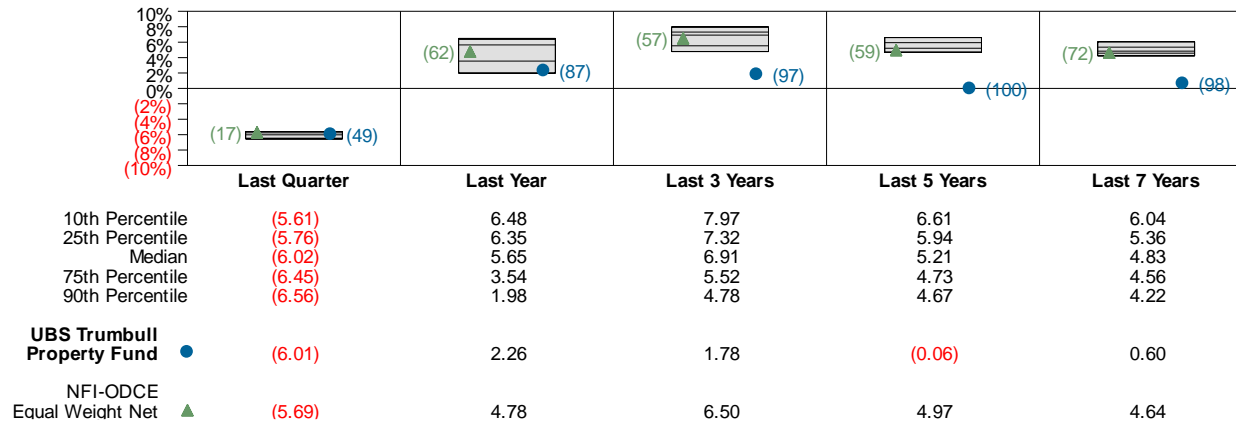


UBS Income and Appreciation Returns

Income Rankings vs Callan Real Estate ODCE Periods ended December 31, 2022



Appreciation Rankings vs Callan Real Estate ODCE Periods ended December 31, 2022



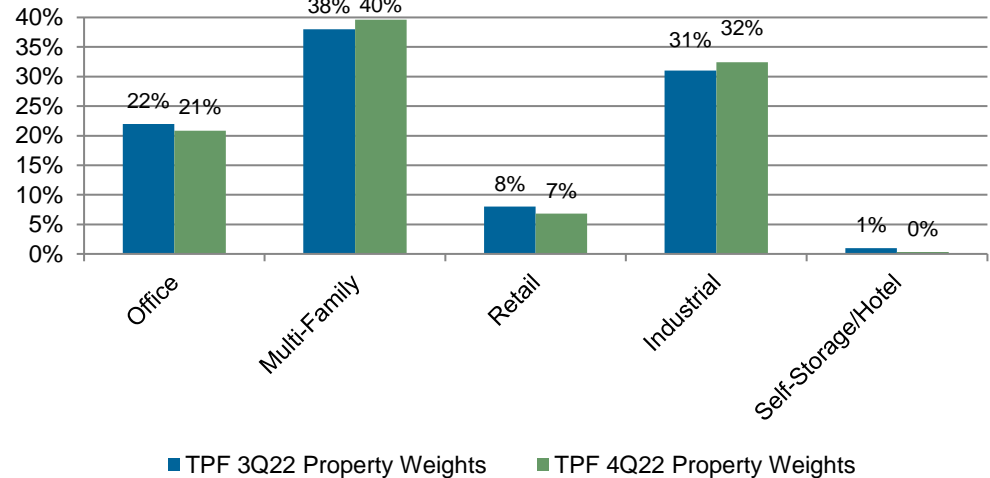
UBS Trumbull Property Fund Snapshot

As of December 31, 2022

As of 4Q 2022

Gross Asset Value	\$16.8B
Net Asset Value	\$13.5B
Leverage	19.1%
Number of Investments	144
Number of Investors	439
Redemption Queue	\$7.0 billion
4Q22 Redemption Queue Payout	\$0 million
Contribution Queue	\$0 million

Property Type Weights (Change from Prior Quarter)



- The Fund has a current redemption pool of \$7.0 billion. The Fund did not make a 4Q 2022 redemption payment in January 2023. The Fund's initial target for 2022 redemption payments was \$2.5 billion; following the fourth payment in October 2022, a total of \$1.85 billion was paid out. The Non-Strategic Asset portfolio began with 44 properties and now has five assets representing 2.6% of the total fund remaining. UBS expects the Non-Strategic Asset portfolio to be fully liquidated by year-end 2023.
- MCERA submitted a partial redemption request for \$20 million in January 2020 and has now received the full amount.
- In September 2019, the fund announced investors would have a choice between two fee incentives: Loyalty Incentive (discounted fees of 15% over 3 years or 25% over 4 years) and Top-up Incentive (\$0 base fee on additional dollars deposited). UBS recently announced they are extending these programs.
 - In 2019, MCERA elected for the 4 year/25% discount loyalty incentive on approximately \$100 million NAV (effective January 2020).

NFI-ODCE Funds - Net of Fee Returns

As of December 31, 2022

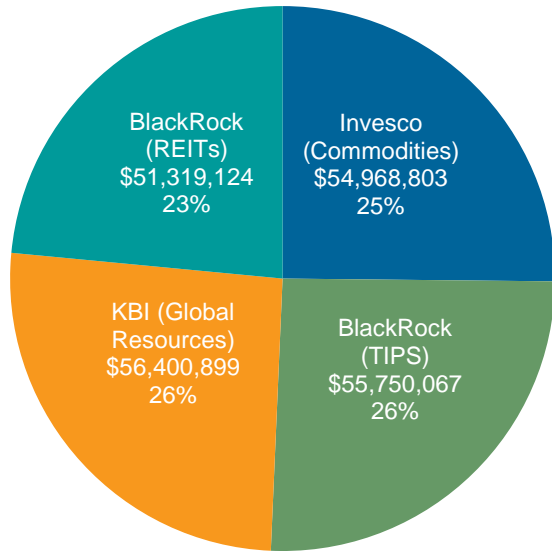
Fund Name	Last Quarter	Last Year	Last 3 Years	Last 5 Years
AEW Core Property Trust	-5.03%	7.95%	9.52%	8.11%
AFL-CIO Building Investment Trust	-7.01%	-3.55%	2.58%	3.58%
ARA Core Property Fund	-5.65%	8.28%	9.51%	8.28%
ASB Allegiance Real Estate Fund	-4.21%	9.77%	8.28%	6.92%
Bailard Real Estate Fund	-1.72%	15.31%	12.56%	12.04%
Barings Core Property Fund	-3.25%	2.42%	6.84%	6.67%
BentallGreenOak BGO Diversified	-5.92%	8.09%	9.93%	8.31%
BlackRock U.S. Core Property Fund	-3.89%	9.09%	9.86%	8.55%
CBRE U.S. Core Partners LP	-9.20%	7.05%	13.74%	11.60%
CIM Urban Income Investments	-4.74%	8.60%	9.29%	8.84%
Clarion Lion Property Fund	-5.33%	8.83%	10.58%	9.37%
DWS RREEF America REIT II	-3.73%	7.65%	10.48%	9.00%
GWL U.S. Property Fund L.P.	-6.17%	7.71%	10.81%	8.58%
Heitman America Real Estate Trust	-4.93%	9.69%	10.37%	7.80%
Intercontinental U.S. Real Estate Investment Fund	-6.31%	7.47%	9.27%	9.07%
Invesco Core Real Estate USA	-5.15%	6.89%	7.87%	7.59%
J.P. Morgan Strategic Property Fund	-5.22%	3.60%	7.61%	6.60%
LaSalle US Property Fund	-4.73%	11.44%	9.98%	8.70%
MetLife Core Property Fund	-5.41%	8.95%	11.51%	9.93%
Morgan Stanley Prime Property Fund	-3.70%	6.12%	9.28%	8.39%
NYL Madison Core Property Fund	-3.72%	13.75%	12.68%	10.61%
PGIM PRISA	-5.83%	5.61%	9.11%	8.11%
Principal U.S. Core Property	-6.22%	4.18%	8.77%	8.10%
Stockbridge Smart Markets Fund	-4.32%	9.24%	11.74%	9.81%
TA Realty	-5.52%	8.89%	14.16%	--
UBS Trumbull Property Fund	-5.36%	5.21%	5.00%	3.59%

NFI-ODCE Funds - Gross of Fee All Sector Returns

As of December 31, 2022

Fund	Retail 4Q 2022	Apartment 4Q 2022	Industrial 4Q 2022	Office 4Q 2022
AEW	-2.62%	-4.64%	-1.70%	-3.68%
AFL-CIO	-3.97%	-5.42%	-5.39%	-10.45%
ARA	-2.02%	-4.12%	-4.34%	-6.47%
ASB	-3.06%	-2.82%	-1.87%	-3.17%
Bailard	1.13%	-1.70%	-0.70%	-2.52%
Barings	-2.42%	-2.88%	-0.51%	-3.58%
BGO	-0.32%	-3.63%	-4.16%	-6.70%
BlackRock	-0.92%	-1.81%	-1.86%	-5.64%
CBRE	-2.40%	-8.88%	-7.15%	-9.14%
CIM Group	-1.00%	-2.18%	-0.67%	-5.54%
Clarion	-0.37%	-4.57%	-3.26%	-5.78%
DWS	0.24%	-3.02%	-2.42%	-5.95%
Everwest	0.58%	-2.57%	-4.06%	-14.44%
Heitman	-1.60%	-4.19%	-3.33%	-7.13%
Intercontinental	-4.09%	-5.53%	-7.33%	-5.18%
Invesco	-1.02%	-4.66%	-3.64%	-5.14%
JP Morgan	0.13%	-3.33%	-4.52%	-4.96%
LaSalle	-1.27%	-5.02%	-2.58%	-5.15%
MetLife	1.37%	1.00%	0.70%	1.23%
MSIM	-1.87%	-0.56%	-4.53%	-6.00%
NYLIM	-0.52%	-3.89%	1.56%	-5.34%
PGIM	-1.25%	-4.94%	-5.21%	-6.06%
Principal	0.12%	-6.18%	-3.77%	-7.05%
Stockbridge	-1.47%	-3.20%	-4.59%	-3.17%
TA Realty	-1.20%	-5.76%	-3.48%	-3.26%
UBS	1.50%	-2.78%	-2.98%	-9.15%

Real Assets Composite



- The BlackRock TIPS and REITs Funds are passive.
- The Invesco Balanced Risk Commodities Fund has been underweight to natural gas. While this underweight helped in the fourth quarter as natural gas declined 36%, it was the largest detractor over the year.
- KBI underperformed the index with the agribusiness segment being the largest detractor as fertilizer prices declined.

Returns and Rankings for Periods Ended December 31, 2022

	Last Quarter	Last Year	Last 3 Years	Last 5 Years
Real Assets - Net	6.44	(9.41)	7.65	5.81
Real Assets Target	6.52	(3.52)	6.82	5.21
BlackRock TIPS Index Fund - Net	1.87	(11.96)	1.21	2.14
Bloomberg US TIPS Index	2.04	(11.85)	1.21	2.11
Ranking vs. Real Returns Database	81	75	56	39
BlackRock REIT Index Fund - Net	4.71	(26.08)	(1.46)	2.44
S&P Dow Jones US Select REIT	4.76	(25.96)	(1.37)	2.50
Ranking vs. Real Estate Mutual Funds	14	50	79	81
Invesco Commodity Fund - Net	6.72	9.00	11.96	5.52
Bloomberg Commodity Index	2.22	16.09	12.65	6.44
Ranking vs. Commodities Funds	17	80	63	77
KBI Global Resources Fund - Net	12.88	(7.85)	13.88	9.50
S&P Global Natural Resources Index	17.07	9.59	10.86	6.64
KBI Custom Benchmark	7.34	(16.01)	9.76	7.98

Returns and Rankings Calendar Years

	2022	2021	2020	2019
Real Assets - Net	(9.41)	23.96	11.08	15.51
Real Assets Target	(3.52)	25.60	0.57	14.08
BlackRock TIPS Index Fund - Net	(11.96)	5.92	11.17	8.49
Bloomberg US TIPS Index	(11.85)	5.96	10.99	8.43
Ranking vs. Real Returns Database	75	41	18	32
BlackRock REIT Index Fund - Net	(26.08)	45.80	(11.21)	23.08
S&P Dow Jones US Select REIT Index	(25.96)	45.91	(11.20)	23.10
Ranking vs. Real Estate Mutual Funds	50	17	96	89
Invesco Commodity Fund - Net	9.00	19.68	7.58	5.49
Bloomberg Commodity Index	16.09	27.11	(3.12)	7.69
Ranking vs. Commodities Funds	80	87	1	81
KBI Global Resources Fund - Net	(7.85)	24.08	29.17	24.81
S&P Global Natural Resources Index	9.59	24.40	(0.05)	16.41
KBI Custom Benchmark	(16.01)	7.22	46.83	28.74

The Real Assets Target is comprised of 25% Bloomberg US TIPS Index, 25% Bloomberg Commodity Index, 25% S&P Dow Jones US Select REIT Index, and 25% S&P Global Natural Resources Index. The KBI Custom Benchmark consists of 1/3 each: S-Network Global Water Index, Wilderhill New Energy Global Innovation Index, and Dax Global Agribusiness Index.

Private Equity Portfolio (as of 9/30/22)

- 90% Paid-In through 9/30/22.
- When ranked against the Thomson-Cambridge Private Equity Database, MCERA is ranked in the second quartile for Total Value to Paid-In (TVPI) basis.
- The total portfolio is well diversified by vintage year and investment type.

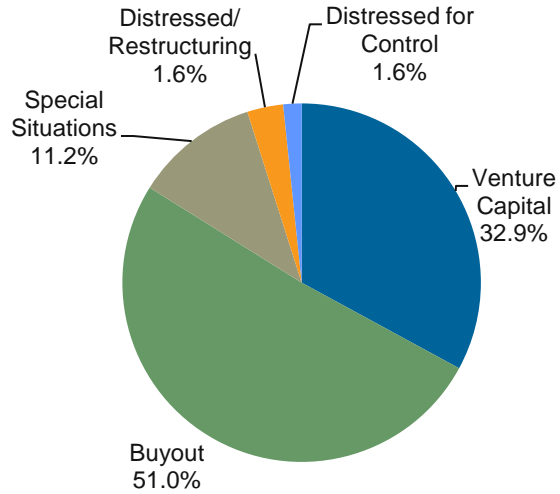
	September 30, 2022	Quarter Change	June 30, 2022
Summary			
Vintage Years	16 in 2008-2023		15 in 2008-2022
# Total Partnerships	530	14	516
# Active Partnerships	501	4	497
# Liquidated Partnerships	21	2	19
Changes in Value			
Capital Commitments	\$450,000,000	-	\$450,000,000
Paid-In Capital	\$406,082,845	\$3,895,196	\$402,187,649
Uncalled Capital	\$58,885,550	\$(3,607,168)	\$62,492,718
% Paid-In	90.24%	0.87%	89.38%
Distributed Capital	\$449,547,321	\$10,592,544	\$438,954,777
Net Asset Value	\$364,889,706	\$(16,300,166)	\$381,189,872
Total Realized and Unrealized Value	\$814,437,027	\$(5,707,622)	\$820,144,649
Ratios and Performance			
Distributions to Paid-In Capital (DPI)	1.11x	0.02x	1.09x
Residual Value to Paid-In Capital (RVPI)	0.90x	(0.05)x	0.95x
Total Value to Paid-In Capital (TVPI)	2.01x	(0.03)x	2.04x
Quartile Ranking	2nd		2nd
Net IRR	15.82%	(0.48%)	16.31%
Additional Performance Metrics			
Distribution Rate, as % of Beginning NAV		2.78%	
Unrealized Gain/(Loss), Dollars		\$(9,602,818)	
Unrealized Gain/(Loss), %		(2.52%)	

Quartile Rankings against the All Private Equity, All Regions Refinitiv/Cambridge Database.

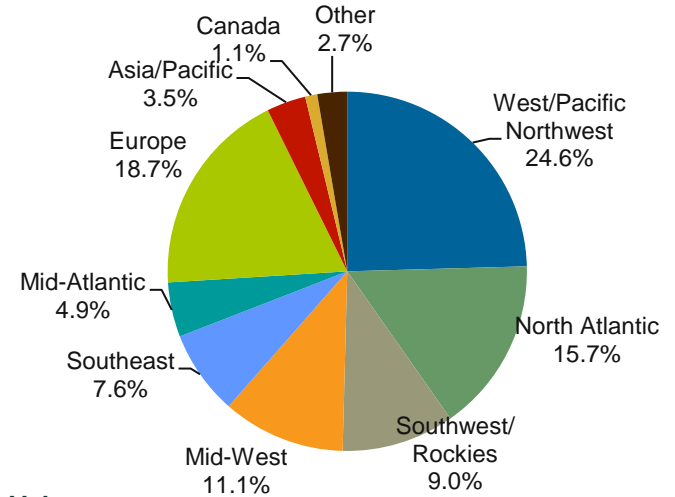
Uncalled capital above does not reflect currency fluctuations for Pathway's investments in foreign partnerships.

Private Equity Portfolio Exposure

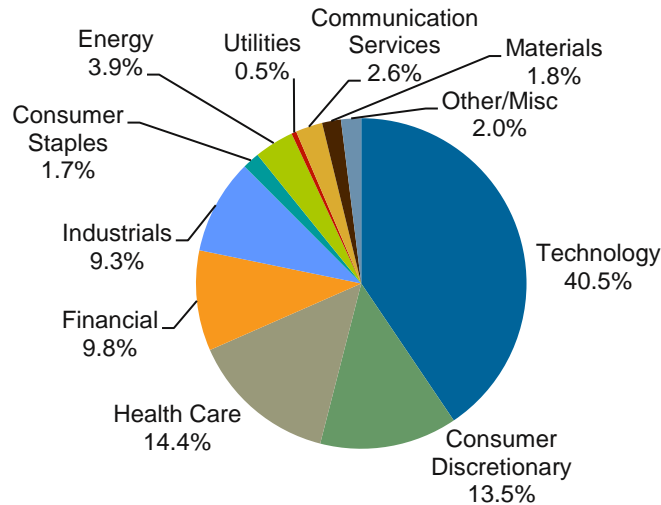
Strategy Mix by Net Asset Value



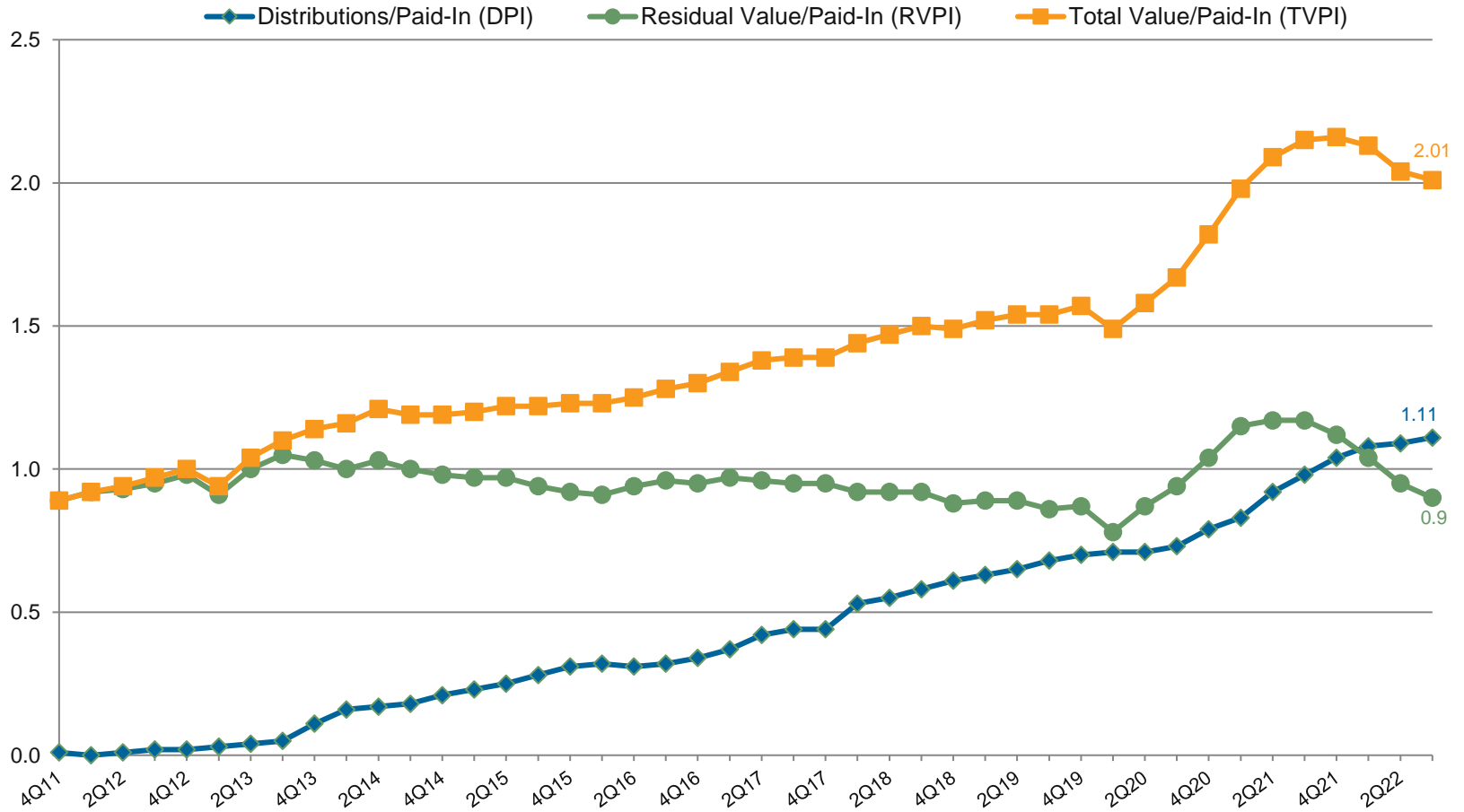
Geographic Mix by Net Asset Value



Industry Mix by Net Asset Value



Private Equity Ratios – Changes Over Time



Opportunistic Portfolio

- 60.7% Paid-In through 12/31/2022.
- The total portfolio is diversified by industry type and geographic location.

	December 31, 2022	Quarter Change	September 30, 2022
Summary			
Vintage Year	2020		2020
# Total Partnerships	193	-	193
# Active Partnerships	193	-	193
# Liquidated Partnerships	0	-	0
Changes in Value			
Capital Commitments	\$100,000,000	-	\$100,000,000
Paid-In Capital	\$60,729,376	\$7,570,249	\$53,159,127
Uncalled Capital	\$41,099,533	\$(7,570,249)	\$48,669,782
% Paid-In	60.73%	7.57%	53.16%
Distributed Capital	\$2,142,541	-	\$2,142,541
Net Asset Value	\$62,514,375	\$8,792,137	\$53,722,238
Total Realized and Unrealized Value	\$64,656,916	\$8,792,137	\$55,864,779
Ratios and Performance			
Distributions to Paid-In Capital (DPI)	0.04x	(0.01)x	0.04x
Residual Value to Paid-In Capital (RVPI)	1.03x	0.02x	1.01x
Total Value to Paid-In Capital (TVPI)	1.06x	0.01x	1.05x
Quartile Ranking	3rd		3rd
Net IRR	5.23%	0.77%	4.46%
Additional Performance Metrics			
Distribution Rate, as % of Beginning NAV		0.00%	
Unrealized Gain/(Loss), Dollars		\$1,221,888	
Unrealized Gain/(Loss), %		2.27%	

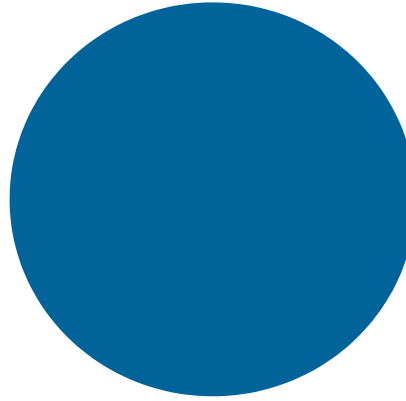
Note: Fortress 4Q22 data not available yet.

Quartile rankings against the 2020 vintage Control Oriented Distressed and Credit Opportunities Refinitiv/Cambridge Database.

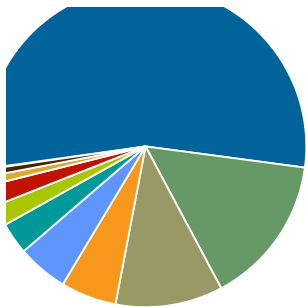
Opportunistic Portfolio Exposure

Strategy Mix by Net Asset Value

Special Situations
100.0%

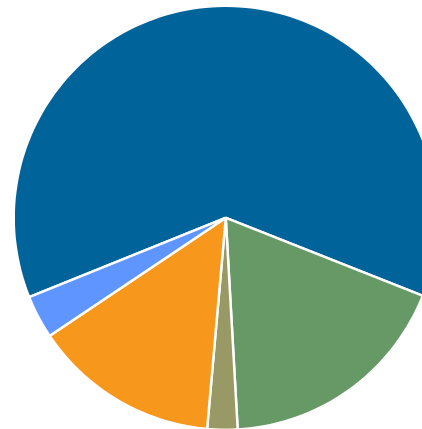


Industry Mix by Net Asset Value



Other/Misc	54.32%
Financial	15.11%
Consumer Discretionary	10.77%
Energy	5.62%
Communication Services	5.12%
Materials	3.22%
Industrials	2.14%
Utilities	2.13%
Consumer Staples	0.87%
Technology	0.71%

Geographic Mix by Net Asset Value



United States	62.84%
Europe	18.72%
Other	2.87%
Asia/Pacific	12.61%
Latin America & Caribbean	2.97%

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