

Plymouth County Retirement Association

February 28, 2023

Meeting Materials

Agenda

1. Estimated Retirement Association Performance As of January 31, 2023
2. Performance Update As of December 31, 2022
 - 2022 Q4 Performance Update
 - Private Markets Q3 Performance Update
3. Current Issues
 - 2022 Year in Review
 - Insurance Linked Strategy Search Respondent Review
4. Appendices
 - Investment Manager Status Report
 - Economy and Market Update As of January 31, 2023
 - Disclaimer, Glossary, and Notes

**Estimated Retirement Association Performance
As of January 31, 2023**

Estimated Aggregate Performance¹

	January ² (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Total Retirement Association	2.3	-1.5	8.1	5.9	7.3

Benchmark Returns

	January (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Russell 3000	6.9	-8.2	9.5	9.1	12.3
MSCI EAFE	8.1	-2.8	4.3	2.1	5.0
MSCI Emerging Markets	7.9	-12.1	1.4	-1.5	2.1
Bloomberg Aggregate	3.1	-8.4	-2.4	0.9	1.4
Bloomberg TIPS	1.8	-8.4	1.1	2.7	1.4
Bloomberg High Yield	3.8	-5.2	1.3	3.0	4.3
JPM EMBI Global Diversified (Hard Currency)	3.2	-12.7	-4.8	-0.7	2.0
S&P Global Natural Resources	7.5	14.3	17.4	7.8	5.3

Estimated Total Assets

	Estimate
Total Retirement Association	1,331,653,652

¹ The January performance estimates are calculated using index returns as of January 31, 2023 for each asset class. No performance estimate was included for private equity, real estate, infrastructure, and private natural resources asset classes.

² As of January 2023.

**Performance Update
As of December 31, 2022**

DRAFT

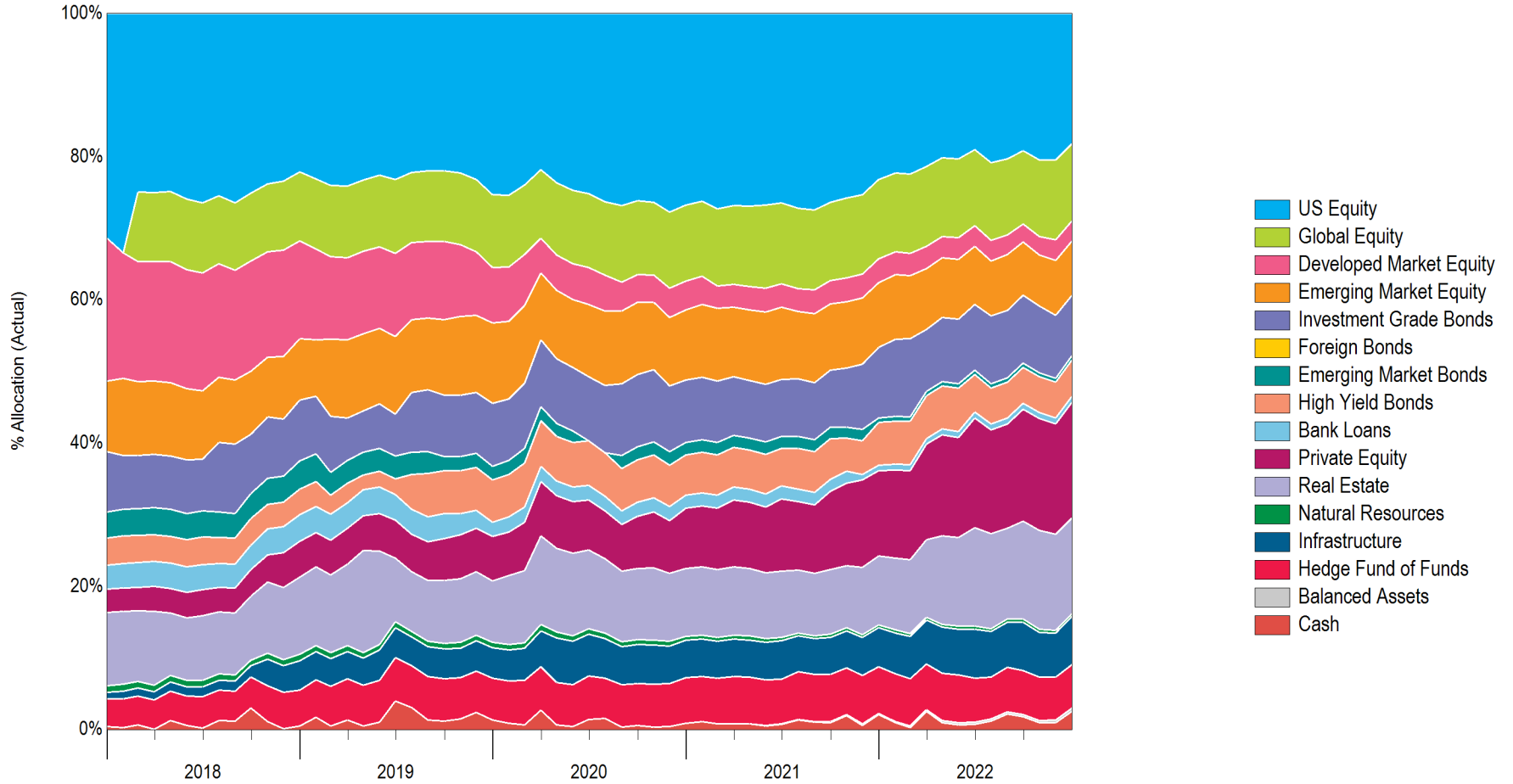
2022 Q4 Performance Update

	Allocation vs. Target		Policy	Policy Range	Within IPS Range?
	Current Balance	Current Allocation			
Domestic Equity	\$236,488,267	18%	26%	21% - 36%	No
International Developed Market Equity	\$37,198,707	3%	6%	1% - 16%	Yes
International Emerging Market Equity	\$98,884,640	8%	10%	5% - 20%	Yes
Global Equity	\$139,998,572	11%	10%	5% - 20%	Yes
Core Bonds	\$109,389,482	8%	9%	4% - 14%	Yes
Value-Added Fixed Income	\$84,638,931	7%	6%	2% - 12%	Yes
Private Equity	\$215,675,088	17%	13%	4% - 18%	Yes
Real Estate	\$173,500,694	13%	10%	5% - 15%	Yes
Real Assets	\$92,434,066	7%	6%	2% - 10%	Yes
Hedge Fund of Funds	\$79,430,331	6%	4%	2% - 8%	Yes
Cash	\$33,771,643	3%	0%	0% - 3%	Yes
Total	\$1,301,410,422	100%	100%		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$783,397,930	60%	69%	60% - 80%	Yes
Total Fixed Income	\$194,028,413	15%	15%	5% - 25%	Yes
Total Real Assets and Real Estate	\$290,212,436	22%	16%	7% - 25%	Yes
Cash	\$33,771,643	3%	0%	0% - 3%	Yes

Cash was raised to fund a \$25 million capital call for IFM due January, 3 2023.

Asset Allocation History
5 Years Ending December 31, 2022



Total Retirement Association | As of December 31, 2022

Asset Class Net Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	1,301,410,422	100.0	-1.4	4.3	-6.7	6.9	6.0	7.4	7.8	Nov-89
Policy Benchmark (Net) (1)			-3.8	4.0	-13.3	4.0	4.8	6.8	--	Nov-89
Actual Allocation (Net)			-4.0	2.4	-13.5	3.5	4.1	--	--	Nov-89
Domestic Equity Assets	236,488,267	18.2	-5.2	8.5	-20.0	7.4	8.5	--	11.0	Jan-16
Russell 3000			-5.9	7.2	-19.2	7.1	8.8	12.1	11.0	Jan-16
International Developed Market Equity Assets	37,198,707	2.9	-1.4	13.9	-21.7	-4.4	-2.8	--	1.7	Jan-16
MSCI EAFE			0.1	17.3	-14.5	0.9	1.5	4.7	4.5	Jan-16
International Emerging Market Equity Assets	98,884,640	7.6	-3.0	5.5	-22.7	-1.6	-1.4	--	4.6	Jan-16
MSCI Emerging Markets			-1.4	9.7	-20.1	-2.7	-1.4	1.4	5.2	Jan-16
Global Equity Assets	139,998,572	10.8	-2.4	11.4	-10.6	5.4	--	--	5.0	Feb-18
MSCI ACWI			-3.9	9.8	-18.4	4.0	5.2	8.0	4.1	Feb-18
Core Fixed Income	109,389,482	8.4	0.0	1.5	-9.1	-1.1	0.9	--	1.7	Jan-16
75% Bbg Aggregate/25% Bbg US TIPs 1-10 year			-0.5	1.8	-11.6	-1.5	0.6	1.1	1.3	Jan-16
Value Added Fixed Income	84,638,931	6.5	-0.3	3.3	-8.9	-0.1	1.8	--	4.0	Jan-16
Custom Benchmark - Global Fixed Income (2)			0.2	4.8	-11.6	-1.5	1.1	2.0	3.2	Jan-16
Hedge Funds	79,430,331	6.1	0.0	2.5	-19.2	-3.1	-0.5	2.9	3.0	Feb-10
Custom Benchmark			1.0	1.7	-5.3	3.8	3.1	3.5	3.1	Feb-10
Real Estate (3)	173,500,694	13.3	-2.3	-2.9	14.4	15.4	12.4	--	10.1	Jan-16
Custom Benchmark (4)			-5.0	-5.0	7.5	9.9	8.3	--	7.7	Jan-16
Private Equity (5)	215,675,088	16.6	2.5	2.5	18.9	25.7	17.4	--	13.7	Jan-16
MSCI ACWI IMI (1Q Lagged) +2%			-9.5	-6.2	-19.6	5.7	6.2	9.4	9.4	Jan-16
Real Assets (6)	92,434,066	7.1	1.5	2.0	11.2	10.8	7.5	--	4.2	Jan-16
CPI + 3%			-0.1	0.7	9.6	8.1	6.9	5.7	6.4	Jan-16
Cash and Cash Equivalent	33,771,643	2.6								

(1) The custom benchmark is comprised of 26% Russell 3000/ 6% MSCI EAFE/ 10% MSCI Emerging Markets/ 13% MSCI ACWI IMI (1Q Lagged) +2%/ 10% MSCI ACWI/ 4% Hedge Funds Custom Benchmark/ 9% (75/25 Barclays Aggregate and Barclays Tips 1-10yr)/ 6% Value Added FI Custom Benchmark/ 10% NCREIF ODCE / 6% CPI+3%

(2) The Custom Benchmark - Global Fixed Income is comprised of 25% BBgBarc/ US High Yield, 25% / Credit Suisse Leveraged Loans / 25% JP Morgan EMBI Global diversified / and 25% BBgBarc Multiverse TR.

(3) The market value and performance is one quarter lagged.

(4) The custom benchmark is comprised of 80% NCREIF ODCE/ 20% Wilshire Reit up until 12/31/2019 and since is comprised of NCREIF ODCE.

(5) The market value and performance is one quarter lagged.

(6) The market value and performance is one quarter lagged.

Total Retirement Association | As of December 31, 2022

Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	1,301,410,422	100.0	--	-1.4	4.3	-6.7	6.9	6.0	7.4	7.8	Nov-89
<i>Policy Benchmark (Net)</i>				-3.8	4.0	-13.3	4.0	4.8	6.8	--	Nov-89
<i>Actual Allocation (Net)</i>				-4.0	2.4	-13.5	3.5	4.1	--	--	Nov-89
<i>InvMetrics Public DB Net Median</i>				-3.2	5.8	-13.8	3.6	5.0	6.9	7.8	Nov-89
<i>InvMetrics Public DB Net Rank</i>				4	90	3	1	13	27	59	Nov-89
Domestic Equity Assets	236,488,267	18.2	18.2	-5.2	8.5	-20.0	7.4	8.5	--	11.0	Jan-16
<i>Russell 3000</i>				-5.9	7.2	-19.2	7.1	8.8	12.1	11.0	Jan-16
Rhumblin Russell 1000 Value	58,144,941	4.5	24.6	-4.0	12.4	-7.5	6.0	6.7	--	9.1	Apr-13
<i>Russell 1000 Value</i>				-4.0	12.4	-7.5	6.0	6.7	10.3	9.2	Apr-13
<i>eV US Large Cap Value Equity Net Median</i>				-4.1	12.7	-5.8	7.4	7.5	10.7	9.7	Apr-13
<i>eV US Large Cap Value Equity Net Rank</i>				47	56	66	77	70	--	67	Apr-13
Rhumblin Russell 1000 Growth	37,167,306	2.9	15.7	-7.6	2.2	-29.1	7.8	11.0	14.0	14.1	Jul-09
<i>Russell 1000 Growth</i>				-7.7	2.2	-29.1	7.8	11.0	14.1	14.2	Jul-09
<i>eV US Large Cap Growth Equity Net Median</i>				-6.8	3.6	-29.7	5.9	9.4	12.6	12.7	Jul-09
<i>eV US Large Cap Growth Equity Net Rank</i>				73	69	46	24	21	15	7	Jul-09
Fisher Midcap Value	55,787,552	4.3	23.6	-3.3	13.6	-17.1	11.5	9.7	11.9	8.7	Apr-07
<i>Russell MidCap Value</i>				-5.1	10.5	-12.0	5.8	5.7	10.1	7.0	Apr-07
<i>Russell MidCap</i>				-5.4	9.2	-17.3	5.9	7.1	11.0	7.9	Apr-07
<i>eV US Mid Cap Value Equity Net Median</i>				-4.5	11.8	-8.6	6.7	6.1	10.0	7.4	Apr-07
<i>eV US Mid Cap Value Equity Net Rank</i>				12	18	96	7	2	16	11	Apr-07
Newton Small Cap Growth	43,265,221	3.3	18.3	-6.5	1.6	-28.4	6.3	10.1	13.3	13.1	Aug-09
<i>Russell 2000 Growth</i>				-6.4	4.1	-26.4	0.6	3.5	9.2	10.6	Aug-09
<i>eV US Small Cap Growth Equity Net Median</i>				-6.0	4.4	-28.1	4.3	7.8	11.0	12.4	Aug-09
<i>eV US Small Cap Growth Equity Net Rank</i>				65	74	54	31	20	15	31	Aug-09

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Vulcan Partners Small Cap Value	13,919,774	1.1	5.9	-3.2	11.0	--	--	--	--	-28.4	Apr-22
<i>Russell 2000 Value</i>				-6.6	8.4	-14.5	4.7	4.1	8.5	-12.4	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>				-5.7	10.8	-11.7	6.3	4.6	9.2	-9.1	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>				7	48	--	--	--	--	99	Apr-22
Systematic Small Cap Free Cash Flow	28,203,474	2.2	11.9	-5.4	11.9	--	--	--	--	-2.5	Apr-22
<i>Russell 2000 Value</i>				-6.6	8.4	-14.5	4.7	4.1	8.5	-12.4	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>				-5.7	10.8	-11.7	6.3	4.6	9.2	-9.1	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>				42	38	--	--	--	--	8	Apr-22
International Developed Market Equity Assets	37,198,707	2.9	2.9	-1.4	13.9	-21.7	-4.4	-2.8	--	1.7	Jan-16
<i>MSCI EAFE</i>				0.1	17.3	-14.5	0.9	1.5	4.7	4.5	Jan-16
Aristotle International Equity	19,839,194	1.5	53.3	-2.2	13.8	-20.9	--	--	--	-4.6	Mar-21
<i>MSCI EAFE</i>				0.1	17.3	-14.5	0.9	1.5	4.7	-3.3	Mar-21
<i>eV EAFE Core Equity Net Median</i>				-0.4	16.1	-16.9	0.6	1.1	5.2	-4.5	Mar-21
<i>eV EAFE Core Equity Net Rank</i>				90	87	77	--	--	--	52	Mar-21
Walter Scott International Equity	17,359,513	1.3	46.7	-0.5	14.0	-22.6	--	--	--	-6.2	Mar-21
<i>MSCI EAFE</i>				0.1	17.3	-14.5	0.9	1.5	4.7	-3.3	Mar-21
<i>eV EAFE Core Equity Net Median</i>				-0.4	16.1	-16.9	0.6	1.1	5.2	-4.5	Mar-21
<i>eV EAFE Core Equity Net Rank</i>				53	85	84	--	--	--	71	Mar-21
International Emerging Market Equity Assets	98,884,640	7.6	7.6	-3.0	5.5	-22.7	-1.6	-1.4	--	4.6	Jan-16
<i>MSCI Emerging Markets</i>				-1.4	9.7	-20.1	-2.7	-1.4	1.4	5.2	Jan-16
ABS Emerging Markets	52,685,835	4.0	53.3	-2.1	7.1	-23.3	0.2	--	--	4.6	Dec-18
<i>MSCI Emerging Markets</i>				-1.4	9.7	-20.1	-2.7	-1.4	1.4	1.5	Dec-18
<i>eV Emg Mkts Equity Net Median</i>				-1.4	10.3	-19.8	-1.6	-0.7	2.1	2.7	Dec-18
<i>eV Emg Mkts Equity Net Rank</i>				71	84	72	35	--	--	25	Dec-18

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Markets Growth	46,198,805	3.5	46.7	-4.0	3.8	-22.1	-0.4	--	--	3.2	Mar-19
<i>MSCI Emerging Markets</i>				-1.4	9.7	-20.1	-2.7	-1.4	1.4	0.0	Mar-19
<i>eV Emg Mkts Equity Net Median</i>				-1.4	10.3	-19.8	-1.6	-0.7	2.1	1.3	Mar-19
<i>eV Emg Mkts Equity Net Rank</i>				96	97	66	39	--	--	26	Mar-19
Global Equity Assets	139,998,572	10.8	10.8	-2.4	11.4	-10.6	5.4	--	--	5.0	Feb-18
<i>MSCI ACWI</i>				-3.9	9.8	-18.4	4.0	5.2	8.0	4.1	Feb-18
First Eagle Global Value Fund	23,862,955	1.8	17.0	-1.1	13.2	-6.6	4.0	--	--	3.7	Feb-18
<i>MSCI ACWI Value NR USD</i>				-2.4	14.2	-7.5	3.3	3.5	6.4	2.5	Feb-18
<i>eV Global Value Equity Net Median</i>				-2.1	15.0	-9.5	4.0	3.9	7.1	3.0	Feb-18
<i>eV Global Value Equity Net Rank</i>				17	72	31	51	--	--	38	Feb-18
Kopernik Global All Cap Fund	34,061,261	2.6	24.3	-1.6	12.2	-9.2	13.6	--	--	7.0	Feb-18
<i>MSCI ACWI Value NR USD</i>				-2.4	14.2	-7.5	3.3	3.5	6.4	2.5	Feb-18
<i>eV Global All Cap Value Eq Net Median</i>				-2.0	15.4	-10.0	3.9	3.7	7.0	2.7	Feb-18
<i>eV Global All Cap Value Eq Net Rank</i>				36	74	43	2	--	--	6	Feb-18
Lee Munder Global Multi-Cap Strategy	38,740,800	3.0	27.7	-4.9	7.7	-18.8	2.5	--	--	3.6	Mar-18
<i>MSCI ACWI</i>				-3.9	9.8	-18.4	4.0	5.2	8.0	5.2	Mar-18
<i>eV All Global Equity Net Median</i>				-3.4	10.7	-18.3	4.4	5.5	8.2	5.5	Mar-18
<i>eV All Global Equity Net Rank</i>				84	80	54	74	--	--	78	Mar-18
Wellington Durable Enterprises, L.P.	43,333,556	3.3	31.0	-1.3	13.5	-5.1	4.4	--	--	7.9	Mar-18
<i>MSCI ACWI</i>				-3.9	9.8	-18.4	4.0	5.2	8.0	5.2	Mar-18
<i>eV All Global Equity Net Median</i>				-3.4	10.7	-18.3	4.4	5.5	8.2	5.5	Mar-18
<i>eV All Global Equity Net Rank</i>				10	23	8	50	--	--	16	Mar-18

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Core Fixed Income	109,389,482	8.4	8.4	0.0	1.5	-9.1	-1.1	0.9	--	1.7	Jan-16
<i>75% Bbg Aggregate/25% Bbg US TIPS 1-10 year</i>				-0.5	1.8	-11.6	-1.5	0.6	1.1	1.3	Jan-16
Lord Abbett Short Duration Credit Trust II	52,709,058	4.1	48.2	0.5	1.2	-4.5	-0.1	--	--	0.3	Aug-19
<i>Bloomberg US Credit 1-3 Yr TR</i>				0.2	1.3	-3.4	0.0	1.3	1.4	0.5	Aug-19
<i>eV US Short Duration - Credit Net Median</i>				0.2	1.6	-4.9	-0.2	1.2	1.5	0.3	Aug-19
<i>eV US Short Duration - Credit Net Rank</i>				5	77	38	49	--	--	45	Aug-19
Lord Abbett Core Fixed Income Trust II	39,851,657	3.1	36.4	-0.4	1.7	-13.3	--	--	--	-12.3	Dec-21
<i>Bloomberg US Aggregate TR</i>				-0.5	1.9	-13.0	-2.7	0.0	1.1	-12.3	Dec-21
<i>eV US Core Fixed Inc Net Median</i>				-0.4	1.8	-13.1	-2.4	0.2	1.2	-12.3	Dec-21
<i>eV US Core Fixed Inc Net Rank</i>				52	61	68	--	--	--	54	Dec-21
Rhumblin TIPS Trust	16,828,767	1.3	15.4	-1.0	2.0	-11.8	--	--	--	-2.4	Sep-20
<i>Bloomberg US TIPS TR</i>				-1.0	2.0	-11.8	1.2	2.1	1.1	-2.4	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>				-0.9	2.0	-11.6	1.2	2.1	1.1	-2.2	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Rank</i>				65	50	72	--	--	--	63	Sep-20
Value Added Fixed Income	84,638,931	6.5	6.5	-0.3	3.3	-8.9	-0.1	1.8	--	4.0	Jan-16
<i>Custom Benchmark - Global Fixed Income</i>				0.2	4.8	-11.6	-1.5	1.1	2.0	3.2	Jan-16
Eaton Vance High Yield	11,632,494	0.9	13.7	-0.4	4.2	-9.5	0.3	2.3	4.0	5.8	Apr-06
<i>ICE BofA US High Yield TR</i>				-0.8	4.0	-11.2	-0.2	2.1	3.9	5.9	Apr-06
<i>eV US High Yield Fixed Inc Net Median</i>				-0.5	3.9	-10.0	0.3	2.3	3.7	5.6	Apr-06
<i>eV US High Yield Fixed Inc Net Rank</i>				33	33	41	52	46	32	33	Apr-06
First Eagle Bank Loan Select Fund	10,539,128	0.8	12.5	0.0	0.6	-3.0	1.8	2.7	3.9	4.5	Sep-10
<i>Credit Suisse Leveraged Loans</i>				0.4	2.3	-1.1	2.3	3.2	3.8	4.3	Sep-10
<i>Bank Loan MStar MF Median</i>				0.2	2.6	-1.7	1.4	2.4	3.1	3.6	Sep-10
<i>Bank Loan MStar MF Rank</i>				89	99	74	32	24	1	1	Sep-10

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Manulife Strategic Fixed Income	40,372,490	3.1	47.7	-0.3	3.3	-9.5	-0.4	--	--	0.4	Jul-19
<i>Bloomberg Multiverse TR</i>				0.6	4.7	-16.0	-4.4	-1.6	-0.3	-3.4	Jul-19
<i>Multisector Bond MStar MF Median</i>				0.0	2.8	-9.7	-0.6	1.4	2.5	0.4	Jul-19
<i>Multisector Bond MStar MF Rank</i>				73	34	45	42	--	--	50	Jul-19
Mesirow High Yield	14,195,684	1.1	16.8	-0.4	2.5	-10.0	3.4	--	--	4.0	Aug-19
<i>Bloomberg US Corporate High Yield TR</i>				-0.6	4.2	-11.2	0.0	2.3	4.0	1.0	Aug-19
<i>eV US High Yield Fixed Inc Net Median</i>				-0.5	3.9	-10.0	0.3	2.3	3.7	1.2	Aug-19
<i>eV US High Yield Fixed Inc Net Rank</i>				36	90	49	3	--	--	2	Aug-19
Eaton Vance EMD Opportunities Fund	7,899,134	0.6	9.3	0.0	6.6	-11.4	--	--	--	-0.8	Aug-20
<i>JP Morgan EMBI Global Diversified</i>				0.3	8.1	-17.8	-5.3	-1.3	1.6	-6.8	Aug-20
<i>eV Emg Mkts Fixed Inc - Blended Currency Net Median</i>				1.2	8.4	-13.6	-4.1	-1.1	0.4	-4.7	Aug-20
<i>eV Emg Mkts Fixed Inc - Blended Currency Net Rank</i>				99	93	21	--	--	--	12	Aug-20
Hedge Funds	79,430,331	6.1	6.1	0.0	2.5	-19.2	-3.1	-0.5	2.9	3.0	Feb-10
<i>Custom Benchmark</i>				1.0	1.7	-5.3	3.8	3.1	3.5	3.1	Feb-10
ABS Offshore SPC - Global Segregated Portfolio	34,717,268	2.7	43.7	0.8	4.7	-8.5	2.5	3.0	5.0	4.8	Aug-10
<i>HFRI Equity Hedge (Total) Index</i>				-0.7	4.3	-10.1	5.8	4.6	5.6	5.3	Aug-10
<i>HFRI FOF: Strategic Index</i>				0.0	2.7	-11.8	2.4	2.1	3.4	3.2	Aug-10
Entrust Special Opportunities Fund III, Ltd.	11,925,266	0.9	15.0	0.0	0.0	-34.0	-10.9	-5.9	--	0.3	Oct-16
<i>HFRI Fund of Funds Composite Index (QTR)</i>				1.7	1.7	-5.3	3.7	3.0	3.5	3.8	Oct-16
Old Farm Partners Master Fund, L.P.	15,330,488	1.2	19.3	-1.4	2.6	-10.0	5.0	--	--	3.8	Oct-18
<i>HFRI Fund of Funds Composite Index</i>				0.3	1.7	-5.3	3.7	3.0	3.5	3.3	Oct-18
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	17,457,309	1.3	22.0	0.0	0.0	-29.3	-8.3	--	--	-0.4	Jan-19
<i>HFRI Fund of Funds Composite Index (QTR)</i>				1.7	1.7	-5.3	3.7	3.0	3.5	4.8	Jan-19

Note: The data for Eaton Vance EMD Opportunities Fund is lagged based on November 30, 2022 values.

Note: The data for Entrust Special Opportunities Fund III, Ltd and Entrust Permal Special Opportunities Evergreen Fund, Ltd is lagged based on September 30, 2022 values.

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Real Estate	173,500,694	13.3	13.3	-2.3	-2.9	14.4	15.4	12.4	--	10.1	Jan-16
<i>Custom Benchmark</i>				-5.0	-5.0	7.5	9.9	8.3	--	7.7	Jan-16
Core Real Estate	112,408,421	8.6	64.8	-4.7	-5.5	7.0	11.6	10.0	--	9.4	Jan-16
<i>NCREIF-ODCE</i>				-5.0	-5.0	7.5	9.9	8.7	10.1	8.5	Jan-16
TA Realty Core Property Fund, L.P.	77,516,051	6.0	69.0	-5.6	-5.6	8.9	14.2	--	--	12.9	Apr-18
<i>NCREIF ODCE Equal Weighted (Net)</i>				-5.1	-5.1	7.6	9.7	8.3	9.5	8.3	Apr-18
JPMorgan Strategic Property	34,892,370	2.7	31.0	-2.5	-5.2	3.6	7.6	--	--	6.8	Apr-19
<i>NCREIF ODCE Equal Weighted (Net)</i>				-5.1	-5.1	7.6	9.7	8.3	9.5	8.7	Apr-19
Non-Core Real Estate	61,092,273	4.7	35.2	2.3	2.3	31.0	22.7	16.4	--	9.7	Jan-16
Private Equity	215,675,088	16.6	16.6	2.5	2.5	18.9	25.7	17.4	--	13.7	Jan-16
<i>MSCI ACWI IMI (1Q Lagged) +2%</i>				-9.5	-6.2	-19.6	5.7	6.2	9.4	9.4	Jan-16
Private Equity	201,092,537	15.5	93.2	2.9	2.9	20.4	26.8	18.0	--	13.5	Jan-16
Venture Capital	14,582,552	1.1	6.8	-2.3	-2.3	1.6	14.7	10.5	--	11.6	Jan-16
Real Assets	92,434,066	7.1	7.1	1.5	2.0	11.2	10.8	7.5	--	4.2	Jan-16
<i>CPI + 3%</i>				-0.1	0.7	9.6	8.1	6.9	5.7	6.4	Jan-16
Core Real Assets	47,130,351	3.6	51.0	2.9	4.0	8.2	10.0	--	--	11.2	Oct-18
<i>CPI + 3%</i>				-0.1	0.7	9.6	8.1	6.9	5.7	7.0	Oct-18
IFM Global Infrastructure	47,130,351	3.6	100.0	2.9	4.0	8.2	10.0	--	--	11.2	Oct-18
<i>CPI + 3%</i>				-0.1	0.7	9.6	8.1	6.9	5.7	7.0	Oct-18

Note: The data for Real Estate, Private Equity, and Real Assets is based on September 30, 2022 fair market value, adjusted for subsequent cash flows.

Note: The data for TA Core Property Fund is reported in real time.

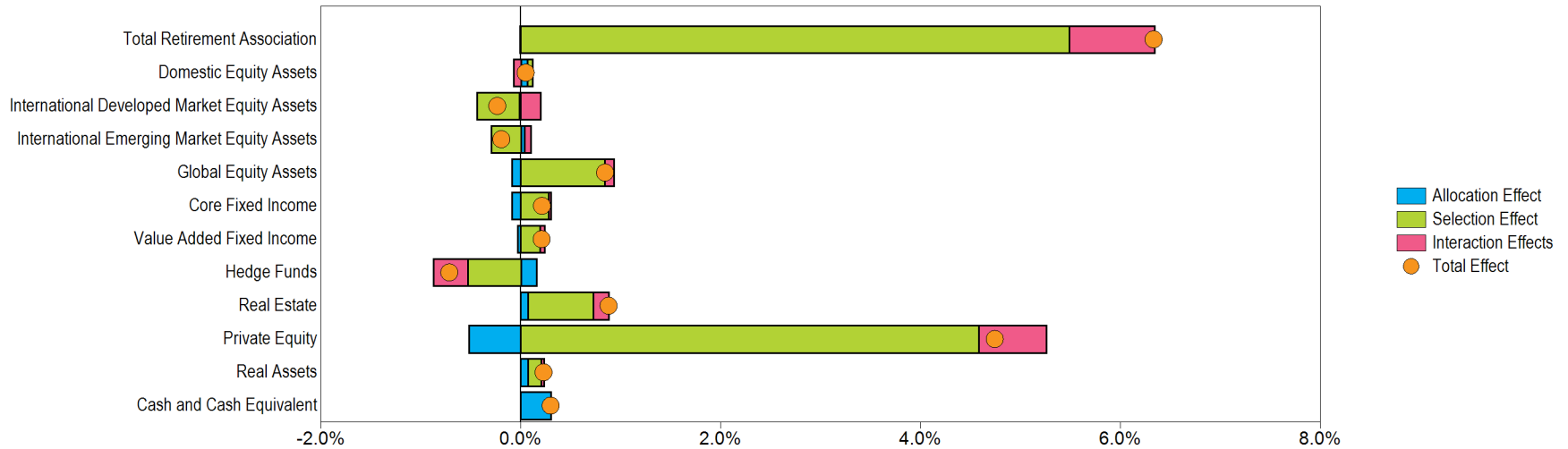
Note: The data for JPMorgan Strategic Property and IFM Global Infrastructure is as of December 31, 2022

Total Retirement Association | As of December 31, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non-Core Real Assets	45,303,715	3.5	49.0	0.0	0.0	14.3	10.9	5.8	--	4.1	Jan-16
<i>CPI + 3%</i>				<i>-0.1</i>	<i>0.7</i>	<i>9.6</i>	<i>8.1</i>	<i>6.9</i>	<i>5.7</i>	<i>6.4</i>	<i>Jan-16</i>
Cash and Cash Equivalent	33,771,643	2.6	2.6								
Cash	33,771,643	2.6	100.0								

Note: The data for Real Estate, Private Equity, and Real Assets is based on September 30, 2022 fair market value, adjusted for subsequent cash flows.

Attribution Effects 1 Year Ending December 31, 2022



Attribution Summary 1 Year Ending December 31, 2022

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Domestic Equity Assets	-20.0%	-19.8%	-0.2%	0.0%	0.1%	-0.1%	0.1%
International Developed Market Equity Assets	-21.7%	-15.1%	-6.6%	-0.4%	0.0%	0.2%	-0.2%
International Emerging Market Equity Assets	-22.7%	-20.7%	-2.1%	-0.3%	0.0%	0.1%	-0.2%
Global Equity Assets	-10.6%	-19.0%	8.4%	0.8%	-0.1%	0.1%	0.8%
Core Fixed Income	-9.1%	-12.2%	3.1%	0.3%	-0.1%	0.0%	0.2%
Value Added Fixed Income	-8.9%	-12.2%	3.3%	0.2%	0.0%	0.0%	0.2%
Hedge Funds	-19.2%	-5.9%	-13.2%	-0.5%	0.2%	-0.3%	-0.7%
Real Estate	14.4%	6.7%	7.7%	0.7%	0.1%	0.2%	0.9%
Private Equity	18.9%	-19.6%	38.4%	4.6%	-0.5%	0.7%	4.7%
Real Assets	11.2%	8.9%	2.4%	0.1%	0.1%	0.0%	0.2%
Cash and Cash Equivalent	1.5%	1.5%	0.0%	0.0%	0.3%	0.0%	0.3%
Total	-6.9%	-13.2%	6.3%	5.5%	0.0%	0.8%	6.3%

Statistics Summary							
5 Years Ending December 31, 2022							
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error	
Total Retirement Association	6.0%	10.6%	0.3	0.9	0.5	3.6%	
Policy Benchmark (Net)	4.8%	10.5%	--	1.0	0.3	0.0%	
Domestic Equity Assets	8.5%	21.5%	-0.1	1.1	0.3	4.4%	
Russell 3000	8.8%	19.2%	--	1.0	0.4	0.0%	
Rhumblin Russell 1000 Value	6.7%	18.8%	0.0	1.0	0.3	0.1%	
Russell 1000 Value	6.7%	18.9%	--	1.0	0.3	0.0%	
Rhumblin Russell 1000 Growth	11.0%	20.8%	0.1	1.0	0.5	0.0%	
Russell 1000 Growth	11.0%	20.9%	--	1.0	0.5	0.0%	
Fisher Midcap Value	9.7%	23.4%	0.7	1.1	0.4	5.5%	
Russell MidCap Value	5.7%	21.4%	--	1.0	0.2	0.0%	
Newton Small Cap Growth	10.1%	25.9%	0.9	1.0	0.3	7.7%	
Russell 2000 Growth	3.5%	24.0%	--	1.0	0.1	0.0%	
Vulcan Partners Small Cap Value	--	--	--	--	--	--	
Russell 2000 Value	4.1%	24.2%	--	1.0	0.1	0.0%	
Systematic Small Cap Free Cash Flow	--	--	--	--	--	--	
Russell 2000 Value	4.1%	24.2%	--	1.0	0.1	0.0%	
International Equity	-1.9%	17.4%	-0.5	0.9	-0.2	5.4%	
International Equity Custom Benchmark	0.6%	17.9%	--	1.0	0.0	0.0%	
International Developed Market Equity Assets	-2.8%	19.2%	-0.9	1.1	-0.2	4.7%	
MSCI EAFE	1.5%	17.5%	--	1.0	0.0	0.0%	
Aristotle International Equity	--	--	--	--	--	--	
MSCI EAFE	1.5%	17.5%	--	1.0	0.0	0.0%	

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Walter Scott International Equity	--	--	--	--	--	--
MSCI EAFE	1.5%	17.5%	--	1.0	0.0	0.0%
International Emerging Market Equity Assets	-1.4%	17.8%	0.0	0.9	-0.1	3.7%
MSCI Emerging Markets	-1.4%	18.8%	--	1.0	-0.1	0.0%
ABS Emerging Markets	--	--	--	--	--	--
MSCI Emerging Markets	-1.4%	18.8%	--	1.0	-0.1	0.0%
Driehaus Emerging Markets Growth	--	--	--	--	--	--
MSCI Emerging Markets	-1.4%	18.8%	--	1.0	-0.1	0.0%
Global Equity Assets	--	--	--	--	--	--
MSCI ACWI	5.2%	17.7%	--	1.0	0.2	0.0%
First Eagle Global Value Fund	--	--	--	--	--	--
MSCI ACWI Value NR USD	3.5%	17.9%	--	1.0	0.1	0.0%
Kopernik Global All Cap Fund	--	--	--	--	--	--
MSCI ACWI Value NR USD	3.5%	17.9%	--	1.0	0.1	0.0%
Lee Munder Global Multi-Cap Strategy	--	--	--	--	--	--
MSCI ACWI	5.2%	17.7%	--	1.0	0.2	0.0%
Wellington Durable Enterprises, L.P.	--	--	--	--	--	--
MSCI ACWI	5.2%	17.7%	--	1.0	0.2	0.0%
Fixed Income Assets	1.2%	5.4%	0.3	0.6	0.0	4.7%
Bloomberg US Aggregate TR	0.0%	5.1%	--	1.0	-0.2	0.0%
Core Fixed Income	0.9%	4.2%	0.1	0.8	-0.1	2.0%
75% Bbg Aggregate/25% Bbg US TIPs 1-10 year	0.6%	4.7%	--	1.0	-0.1	0.0%
Lord Abbett Short Duration Credit Trust II	--	--	--	--	--	--
Bloomberg US Credit 1-3 Yr TR	1.3%	2.1%	--	1.0	0.1	0.0%

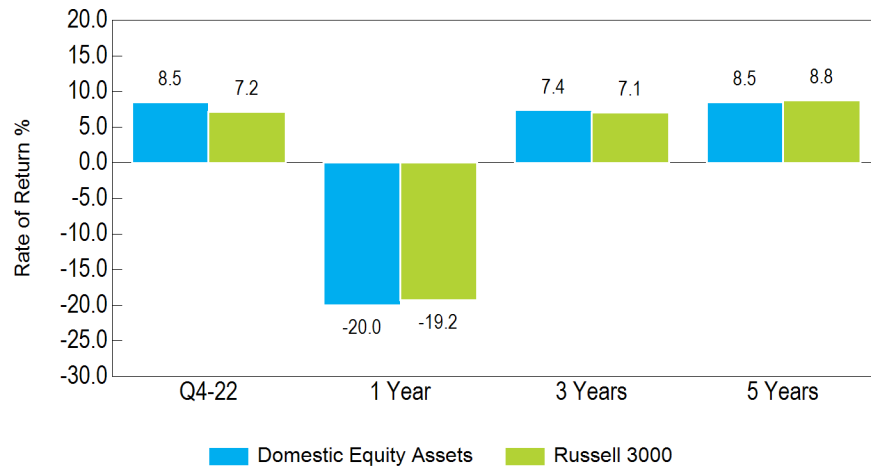
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Lord Abbett Core Fixed Income Trust II	--	--	--	--	--	--
Bloomberg US Aggregate TR	0.0%	5.1%	--	1.0	-0.2	0.0%
Rhumblin TIPS Trust	--	--	--	--	--	--
Bloomberg US TIPS TR	2.1%	5.8%	--	1.0	0.2	0.0%
Value Added Fixed Income	1.8%	7.2%	0.4	0.8	0.1	1.8%
Custom Benchmark - Global Fixed Income	1.1%	8.5%	--	1.0	0.0	0.0%
Eaton Vance High Yield	2.3%	8.4%	0.2	0.9	0.1	1.1%
ICE BofA US High Yield TR	2.1%	9.2%	--	1.0	0.1	0.0%
First Eagle Bank Loan Select Fund	2.7%	6.8%	-0.6	0.9	0.2	0.8%
Credit Suisse Leveraged Loans	3.2%	7.1%	--	1.0	0.3	0.0%
Manulife Strategic Fixed Income	--	--	--	--	--	--
Bloomberg Multiverse TR	-1.6%	6.4%	--	1.0	-0.4	0.0%
Mesirow High Yield	--	--	--	--	--	--
Bloomberg US Corporate High Yield TR	2.3%	9.1%	--	1.0	0.1	0.0%
Eaton Vance EMD Opportunities Fund	--	--	--	--	--	--
JP Morgan EMBI Global Diversified	-1.3%	11.1%	--	1.0	-0.2	0.0%
Hedge Funds	-0.5%	13.8%	-0.4	2.0	-0.1	8.3%
Custom Benchmark	3.1%	6.3%	--	1.0	0.3	0.0%
ABS Offshore SPC - Global Segregated Portfolio	3.0%	8.8%	-0.4	0.8	0.2	3.7%
HFRI Equity Hedge (Total) Index	4.6%	10.7%	--	1.0	0.3	0.0%
Entrust Special Opportunities Fund III, Ltd.	-5.9%	24.2%	-0.5	2.6	-0.3	17.6%
HFRI Fund of Funds Composite Index (QTR)	3.0%	8.0%	--	1.0	0.2	0.0%
Old Farm Partners Master Fund, L.P.	--	--	--	--	--	--
HFRI Fund of Funds Composite Index	3.0%	6.2%	--	1.0	0.3	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	--	--	--	--	--	--
HFRI Fund of Funds Composite Index (QTR)	3.0%	8.0%	--	1.0	0.2	0.0%
Real Estate	12.4%	7.8%	1.3	1.0	1.4	3.1%
Custom Benchmark	8.3%	6.9%	--	1.0	1.0	0.0%
Core Real Estate	10.0%	6.4%	0.5	0.9	1.4	2.8%
NCREIF-ODCE	8.7%	6.8%	--	1.0	1.1	0.0%
TA Realty Core Property Fund, L.P.	--	--	--	--	--	--
NCREIF ODCE Equal Weighted (Net)	8.3%	6.7%	--	1.0	1.1	0.0%
JPMorgan Strategic Property	--	--	--	--	--	--
NCREIF ODCE Equal Weighted (Net)	8.3%	6.7%	--	1.0	1.1	0.0%
Private Equity	17.4%	11.6%	0.6	0.1	1.4	19.3%
MSCI ACWI IMI (1Q Lagged) +2%	6.2%	17.5%	--	1.0	0.3	0.0%
Summit Partners Growth Equity Fund XI	--	--	--	--	--	--
MSCI ACWI IMI (1Q Lagged) +2%	6.2%	17.5%	--	1.0	0.3	0.0%
Ironsides Opportunities Fund II, L.P.	--	--	--	--	--	--
MSCI ACWI IMI (1Q Lagged) +2%	6.2%	17.5%	--	1.0	0.3	0.0%
Real Assets	7.5%	5.6%	0.1	0.6	1.1	5.6%
CPI + 3%	6.9%	1.4%	--	1.0	4.1	0.0%
Core Real Assets	--	--	--	--	--	--
CPI + 3%	6.9%	1.4%	--	1.0	4.1	0.0%
IFM Global Infrastructure	--	--	--	--	--	--
CPI + 3%	6.9%	1.4%	--	1.0	4.1	0.0%
Non-Core Real Assets	5.8%	7.7%	-0.1	1.1	0.6	7.6%

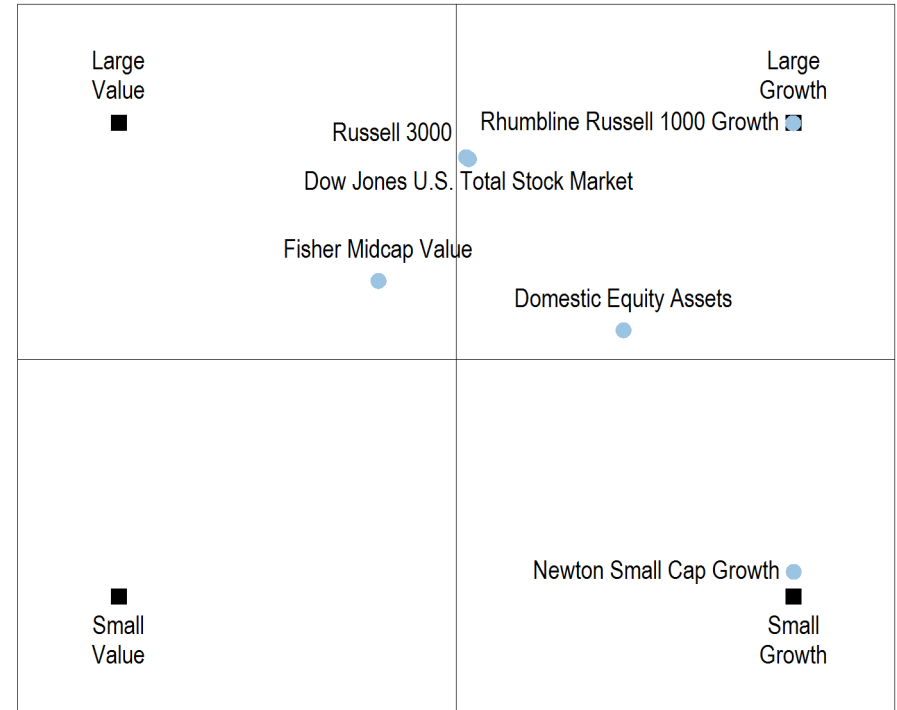
Asset Allocation on December 31, 2022

	Actual	Actual
Fisher Midcap Value	\$55,787,552	23.6%
Newton Small Cap Growth	\$43,265,221	18.3%
Rhumblin Russell 1000 Growth	\$37,167,306	15.7%
Rhumblin Russell 1000 Value	\$58,144,941	24.6%
Systematic Small Cap Free Cash Flow	\$28,203,474	11.9%
Vulcan Partners Small Cap Value	\$13,919,774	5.9%
Total	\$236,488,267	100.0%

Return Summary Ending December 31, 2022

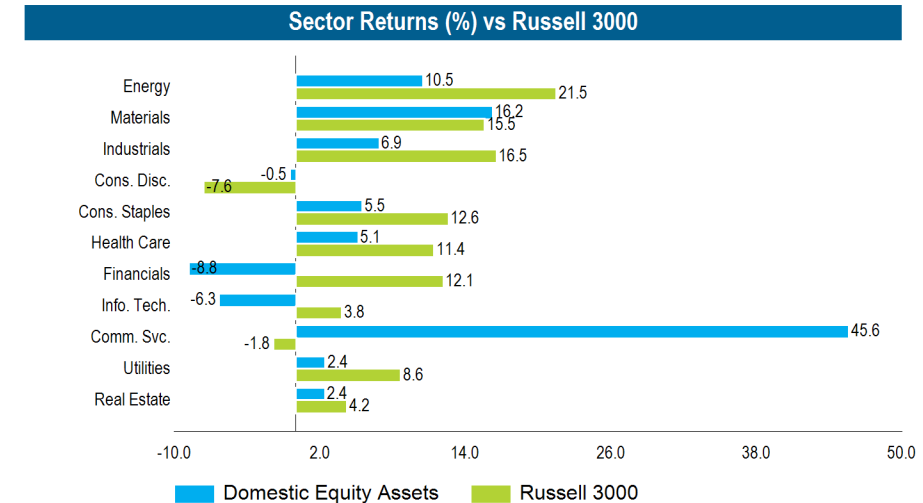
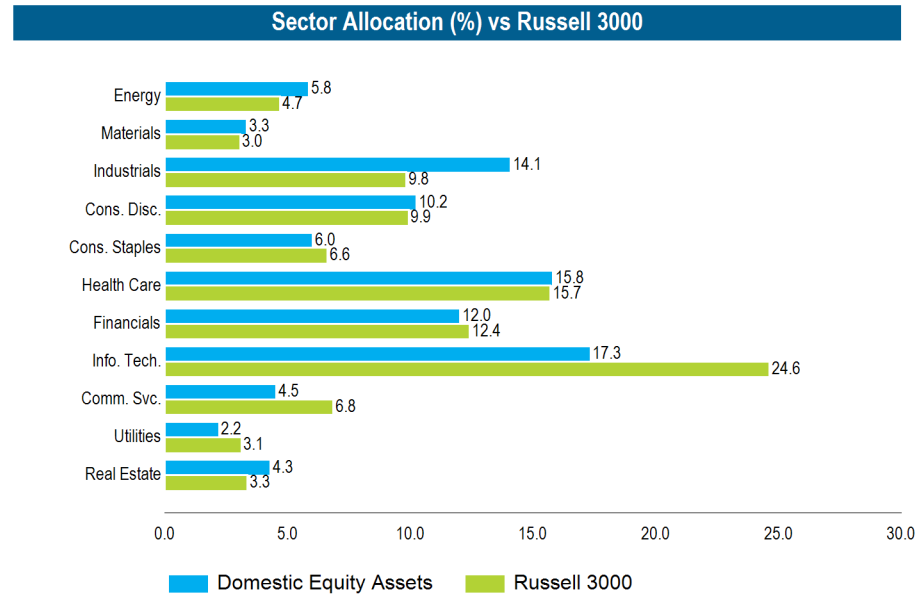


Domestic Equity Assets Style Map



Domestic Equity Assets Equity Characteristics		
	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	236.49	--
Number Of Holdings	1209	2960
Characteristics		
Weighted Avg. Market Cap. (\$B)	186.22	360.27
Median Market Cap (\$B)	10.59	2.47
P/E Ratio	16.43	18.49
Yield	1.53	1.72
EPS Growth - 5 Yrs.	15.95	17.23
Price to Book	2.85	3.59

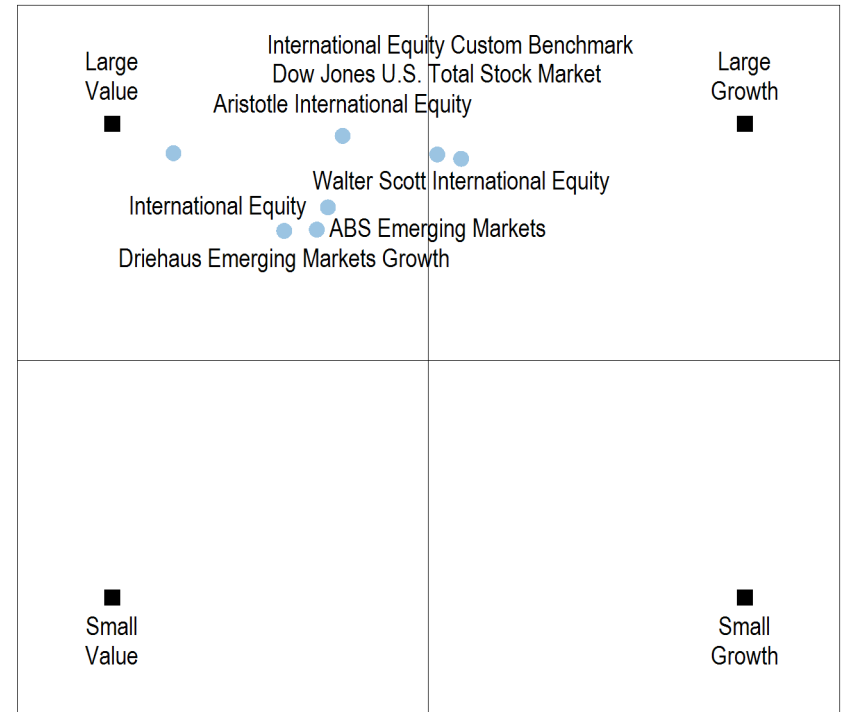
Top 10 Holdings	
APPLE INC	2.4%
MICROSOFT CORP	2.2%
ISHARES RUSSELL 2000 GROWTH ETF	1.2%
BERKSHIRE HATHAWAY INC	1.0%
AMAZON.COM INC	0.9%
JOHNSON & JOHNSON	0.8%
PLANET FITNESS INC	0.8%
EXXON MOBIL CORP	0.8%
CALIX INC	0.8%
CACTUS INC	0.8%
Total	11.9%



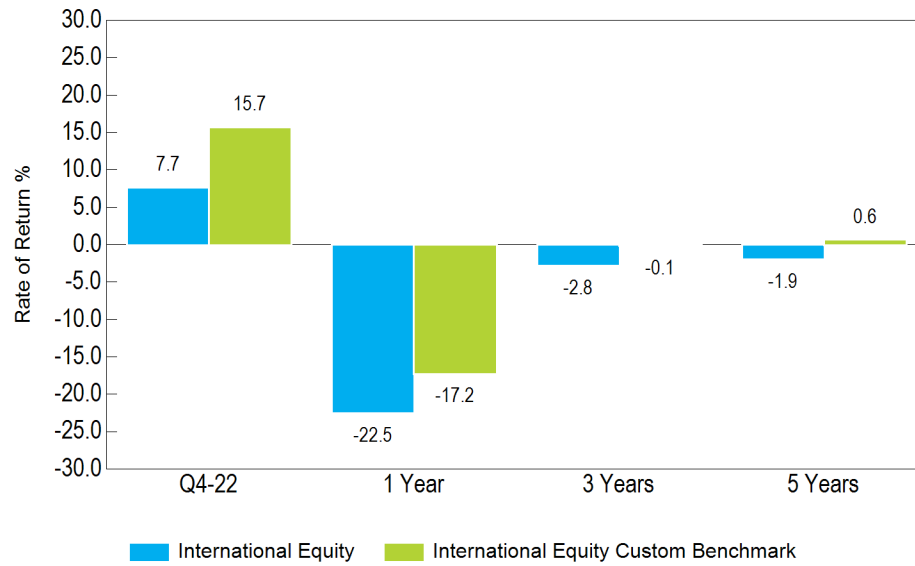
Asset Allocation on December 31, 2022

	Actual	Actual
ABS Emerging Markets	\$52,685,835	38.7%
Aristotle International Equity	\$19,839,194	14.6%
Driehaus Emerging Markets Growth	\$46,198,805	33.9%
Walter Scott International Equity	\$17,359,513	12.8%
Total	\$136,083,347	100.0%

International Equity Style Map

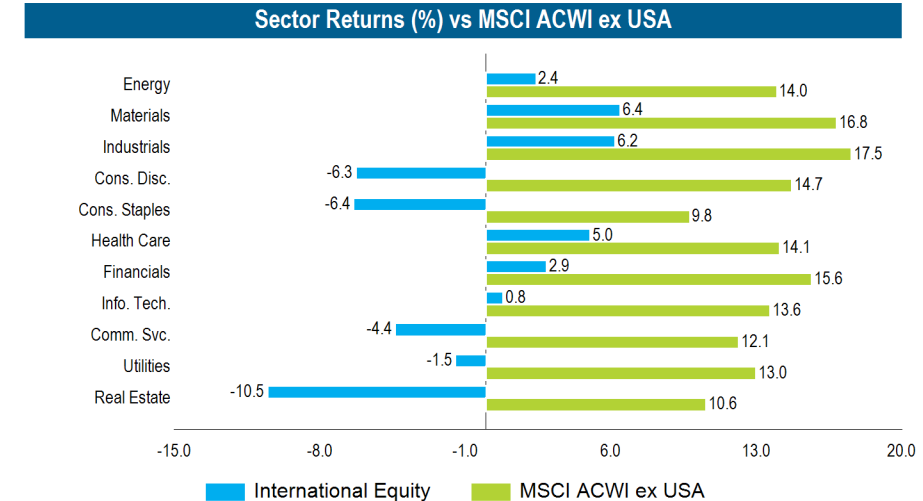
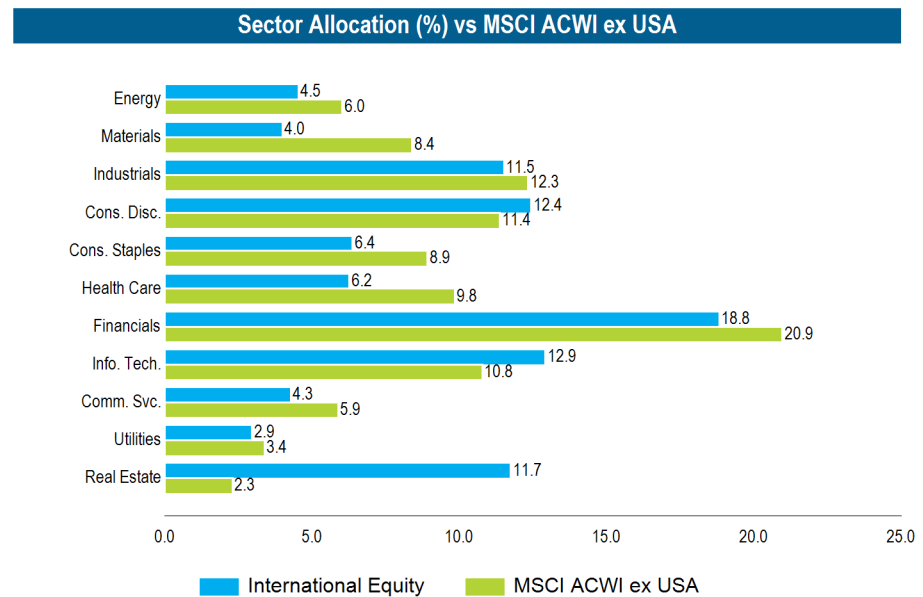


Return Summary Ending December 31, 2022



International Equity Equity Characteristics		
	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	136.08	--
Number Of Holdings	203	2259
Characteristics		
Weighted Avg. Market Cap. (\$B)	95.71	80.65
Median Market Cap (\$B)	24.96	8.90
P/E Ratio	15.48	12.84
Yield	2.65	3.42
EPS Growth - 5 Yrs.	10.30	11.64
Price to Book	2.42	2.41

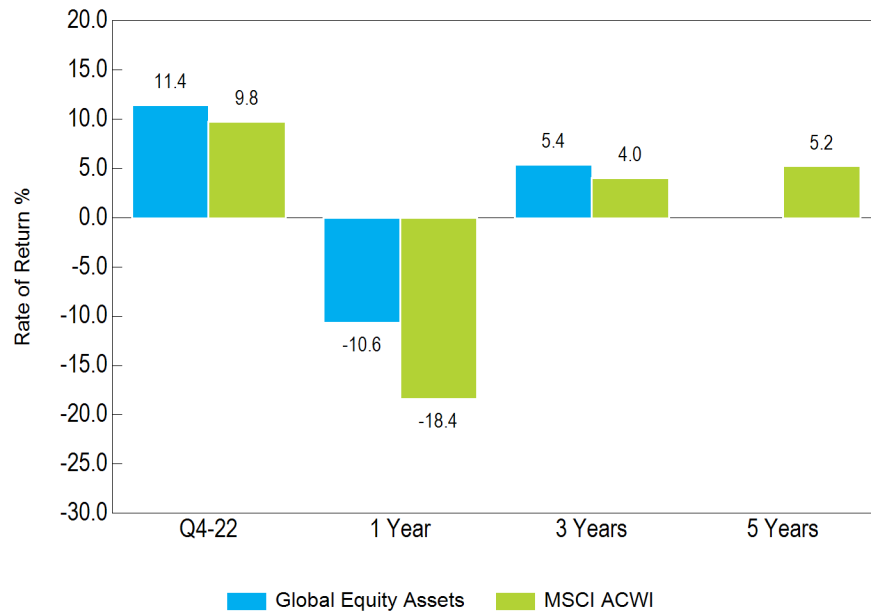
Top 10 Holdings	
CAPITALAND ASCENDAS REIT	6.1%
HANG LUNG PROPERTIES LTD	4.2%
AIA GROUP LTD	3.8%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	3.3%
SAMSUNG ELECTRONICS CO LTD	3.2%
ALIBABA GROUP HOLDING LTD	1.5%
TENCENT HOLDINGS LTD	1.5%
ICICI BANK LTD	1.3%
CREDICORP LTD	1.2%
RELIANCE INDUSTRIES LTD	1.2%
Total	27.3%



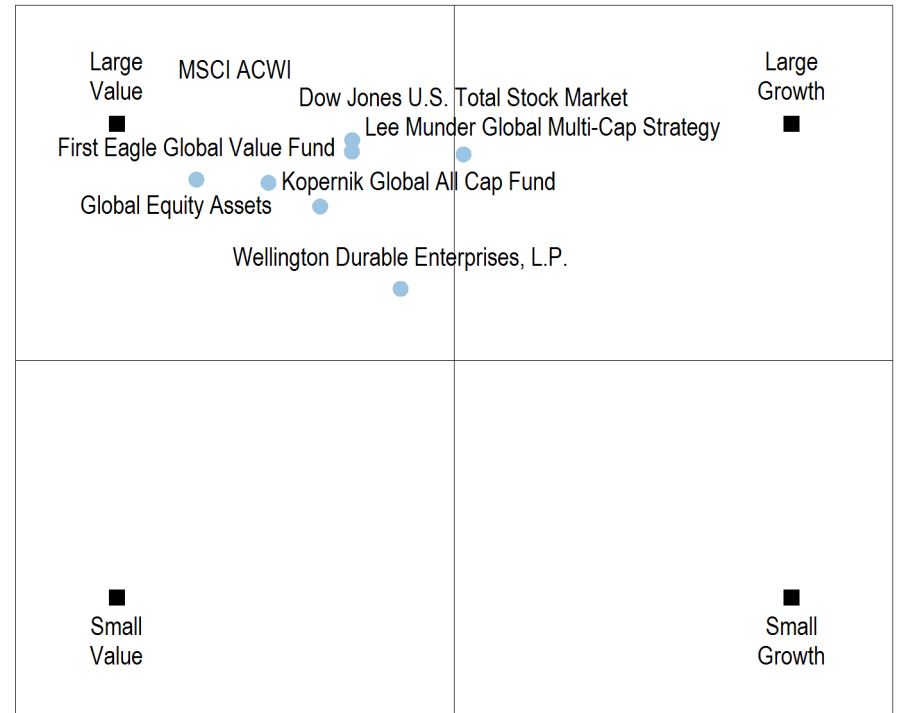
Asset Allocation on December 31, 2022

	Actual	Actual
First Eagle Global Value Fund	\$23,862,955	17.0%
Kopernik Global All Cap Fund	\$34,061,261	24.3%
Lee Munder Global Multi-Cap Strategy	\$38,740,800	27.7%
Wellington Durable Enterprises, L.P.	\$43,333,556	31.0%
Total	\$139,998,572	100.0%

Return Summary Ending December 31, 2022

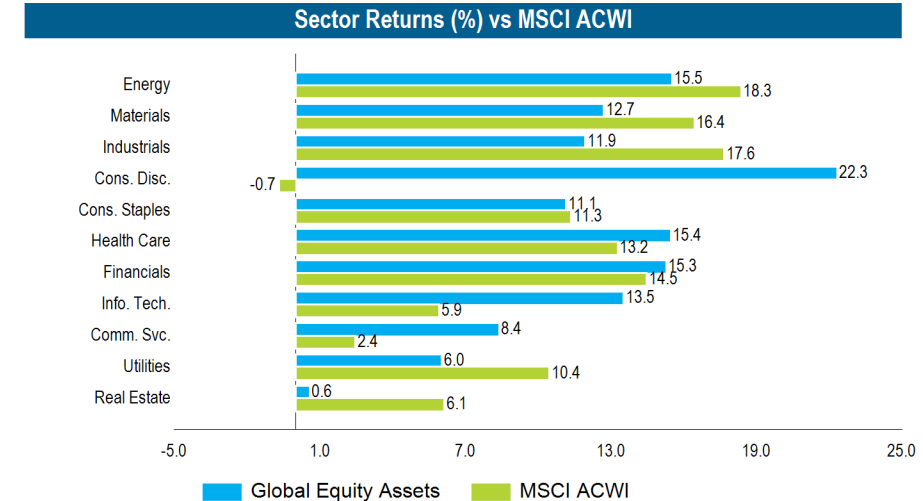
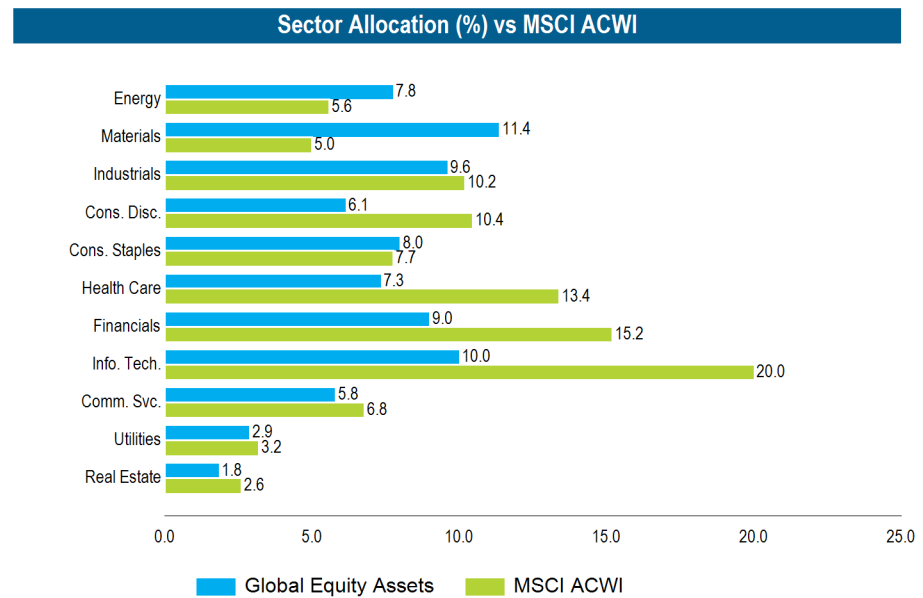


Global Equity Assets Style Map



Global Equity Assets Equity Characteristics		
	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	140.00	--
Number Of Holdings	334	2883
Characteristics		
Weighted Avg. Market Cap. (\$B)	186.88	274.21
Median Market Cap (\$B)	15.54	11.87
P/E Ratio	12.88	16.13
Yield	2.23	2.40
EPS Growth - 5 Yrs.	14.59	15.05
Price to Book	2.67	3.19

Top 10 Holdings	
MICROSOFT CORP	2.1%
APPLE INC	2.0%
ISHARES CORE MSCI EMERGING MARKETS ETF	1.9%
KT CORP	1.7%
ALPHABET INC	1.6%
NEWCREST MINING LTD	1.4%
AMAZON.COM INC	1.4%
VANECK VECTORS ETF TRUST VANECK VECTORS GOLD MINERS ETF	1.3%
KAZATOMPROM JSC NAC	1.2%
SPROTT PHYSICAL URANIUM TR UNIT	1.1%
Total	15.7%



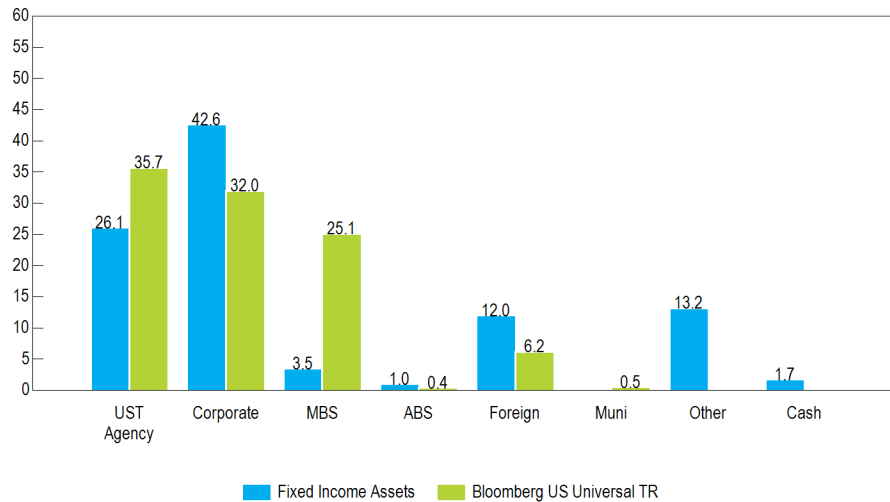
Asset Allocation on December 31, 2022

	Actual	Actual
Eaton Vance EMD Opportunities Fund	\$7,899,134	4.1%
Eaton Vance High Yield	\$11,632,494	6.0%
First Eagle Bank Loan Select Fund	\$10,539,128	5.4%
Lord Abbett Core Fixed Income Trust II	\$39,851,657	20.5%
Lord Abbett Short Duration Credit Trust II	\$52,709,058	27.2%
Manulife Strategic Fixed Income	\$40,372,490	20.8%
Mesirow High Yield	\$14,195,684	7.3%
Rhumblin TIPS Trust	\$16,828,767	8.7%
Total	\$194,028,413	100.0%

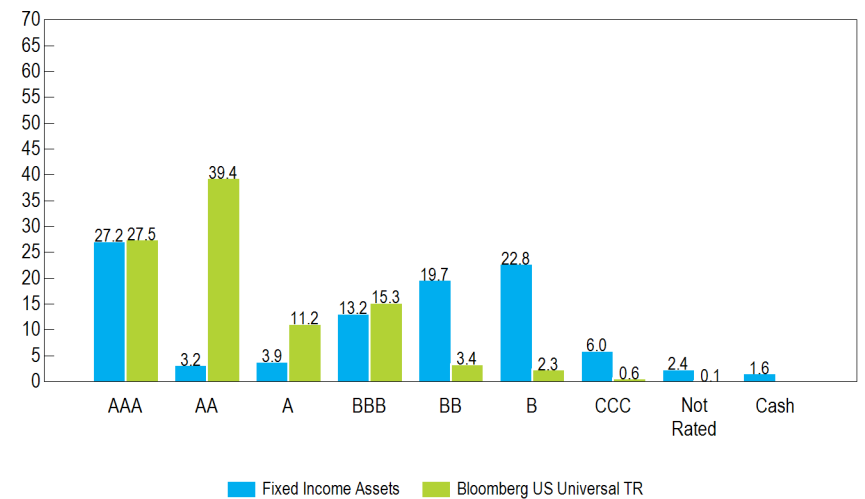
Fixed Income Assets Characteristics vs. Bloomberg US Universal TR

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity	7.7	5.1	7.8
Average Duration	4.0	6.0	4.2
Average Quality	BBB	AA	BBB
Weighted Average Maturity	6.1	12.2	6.1

Sector Allocation



Credit Quality Allocation



Rhumblin Russell 1000 Value | As of December 31, 2022

Account Information

Account Name	Rhumblin Russell 1000 Value
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	4/30/13
Account Type	US Equity
Benchmark	Russell 1000 Value
Universe	eV US Large Cap Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumblin Russell 1000 Value	12.4	-7.5	6.0	6.7	--	9.1	Apr-13
<i>Russell 1000 Value</i>	12.4	-7.5	6.0	6.7	10.3	9.2	Apr-13
<i>eV US Large Cap Value Equity Net Median</i>	12.7	-5.8	7.4	7.5	10.7	9.7	Apr-13
<i>eV US Large Cap Value Equity Net Rank</i>	56	66	77	70	--	67	Apr-13

Top 10 Holdings

BERKSHIRE HATHAWAY INC	3.0%
JOHNSON & JOHNSON	2.5%
EXXON MOBIL CORP	2.5%
JPMORGAN CHASE & CO	2.1%
CHEVRON CORP	1.9%
PFIZER INC	1.6%
BANK OF AMERICA CORP	1.3%
META PLATFORMS INC	1.2%
PROCTER & GAMBLE CO (THE)	1.1%
WALMART INC	1.1%
Total	18.2%

Rhumblin Russell 1000 Value Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	58.1	--	64.9
Number Of Holdings	854	852	858
Characteristics			
Weighted Avg. Market Cap. (\$B)	151.2	152.3	134.3
Median Market Cap (\$B)	11.9	11.9	11.5
P/E Ratio	15.3	15.6	14.0
Yield	2.3	2.3	2.5
EPS Growth - 5 Yrs.	12.6	12.6	12.4
Price to Book	2.5	2.5	2.3
Sector Distribution			
Energy	8.5	7.6	7.8
Materials	4.3	4.4	4.2
Industrials	10.5	10.7	10.0
Consumer Discretionary	6.0	5.8	6.0
Consumer Staples	7.4	7.4	7.3
Health Care	17.4	17.6	17.3
Financials	20.1	20.4	20.0
Information Technology	8.3	8.4	8.7
Communication Services	7.3	7.4	8.0
Utilities	5.7	5.9	5.8
Real Estate	4.5	4.5	4.8

Rhumblin Russell 1000 Growth | As of December 31, 2022

Account Information

Account Name	Rhumblin Russell 1000 Growth
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	7/31/09
Account Type	US Equity
Benchmark	Russell 1000 Growth
Universe	eV US Large Cap Growth Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumblin Russell 1000 Growth	2.2	-29.1	7.8	11.0	14.0	14.1	Jul-09
<i>Russell 1000 Growth</i>	2.2	-29.1	7.8	11.0	14.1	14.2	Jul-09
<i>eV US Large Cap Growth Equity Net Median</i>	3.6	-29.7	5.9	9.4	12.6	12.7	Jul-09
<i>eV US Large Cap Growth Equity Net Rank</i>	69	46	24	21	15	7	Jul-09

Top 10 Holdings

APPLE INC	11.3%
MICROSOFT CORP	10.4%
AMAZON.COM INC	4.3%
ALPHABET INC	2.7%
UNITEDHEALTH GROUP INC	2.6%
ALPHABET INC	2.4%
NVIDIA CORPORATION	2.0%
VISA INC	2.0%
TESLA INC	1.8%
MASTERCARD INC	1.7%
Total	41.1%

Rhumblin Russell 1000 Growth Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	37.2	--	44.5
Number Of Holdings	514	512	520
Characteristics			
Weighted Avg. Market Cap. (\$B)	619.3	626.2	702.9
Median Market Cap (\$B)	16.1	15.9	14.8
P/E Ratio	24.6	24.7	24.9
Yield	1.1	1.1	1.1
EPS Growth - 5 Yrs.	22.1	22.1	23.2
Price to Book	8.5	8.6	9.0
Sector Distribution			
Energy	1.7	1.3	1.5
Materials	1.4	1.5	1.3
Industrials	8.0	8.1	7.1
Consumer Discretionary	14.0	14.2	16.9
Consumer Staples	6.0	6.1	5.6
Health Care	13.3	13.5	12.1
Financials	3.2	3.3	3.0
Information Technology	42.5	43.4	42.2
Communication Services	6.7	6.8	7.4
Utilities	0.1	0.1	0.0
Real Estate	1.6	1.6	1.6

Fisher Midcap Value | As of December 31, 2022

Account Information

Account Name	Fisher Midcap Value
Account Structure	Separate Account
Investment Style	Active
Inception Date	4/30/07
Account Type	US Equity
Benchmark	Russell MidCap Value
Universe	eV US Mid Cap Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Fisher Midcap Value	13.6	-17.1	11.5	9.7	11.9	8.7	Apr-07
<i>Russell MidCap Value</i>	<i>10.5</i>	<i>-12.0</i>	<i>5.8</i>	<i>5.7</i>	<i>10.1</i>	<i>7.0</i>	<i>Apr-07</i>
<i>Russell MidCap</i>	<i>9.2</i>	<i>-17.3</i>	<i>5.9</i>	<i>7.1</i>	<i>11.0</i>	<i>7.9</i>	<i>Apr-07</i>
<i>eV US Mid Cap Value Equity Net Median</i>	<i>11.8</i>	<i>-8.6</i>	<i>6.7</i>	<i>6.1</i>	<i>10.0</i>	<i>7.4</i>	<i>Apr-07</i>
<i>eV US Mid Cap Value Equity Net Rank</i>	<i>18</i>	<i>96</i>	<i>7</i>	<i>2</i>	<i>16</i>	<i>11</i>	<i>Apr-07</i>

Top 10 Holdings

UNITED RENTALS INC.	3.3%
PERKINELMER INC.	3.0%
SYNOPTIS INC	3.0%
CHARLES RIVER LABORATORIES INTERNATIONAL INC	2.9%
RAYMOND JAMES FINANCIAL INC.	2.7%
FACTSET RESEARCH SYSTEMS INC.	2.6%
FREEPORT-MCMORAN INC	2.5%
ROCKWELL AUTOMATION INC.	2.2%
MORNINGSTAR INC	2.2%
COOPER COS INC (THE)	2.2%
Total	26.7%

Fisher Midcap Value Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	55.8	--	53.5
Number Of Holdings	77	699	70
Characteristics			
Weighted Avg. Market Cap. (\$B)	19.7	20.1	19.2
Median Market Cap (\$B)	12.5	9.2	13.0
P/E Ratio	13.4	14.5	12.1
Yield	1.2	2.2	1.2
EPS Growth - 5 Yrs.	19.4	13.5	22.0
Price to Book	2.9	2.3	2.6
Sector Distribution			
Energy	5.6	5.3	6.0
Materials	8.1	7.6	9.6
Industrials	18.4	15.7	17.8
Consumer Discretionary	11.1	9.9	5.6
Consumer Staples	0.7	3.9	0.9
Health Care	16.9	7.5	17.1
Financials	15.6	18.3	18.4
Information Technology	18.5	8.9	20.3
Communication Services	0.2	3.1	0.2
Utilities	0.0	9.2	0.0
Real Estate	5.0	10.6	4.1

Newton Small Cap Growth | As of December 31, 2022

Account Information

Account Name	Newton Small Cap Growth
Account Structure	Separate Account
Investment Style	Active
Inception Date	8/31/09
Account Type	US Equity
Benchmark	Russell 2000 Growth
Universe	eV US Small Cap Growth Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Newton Small Cap Growth	1.6	-28.4	6.3	10.1	13.3	13.1	Aug-09
<i>Russell 2000 Growth</i>	4.1	-26.4	0.6	3.5	9.2	10.6	Aug-09
<i>eV US Small Cap Growth Equity Net Median</i>	4.4	-28.1	4.3	7.8	11.0	12.4	Aug-09
<i>eV US Small Cap Growth Equity Net Rank</i>	74	54	31	20	15	31	Aug-09

Top 10 Holdings

ISHARES RUSSELL 2000 GROWTH ETF	5.7%
PLANET FITNESS INC	3.9%
CALIX INC	3.9%
CACTUS INC	3.7%
GROCERY OUTLET INC	3.3%
SAREPTA THERAPEUTICS INC	3.2%
CONSTRUCTION PARTNERS INC	3.0%
EQT CORP	3.0%
OLLIE'S BARGAIN OUTLET HOLDINGS INC	3.0%
XENON PHARMACEUTICALS INC	2.7%
Total	35.3%

Boston Company Small Cap Growth Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	43.3	--	42.5
Number Of Holdings	71	1109	75
Characteristics			
Weighted Avg. Market Cap. (\$B)	4.6	3.2	4.5
Median Market Cap (\$B)	2.8	1.3	2.6
P/E Ratio	18.2	14.8	18.7
Yield	0.3	0.9	0.3
EPS Growth - 5 Yrs.	12.7	22.6	20.1
Price to Book	3.1	3.5	3.2
Sector Distribution			
Energy	8.1	7.4	7.6
Materials	1.1	4.5	0.9
Industrials	15.5	17.7	14.9
Consumer Discretionary	13.1	10.8	8.8
Consumer Staples	7.4	4.5	6.6
Health Care	24.1	23.3	28.2
Financials	2.6	5.7	2.8
Information Technology	11.7	19.8	13.2
Communication Services	2.5	2.3	2.2
Utilities	0.0	1.7	0.0
Real Estate	1.8	2.2	1.7

Vulcan Partners Small Cap Value | As of December 31, 2022

Account Information

Account Name	Vulcan Partners Small Cap Value
Account Structure	Separate Account
Investment Style	Active
Inception Date	4/01/22
Account Type	US Equity
Benchmark	Russell 2000 Value
Universe	eV US Small Cap Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Vulcan Partners Small Cap Value	11.0	--	--	--	--	-28.4	Apr-22
<i>Russell 2000 Value</i>	8.4	-14.5	4.7	4.1	8.5	-12.4	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>	10.8	-11.7	6.3	4.6	9.2	-9.1	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>	48	--	--	--	--	99	Apr-22

Top 10 Holdings

ISHARES RUSSELL 2000 GROWTH ETF	5.7%
PLANET FITNESS INC	3.9%
CALIX INC	3.9%
CACTUS INC	3.7%
GROCERY OUTLET INC	3.3%
SAREPTA THERAPEUTICS INC	3.2%
CONSTRUCTION PARTNERS INC	3.0%
EQT CORP	3.0%
OLLIE'S BARGAIN OUTLET HOLDINGS INC	3.0%
XENON PHARMACEUTICALS INC	2.7%
Total	35.3%

Vulcan Partners Small Cap Value Characteristics

	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	13.9	--
Number Of Holdings	25	1383
Characteristics		
Weighted Avg. Market Cap. (\$B)	2.5	2.4
Median Market Cap (\$B)	2.1	0.9
P/E Ratio	14.8	10.5
Yield	2.1	2.3
EPS Growth - 5 Yrs.	8.4	13.3
Price to Book	2.1	1.6
Sector Distribution		
Energy	0.0	6.3
Materials	8.3	4.0
Industrials	27.5	13.3
Consumer Discretionary	6.3	9.8
Consumer Staples	4.5	2.7
Health Care	4.6	10.5
Financials	7.8	28.9
Information Technology	17.4	5.6
Communication Services	0.0	2.8
Utilities	0.0	5.3
Real Estate	16.4	10.7

Systematic Small Cap Free Cash Flow | As of December 31, 2022

Account Information

Account Name	Systematic Small Cap Free Cash Flow
Account Structure	Separate Account
Investment Style	Active
Inception Date	4/01/22
Account Type	US Equity
Benchmark	Russell 2000 Value
Universe	eV US Small Cap Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Systematic Small Cap Free Cash Flow	11.9	--	--	--	--	-2.5	Apr-22
<i>Russell 2000 Value</i>	8.4	-14.5	4.7	4.1	8.5	-12.4	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>	10.8	-11.7	6.3	4.6	9.2	-9.1	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>	38	--	--	--	--	8	Apr-22

Top 10 Holdings

FIRST CITIZENS BANCSHARES INC	3.0%
MAGNOLIA OIL & GAS CORP	2.1%
CROSS COUNTRY HEALTHCARE INC	1.7%
EMCOR GROUP INC.	1.7%
NORTHWESTERN CORP	1.7%
KBR INC	1.6%
WASHINGTON FEDERAL INC.	1.5%
WEBSTER FINANCIAL CORP	1.4%
CURTISS-WRIGHT CORP	1.3%
ICF INTERNATIONAL INC	1.3%
Total	17.3%

Systematic Small Cap Free Cash Flow Characteristics

	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	28.2	--
Number Of Holdings	151	1383
Characteristics		
Weighted Avg. Market Cap. (\$B)	3.9	2.4
Median Market Cap (\$B)	2.3	0.9
P/E Ratio	11.5	10.5
Yield	1.8	2.3
EPS Growth - 5 Yrs.	17.4	13.3
Price to Book	1.8	1.6
Sector Distribution		
Energy	5.9	6.3
Materials	4.4	4.0
Industrials	21.0	13.3
Consumer Discretionary	12.1	9.8
Consumer Staples	2.1	2.7
Health Care	10.1	10.5
Financials	22.6	28.9
Information Technology	10.7	5.6
Communication Services	1.3	2.8
Utilities	2.0	5.3
Real Estate	5.0	10.7

Aristotle International Equity | As of December 31, 2022

Account Information

Account Name	Aristotle International Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	3/01/21
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE Core Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Aristotle International Equity	13.8	-20.9	--	--	--	-4.6	Mar-21
MSCI EAFE	17.3	-14.5	0.9	1.5	4.7	-3.3	Mar-21
eV EAFE Core Equity Net Median	16.1	-16.9	0.6	1.1	5.2	-4.5	Mar-21
eV EAFE Core Equity Net Rank	87	77	--	--	--	52	Mar-21

Top 10 Holdings

ACCENTURE PLC	4.6%
MUENCHENER RUCK.	3.7%
SONY GROUP CORPORATION	3.6%
ASHTREAD GROUP PLC	3.6%
LVMH MOET HENNESSY LOUIS VUITTON SE	3.3%
PAN PACIFIC INTERNATIONAL HOLDINGS CORP	3.2%
DASSAULT SYSTEMES SA	3.2%
DBS GROUP HOLDINGS LTD	3.1%
HALEON PLC ORD GBP1.25	3.1%
TOTALENERGIES SE	3.1%
Total	34.5%

Aristotle International Equity Characteristics

	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	19.8	--
Number Of Holdings	49	796
Characteristics		
Weighted Avg. Market Cap. (\$B)	71.3	78.1
Median Market Cap (\$B)	30.4	11.8
P/E Ratio	16.5	13.7
Yield	2.4	3.4
EPS Growth - 5 Yrs.	12.8	9.9
Price to Book	2.3	2.4
Sector Distribution		
Energy	5.1	5.0
Materials	6.7	7.8
Industrials	18.0	15.1
Consumer Discretionary	15.0	11.1
Consumer Staples	7.7	10.5
Health Care	8.9	13.6
Financials	18.8	18.7
Information Technology	11.8	7.8
Communication Services	2.7	4.5
Utilities	0.0	3.5
Real Estate	0.0	2.6

Walter Scott International Equity | As of December 31, 2022

Account Information

Account Name	Walter Scott International Equity
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	3/01/21
Account Type	Non-US Stock Developed
Benchmark	MSCI EAFE
Universe	eV EAFE Core Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Walter Scott International Equity	14.0	-22.6	--	--	--	-6.2	Mar-21
MSCI EAFE	17.3	-14.5	0.9	1.5	4.7	-3.3	Mar-21
eV EAFE Core Equity Net Median	16.1	-16.9	0.6	1.1	5.2	-4.5	Mar-21
eV EAFE Core Equity Net Rank	85	84	--	--	--	71	Mar-21

Top 10 Holdings

CAPITALAND ASCENDAS REIT	28.3%
HANG LUNG PROPERTIES LTD	19.7%
AIA GROUP LTD	8.6%
CLP HOLDINGS LTD	5.0%
PRUDENTIAL PLC	3.9%
COMPASS GROUP PLC	3.3%
ATLAS COPCO AB	2.6%
EXPERIAN PLC	2.0%
ALIMENTATION COUCHE-TARD INC	1.9%
INDUSTRIA DE DISENO TEXTIL INDITEX SA	1.7%
Total	77.1%

Walter Scott International Equity Characteristics

	Portfolio Q4-22	Index Q4-22
Market Value		
Market Value (\$M)	17.4	--
Number Of Holdings	52	796
Characteristics		
Weighted Avg. Market Cap. (\$B)	43.4	78.1
Median Market Cap (\$B)	36.9	11.8
P/E Ratio	17.6	13.7
Yield	3.8	3.4
EPS Growth - 5 Yrs.	3.7	9.9
Price to Book	2.0	2.4
Sector Distribution		
Energy	0.9	5.0
Materials	2.8	7.8
Industrials	9.6	15.1
Consumer Discretionary	5.6	11.1
Consumer Staples	4.2	10.5
Health Care	6.2	13.6
Financials	12.5	18.7
Information Technology	5.0	7.8
Communication Services	0.0	4.5
Utilities	5.0	3.5
Real Estate	48.0	2.6

Driehaus Emerging Markets Growth | As of December 31, 2022

Account Information

Account Name	Driehaus Emerging Markets Growth
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	3/01/19
Account Type	Non-US Stock Emerging
Benchmark	MSCI Emerging Markets
Universe	eV Emg Mkts Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Markets Growth	3.8	-22.1	-0.4	--	--	3.2	Mar-19
MSCI Emerging Markets	9.7	-20.1	-2.7	-1.4	1.4	0.0	Mar-19
eV Emg Mkts Equity Net Median	10.3	-19.8	-1.6	-0.7	2.1	1.3	Mar-19
eV Emg Mkts Equity Net Rank	97	66	39	--	--	26	Mar-19

Top 10 Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.6%
SAMSUNG ELECTRONICS CO LTD	5.0%
ALIBABA GROUP HOLDING LTD	2.8%
TENCENT HOLDINGS LTD	2.7%
ICICI BANK LTD	2.3%
AIA GROUP LTD	2.3%
RELIANCE INDUSTRIES LTD	2.2%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	2.2%
GPO FINANCE BANORTE	2.0%
PING AN INSURANCE GROUP	1.9%
Total	29.0%

Driehaus Emerging Markets Growth Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	46.2	--	44.5
Number Of Holdings	113	1375	99
Characteristics			
Weighted Avg. Market Cap. (\$B)	130.0	95.7	120.2
Median Market Cap (\$B)	18.4	6.5	20.0
P/E Ratio	13.7	11.4	14.3
Yield	2.3	3.4	2.3
EPS Growth - 5 Yrs.	13.3	14.6	16.7
Price to Book	2.8	2.6	2.8
Sector Distribution			
Energy	5.6	4.9	7.9
Materials	3.2	8.9	2.9
Industrials	9.4	6.1	9.2
Consumer Discretionary	13.9	14.1	16.0
Consumer Staples	6.6	6.4	8.9
Health Care	5.1	4.1	3.6
Financials	21.2	22.1	18.2
Information Technology	16.3	18.6	14.6
Communication Services	6.5	9.9	5.2
Utilities	3.4	3.0	2.6
Real Estate	3.1	1.9	3.1

First Eagle Global Value Fund | As of December 31, 2022

Account Information

Account Name	First Eagle Global Value Fund
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/18
Account Type	Equity
Benchmark	MSCI ACWI Value NR USD
Universe	eV Global Value Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
First Eagle Global Value Fund	13.2	-6.6	4.0	--	--	3.7	Feb-18
MSCI ACWI Value NR USD	14.2	-7.5	3.3	3.5	6.4	2.5	Feb-18
eV Global Value Equity Net Median	15.0	-9.5	4.0	3.9	7.1	3.0	Feb-18
eV Global Value Equity Net Rank	72	31	51	--	--	38	Feb-18

Top 10 Holdings

ORACLE CORP	3.3%
SCHLUMBERGER LTD	3.0%
EXXON MOBIL CORP	2.9%
COMCAST CORP	2.2%
BRITISH AMERICAN TOBACCO PLC	2.1%
HCA HEALTHCARE INC	2.1%
C.H. ROBINSON WORLDWIDE INC.	1.9%
PHILIP MORRIS INTERNATIONAL INC	1.9%
CIE FINANCIERE RICHEMONT AG, ZUG	1.8%
ELEVANCE HEALTH INC	1.8%
Total	23.1%

First Eagle Global Value Fund Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	23.9	--	21.1
Number Of Holdings	137	2883	140
Characteristics			
Weighted Avg. Market Cap. (\$B)	125.0	274.2	119.7
Median Market Cap (\$B)	26.3	11.9	22.1
P/E Ratio	16.2	16.1	14.0
Yield	2.5	2.4	2.7
EPS Growth - 5 Yrs.	11.0	15.1	12.5
Price to Book	2.1	3.2	2.1
Sector Distribution			
Energy	8.1	5.6	6.9
Materials	5.8	5.0	5.7
Industrials	11.7	10.2	10.6
Consumer Discretionary	7.8	10.4	6.0
Consumer Staples	14.6	7.7	12.7
Health Care	7.5	13.4	5.6
Financials	14.7	15.2	14.7
Information Technology	9.4	20.0	9.0
Communication Services	4.9	6.8	4.6
Utilities	0.6	3.2	0.5
Real Estate	4.1	2.6	3.9

Kopernik Global All Cap Fund | As of December 31, 2022

Account Information

Account Name	Kopernik Global All Cap Fund
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	2/01/18
Account Type	Equity
Benchmark	MSCI ACWI Value NR USD
Universe	eV Global All Cap Value Eq Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Kopernik Global All Cap Fund	12.2	-9.2	13.6	--	--	7.0	Feb-18
MSCI ACWI Value NR USD	14.2	-7.5	3.3	3.5	6.4	2.5	Feb-18
eV Global All Cap Value Eq Net Median	15.4	-10.0	3.9	3.7	7.0	2.7	Feb-18
eV Global All Cap Value Eq Net Rank	74	43	2	--	--	6	Feb-18

Top 10 Holdings

KT CORP	4.5%
NEWCREST MINING LTD	3.6%
VANECK VECTORS ETF TRUST VANECK VECTORS GOLD MINERS ETF	3.3%
KAZATOMPROM JSC NAC	3.2%
SPROTT PHYSICAL URANIUM TR UNIT	2.9%
SOUTHWESTERN ENERGY CO	2.5%
GOLDEN AGRI-RESOURCES LTD	2.5%
CGN POWER CO LTD	2.4%
WHEATON PRECIOUS METALS CORP	2.2%
RANGE RESOURCES CORP.	2.2%
Total	29.3%

Kopernik Global All Cap Fund Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	34.1	--	30.4
Number Of Holdings	113	2883	117
Characteristics			
Weighted Avg. Market Cap. (\$B)	8.2	274.2	9.2
Median Market Cap (\$B)	1.9	11.9	2.1
P/E Ratio	7.2	16.1	6.9
Yield	2.5	2.4	3.1
EPS Growth - 5 Yrs.	11.7	15.1	14.0
Price to Book	1.9	3.2	2.0
Sector Distribution			
Energy	12.9	5.6	12.2
Materials	25.3	5.0	24.0
Industrials	12.6	10.2	12.5
Consumer Discretionary	4.0	10.4	3.8
Consumer Staples	7.0	7.7	6.9
Health Care	4.1	13.4	3.8
Financials	4.4	15.2	3.9
Information Technology	1.4	20.0	0.9
Communication Services	5.8	6.8	5.5
Utilities	6.5	3.2	7.7
Real Estate	0.7	2.6	0.7

Lee Munder Global Multi-Cap Strategy | As of December 31, 2022

Account Information

Account Name	Lee Munder Global Multi-Cap Strategy
Account Structure	Separate Account
Investment Style	Active
Inception Date	3/01/18
Account Type	Equity
Benchmark	MSCI ACWI
Universe	eV All Global Equity Net

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Lee Munder Global Multi-Cap Strategy	7.7	-18.8	2.5	--	--	3.6	Mar-18
MSCI ACWI	9.8	-18.4	4.0	5.2	8.0	5.2	Mar-18
eV All Global Equity Net Median	10.7	-18.3	4.4	5.5	8.2	5.5	Mar-18
eV All Global Equity Net Rank	80	54	74	--	--	78	Mar-18

Top 10 Holdings

APPLE INC	5.2%
ISHARES CORE MSCI EMERGING MARKETS ETF	5.0%
MICROSOFT CORP	4.9%
ALPHABET INC	3.9%
AMAZON.COM INC	3.6%
NORTHROP GRUMMAN CORP	2.6%
UNITEDHEALTH GROUP INC	2.5%
MASTERCARD INC	2.2%
LVMH	2.2%
ISHARES MSCI SOUTH KOREA ETF	2.1%
Total	34.2%

Lee Munder Global Multi-Cap Strategy Characteristics

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Market Value			
Market Value (\$M)	38.7	--	40.4
Number Of Holdings	97	2883	100
Characteristics			
Weighted Avg. Market Cap. (\$B)	399.6	274.2	384.1
Median Market Cap (\$B)	83.1	11.9	81.0
P/E Ratio	18.7	16.1	16.8
Yield	1.8	2.4	1.9
EPS Growth - 5 Yrs.	18.8	15.1	17.9
Price to Book	3.9	3.2	3.5
Sector Distribution			
Energy	3.0	5.6	4.2
Materials	2.1	5.0	1.9
Industrials	5.9	10.2	8.1
Consumer Discretionary	7.1	10.4	11.7
Consumer Staples	5.2	7.7	8.0
Health Care	10.1	13.4	15.5
Financials	9.8	15.2	12.5
Information Technology	17.9	20.0	21.1
Communication Services	6.2	6.8	7.7
Utilities	1.0	3.2	1.5
Real Estate	1.6	2.6	0.8

Account Information

Account Name	Rhumblin TIPS Trust
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	9/01/20
Account Type	US Fixed Income Investment Grade
Benchmark	Bloomberg US TIPS TR
Universe	eV US TIPS / Inflation Fixed Inc Net

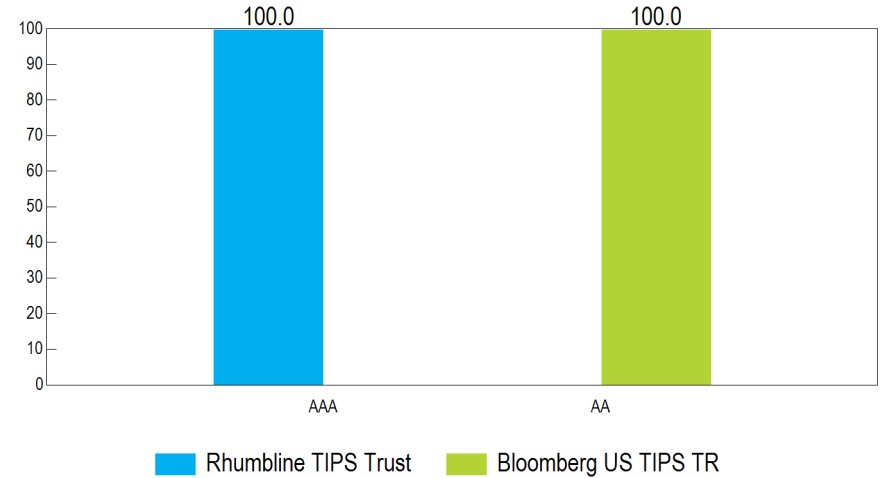
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumblin TIPS Trust	2.0	-11.8	--	--	--	-2.4	Sep-20
<i>Bloomberg US TIPS TR</i>	2.0	-11.8	1.2	2.1	1.1	-2.4	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>	2.0	-11.6	1.2	2.1	1.1	-2.2	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Rank</i>	50	72	--	--	--	63	Sep-20

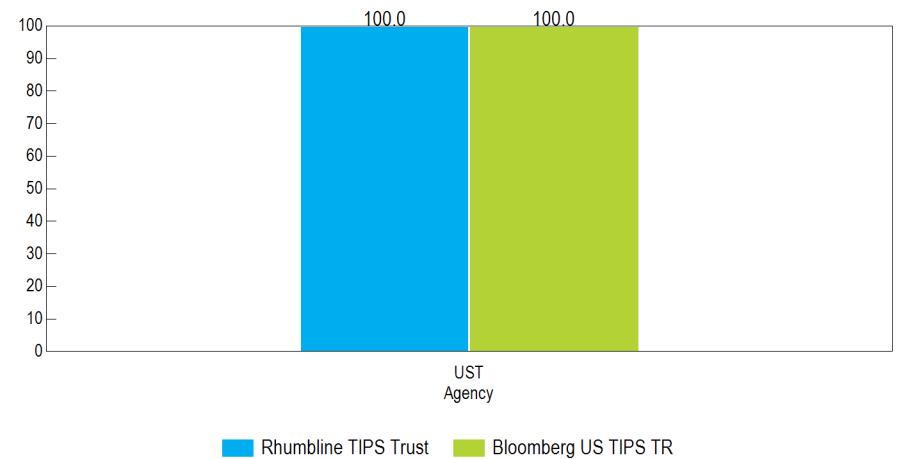
Rhumblin TIPS Trust Characteristics vs. Bloomberg US TIPS TR

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity	4.2	4.1	4.1
Average Duration	6.6	6.6	6.8
Average Quality	AAA	AA	AAA
Weighted Average Maturity	7.2	7.1	7.3

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	Eaton Vance High Yield
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	4/30/06
Account Type	US Fixed Income High Yield
Benchmark	ICE BofA US High Yield TR
Universe	eV US High Yield Fixed Inc Net

Portfolio Performance Summary

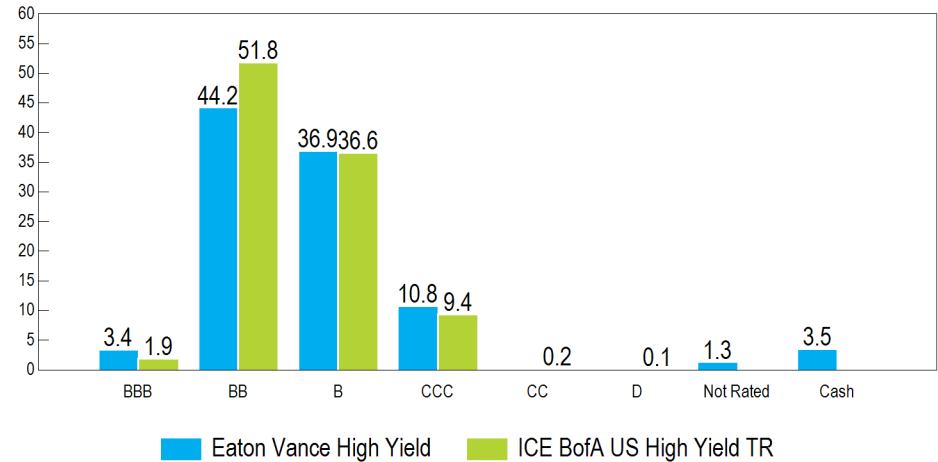
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Eaton Vance High Yield	4.2	-9.5	0.3	2.3	4.0	5.8	Apr-06
ICE BofA US High Yield TR	4.0	-11.2	-0.2	2.1	3.9	5.9	Apr-06
eV US High Yield Fixed Inc Net Median	3.9	-10.0	0.3	2.3	3.7	5.6	Apr-06
eV US High Yield Fixed Inc Net Rank	33	41	52	46	32	33	Apr-06

Eaton Vance High Yield Characteristics

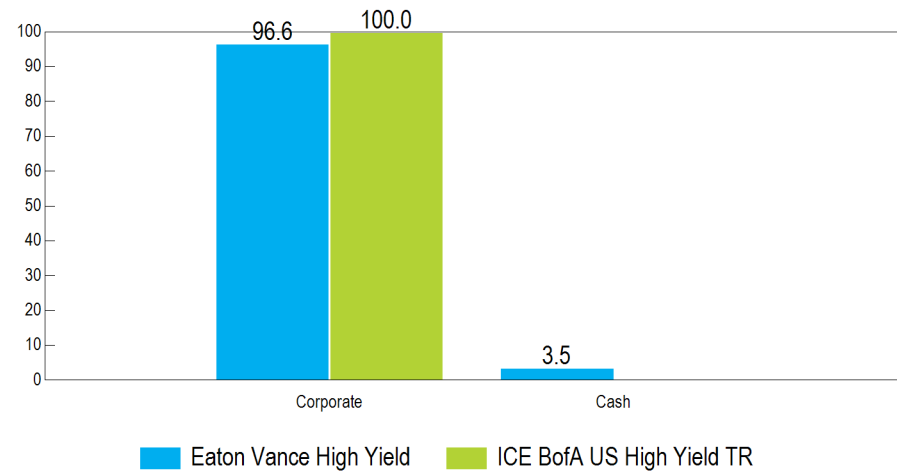
vs. ICE BofA US High Yield TR

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity	8.4	8.9	8.6
Average Duration	4.1	4.3	4.1
Average Quality	B	B	B
Weighted Average Maturity	5.8	5.5	5.9

Credit Quality Allocation



Sector Allocation



Eaton Vance EMD Opportunities Fund | As of December 31, 2022

Account Information

Account Name	Eaton Vance EMD Opportunities Fund
Account Structure	Commingled Fund
Investment Style	Passive
Inception Date	8/01/20
Account Type	Non-US Fixed Income
Benchmark	JP Morgan EMBI Global Diversified
Universe	eV Emg Mkts Fixed Inc - Blended Currency Net

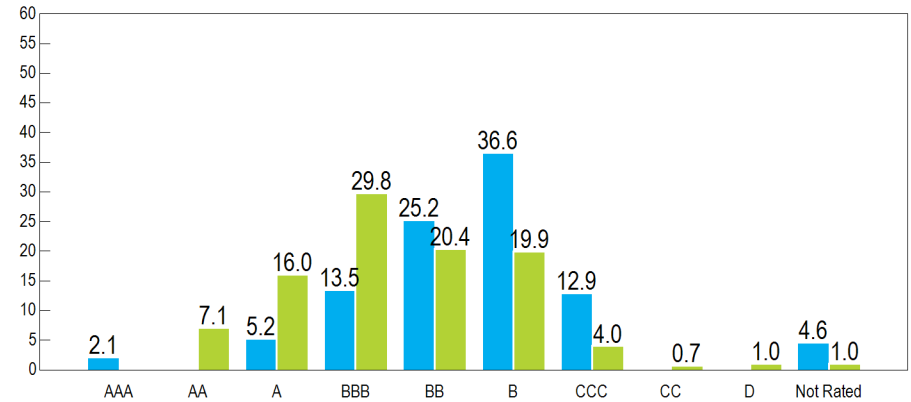
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Eaton Vance EMD Opportunities Fund	6.6	-11.4	--	--	--	-0.8	Aug-20
JP Morgan EMBI Global Diversified	8.1	-17.8	-5.3	-1.3	1.6	-6.8	Aug-20
eV Emg Mkts Fixed Inc - Blended Currency Net Median	8.4	-13.6	-4.1	-1.1	0.4	-4.7	Aug-20
eV Emg Mkts Fixed Inc - Blended Currency Net Rank	93	21	--	--	--	12	Aug-20

Eaton Vance EMD Opportunities Fund Characteristics vs. JP Morgan EMBI Global Diversified

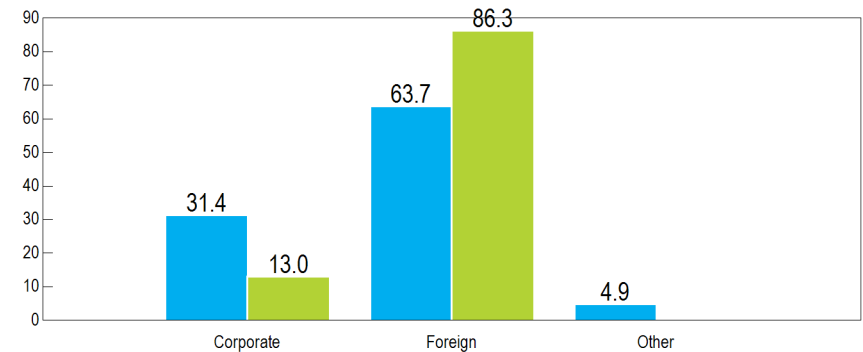
	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity		12.2	7.8
Average Duration		3.2	6.8
Average Quality		BB	BB
Weighted Average Maturity		6.6	11.7
			5.3

Credit Quality Allocation



Legend: Eaton Vance EMD Opportunities Fund (Blue), JP Morgan EMBI Global Diversified (Green)

Sector Allocation



Legend: Eaton Vance EMD Opportunities Fund (Blue), JP Morgan EMBI Global Diversified (Green)

First Eagle Bank Loan Select Fund | As of December 31, 2022

Account Information

Account Name	First Eagle Bank Loan Select Fund
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	9/30/10
Account Type	US Fixed Income High Yield
Benchmark	Credit Suisse Leveraged Loans
Universe	Bank Loan MStar MF

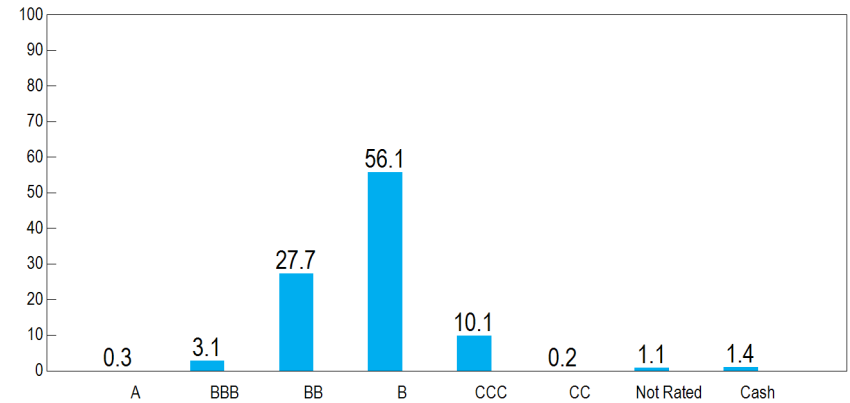
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
First Eagle Bank Loan Select Fund	0.6	-3.0	1.8	2.7	3.9	4.5	Sep-10
Credit Suisse Leveraged Loans	2.3	-1.1	2.3	3.2	3.8	4.3	Sep-10
Bank Loan MStar MF Median	2.6	-1.7	1.4	2.4	3.1	3.6	Sep-10
Bank Loan MStar MF Rank	99	74	32	24	1	1	Sep-10

THL Bank Loan Select Fund Characteristics

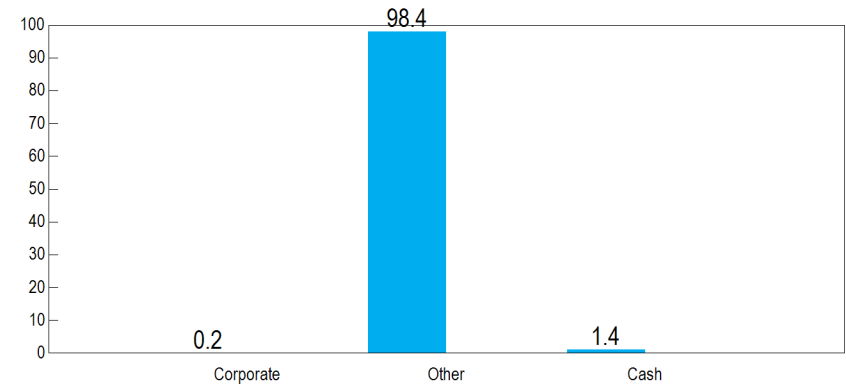
	Portfolio Q4-22	Portfolio Q3-22
Fixed Income Characteristics		
Yield to Maturity	11.8	11.5
Average Duration	0.2	0.2
Average Quality	B	B
Weighted Average Maturity	4.3	4.5

Credit Quality Allocation



First Eagle Bank Loan Select Fund

Sector Allocation



First Eagle Bank Loan Select Fund

Account Information

Account Name	Manulife Strategic Fixed Income
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	7/17/19
Account Type	US Fixed Income High Yield
Benchmark	Bloomberg Multiverse TR
Universe	Multisector Bond MStar MF

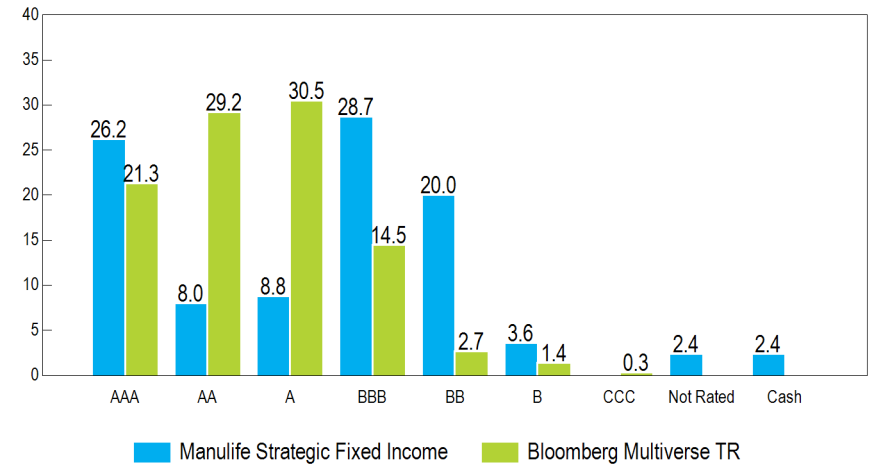
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Manulife Strategic Fixed Income	3.3	-9.5	-0.4	--	--	0.4	Jul-19
Bloomberg Multiverse TR	4.7	-16.0	-4.4	-1.6	-0.3	-3.4	Jul-19
Multisector Bond MStar MF Median	2.8	-9.7	-0.6	1.4	2.5	0.4	Jul-19
Multisector Bond MStar MF Rank	34	45	42	--	--	50	Jul-19

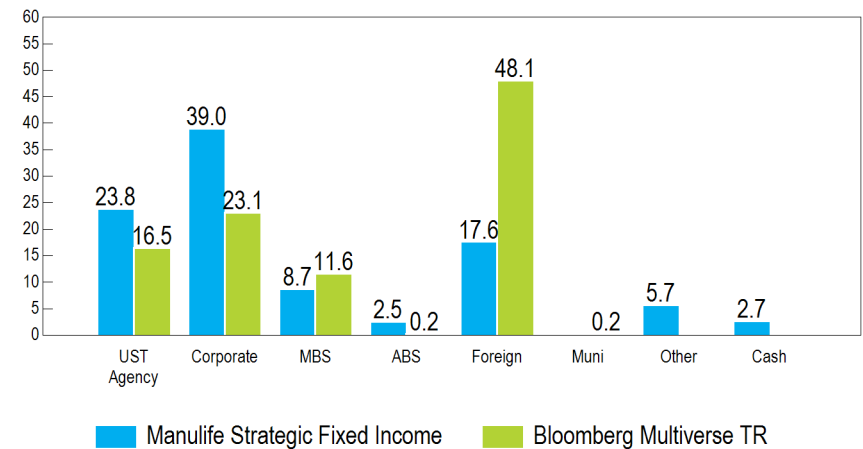
Manulife Strategic Fixed Income Characteristics vs. Bloomberg Multiverse TR

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity	5.6	3.9	6.0
Average Duration	4.5	6.5	4.2
Average Quality	BBB	A	BBB
Weighted Average Maturity	6.5	10.3	6.3

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	Mesirow High Yield
Account Structure	Commingled Fund
Investment Style	Active
Inception Date	8/01/19
Account Type	US Fixed Income High Yield
Benchmark	Bloomberg US Corporate High Yield TR
Universe	eV US High Yield Fixed Inc Net

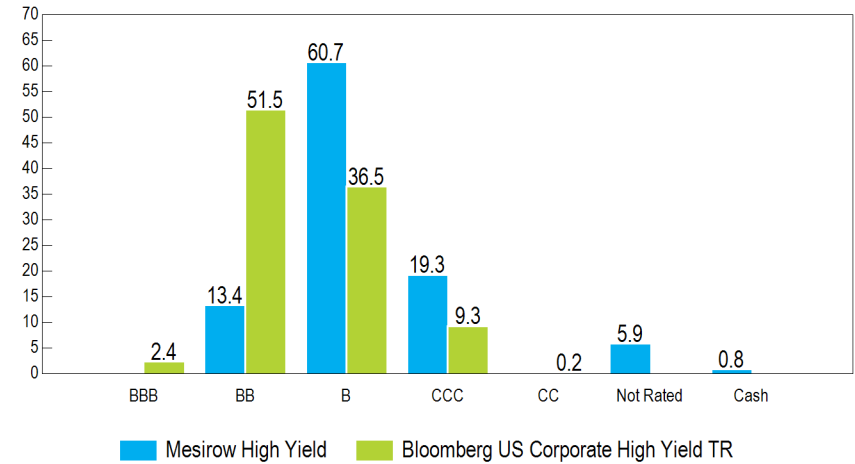
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Mesirow High Yield	2.5	-10.0	3.4	--	--	4.0	Aug-19
Bloomberg US Corporate High Yield TR	4.2	-11.2	0.0	2.3	4.0	1.0	Aug-19
eV US High Yield Fixed Inc Net	3.9	-10.0	0.3	2.3	3.7	1.2	Aug-19
Median							
eV US High Yield Fixed Inc Net Rank	90	49	3	--	--	2	Aug-19

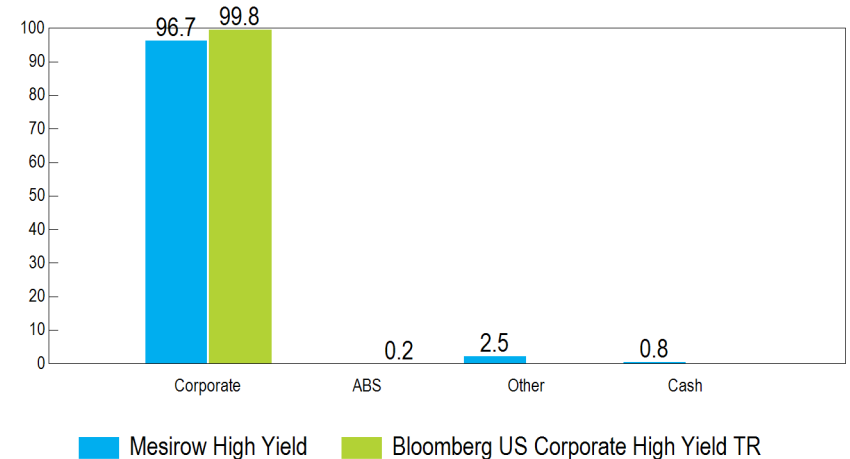
Mesirow High Yield Characteristics vs. Bloomberg US Corporate High Yield TR

	Portfolio Q4-22	Index Q4-22	Portfolio Q3-22
Fixed Income Characteristics			
Yield to Maturity	11.8	8.9	11.9
Average Duration	2.8	4.3	4.0
Average Quality	B	B	B
Weighted Average Maturity	4.9	5.5	5.1

Credit Quality Allocation



Sector Allocation

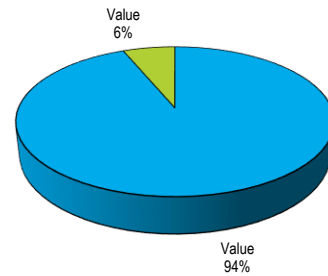


EnTrustPermal Special Opportunities Evergreen Fund, Ltd. | As of December 31, 2022

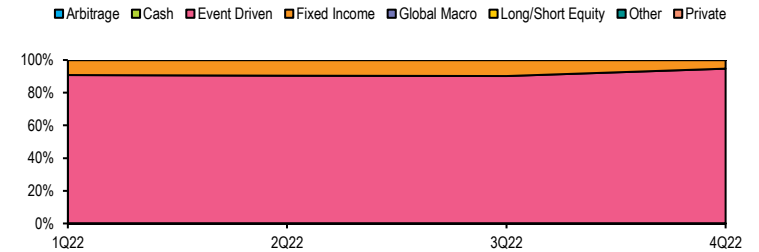
Account Information

Mandate:	Hedge Fund, Return Seeking
Market Value:	\$17.5 M
Portfolio Manager:	Team
Location:	New York, NY
Inception Date:	1/1/2019
Account Type:	Limited Partnership
# of Investments:	28
Fee Schedule:	1.25% Management Fee, 10% Performance Fee
Liquidity Constraints:	Distributions from monetized investments will be recycled into the Fund, unless otherwise noted by the investor. Investors who opt out of the Fund (in part or in whole) following expiration of the 3 year Commitment Period, and any applicable successive renewals, will receive their pro rata distributions of underlying investments in the Fund, net of fees and expenses, as they are realized by the Investment Manager

Instrument Allocation



Historical Strategy Allocations



Geographic Exposure Allocation (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
North America	75	76	73	69
Developed Europe	21	20	22	28
Developed Asia	3	3	3	3
Emerging Markets	1	2	2	1

Exposure Report (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Total Gross Exposure	104	96	94	94
Gross Long Exposure	97	95	94	93
Gross Short Exposure	7	2	0	1
Net Exposure	90	93	94	92

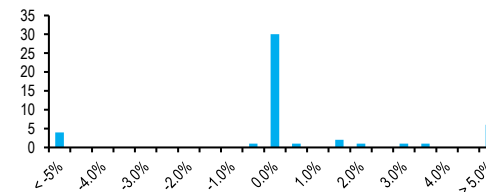
Portfolio Performance Summary

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 1/2019 (%)
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	0.0	-29.3	-8.3	N/A	-0.4
HFRI Fund of Funds Composite Index (QTR)	1.7	-5.3	3.7	3.0	4.8

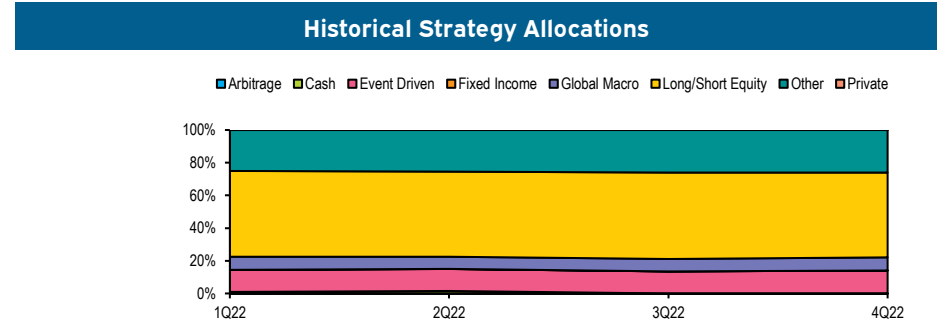
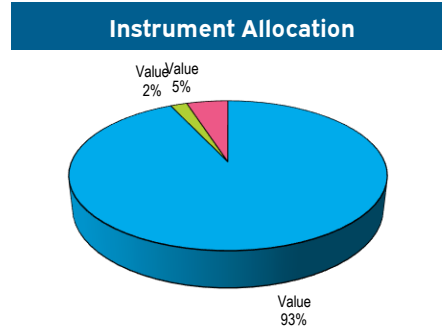
Top 5 Funds (%)

Seaworld II - Hill Path	9
StubHub - Declaration	7
Dollar Tree - Mantle Ridge	7
Masimo - Politan	6
Centene - Politan	6

Return Distribution



Account Information	
Mandate:	Hedge Fund, Return Seeking
Market Value:	\$15.3 M
Portfolio Manager:	Team
Location:	
Inception Date:	10/1/2018
Account Type:	Limited Partnership
# of Investments:	13
Fee Schedule:	0.5% Management Fee, 5% Performance Fee
Liquidity Constraints:	Quarterly with 65 days' notice



Portfolio Performance Summary

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 10/2018 (%)
Old Farm Partners Master Fund, L.P.	2.6	-10.0	5.0	N/A	3.8
HFRI Fund of Funds Composite Index	1.7	-5.4	3.7	3.0	3.3

Top 5 Funds (%)

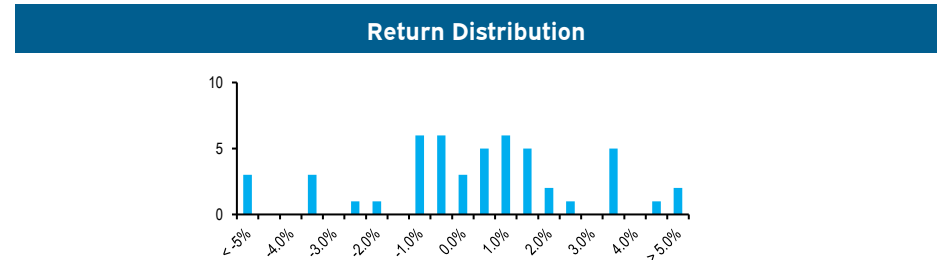
Divisar	9
Crake	8
Sio	8
Flat Footed	6
Prospect	5

Geographic Exposure Allocation (%)

	12/31/2022	9/30/2022	6/30/2022	3/31/2022
North America	72	75	67	66
Developed Europe	22	22	29	29
Emerging Markets	3	2	3	3
Developed Asia	3	1	1	2

Exposure Report (%)

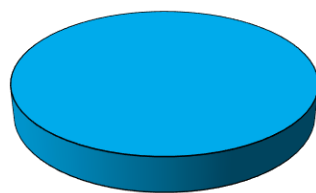
	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Total Gross Exposure	101	113	107	123
Gross Long Exposure	68	74	71	82
Gross Short Exposure	33	39	36	41
Net Exposure	35	35	35	41



Account Information

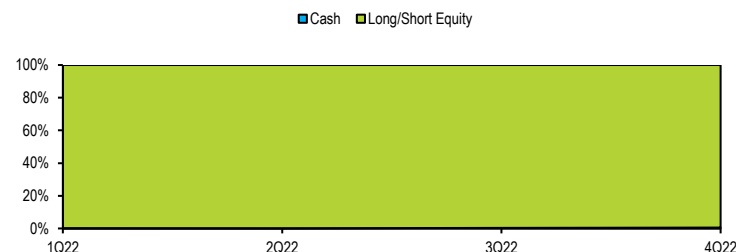
Mandate:	Hedge Fund, Return Seeking
Market Value:	\$52.7 M
Portfolio Manager:	Team
Location:	
Inception Date:	12/1/2018
Account Type:	Limited Partnership
# of Investments:	Not Provided
Fee Schedule:	0.35% Management Fee, 10% Performance Fee
Liquidity Constraints:	Quarterly with 45 days' notice

Instrument Allocation



Equity
100%

Historical Strategy Allocations



Portfolio Performance Summary

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 12/2018 (%)
ABS Emerging Markets	7.1	-23.3	0.2	N/A	4.6
MSCI Emerging Markets	9.7	-20.1	-2.7	-1.4	1.5

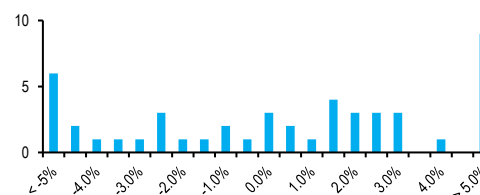
Top 5 Funds (%)

SinoVision Greater China SMA	13
Houshan SMA	10
IvyRock China SMA	10
WhiteOak SMA	8
Anda SMA	7

Geographic Exposure Allocation (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Emerging Markets	98	98	98	97
North America	0	1	0	1
Developed Europe	0	1	1	1
Developed Asia	0	1	1	1

Exposure Report (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Total Gross Exposure	95	95	95	96
Gross Long Exposure	95	95	95	96
Gross Short Exposure	0	0	0	0
Net Exposure	95	95	95	96

Return Distribution

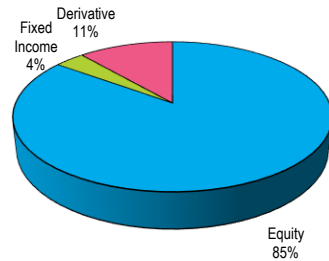


ABS Offshore SPC - Global Segregated Portfolio | As of December 31, 2022

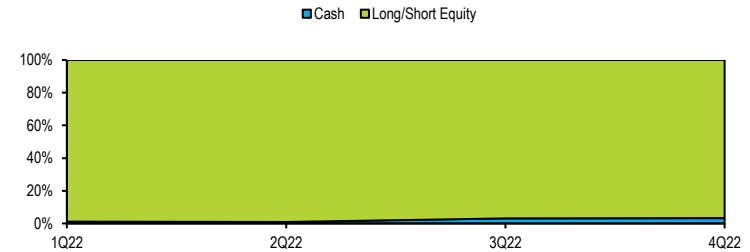
Account Information

Mandate:	Hedge Fund, Return Seeking
Market Value:	\$34.7 M
Portfolio Manager:	Team
Location:	Greenwich, CT
Inception Date:	8/31/2010
Account Type:	Limited Partnership
# of Investments:	Not Provided
Fee Schedule:	1.00% Management Fee, 5% Performance Fee
Liquidity Constraints:	Quarterly with 45 days' notice

Instrument Allocation



Historical Strategy Allocations



Portfolio Performance Summary

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 8/2010 (%)
ABS Offshore SPC - Global Segregated Portfolio	4.7	-8.5	2.5	3.0	4.8
HFRI Equity Hedge (Total) Index	4.3	-10.1	5.8	4.6	5.1

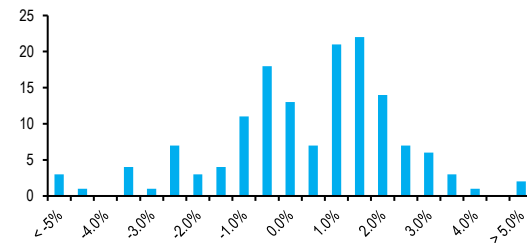
Geographic Exposure Allocation (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Emerging Markets	12	14	13	14
North America	73	71	71	70
Developed Europe	10	9	10	10
Developed Asia	6	6	6	6

Exposure Report (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Total Gross Exposure	130	130	135	148
Gross Long Exposure	84	84	86	95
Gross Short Exposure	45	47	49	53
Net Exposure	38	37	38	43

Top 5 Funds (%)

Energy Dynamics	6
Sagil	5
Azora	5
Medina Singh	5
Seligman Tech	5

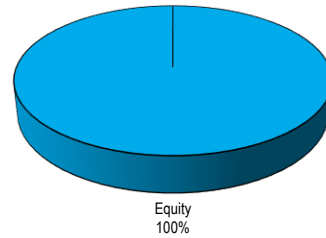
Return Distribution



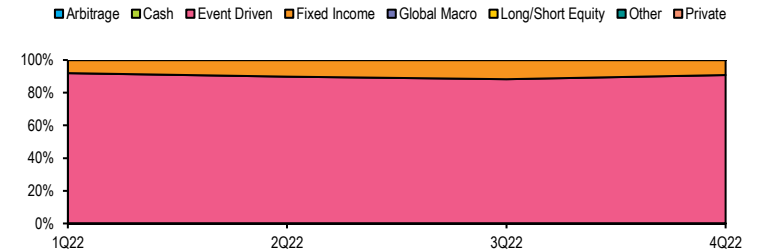
Account Information

Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$11.9 M
Portfolio Manager:	Team
Location:	New York, NY
Inception Date:	10/1/2016
Account Type:	Limited Partnership
# of Investments:	Not Provided
Fee Schedule:	1.25% Management Fee; 10% Performance Fee; 7.5% Hurdle
Liquidity Constraints:	3 Year Lockup (4 years max) then quarterly with 95 days' notice

Instrument Allocation



Historical Strategy Allocations



Portfolio Performance Summary

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 10/2016 (%)
EnTrust Special Opportunities Fund III, Ltd.	0.0	-34.0	-10.9	-5.9	0.3
HFRI Fund of Funds Composite Index (QTR)	1.7	-5.3	3.7	3.0	3.8

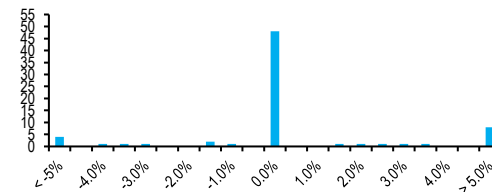
Geographic Exposure Allocation (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
North America	58	59	56	59
Developed Europe	36	33	37	36
Developed Asia	1	1	1	1
Emerging Markets	5	7	6	5

Exposure Report (%)	12/31/2022	9/30/2022	6/30/2022	3/31/2022
Total Gross Exposure	96	98	98	98
Gross Long Exposure	96	98	98	98
Gross Short Exposure	0	0	0	0
Net Exposure	96	98	98	98

Top 5 Funds (%)

SeaWorld - Hill Path	19
Deutsche Bank - Hudson Executive	11
J.G. Wentworth - Axar	9
MGM - Corvex	8
Bally's - Standard General	7

Return Distribution



Annual Investment Expense Analysis				
As Of December 31, 2022				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Domestic Equity Assets		\$236,488,267		
Rhumblin Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$58,144,941	\$24,943	0.04%
Rhumblin Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$37,167,306	\$17,367	0.05%
Fisher Midcap Value	0.65% of Assets	\$55,787,552	\$362,619	0.65%
Newton Small Cap Growth	0.45% of Assets	\$43,265,221	\$194,693	0.45%
Vulcan Partners Small Cap Value	0.83% of Assets	\$13,919,774	\$115,534	0.83%
Systematic Small Cap Free Cash Flow	0.76% of Assets	\$28,203,474	\$214,346	0.76%
International Developed Market Equity Assets		\$37,198,707		
Aristotle International Equity	0.49% of Assets	\$19,839,194	\$97,212	0.49%
Walter Scott International Equity	0.75% of Assets	\$17,359,513	\$130,196	0.75%
International Emerging Market Equity Assets		\$98,884,640		
ABS Emerging Markets	Performance-based 0.35 and 0.10	\$52,685,835	\$184,400	0.35%
Driehaus Emerging Markets Growth	0.55% of Assets	\$46,198,805	\$254,093	0.55%
Global Equity Assets		\$139,998,572		
First Eagle Global Value Fund	0.75% of Assets	\$23,862,955	\$178,972	0.75%
Kopernik Global All Cap Fund	0.80% of First 50.0 Mil, 0.75% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.65% of Next 350.0 Mil	\$34,061,261	\$272,490	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$38,740,800	\$174,334	0.45%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$43,333,556	\$260,001	0.60%
Core Fixed Income		\$109,389,482		
Lord Abbett Short Duration Credit Trust II	0.17% of Assets	\$52,709,058	\$89,605	0.17%
Lord Abbett Core Fixed Income Trust II	0.15% of Assets	\$39,851,657	\$59,777	0.15%
Rhumblin TIPS Trust	0.04% of First 5.0 Mil, 0.03% Thereafter	\$16,828,767	\$5,549	0.03%
Value Added Fixed Income		\$84,638,931		
Eaton Vance High Yield	0.42% of Assets	\$11,632,494	\$48,856	0.42%
First Eagle Bank Loan Select Fund	0.40% of Assets	\$10,539,128	\$42,157	0.40%
Manulife Strategic Fixed Income	0.35% of Assets	\$40,372,490	\$141,304	0.35%
Mesirow High Yield	0.40% of Assets	\$14,195,684	\$56,783	0.40%
Eaton Vance EMD Opportunities Fund	0.30% of Assets	\$7,899,134	\$23,697	0.30%
Core Real Assets		\$47,130,351		
Non-Core Real Assets		\$45,303,715		

Total Retirement Association | As of December 31, 2022

Private Equity	Commitment	Total Contributions	Total Distributions	Value
Ascend Ventures II, L.P.	2,500,000	2,327,488	995,193	4,793
Ascent Venture Partners IV, L.P.	2,500,000	2,502,219	424,010	0
Ascent Venture Partners V, L.P.	5,000,000	5,004,731	4,054,562	3,564,498
Audax Mezzanine Fund IV, L.P.	10,000,000	8,665,022	7,526,720	2,937,829
Charles River Partnership XI, L.P.	1,839,000	1,820,323	2,532,884	0
Charlesbank Technology Opportunities Fund, L.P.	12,000,000	7,398,711	1,078,536	13,783,468
Ironsides Opportunities Fund II	20,000,000	0	0	0
Ironsides Co-Investment Fund VI, L.P.	13,000,000	13,150,994	288,017	14,786,052
DN Partners II, L.P.	5,000,000	2,375,841	23,571	2,426,338
Euro Choice V, L.P.	6,060,975	5,919,759	5,591,301	3,053,063
FS Equity Partners VIII, L.P.	12,000,000	7,581,269	324,324	13,122,732
Globespan Capital Partners V, L.P.	5,000,000	4,852,500	8,895,488	4,087,430
HarbourVest Partners Co-Investment Fund V, L.P.	12,000,000	9,300,000	1,440,447	14,105,038
HarbourVest Partners Co-Investment Fund VI, L.P.	13,000,000	1,950,000	0	1,701,949
Ironsides Direct Investment Fund V, L.P.	12,000,000	11,870,897	3,152,053	18,327,411
Kohlberg Investors IX	10,000,000	5,510,578	294,108	6,989,158
Landmark Equity Partners XIV, L.P.	6,000,000	5,841,745	7,356,228	500,373
Leeds Equity Partners IV, L.P.	5,000,000	5,093,100	9,709,704	13,385
Leeds Equity Partners V, L.P.	2,500,000	3,525,207	5,594,639	238,203
Lexington Capital Partners VII, L.P.	10,000,000	8,945,670	13,146,414	1,461,845
LLR Equity Partners V, L.P.	12,000,000	11,640,000	3,790,818	16,200,112
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	2,021,056	78,637
Ridgemont Equity Partners III, L.P.	12,000,000	11,201,957	4,813,137	17,471,222
Ridgemont Equity Partners IV, L.P.	13,000,000	0	0	0
Rimco Production Company, Inc	2,000,000	2,000,000	7,651,066	1
Searchlight Capital III, L.P.	12,000,000	7,940,428	3,583,186	9,317,120
Siguler Guff Distressed Opportunities Fund III, L.P.	6,000,000	5,820,000	9,151,887	537,317
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	11,620,000	12,558,753	15,001,855
Summit Partners Venture Capital Fund V	10,000,000	4,104,913	0	3,942,112
Summit Partners Growth Equity Fund XI, L.P.	13,000,000	844,860	0	739,765
TRG Growth Partnership II, L.P.	7,500,000	7,366,152	7,957,800	1,313,508

Note: The value is based on September 30, 2022 FMV.

Total Retirement Association | As of December 31, 2022

Private Equity	Commitment	Total Contributions	Total Distributions	Value
Trilantic Capital Partners VI (North America), L.P.	12,000,000	10,218,707	1,142,305	13,204,434
Waud Capital Partners V, L.P.	10,000,000	8,859,640	0	13,477,134
Wellspring Capital Partners VI, L.P.	12,000,000	11,494,621	2,497,169	15,459,773
Total Plymouth County - PE	300,899,975	210,588,064	127,595,373	207,846,556
Real Assets	Commitment	Total Contributions	Total Distributions	Value
Basalt Infrastructure Partners II	10,000,000	9,416,866	2,439,089	9,932,120
BlackRock Global Renewable Power Infrastructure Fund III, L.P.	10,000,000	2,946,235	258,108	2,682,368
BTG Pactual Global Timberland Resources Fund, LLC	5,043,536	5,043,536	1,869,240	1,377,651
Climate Adaptive Infrastructure Fund I	10,000,000	0	0	0
Global Infrastructure Partners III, L.P.	10,000,000	9,969,173	3,393,156	10,961,558
Global Infrastructure Partners IV, L.P.	10,000,000	6,552,307	4,747	6,721,619
IFM Global Infrastructure (U.S.), L.P.	60,000,000	35,000,000	3,422,216	47,130,351
ISQ Global Infrastructure Fund III (USTE), L.P.	10,000,000	1,085,165	1,223	971,137
JPMorgan Global Maritime Investment	10,000,000	10,034,375	2,578,840	9,731,561
Domain Timbervest Partners III, L.P.	5,000,000	5,000,000	3,646,126	3,961,063
Total Plymouth County - RA	140,043,536	85,047,656	17,612,744	93,469,428
Real Estate	Commitment	Total Contributions	Total Distributions	Value
1921 Realty, Inc.	5,000,000	5,378,294	0	556,339
AEW Partners IX, L.P.	10,000,000	5,761,317	111	5,949,861
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	23,989,589	27,792,735	7,512,349
Berkshire Value Fund V, L.P.	9,000,000	5,134,454	1,058,371	5,953,020
Carlyle Realty Partners VIII, L.P.	18,000,000	13,029,418	9,073,505	11,424,070
DSF Capital Partners IV, L.P.	5,000,000	5,000,000	7,406,550	0
DSF Multi-Family Real Estate Fund III, L.P.	15,000,000	15,079,717	22,005,735	5,111,996
JPMorgan Strategic Property Fund	27,000,000	27,000,000	1,057,812	36,810,038
PCCP Equity IX, L.P.	10,000,000	4,369,943	0	4,576,020
Real Estate International Partnership Fund I, L.P.	15,000,000	12,677,141	11,372,161	699,983
Rockpoint Real Estate Fund VI, L.P.	9,000,000	6,858,010	1,091,059	7,463,360
TA Realty Core Property Fund, L.P.	60,000,000	60,749,705	5,926,577	77,516,051
TerraCap Partners V, L.P.	5,000,000	4,992,904	85,609	5,559,651
Total Plymouth County - RE	213,000,000	190,020,493	86,870,225	169,132,738

Note: The data for IFM Global Infrastructure, JPMorgan Strategic Property, and TA Realty Core is as of December 31, 2022. All other values are based on September 30, 2022. FMV

Cash Flow Summary					
Quarter Ending December 31, 2022					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
1921 Realty, Inc	\$555,888	\$0	\$0	\$0	\$556,339
ABS Emerging Markets	\$49,205,469	\$0	-\$45,603	-\$45,603	\$52,685,835
ABS Offshore SPC - Global Segregated Portfolio	\$33,160,237	\$0	-\$85,592	-\$85,592	\$34,717,268
AEW Partners Real Estate Fund IX, L.P.	\$5,832,696	\$617,284	\$0	\$617,284	\$6,567,145
AEW Partners Real Estate VIII	\$7,322,850	\$0	-\$1,234,001	-\$1,234,001	\$6,278,348
Aristotle International Equity	\$17,436,411	\$0	-\$23,832	-\$23,832	\$19,839,194
Ascend Ventures II	\$0	\$0	-\$2,142	-\$2,142	\$0
Ascent Ventures IV	\$0	\$0	\$0	\$0	\$0
Ascent Ventures V	\$3,847,278	\$0	-\$439,554	-\$439,554	\$3,124,944
Audax Mezzanine Debt IV	\$2,813,303	\$0	-\$2,684	-\$2,684	\$2,935,145
Basalt Infrastructure Partners II	\$10,007,139	\$0	-\$3,406,657	-\$3,406,657	\$6,525,463
Berkshire Value Fund V	\$5,897,532	\$1,148,727	\$0	\$1,148,727	\$7,101,747
BlackRock Global Renewable Power Infrastructure Fund III, L.P.	\$2,646,026	\$1,815,513	\$0	\$1,815,513	\$4,497,881
BTG Pactual Global Timberland Resources	\$1,323,589	\$0	\$0	\$0	\$1,377,651
Carlyle Realty Partners VIII	\$10,654,952	\$1,018,265	-\$778,163	\$240,102	\$11,664,172
Cash	\$22,910,328	\$45,226,293	-\$34,364,190	\$10,862,103	\$33,771,643
Charles River Partnership XI	\$0	\$0	\$0	\$0	\$0
Charlesbank Technology Opportunities Fund	\$12,393,450	\$1,177,088	\$0	\$1,177,088	\$14,960,556
Climate Adaptive Infrastructure Fund	--	\$3,187,514	\$0	\$3,187,514	\$3,187,514
DN Partners II, LP	\$2,426,338	\$0	\$0	\$0	\$2,426,338
Driehaus Emerging Markets Growth	\$44,458,672	\$0	-\$63,602	-\$63,602	\$46,198,805
DSF Multi-Family Real Estate Fund III	\$4,756,949	\$0	-\$72,601	-\$72,601	\$5,039,395

Total Retirement Association | As of December 31, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Eaton Vance EMD Opportunities Fund	\$7,409,337	\$0	-\$5,814	-\$5,814	\$7,899,134
Eaton Vance High Yield	\$11,165,577	\$0	-\$12,171	-\$12,171	\$11,632,494
Entrust Special Opportunities Fund III, Ltd.	\$11,925,266	\$0	\$0	\$0	\$11,925,266
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$17,457,309	\$0	\$0	\$0	\$17,457,309
Euro Choice V Programme	\$3,378,010	\$0	-\$66,572	-\$66,572	\$2,986,491
First Eagle Bank Loan Select Fund	\$10,474,387	\$0	-\$10,525	-\$10,525	\$10,539,128
First Eagle Global Value Fund	\$21,089,580	\$0	-\$43,993	-\$43,993	\$23,862,955
Fisher Midcap Value	\$53,512,435	\$0	-\$5,096,016	-\$5,096,016	\$55,787,552
FS Equity Partners VIII, L.P.	\$12,261,304	\$1,313,707	\$0	\$1,313,707	\$14,436,439
Global Infrastructure Partners III	\$11,069,355	\$244,959	-\$1,283,970	-\$1,039,011	\$9,922,547
Global Infrastructure Partners IV, L.P.	\$6,589,836	\$1,304,650	-\$38,595	\$1,266,055	\$7,987,674
Globespan Capital V	\$4,394,697	\$0	-\$529,451	-\$529,451	\$3,557,979
HarbourVest Partners Co-Investment Fund VI, L.P.	\$1,893,372	\$1,300,000	\$0	\$1,300,000	\$3,001,949
HarbourVest Partners Co-Investment V	\$14,252,426	\$2,761	-\$475,122	-\$472,361	\$13,632,677
IFM Global Infrastructure	\$45,308,531	\$0	\$0	\$0	\$47,130,351
Ironsides Co-Investment Fund VI, L.P.	\$14,907,981	\$253,526	-\$783,667	-\$530,141	\$14,255,911
Ironsides Direct Investment Fund V, L.P.	\$18,702,764	\$0	\$0	\$0	\$18,327,411
Ironsides Opportunities Fund II, L.P.	\$0	\$1,633,210	\$0	\$1,633,210	\$1,633,210
ISQ Global Infrastructure Fund III (USTE), L.P.	\$947,215	\$0	\$0	\$0	\$971,137
JP Morgan Global Maritime Investment	\$9,838,102	\$0	-\$2,508,776	-\$2,508,776	\$7,222,785
JPMorgan Strategic Property	\$36,810,038	\$0	-\$181,212	-\$181,212	\$34,892,370
Kohlberg Investors IX	\$6,746,547	\$910,470	\$0	\$910,470	\$7,899,628
Kopernik Global All Cap Fund	\$30,354,475	\$0	-\$66,721	-\$66,721	\$34,061,261
Landmark Equity Partners XIV	\$514,906	\$0	-\$40,016	-\$40,016	\$460,357

Total Retirement Association | As of December 31, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Lee Munder Global Multi-Cap Strategy	\$40,382,952	-\$5,000,000	-\$47,726	-\$5,047,726	\$38,740,800
Leeds Equity Partners IV	\$13,487	\$0	-\$4,354	-\$4,354	\$9,031
Leeds Equity Partners V	\$247,496	\$0	\$0	\$0	\$238,203
Lexington Capital Partners VII	\$1,517,650	\$13,117	-\$84,074	-\$70,957	\$1,390,888
LLR Equity Partners V, LP.	\$15,361,187	\$0	\$0	\$0	\$16,200,112
Lord Abbett Core Fixed Income Trust II	\$39,184,190	\$0	-\$9,816	-\$9,816	\$39,851,657
Lord Abbett Short Duration Credit Trust II	\$58,950,218	\$0	-\$7,024,211	-\$7,024,211	\$52,709,058
Manulife Strategic Fixed Income	\$39,070,189	\$0	-\$70,618	-\$70,618	\$40,372,490
Mesirow Financial Capital Partners IX, LP	\$78,038	\$0	\$0	\$0	\$78,637
Mesirow Financial International Real Estate Fund I	\$740,455	\$0	\$0	\$0	\$699,983
Mesirow High Yield	\$13,847,933	\$0	-\$14,142	-\$14,142	\$14,195,684
Newton Small Cap Growth	\$42,528,161	\$0	-\$50,637	-\$50,637	\$43,265,221
Old Farm Partners Master Fund, L.P.	\$14,942,858	\$0	-\$18,679	-\$18,679	\$15,330,488
PCCP Equity IX, L.P.	\$4,533,181	\$750,000	\$0	\$750,000	\$5,326,020
Rhumblin Russell 1000 Growth	\$44,544,578	\$0	-\$8,505,078	-\$8,505,078	\$37,167,306
Rhumblin Russell 1000 Value	\$64,871,001	\$0	-\$14,506,854	-\$14,506,854	\$58,144,941
Rhumblin TIPS Trust	\$22,472,711	\$0	-\$6,001,540	-\$6,001,540	\$16,828,767
Ridgemont Equity Partners III, L.P.	\$16,209,848	\$756,524	-\$218,098	\$538,426	\$18,009,648
RIMCO Royalty Partners, LP	\$1	\$0	\$0	\$0	\$1
Rockpoint Real Estate Fund VI, L.P.	\$7,658,586	\$390,667	\$0	\$390,667	\$7,854,027
Searchlight Capital III, L.P.	\$9,429,692	\$0	\$0	\$0	\$9,317,120
Siguler Guff Distressed Opportunities Fund III, LP	\$575,077	\$0	-\$40,474	-\$40,474	\$496,843
Summit Partners Growth Equity Fund IX	\$15,180,935	\$84,000	\$0	\$84,000	\$15,085,855
Summit Partners Growth Equity Fund XI	\$844,860	\$627,736	\$0	\$627,736	\$1,367,501

Total Retirement Association | As of December 31, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Summit Partners Venture Capital Fund V	\$4,020,426	\$1,086,889	\$0	\$1,086,889	\$5,029,001
Systematic Small Cap Free Cash Flow	\$25,214,146	\$0	-\$54,650	-\$54,650	\$28,203,474
TA Realty Core Property Fund, L.P.	\$82,934,487	\$145,135	-\$974,480	-\$829,345	\$77,516,051
TerraCap Partners V, L.P	\$5,477,120	\$5,486,176	-\$1,040,729	\$4,445,446	\$10,005,097
Timbervest Partners III, LP	\$3,922,884	\$0	-\$350,000	-\$350,000	\$3,611,063
TRG Growth Partnership II	\$968,735	\$0	\$0	\$0	\$1,313,508
Trilantic Capital Partners VI, L.P.	\$12,662,318	\$275,858	\$0	\$275,858	\$13,480,292
Vulcan Partners Small Cap Value	\$12,516,377	\$0	-\$29,081	-\$29,081	\$13,919,774
Walter Scott International Equity	\$15,226,891	\$0	-\$63,460	-\$63,460	\$17,359,513
Waud Capital Partners V	\$12,011,980	\$1,002,120	-\$50,314	\$951,806	\$14,428,940
Wellington Durable Enterprises, L.P.	\$38,163,531	\$0	-\$64,301	-\$64,301	\$43,333,556
Wellspring Capital Partners VI	\$14,969,077	\$130,698	\$0	\$130,698	\$15,590,471
Total	\$1,269,925,815	\$66,902,887	-\$90,884,559	-\$23,981,672	\$1,301,410,422

**Private Markets
Q3 Performance Update**

The purpose of this document is to offer a review of the Plymouth County Retirement Association’s aggregate private market investments.

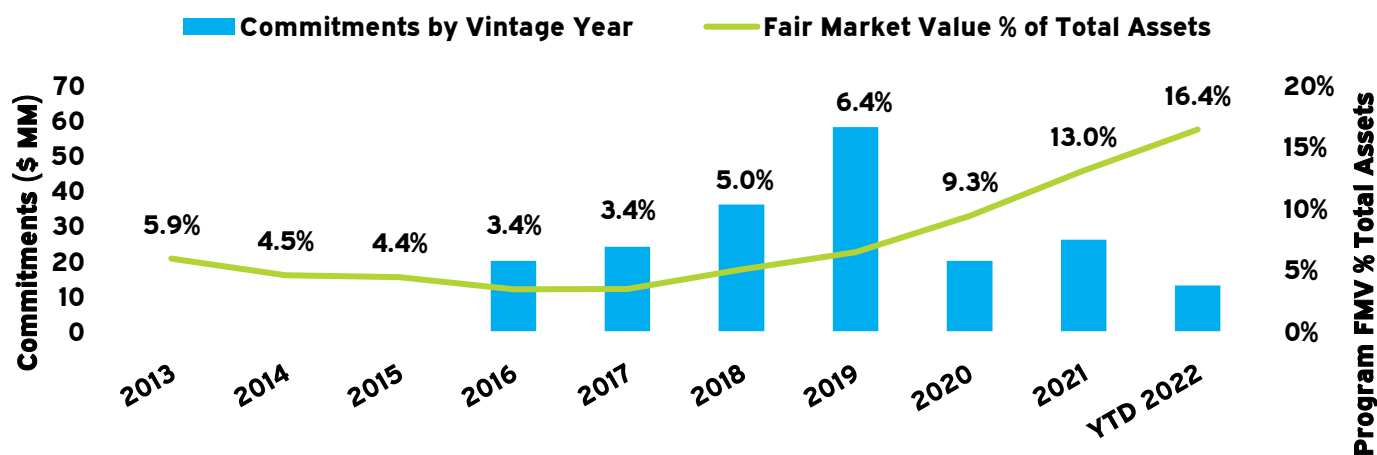
As of September 30, 2022 the Retirement Association had committed \$715.1 million to 67 partnerships. The reported fair market value of the program, in aggregate, was \$466.1 million at the end of the quarter.

Private Equity Program		Real Assets Program		Real Estate Program	
No. of Funds	38	No of Funds	10	No of Funds	21
Committed	317.1	Committed	140.0	Committed	288.0
Contributed	228.2	Contributed	85.0	Contributed	268.4
Distributed	143.0	Distributed	17.6	Distributed	222.8
Fair Market Value	208.0	Fair Market Value	91.6	Fair Market Value	174.6
TVPI	1.53x	TVPI	1.28x	TVPI	1.48x
Since Inception IRR	9.4%	Since Inception IRR	5.9%	Since Inception IRR	7.1%
1-Quarter IRR	-1.3%	1-Quarter IRR	0.1%	1-Quarter IRR	1.1%
1-Year IRR	18.4%	1-Year IRR	11.4%	1-Year IRR	24.2%

Private Equity Program

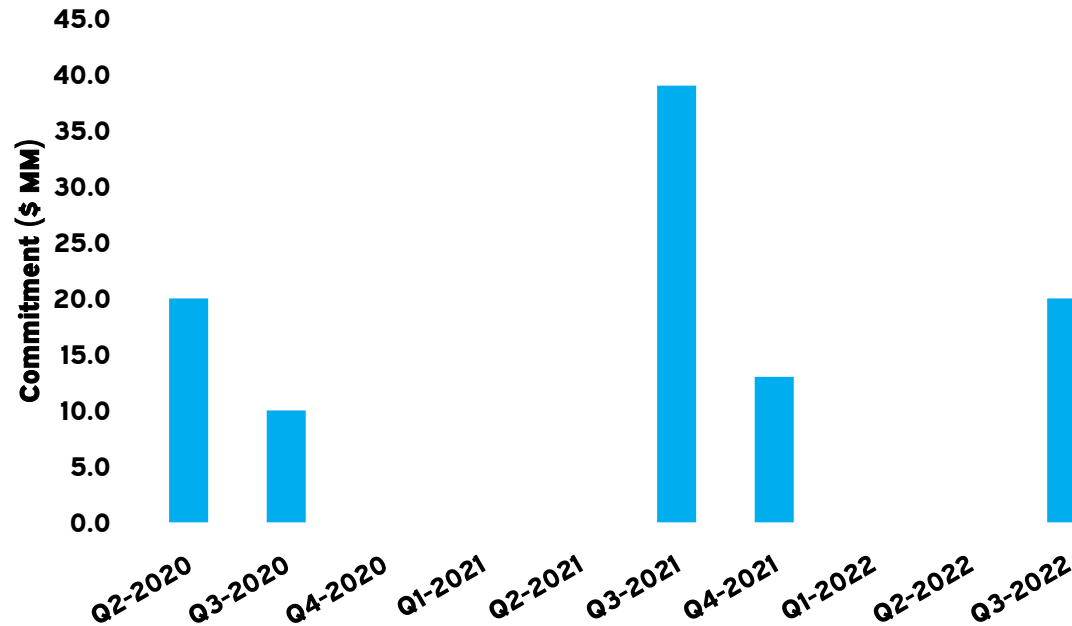
Introduction

As of September 30, 2022, the Plymouth County Retirement Association (“the Retirement Association”) had committed \$317.1 million to 38 partnerships. The Retirement Association maintains a 13% allocation target to private equity. The Retirement Association committed to Ironsides Opportunities Fund II, L.P. during the third quarter, providing direct lending private debt exposure. The fair market value of the private equity program was \$208.0 million, representing 16.4% of the Retirement Association’s total assets.



Program Status		Performance Since Inception	
No. of Investments	38	DPI	0.63x
Committed (\$ MM)	317.1	TVPI	1.53x
Contributed (\$ MM)	228.2	IRR	9.4%
Distributed (\$ MM)	143.0		
Fair Market Value (\$ MM)	208.0		

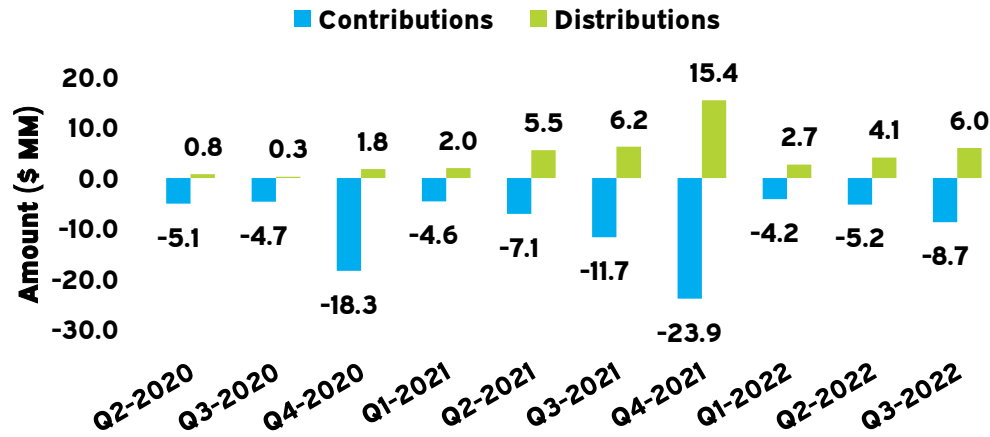
Commitments Recent Quarterly Commitments



Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
Ironsides Opps II	Direct Lending	North America	20.00

Cash Flows Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
Ironsides Co-Inv VI	2021	Buyout	North America	1.61
HV Co-Invest VI	2021	Buyout	Global: All	1.30
Ridgemont III	2019	Buyout	North America	0.99

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
Ironsides Direct V	2018	Buyout	North America	1.96
Searchlight III	2019	Buyout	Global: Developed	1.30
Euro Choice V	2012	Fund of Funds	Global: All	0.82

Significant Events

- During the third quarter of 2022, the Retirement Association contributed \$8.7 million to its private equity partnerships and received \$6.0 million in distributions, representing a \$2.7 million net cash outflow.
- Ironsides Co-Investment Fund VI, L.P. called \$2.33 million during the third quarter to fund new investments as well as management fees and partnership expenses. The capital call was offset by a \$0.68 million return of excess contributions and \$0.04 million in late closing interest due to the admittance of new investors into the Fund.
- Harbourvest Partners Co-Investment Fund VI, L.P. called \$.130 million during the third quarter, primarily to repay the credit facility used to fund new investments.
- Ridgemont Equity Partners III, L.P. called \$0.99 million during the third quarter, primarily to fund several investments, as well as management fees and partnership expenses.
- Ironsides Direct Investment Fund V, L.P. distributed \$1.96 million during the third quarter. Proceeds stemmed from the sale of several investments as well as the partial realization of investments. Of the total distribution, \$1.25 million was recallable, thereby increasing the Retirement Association's unfunded commitment in the Fund.
- Searchlight Capital III, L.P. distributed \$1.30 million during the quarter. Proceeds stemmed from the sale of an investment as well as the partial repayment of debt securities. Of the total distribution, \$0.28 million was a recallable return of capital, thereby increasing the Retirement Association's unfunded commitment in the Fund.
- Euro Choice V, L.P. distributed \$0.82 million during the third quarter as proceeds from existing investments.

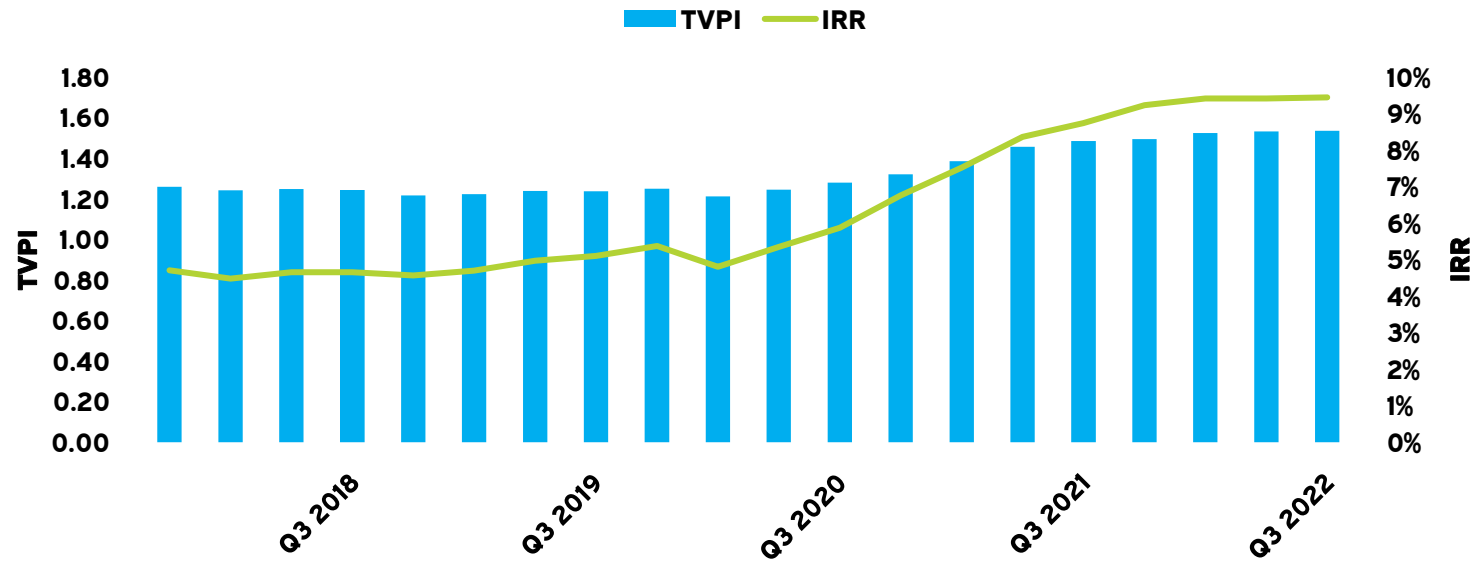
By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Buyout	20	188.1	137.7	62.5	47.5	170.8	233.3	0.35	1.59	12.0
Fund of Funds	3	17.6	17.3	1.7	22.8	3.6	5.3	1.32	1.53	8.5
Growth Equity	3	30.5	19.8	23.2	20.5	17.1	40.3	1.03	1.89	12.9
Private Debt	2	30.0	8.7	22.9	7.5	2.9	25.9	0.87	1.21	10.5
Secondary	2	16.0	14.8	1.3	20.5	2.0	3.3	1.39	1.52	12.4
Special Situations	1	3.0	4.9	0.0	5.1	0.0	0.0	1.04	1.04	1.3
Venture Capital	7	31.8	25.1	6.9	19.1	11.7	18.6	0.76	1.23	2.7
Total	38	317.1	228.2	118.7	143.0	208.0	326.7	0.63	1.53	9.4

By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
1998	1	2.6	2.7	0.0	0.1	0.0	0.0	0.04	0.04	-25.5
1999	1	5.0	4.4	0.6	2.2	0.0	0.6	0.49	0.49	-14.9
2000	1	1.8	1.8	0.0	2.5	0.0	0.0	1.39	1.39	5.5
2001	1	2.0	2.0	0.0	7.7	0.0	0.0	3.83	3.83	29.1
2004	3	13.0	13.1	0.4	18.2	0.0	0.4	1.39	1.39	4.8
2005	3	9.5	11.0	0.3	8.1	0.2	0.5	0.73	0.75	-5.2
2006	1	5.0	4.9	0.1	8.9	4.1	4.2	1.83	2.68	13.6
2007	2	12.5	9.7	2.8	8.0	3.7	6.5	0.82	1.20	2.7
2008	2	12.0	11.7	0.3	16.5	1.0	1.4	1.42	1.50	10.3
2009	1	10.0	8.9	1.1	13.1	1.5	2.6	1.47	1.63	13.8
2010	1	2.5	3.5	0.0	5.6	0.2	0.2	1.59	1.65	12.3
2011	1	5.0	5.0	0.2	4.1	3.6	3.7	0.81	1.52	6.6
2012	1	6.1	5.9	1.2	5.6	3.1	4.3	0.94	1.46	7.7
2016	2	20.0	20.3	13.9	20.1	17.9	31.8	0.99	1.87	27.9
2017	2	24.0	23.1	3.3	6.3	31.7	35.0	0.27	1.64	22.7
2018	3	36.0	31.4	7.7	5.7	45.6	53.3	0.18	1.64	21.4
2019	5	58.0	43.0	19.6	9.8	67.2	86.8	0.23	1.79	45.6
2020	3	40.0	9.6	30.6	0.3	10.9	41.6	0.03	1.17	NM
2021	3	39.0	15.9	23.4	0.3	17.2	40.6	0.02	1.10	NM
2022	1	13.0	0.0	13.0	0.0	0.1	13.1	0.00	NM	NM
Total	38	317.1	228.2	118.7	143.0	208.0	326.7	0.63	1.53	9.4

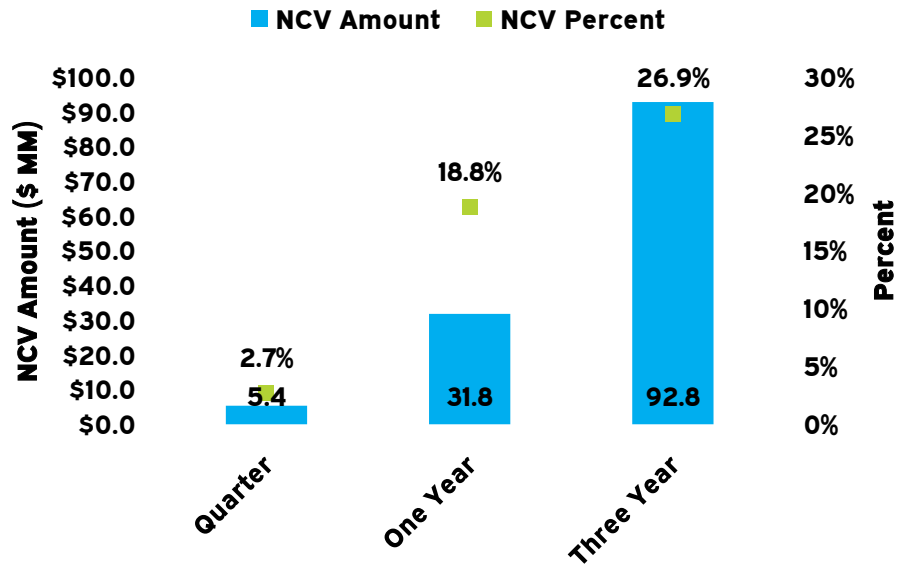
Since Inception Performance Over Time



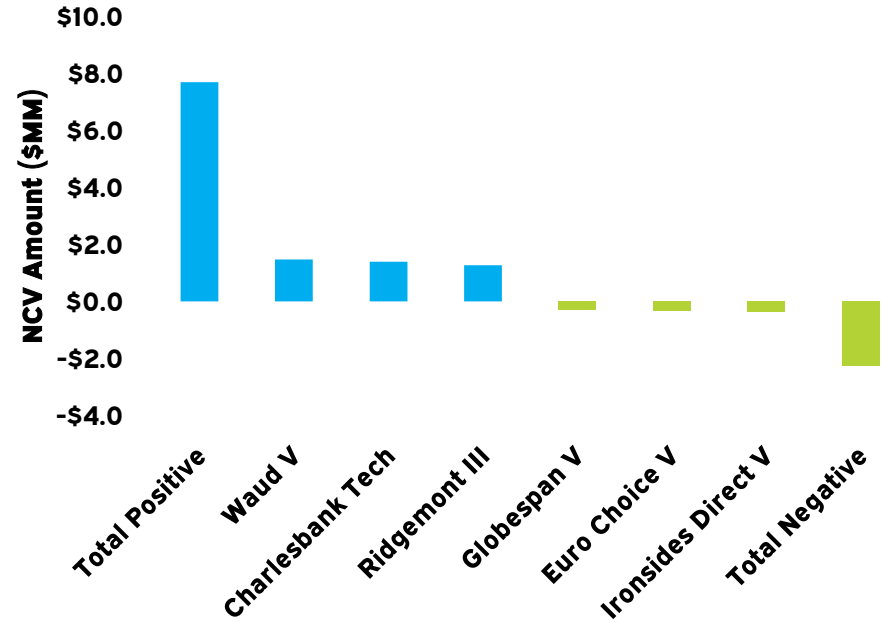
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	18.4	27.4	22.4	14.5	9.4
Public Market Equivalent	-25.2	-4.0	-0.5	4.8	5.0

Periodic NCV



1 Quarter Drivers Of NCV



Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Senior Tour Players	1998	Buyout	2.6	2.7	0.0	0.1	0.0	0.04	1.38	-25.5	8.0
Charles River X	1999	Venture Capital	5.0	4.4	0.6	2.2	0.0	0.49	1.30	-14.9	7.3
Charles River XI	2000	Venture Capital	1.8	1.8	0.0	2.5	0.0	1.39	1.39	5.5	8.3
Rimco	2001	Buyout	2.0	2.0	0.0	7.7	0.0	3.83	1.61	29.1	13.0
Leeds IV	2004	Buyout	5.0	5.1	0.1	9.7	<0.1	1.91	1.59	8.0	10.0
Euro Choice II	2004	Fund of Funds	5.5	5.5	0.3	8.0	0.0	1.46	1.59	7.0	10.0
Ascent Venture IV	2004	Venture Capital	2.5	2.5	0.0	0.4	0.0	0.17	1.59	-27.2	10.0
Mesirow IX	2005	Buyout	4.0	3.8	0.2	2.0	0.1	0.55	1.49	-7.0	8.1
Levine Leichtman DV	2005	Special Situations	3.0	4.9	0.0	5.1	0.0	1.04	1.49	1.3	8.1
Ascend Ventures II	2005	Venture Capital	2.5	2.3	0.2	1.0	0.1	0.46	1.49	-8.4	8.1
Globespan V	2006	Venture Capital	5.0	4.9	0.1	8.9	4.1	2.68	1.51	13.6	8.8
DN Partners II	2007	Buyout	5.0	2.4	2.6	0.0	2.4	1.03	1.70	0.3	11.3
TRG II	2007	Growth Equity	7.5	7.4	0.2	8.0	1.3	1.26	1.70	4.2	11.3

Fund Performance: Sorted By Vintage And Strategy (con't)

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Siguler Guff III	2008	Fund of Funds	6.0	5.8	0.2	9.2	0.5	1.66	1.64	10.6	12.3
Landmark XIV	2008	Secondary	6.0	5.8	0.2	7.4	0.5	1.34	1.64	9.7	12.3
Lexington VII	2009	Secondary	10.0	8.9	1.1	13.1	1.5	1.63	1.76	13.8	18.2
Leeds V	2010	Buyout	2.5	3.5	0.0	5.6	0.2	1.65	1.86	12.3	15.2
Ascent Venture V	2011	Venture Capital	5.0	5.0	0.2	4.1	3.6	1.52	1.88	6.6	15.8
Euro Choice V	2012	Fund of Funds	6.1	5.9	1.2	5.6	3.1	1.46	1.84	7.7	16.2
Summit Growth IX	2016	Growth Equity	10.0	11.6	10.9	12.6	15.0	2.37	1.90	35.4	20.8
Audax Mezz IV	2016	Private Debt	10.0	8.7	2.9	7.5	2.9	1.21	1.35 ¹	10.5	10.3 ¹
LLR V	2017	Buyout	12.0	11.6	1.9	3.8	16.2	1.72	1.70	22.1	22.1
Wellspring VI	2017	Buyout	12.0	11.5	1.4	2.5	15.5	1.56	1.70	23.6	22.1
HV Co-Invest V	2018	Buyout	12.0	9.3	2.7	1.4	14.1	1.67	1.64	26.2	24.8
Ironsides Direct V	2018	Buyout	12.0	11.9	2.1	3.2	18.3	1.81	1.64	20.2	24.8
Trilantic VI	2018	Buyout	12.0	10.2	2.9	1.1	13.2	1.40	1.64	19.0	24.8

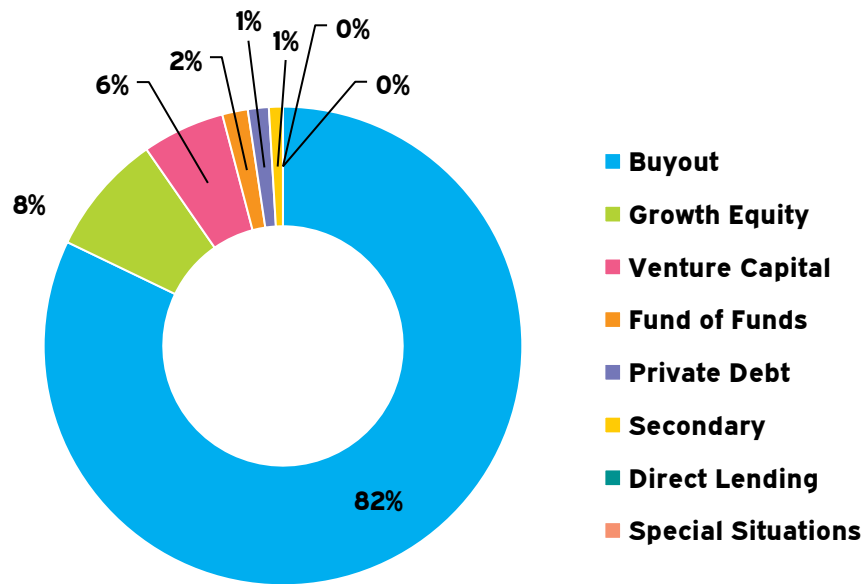
¹ Preqin, Private Debt – All, Net Median, as of September 30, 2022.

Fund Performance: Sorted By Vintage And Strategy (con't)

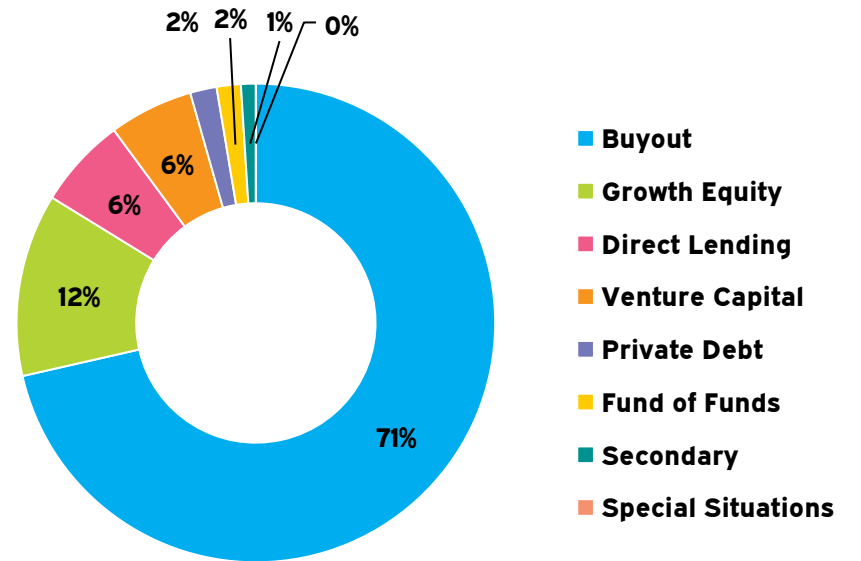
By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Charlesbank Tech	2019	Buyout	12.0	7.4	5.3	1.1	13.8	2.01	1.40	76.7	22.5
FS Equity VIII	2019	Buyout	12.0	7.6	4.4	0.3	13.1	1.77	1.40	34.0	22.5
Ridgemont III	2019	Buyout	12.0	11.2	3.1	4.8	17.5	1.99	1.40	52.7	22.5
Searchlight III	2019	Buyout	12.0	7.9	5.7	3.6	9.3	1.62	1.40	38.3	22.5
Waud V	2019	Buyout	10.0	8.9	1.1	0.0	13.5	1.52	1.40	35.0	22.5
Kohlberg IX	2020	Buyout	10.0	5.5	4.8	0.3	7.0	1.32	1.18	NM	NM
Ironsides Opps II	2020	Private Debt	20.0	0.0	20.0	0.0	0.0	NM	1.13	NM	NM
Summit Venture V	2020	Venture Capital	10.0	4.1	5.9	0.0	3.9	0.96	1.18	NM	NM
HV Co-Invest VI	2021	Buyout	13.0	2.0	11.1	0.0	1.7	0.87	1.05	NM	NM
Ironsides Co-Inv VI	2021	Buyout	13.0	13.2	0.2	0.3	14.8	1.15	1.05	NM	NM
Summit Growth XI	2021	Growth Equity	13.0	0.8	12.2	0.0	0.7	0.88	1.05	NM	NM
Ridgemont IV	2022	Buyout	13.0	0.0	13.0	0.0	0.1	NM	1.00	NM	NM
Total			317.1	228.2	118.7	143.0	208.0	1.53		9.4	

By Strategy

Percent of FMV

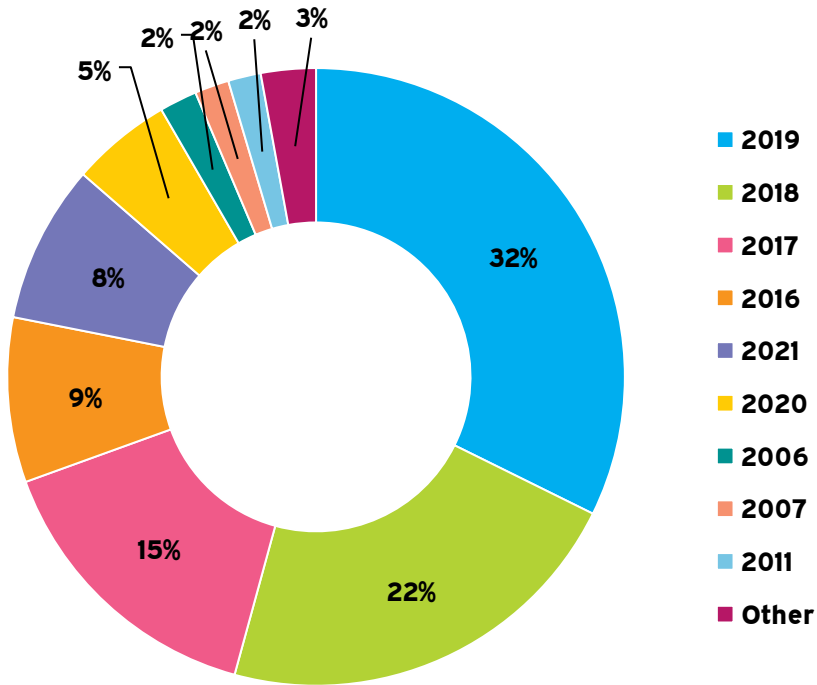


Percent of Exposure

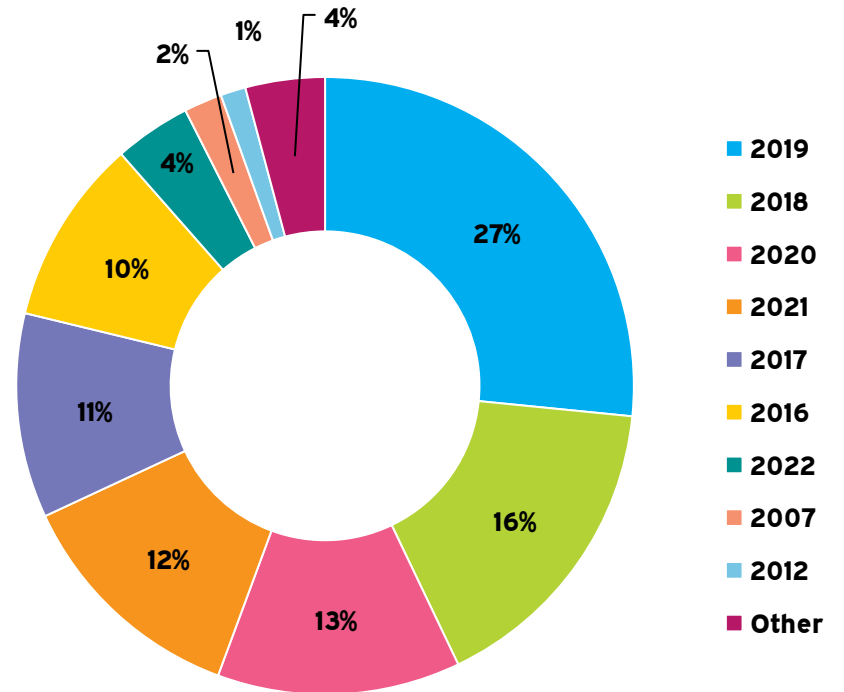


By Vintage

Percent of FMV

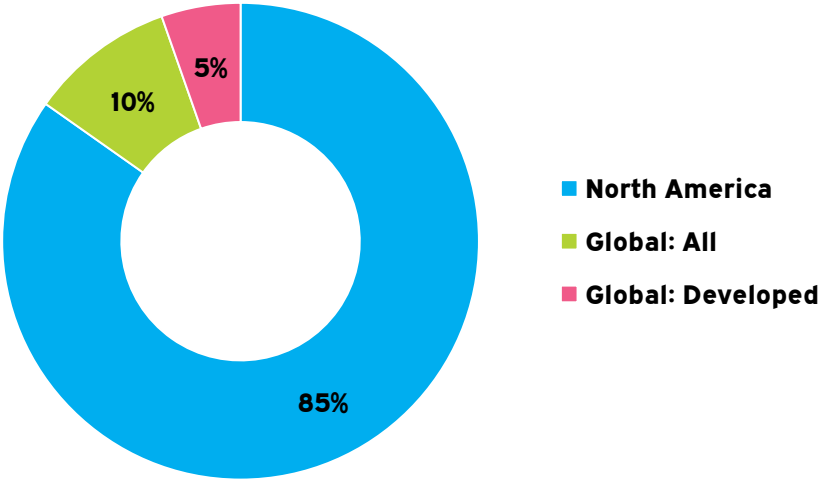


Percent of Exposure

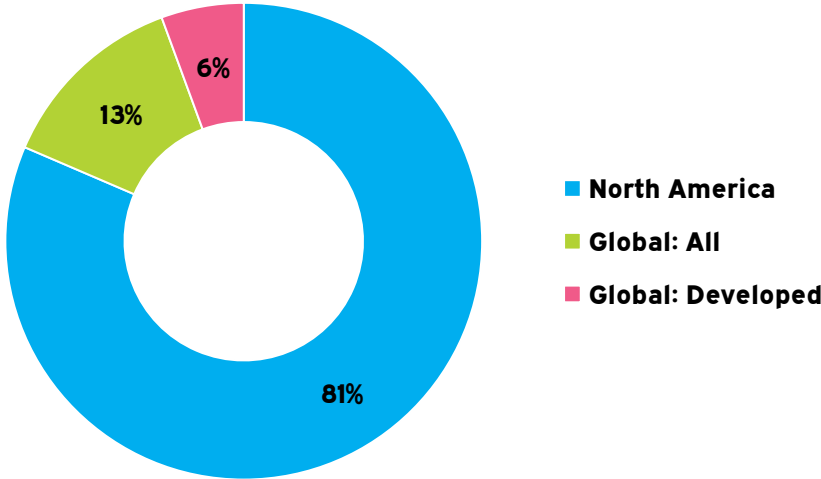


By Geographic Focus

Percent of FMV



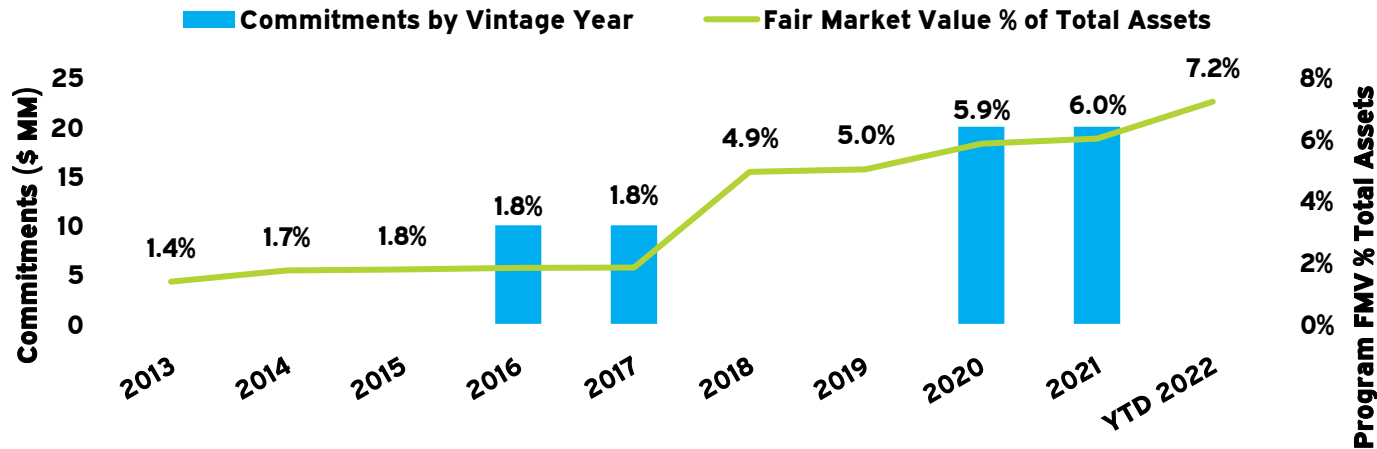
Percent of Exposure



Real Assets Program

Introduction

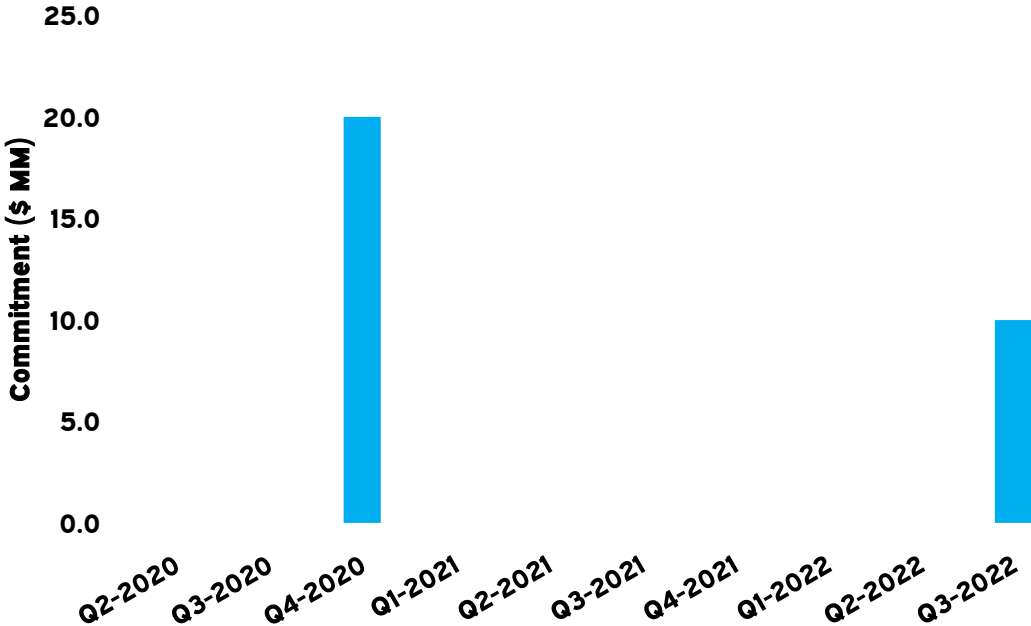
As of September 30, 2022, the Plymouth County Retirement Association (“the Retirement Association”) had committed \$140.0 million to ten partnerships. The Retirement Association committed to Blackrock Global Infrastructure Fund IV, L.P. during the third quarter, providing diversified value-add infrastructure exposure. The fair market value of the Retirement Association’s Real Assets program was \$91.6 million, representing 7.2% of total assets, exceeding the program’s 6.0% target



Program Status	
No. of Investments	10
Committed (\$ MM)	140.0
Contributed (\$ MM)	85.0
Distributed (\$ MM)	17.6
Fair Market Value (\$ MM)	91.6

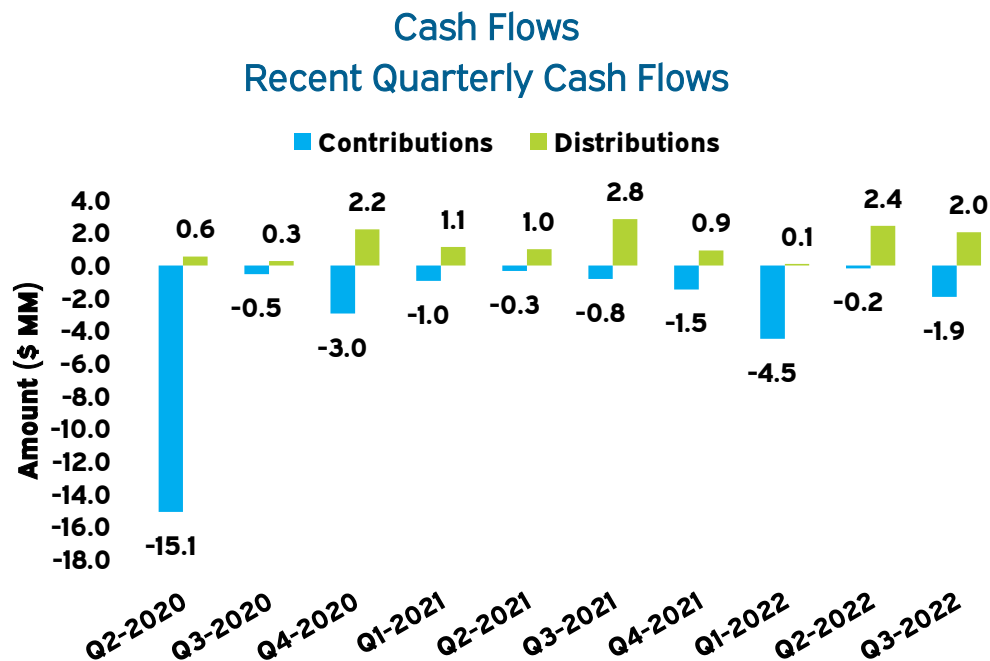
Performance Since Inception	
	Program
DPI	0.21x
TVPI	1.28x
IRR	5.9%

Commitments
Recent Quarterly Commitments



Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
Blackrock Infra IV	Value-Added	Global: All	10.00



Largest Contributions This Quarter				
Fund	Vintage	Strategy	Region	Amount(\$MM)
GIP IV	2020	Value-Added	Global: Developed	1.19
BlackRock GRPIF III	2020	Value-Added	Global: All	0.38
ISQ IS III	2021	Value-Added	Global: Developed	0.30

Largest Distributions This Quarter				
Fund	Vintage	Strategy	Region	Amount (\$MM)
Basalt IS II	2017	Core	Global: Developed	1.21
GIP III	2016	Value-Added	Global: Developed	0.38
Timbervest III	2010	Natural Resources	North America	0.20

Significant Events

- During the third quarter of 2022, the Retirement Association contributed \$1.9 million to its private real assets partnerships and received \$2.0 million in distributions, representing a \$0.10 million net cash inflow.
- Global Infrastructure Partners IV, L.P. called \$1.19 million during the third quarter, primarily to fund several new investments, as well as management fees and partnership expenses.
- BlackRock Global Renewable Power Infrastructure Fund III, L.P. called \$0.38 million during the quarter. The capital call was used to primarily fund existing investments as well as partnership expenses.
- ISQ Global Infrastructure Fund III, L.P. called \$0.30 million during the third quarter to repay the credit facility used to fund several existing investments, as well as management fees and partnership expenses.
- Basalt Infrastructure Partners II, L.P. distributed \$1.21 million of recallable proceeds from an existing investment, thereby increasing the Retirement Association's unfunded commitment in the Fund.
- Global Infrastructure Partners III, L.P. distributed \$0.38 million during the third quarter. Proceeds stemmed from dividend proceeds from existing investments.
- Domain Timbervest Investments III, L.P. distributed \$0.20 million during the third quarter. Proceeds stemmed from revenue generated through timber and land sales throughout the quarter.

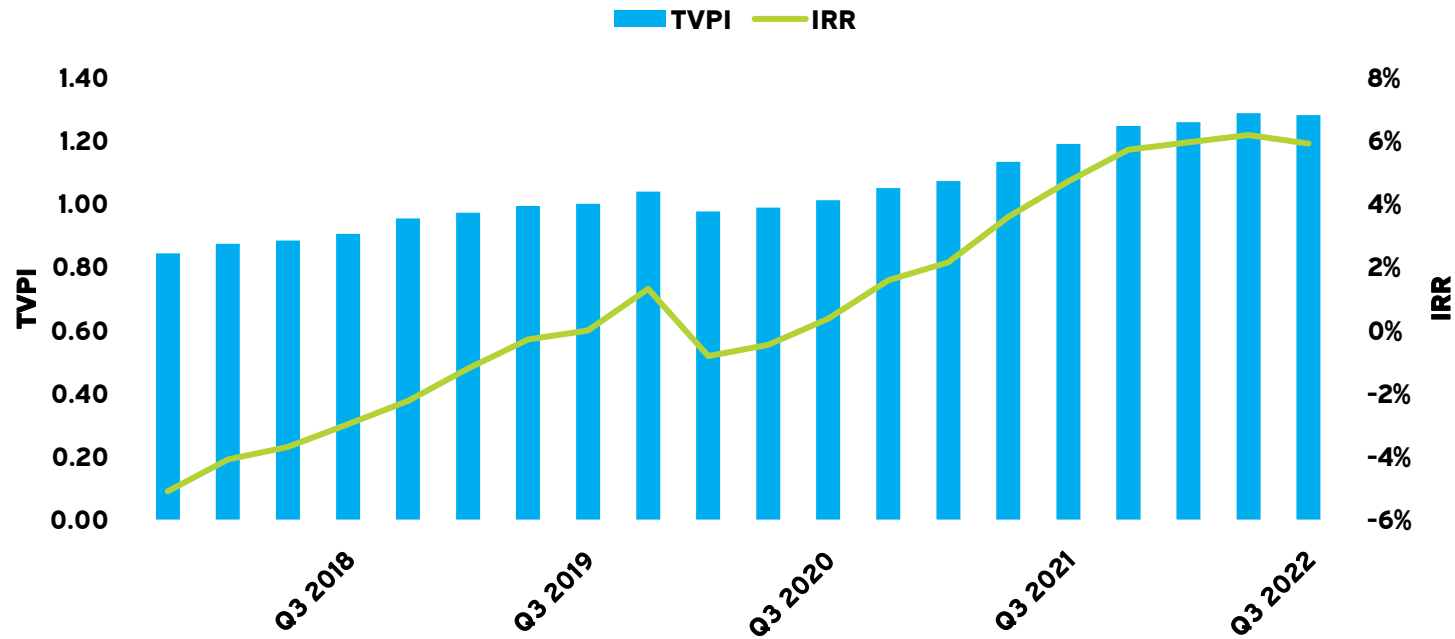
By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market		DPI (X)	TVPI (X)	IRR (%)
						Value (\$ MM)	Exposure (\$ MM)			
Core	2	70.0	44.4	28.0	5.9	55.2	83.3	0.13	1.38	10.2
Natural Resources	2	10.0	10.0	0.0	5.5	5.3	5.3	0.55	1.08	0.9
Opportunistic	1	10.0	10.0	0.3	2.6	9.7	10.0	0.26	1.23	2.9
Value-Added	5	50.0	20.6	31.5	3.7	21.3	52.8	0.18	1.22	8.8
Total	10	140.0	85.0	59.8	17.6	91.6	151.4	0.21	1.28	5.9

By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market		DPI (X)	TVPI (X)	IRR (%)
						Value (\$ MM)	Exposure (\$ MM)			
Open-end Fund	1	60.0	35.0	25.0	3.4	45.3	70.3	0.10	1.39	10.6
2010	2	15.0	15.0	0.3	6.2	13.7	14.0	0.41	1.32	3.7
2011	1	5.0	5.0	0.0	1.9	1.4	1.4	0.37	0.64	-5.2
2016	1	10.0	10.0	1.3	3.4	11.0	12.2	0.34	1.44	10.3
2017	1	10.0	9.4	3.0	2.4	9.9	13.0	0.26	1.31	8.8
2020	2	20.0	9.5	11.3	0.3	9.4	20.7	0.03	1.02	NM
2021	2	20.0	1.1	18.9	0.0	1.0	19.9	0.00	0.90	NM
Total	10	140.0	85.0	59.8	17.6	91.6	151.4	0.21	1.28	5.9
Open-end Fund	1	60.0	35.0	25.0	3.4	45.3	70.3	0.10	1.39	10.6

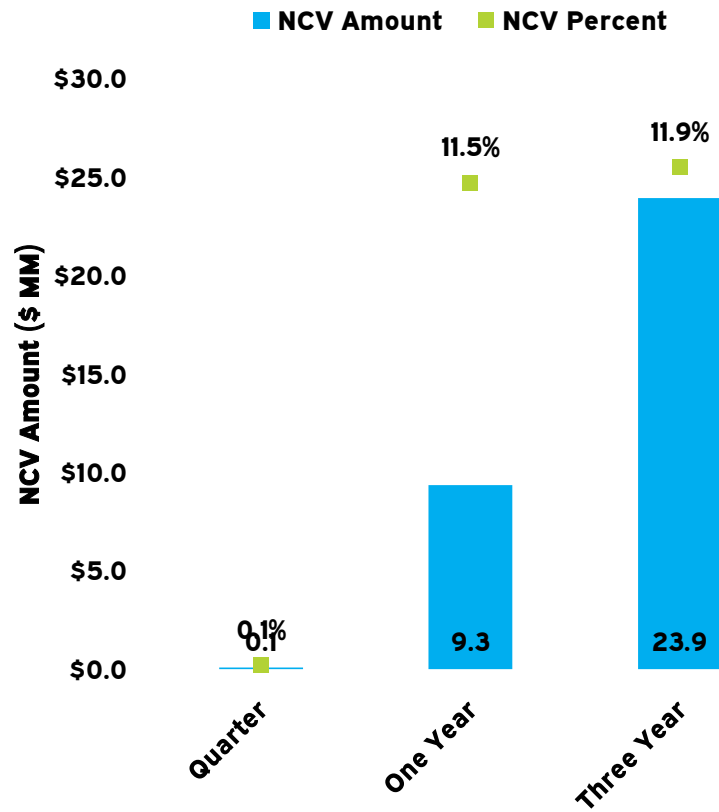
Since Inception Performance Over Time



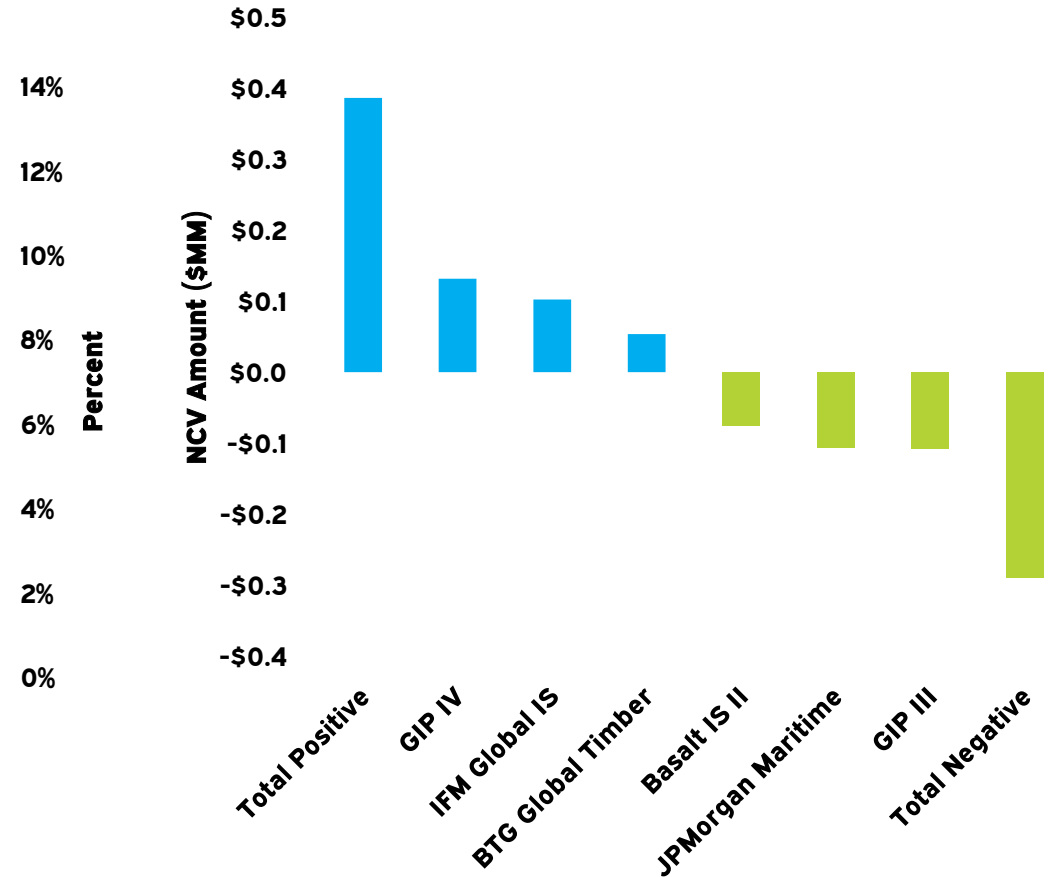
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	11.4	11.1	9.3	6.4	5.9
Public Market Equivalent	-10.2	5.5	4.9	5.3	5.4

Periodic NCV



1 Quarter Drivers Of NCV



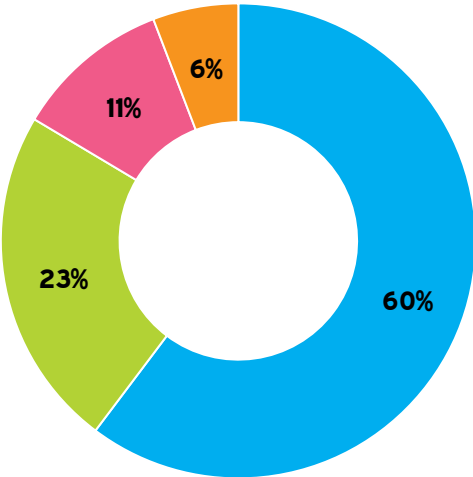
	3Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Since Inception (%)	Inception Date
IFM Global Infrastructure	0.2	7.7	10.1	NA	NA	10.3	10/01/2018
<i>CPI+3%</i>	0.9	11.4	8.1	NA	NA	6.9	

Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
IFM Global IS	Open-end	Core	60.0	35.0	25.0	3.4	45.3	1.39	NA	10.6	NA
Timbervest III	2010	Natural Resources	5.0	5.0	0.0	3.6	4.0	1.52	1.40	5.0	11.7
JPMorgan Maritime	2010	Opportunistic	10.0	10.0	0.3	2.6	9.7	1.23	1.40	2.9	11.7
BTG Global Timber	2011	Natural Resources	5.0	5.0	0.0	1.9	1.4	0.64	1.42	-5.2	11.7
GIP III	2016	Value-Added	10.0	10.0	1.3	3.4	11.0	1.44	1.63	10.3	13.3
Basalt IS II	2017	Core	10.0	9.4	3.0	2.4	9.9	1.31	1.46	8.8	16.8
BlackRock GRPIF III	2020	Value-Added	10.0	2.9	7.3	0.3	2.7	1.00	1.21	NM	NM
GIP IV	2020	Value-Added	10.0	6.6	4.0	0.0	6.7	1.03	1.21	NM	NM
Blackrock Infra IV	2021	Value-Added	10.0	0.0	10.0	0.0	0.0	NA	1.06	NA	NM
ISQ IS III	2021	Value-Added	10.0	1.1	8.9	0.0	1.0	0.90	1.06	NM	NM

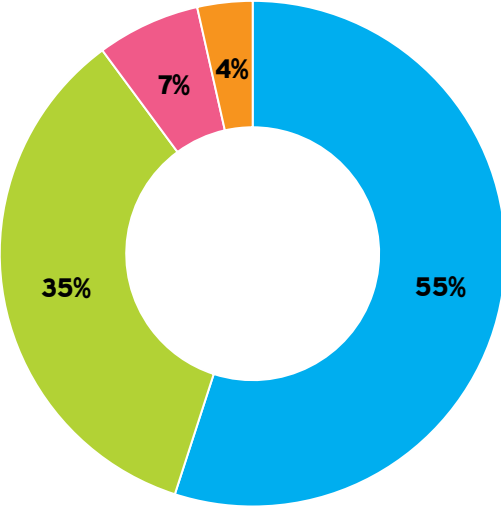
By Strategy

Percent of FMV



- Core
- Value-Added
- Opportunistic
- Natural Resources

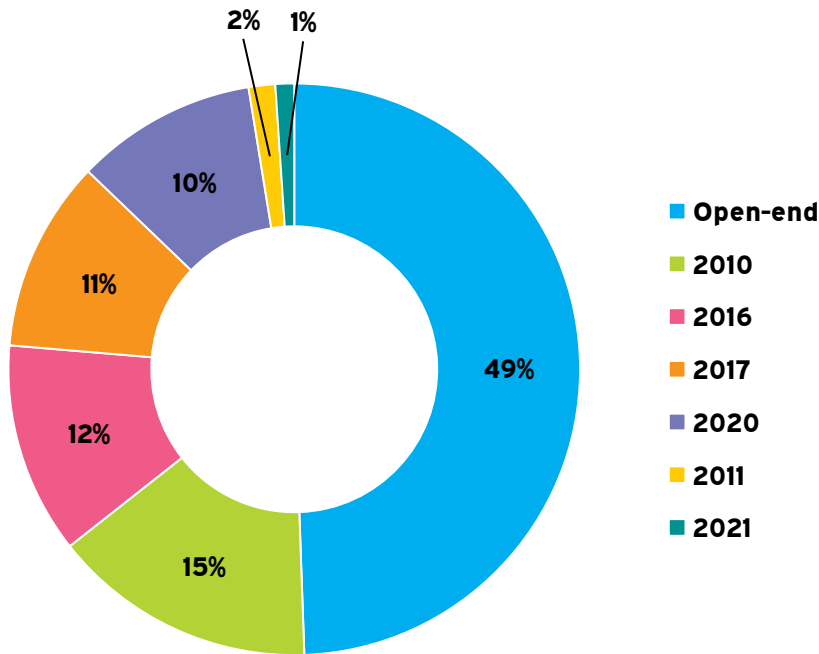
Percent of Exposure



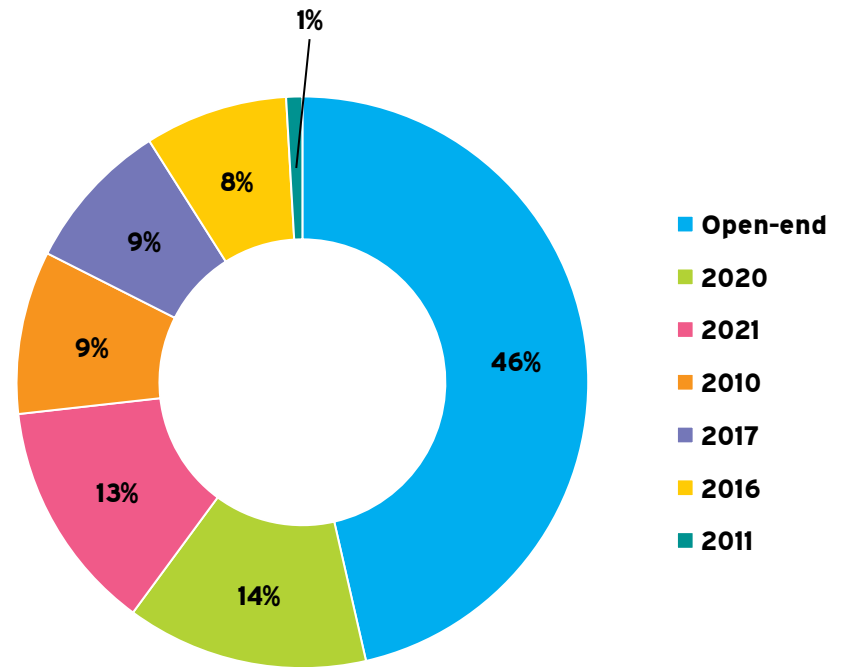
- Core
- Value-Added
- Opportunistic
- Natural Resources

By Vintage

Percent of FMV

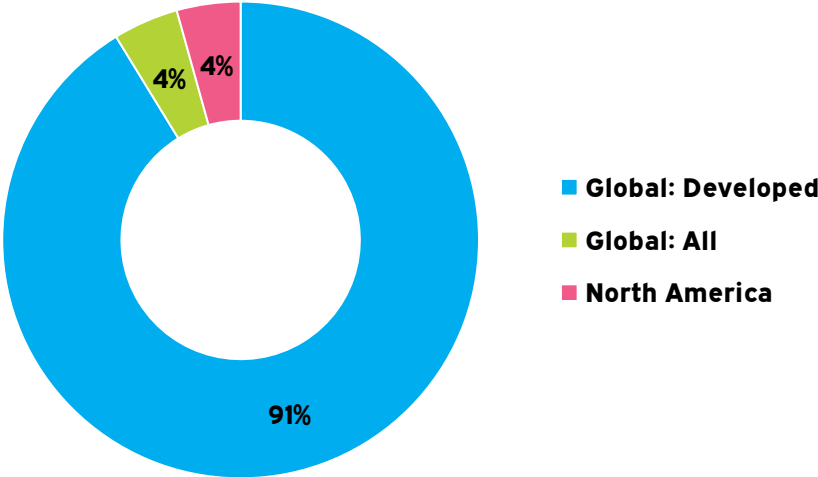


Percent of Exposure

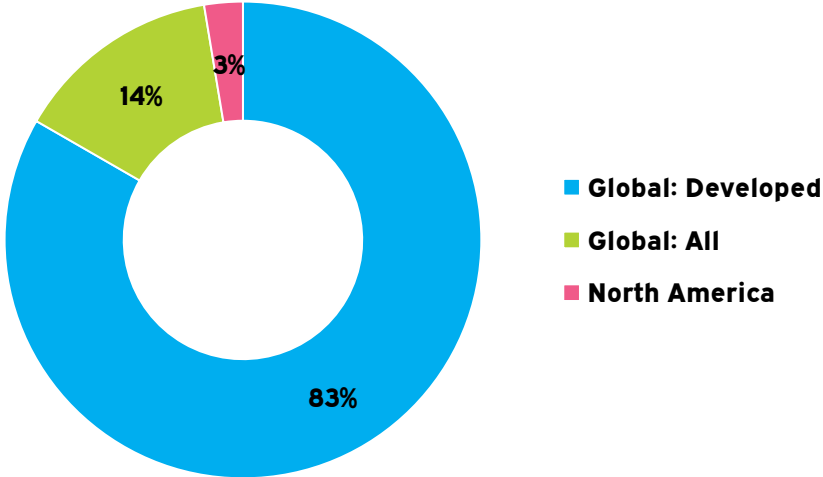


By Geographic Focus

Percent of FMV



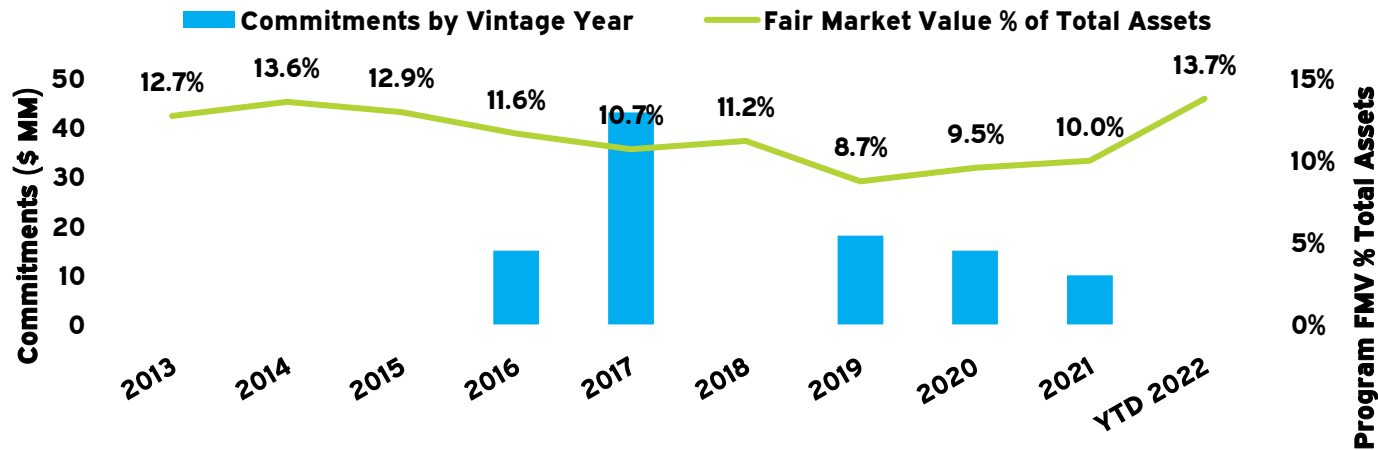
Percent of Exposure



Real Estate Program

Introduction

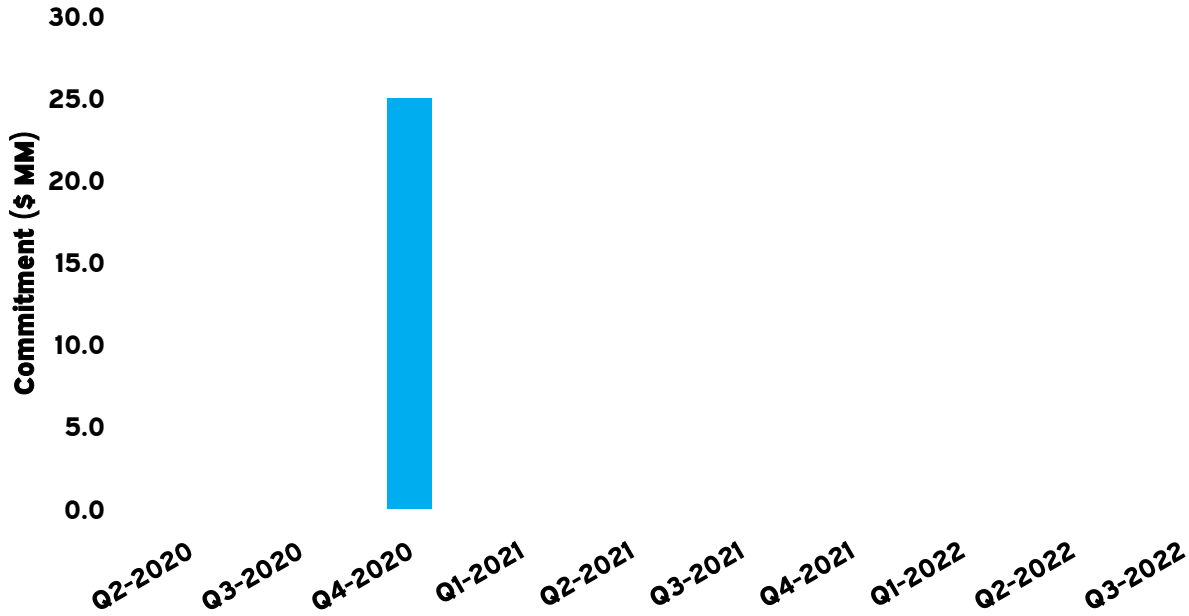
As of September 30, 2022, the Plymouth County Retirement Association (“the Retirement Association”) had committed \$288.0 million to 21 partnerships. As of quarter end, the fair market value of its private real estate partnerships, in aggregate, was \$174.6 million. The fair market value of the Retirement Association’s Real Estate program represents 13.7% of total assets.



Program Status	
No. of Investments	21
Committed (\$ MM)	288.0
Contributed (\$ MM)	268.4
Distributed (\$ MM)	222.8
Fair Market Value (\$ MM)	174.6

Performance Since Inception	
	Program
DPI	0.83x
TVPI	1.48x
IRR	7.1%

Commitments
Recent Quarterly Commitments

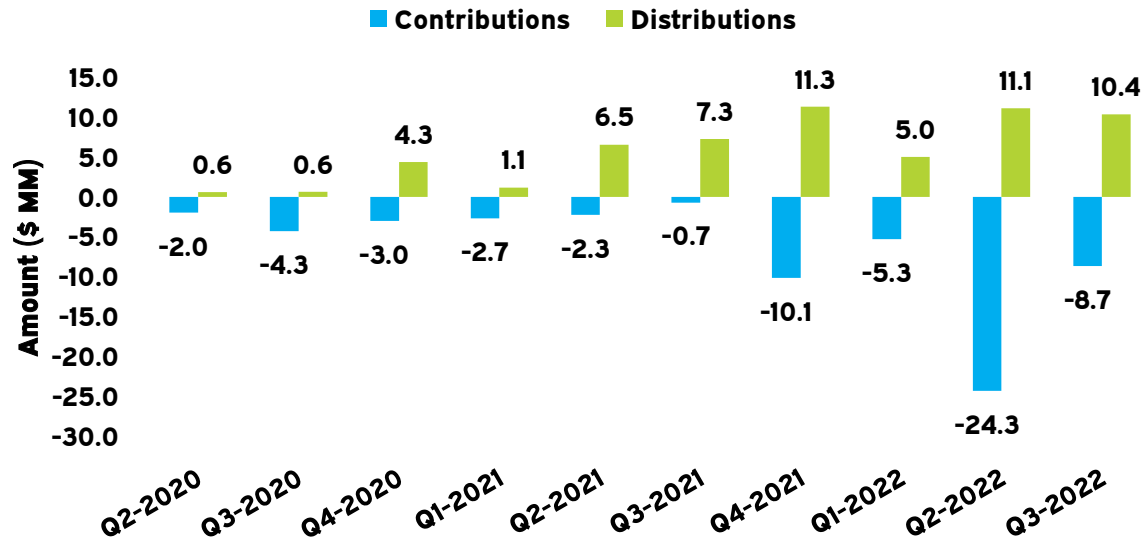


Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
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No new commitments made during the quarter

Cash Flows Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
TA Realty Core	2018	Core	North America	5.14
PCCP Equity IX	2021	Opportunistic	North America	1.20
Berkshire Value V	2019	Value-Added	North America	1.02

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
DSF III	2016	Value-Added	North America	9.25
TA Realty Core	2018	Core	North America	0.97
Rockpoint VI	2019	Opportunistic	North America	0.13

Significant Events

- During the third quarter of 2022, the Retirement Association contributed \$8.7 million to its private real estate partnerships and received \$10.4 million in distributions, representing a \$1.7 million net cash inflow.
- TA Realty Core Property Fund, L.P. called \$5.14 million during the third quarter, primarily to fund investments as well as management fees. The Fund distributed \$0.97 million as proceeds from existing investments.
- PCCP Equity IX, L.P. called \$1.20 million during the third quarter to partially repay the Fund's credit facility utilized for deal acquisitions, follow-on investments, and operating expenses.
- Berkshire Value Fund V, L.P. called \$1.02 million during the quarter. The capital call was used to pay down the subscription facility principal balance that was used to fund the acquisition of an underlying portfolio.
- DSF Multi-Family Real Estate Fund III, L.P. distributed \$9.25 million during the third quarter. Proceeds stemmed from the sale of several investments in addition to operating cash flow proceeds from existing investments.
- Rockpoint Real Estate Fund VI, L.P. distributed \$0.13 million during the third quarter. Proceeds stemmed from operating cash flow proceeds from existing investments. Of the total distribution, \$0.02 million was a recallable return of capital, thereby increasing the Retirement Association's unfunded commitment in the Fund.

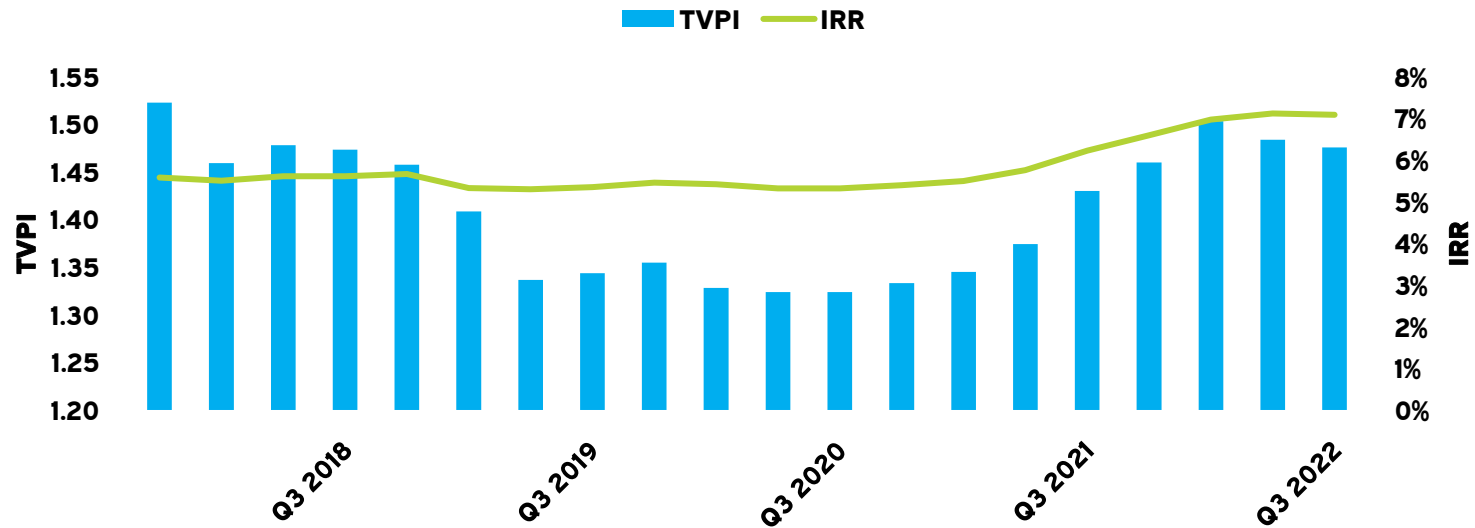
By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Core	5	129.0	133.7	0.0	101.2	119.7	119.7	0.76	1.65	7.6
Fund of Funds	1	15.0	12.7	2.3	11.4	0.7	3.0	0.90	0.95	-0.8
Opportunistic	6	77.0	59.4	29.3	38.0	37.5	66.8	0.64	1.27	7.8
Value-Added	9	67.0	62.6	8.3	72.3	16.6	25.0	1.16	1.42	6.8
Total	21	288.0	268.4	40.0	222.8	174.6	214.6	0.83	1.48	7.1

By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Open-end Fund	5	129.0	133.7	0.0	101.2	119.7	119.7	0.76	1.65	7.6
2001	1	4.0	4.6	0.0	5.7	0.0	0.0	1.23	1.23	2.4
2003	1	10.0	9.0	1.9	11.7	0.0	1.9	1.31	1.31	5.1
2004	1	4.0	4.6	0.0	2.4	0.0	0.0	0.54	0.54	-8.0
2007	3	30.0	26.9	4.3	33.3	0.7	5.0	1.24	1.26	4.8
2008	1	5.0	5.4	0.0	0.0	0.6	0.6	0.00	0.10	-14.7
2011	1	5.0	5.0	0.0	7.4	0.0	0.0	1.48	1.48	11.6
2016	1	15.0	15.1	0.0	22.0	5.1	5.1	1.46	1.80	15.5
2017	2	43.0	37.0	16.9	36.9	18.9	35.9	1.00	1.51	23.9
2019	2	18.0	12.0	7.0	2.1	13.4	20.5	0.18	1.30	20.6
2020	2	15.0	10.8	4.2	0.1	11.5	15.7	0.01	1.08	NM
2021	1	10.0	4.4	5.6	0.0	4.6	10.2	0.00	1.05	NM
Total	21	288.0	268.4	40.0	222.8	174.6	214.6	0.83	1.48	7.1

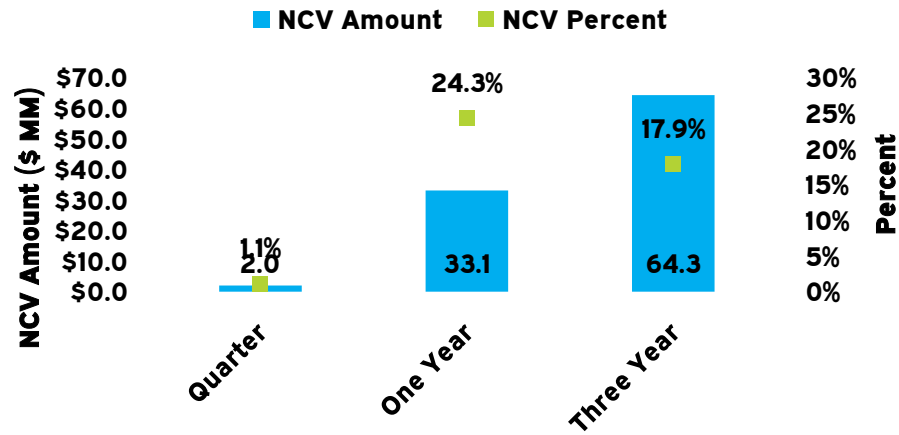
Since Inception Performance Over Time



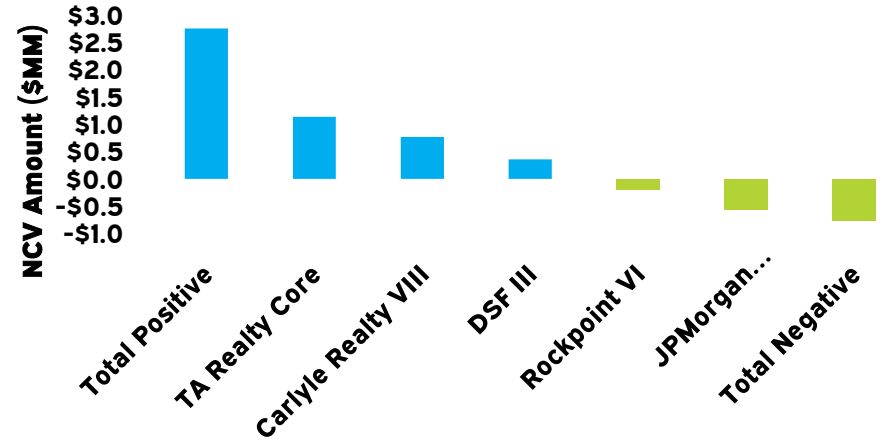
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	24.2	17.3	11.5	9.3	7.1
Public Market Equivalent	-29.5	-10.6	-3.5	0.3	3.3

Periodic NCV



1 Quarter Drivers Of NCV



	3Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Since Inception (%)	Inception Date
JPMorgan Strategic Property	-1.5	18.2	10.5	NA	NA	9.3	4/01/2019
<i>NCREIF ODCE Equal Weighted (Net)</i>	0.8	21.7	12.1	NA	NA	11.0	
TA Realty Core Property Fund, L.P.	1.4	25.1	17.1	NA	NA	15.5	3/21/2018
<i>NCREIF ODCE Equal Weighted (Net)</i>	0.8	21.7	12.1	NA	NA	10.4	

Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Invesco RE	Open-end	Core	22.0	23.9	0.0	44.8	0.0	1.87	NA	8.3	NA
JPMorgan Strategic	Open-end	Core	27.0	27.0	0.0	0.1	36.8	1.37	NA	9.3	NA
MEPT	Open-end	Core	5.0	5.0	0.0	15.9	0.0	3.18	NA	6.5	NA
PRISA I	Open-end	Core	15.0	17.2	0.0	35.5	0.0	2.06	NA	5.3	NA
TA Realty Core	Open-end	Core	60.0	60.6	0.0	5.0	82.9	1.45	NA	15.6	NA
Intercontinental III	2001	Value-Added	4.0	4.6	0.0	5.7	0.0	1.23	1.60	2.4	18.6
Hunt Redevelopment	2003	Value-Added	10.0	9.0	1.9	11.7	0.0	1.31	1.60	5.1	17.5
Intercontinental IV	2004	Value-Added	4.0	4.6	0.0	2.4	0.0	0.54	1.24	-8.0	9.5
Mesirow RE Intl	2007	Fund of Funds	15.0	12.7	2.3	11.4	0.7 ¹	0.95	1.30	-0.8	7.0
Berkshire Multi II	2007	Value-Added	10.0	11.3	0.0	17.9	0.0	1.59	1.30	11.0	7.0
New Boston VII	2007	Value-Added	5.0	3.0	2.0	4.0	0.0	1.33	1.30	5.6	7.0
1921 Realty	2008	Opportunistic	5.0	5.4	0.0	0.0	0.6	0.10	1.38	-14.7	9.8

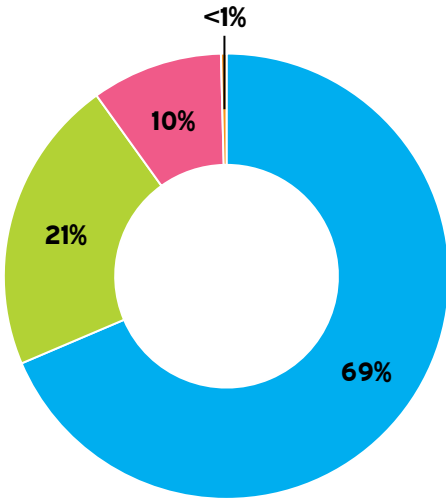
¹ The fair market value of Mesirow Real Estate International Partnership Fund I, L.P. is a cash adjusted estimate due to the timing of the report.

Fund Performance: Sorted By Vintage And Strategy (con't)

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
DSF IV	2011	Value-Added	5.0	5.0	0.0	7.4	0.0	1.48	1.66	11.6	18.7
DSF III	2016	Value-Added	15.0	15.1	0.0	22.0	5.1	1.80	1.48	15.5	12.6
AEW Partners VIII	2017	Opportunistic	25.0	24.0	4.5	27.8	7.5	1.47	1.39	21.1	11.9
Carlyle Realty VIII	2017	Opportunistic	18.0	13.0	12.5	9.1	11.4	1.57	1.39	31.3	11.9
Rockpoint VI	2019	Opportunistic	9.0	6.9	2.5	1.1	7.5	1.25	1.28	20.6	15.3
Berkshire Value V	2019	Value-Added	9.0	5.1	4.5	1.1	6.0	1.37	1.28	20.5	15.3
AEW Partners IX	2020	Opportunistic	10.0	5.8	4.2	0.0	5.9	1.03	1.13	NM	NM
TerraCap V	2020	Value-Added	5.0	5.0	0.0	0.1	5.6	1.13	1.13	NM	NM
PCCP Equity IX	2021	Opportunistic	10.0	4.4	5.6	0.0	4.6	1.05	1.05	NM	NM
Total			288.0	268.4	40.0	222.8	174.6	1.48		7.1	

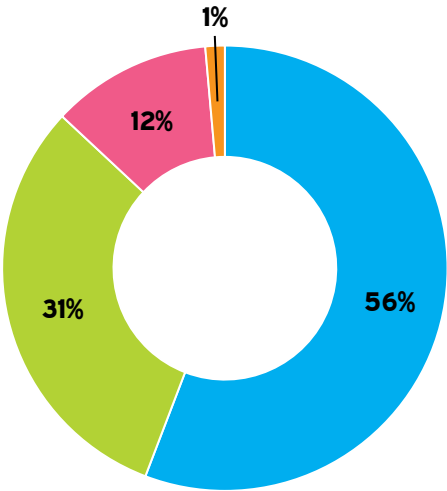
By Strategy

Percent of FMV



- Core
- Opportunistic
- Value-Added
- Fund of Funds

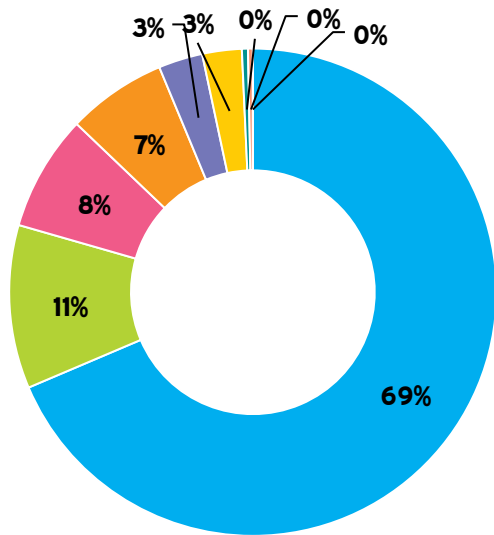
Percent of Exposure



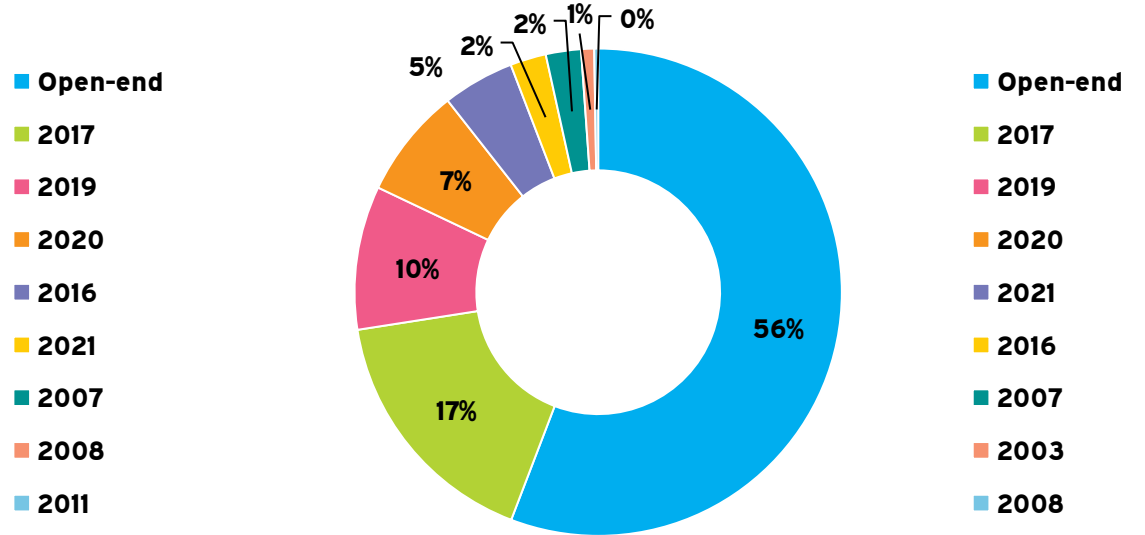
- Core
- Opportunistic
- Value-Added
- Fund of Funds

By Vintage

Percent of FMV

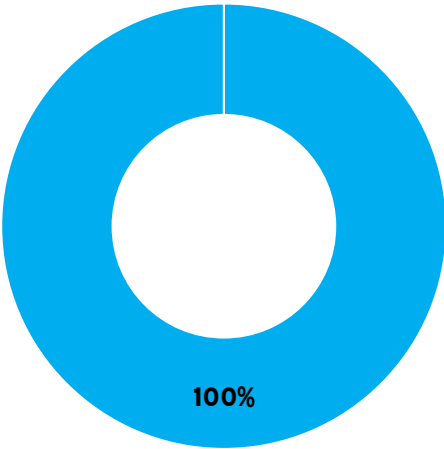


Percent of Exposure



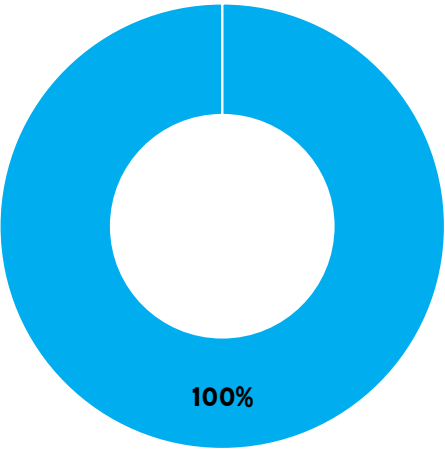
By Geographic Focus

Percent of FMV



■ North America

Percent of Exposure



■ North America

Current Issues

2022 Year in Review

Market Summary

- Between the Russia-Ukraine War, inflation, and continued COVID-19 restrictions, 2022 was one of the worst years on record for the US equity market, and the worst year on record for the fixed income market.
- The S&P 500 ended the year down just over -18%, the MSCI EAFE down -14.5%, and the MSCI Emerging Markets down over -20%.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.
- The broad Fixed Income market, represented by the Bloomberg US Universal and the Bloomberg Aggregate, both fell -13% in 2022. TIPS and High Yield didn't fare much better, returning -11.8% and -11.2% respectively. Foreign bonds also suffered, returning -11.7% for the year.
- The Fed has raised interest rates 7 times in 2022 to a high of 4.50% in order to combat inflation, which at its highest point was running at 9% year-over-year. Inflation has since cooled to 6.5% in December.
- Private equity and real asset returns were high during the year but have since begun to cool as valuations declined in the third and fourth quarter of the year.
- Growth will continue to slow globally next year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.

World Markets in 2022¹

	4Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	7.6	-18.1	7.7	9.4	12.6
Russell 3000	7.2	-19.2	7.1	8.8	12.1
Russell 1000	7.2	-19.1	7.3	9.1	12.4
Russell 1000 Growth	2.2	-29.1	7.8	11.0	14.1
Russell 1000 Value	12.4	-7.5	6.0	6.7	10.3
Russell MidCap	9.2	-17.3	5.9	7.1	11.0
Russell MidCap Growth	6.9	-26.7	3.9	7.6	11.4
Russell MidCap Value	10.5	-12.0	5.8	5.7	10.1
Russell 2000	6.2	-20.4	3.1	4.1	9.0
Russell 2000 Growth	4.1	-26.4	0.6	3.5	9.2
Russell 2000 Value	8.4	-14.5	4.7	4.1	8.5
Foreign Equity					
MSCI ACWI	9.8	-18.4	4.0	5.2	8.0
MSCI ACWI (ex. US)	14.3	-16.0	0.1	0.9	3.8
MSCI EAFE	17.3	-14.5	0.9	1.5	4.7
MSCI EAFE (Local Currency)	8.7	-7.0	3.6	3.8	7.6
MSCI EAFE Small Cap	15.8	-21.4	-0.9	0.0	6.2
MSCI Emerging Markets	9.7	-20.1	-2.7	-1.4	1.4
MSCI Emerging Markets (Local Currency)	6.6	-15.5	0.1	1.3	4.6
Fixed Income					
Bloomberg Barclays Universal	2.2	-13.0	-2.5	0.2	1.3
Bloomberg Barclays Aggregate	1.9	-13.0	-2.7	0.0	1.1
Bloomberg Barclays US TIPS	2.0	-11.8	1.2	2.1	1.1
Bloomberg Barclays High Yield	4.2	-11.2	0.0	2.3	4.0
JPM GBI-EM Global Diversified	8.5	-11.7	-6.1	-2.5	-2.0
Other					
FTSE NAREIT Equity	4.1	-24.9	0.2	4.4	7.1
Bloomberg Commodity Index	2.2	16.1	12.7	6.4	-1.3

¹ Source Investor Force

2022 Performance Review vs PRIT

	PCRA Allocation ¹ (%)	PRIT Allocation (%)	Index Performance ² (%)	PCRA Allocation Effect	PCRA Performance (%)	PRIT Performance (%)	Manager Effect
Total Aggregate Performance³					-6.7	-11.3⁴	
US Equity	21	21	-19.2	NM	-20.0	-18.5	-
International Equity	3	12	-14.5	+	-21.7	-17.0	--
Emerging Markets Equity	8	5	-20.1	-	-22.7	-18.6	--
Global Equity	11	-	-18.4	-	-10.6	N/A	N/A
Core Fixed Income	9	14	-11.6	+	-9.1	-18.3	++
Value-Added Fixed Income	7	7	-11.6	NM	-8.9	-5.4	--
Private Equity	14	18	-19.6	+	18.9	-4.7	++
Real Estate	12	11	7.5	+	14.4	7.8	++
Timber/Real Assets	7	3	9.6	+	11.2	8.2	++
Portfolio Completion ⁵	6	9	-5.3	+	-19.2	-2.1	--
Overlay / Cash	2	< 1	1.5	NM	N/A	-10.4	N/A

→ The Association significantly outperformed PRIT in 2022, returning -6.7% net of fees vs. an estimated -11.3% net of fees for PRIT.

→ Overall, the allocation positioning and manager performance had concentrated areas of strength (e.g., private equity, real assets, core fixed income) and weakness (e.g., international equity).

¹ Represent Average allocations during 2022, may not sum to 100 due to rounding

² Indexes used in descending order: Russell 3000, MSCI EAFE, MSCI EM, MSCI ACWI, 75% Bbg Aggregate / 25% Bbg US TIPs 1-10 year, 25% BBgBarc/ US High Yield, 25% / Credit Suisse Leveraged Loans / 25% JP Morgan EMBI Global diversified / and 25% BBgBarc Multiverse TR, MSCI ACWI IMI (1Q Lagged) +2%, NCREIF ODCE, CPI + 3%, Custom Hedge Fund Benchmark, and Barclays 3 Month T-Bill.

³ PCRA returns are Net of Fees, PRIT returns are Gross of Fees. Categories as follows: Core fixed income: TIPS + Investment Grade Bonds; Value added bonds: High yield bonds + emerging market bonds; Timber/Real assets: Infrastructure

⁴ PRIT Reported a Gross return of -10.8%, We've adjusted that down by 0.50% to estimate the impact of fees. The resulting -11.3% return is an estimated Net PRIT return.

⁵ Custom Hedge Fund Benchmark used - 26% Russell 3k, 6% MSCI EAFE, 10% MSCI EM, 13% MSCI ACWI IMI, 10% MSCI ACWI World, 4% of a Custom BM, 9% 75% Barclays Agg & 25% Barclays US TUPS 1-10 yr, 6% Custom Benchmark, 10% PCRA RE, 6% CPI +3%

Insurance Linked Strategy Search Respondent Review

Background

- At the September 16, 2022, meeting, the Board voted to conduct a search for an Insurance Linked Strategies manager.
- Shortly after that meeting, Meketa issued the RFP, targeting a \$10 million mandate.
- This would represent the first investment of this nature for The Plymouth County Retirement Association.
- RFP responses were due on November 23, 2022.
- Meketa Investment Group received 13 responses in total, however some were excluded for failing to meet minimum requirements. Below are summaries of the nine remaining qualified respondents. In totality, the respondents all have experience and capabilities to fulfill an insurance linked strategy mandate.
- Meketa is happy to facilitate interviews with any managers the Board has interest in.

Manager Search Respondent Reviews

Manager Respondents Composite Rating Overview

Manager	Overall Rating	Rationale
GAM FCM	Highly Advantageous	GAM FCM Cat Bond strategy is a strong approach with a highly tenured and cohesive team. The strategy is managed by Fermat Capital Management while marketing and distribution is managed by GAM Investments. While the strategy is catastrophe bond centric, the performance has been impressive over its tenure compared to other funds that utilize a broader investment universe. Reliance of this strategy on the catastrophe bond market may prove less than optimal when bond placement activity is slow.
Nephila Capital	Highly Advantageous	Nephila Capital is a highly capable investment manager in the insurance linked strategies space. The firm has strong counterparty relationships, is on the cutting edge of modelling developments and has a strong, tenured investment team. The firm is owned by Markel Corporation, an insurance holding company which provides Nephila with balance sheet efficiency it can pass along to investors. The firm has had relatively weak performance in the past several years, largely due to a strategic shift in investments relative to peers.
Neuberger Berman Group	Highly Advantageous	Neuberger Berman’s Insurance-Linked Strategies Fund is a strong strategy that focuses on the usage of industry loss warranties as its main vehicle of investment. The strategy is likely more U.S. centric than others here, meaning that multiple U.S. based natural disasters (hurricane, earthquake) in any year may result in poor performance. The team, led by Peter DiFiore and Cedric Drui, is strong and has been working together for several years. Each senior investment team member has years of diverse experience in the space.
Pillar Capital	Highly Advantageous	Pillar is one of the longest standing ILS managers with a firm inception of 2008. Over the long-term, the strategy has generated strong returns relative to peers and benchmarks, including protecting capital in the challenging 2017-2018 ILS market. Firm founder Steve Velotti is impressive, and his leadership of the investment operation is a large plus.
Schroder Investment Management	Highly Advantageous	Schroders Capital All-ILS Fund is supported by a strong, tenured team and comprehensive process. The strategy utilizes pieces of life insurance in addition to natural catastrophe exposure through a mix that targets 60-70% private transactions. The strategy has historically had a return and volatility profile closer to that of bonds.

Manager Respondents Composite Rating Overview (con't)

Manager	Overall Rating	Rationale
Amundi Asset Management	Advantageous	Amundi ILS is a capable strategy and seeks to provide best in class security selection without making active geographic or peril bets. The firm’s approach is differentiated to other respondents. Chin Liu and Campbell Brown lead the strategy and are both knowledgeable investors within the ILS space. The proposed fee schedule is attractive.
AlphaCat Managers	Advantageous	AlphaCat is a dedicated ILS manager that incorporates a strong research team at Validus Research. The Diversified Fund II is a continuation of a previous iteration (Diversified I) and will follow the same mandate. The investment team has had some turnover in recent years. AlphaCat is 100% owned by global insurer AIG. AlphaCat maintains its decision-making autonomy in the arrangement.
K2 Advisors	Advantageous	K2 Advisors’ Pyxis Fund is a rules-based strategy that seeks to build a portfolio of liquid catastrophe bonds. The Pyxis Fund’s team has longevity together and the firm’s ownership by Franklin Templeton may provide strong research, counterparty and operational efficiencies.
Resolute Global Partners	Advantageous	Resolute Global is a multi-dimensional organization that has its own insurance outfit, reinsurance group and Lloyd’s Syndicate. Most of this strategy’s risk will stem from traditional insurance in personal/commercial auto with some specialty risk as well. Equity investments in the fund related to Resolute’s insurance outfit (Producer’s National) provide economic benefits to the strategy through underwriting income but also add a little equity risk. This strategy has a different risk dynamic than the others and may not be as affected by global natural catastrophe.

GAM - GAM FCM Cat Bond

Rating Criteria	Score	Rationale
Overall	Highly Advantageous	<p>→ GAM FCM Cat Bond strategy is a strong approach with a highly tenured and cohesive team. The strategy is managed by Fermat Capital Management while marketing and distribution is managed by GAM Investments. While the strategy is catastrophe bond centric, the performance has been impressive over its tenure compared to other funds that utilize a broader investment universe. Reliance of this strategy on the catastrophe bond market may prove less than optimal when bond placement activity is slow.</p>
Organization	Highly Advantageous	<p>→ GAM Investments is a large European asset manager. The firm does not have a Chief Investment Officer or house view but is instead made up of 20 independent investment teams across traditional and alternatives. Each of those teams are autonomous but share ideas with each other.</p> <p>→ The investment manager for this strategy is Fermat Capital Management (FCM), which is based in Westport, CT. FCM utilizes GAM for marketing and distribution. This relationship began in 2004.</p> <p>→ FCM is a minority owned firm and is co-owned by brothers John and Nelson Seo. FCM was founded in 2001.</p> <p>→ It may be a benefit to FCM that the investment team is able to focus on investments and not marketing or distribution.</p>
Team	Highly Advantageous	<p>→ The Fermat team is impressive up and down the roster and has had impressively low turnover. Brothers John and Nelson Seo help co-lead the investment operation with Brett Houghton</p> <ul style="list-style-type: none"> • Dr. John Seo has over 30 years' experience fixed income, FX options, and interest-rate-derivatives structuring. • Nelson Seo has 27 years' experience in commodities, derivatives, bond trading and investment banking experience and has been in the ILS markets for 18 years • Brett Houghton also helps lead the investment team and joined Fermat in 2010. <p>→ The three individuals mentioned above are supported by a strong, tenured team. The portfolio management team has been together in totality since 2015.</p> <p>→ Overall, the team has an impressive lack of turnover. No member of senior investment team has left the firm in its history.</p> <p>→ Fermat utilizes external consultants including climatologists, seismologists, atmospheric scientists, and political advisors.</p>

GAM - GAM FCM Cat Bond (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy</u></p> <ul style="list-style-type: none"> → GAM FCM Cat Bond seeks attractive levels of yield, while maintaining focus on peak peril and catastrophe risk. → The Fermat team believes that collateralized reinsurance and catastrophe bonds are the most transparent and easily modeled types of insurance linked securities <p><u>Process</u></p> <ul style="list-style-type: none"> → FCM's Investment committee reviews all liquid catastrophe bonds that come to market when they are announced. (about 30-40 a year). When an offering comes in, it goes to Tony Pham, director of modeling and analytics. Mr. Pham will apply vendor modeling (Verisk, RMS, and KCC) as well as internal adjustments to create a "FCM View of Risk". <ul style="list-style-type: none"> ○ Underwriting adjustments are made to risk profile to the output from the models, including meeting with the sponsors. ○ Reporting goes to portfolio managers who look at the bond in isolation as well as its fit within the existing portfolio as well as the weighting. → FCM claims its size, experience and market share of the cat bond market (~15-25%) gives the team very strong transparency into the pipeline. → Modeling incorporates three distinct measurements: an insurance linked securities exceedance curve, a market exceedance curve and an implied yield curve. Together, FCM believes this allows the team to have a strong idea of market pricing and if any security they model is over- or undervalued. This modeling is constantly monitored to maintain and ensure its efficacy. → Portfolio construction includes optimization to show team the impact of individual bonds on the existing portfolio. → Portfolio statistics are rerun daily to review whether its investments are providing adequate compensation for risk or if the team should be tactical in trading the portfolio
Performance	Advantageous	<ul style="list-style-type: none"> → The strategy's performance has been strong, especially given that for a catastrophe bond fund, but most of the strong performance was earned more than 10 years ago. Over the past several trailing periods, the fund has had more modest risk/return numbers, albeit better than the EH ILS Advisers Index, and likely more in line with what we would expect from a catastrophe bond fund.
Fees	Advantageous	<ul style="list-style-type: none"> → Management Fee: 0.95% → Incentive Allocation: 10% over a hurdle of the Secured Overnight Financing Rate (SOFR). Subject to a high-water mark. → Subscription frequency: Monthly → Redemption frequency: Monthly → Gate: 10% fund-level → Lock-up: None

GAM FCM Cat Bond
Trailing Annualized Returns
 (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Common Period (1/2006)	Since Inception (12/2004)
GAM FCM	-3.0	0.7	2.1	3.2	3.1	4.0	6.5	6.0
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	3.6	---
MSCI ACWI	-18.0	-1.2	4.5	5.8	8.7	8.5	6.7	7.1
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	3.0	3.0

Trailing Risk Metrics
 (January 2006-December 2022)

	GAM FCM	<i>EH ILS Advisers Index</i>	MSCI ACWI	<i>Bloomberg US Agg</i>
Annualized Returns (%)	7.8	3.6	6.7	3.0
Annualized Standard Deviation (%)	3.7	3.5	16.3	3.8
Omega Ratio	0.21	0.02	0.75	0.11
Beta - MSCI ACWI	0.07	0.04	1.00	0.05
Beta - Bloomberg US Aggregate	0.27	0.21	0.87	1.00
Correlation - MSCI ACWI	0.29	0.18	1.00	0.21
Correlation - Bloomberg US Aggregate	0.28	0.23	0.21	1.00
Skewness	-3.01	-5.61	-0.68	-0.47
Kurtosis	22.43	41.30	1.79	2.48

Nephila - Iron Catastrophe Fund

Rating Criteria	Score	Rationale
Overall	Highly Advantageous	<ul style="list-style-type: none"> → Nephila Capital is a highly capable investment manager in the insurance linked strategies space. The firm has strong counterparty relationships, is on the cutting edge of modelling developments and has a strong, tenured investment team. The firm is owned by Markel Corporation, an insurance holding company which provides Nephila with balance sheet efficiency it can pass along to investors. The firm has had relatively weak performance in the past several years, largely due to a strategic shift in allocations relative to peers
Organization	Highly Advantageous	<ul style="list-style-type: none"> → Nephila Capital is wholly owned by Markel Corporation (NYSE: MKL). Markel is a holding company for insurance, reinsurance, and investment operations headquartered in VA. Markel helps provide Nephila with sourcing capabilities, infrastructure support and provides the benefit of balance sheet efficiency. → The firm is the longest standing private player in the ILS market, founded in 1997. The firm has offices in Bermuda, San Francisco, Nashville, and London. → Nephila is a huge investment manager in the ILS space. \$7.8b across 123 clients. Nephila entered the direct insurance business in 2017. Co-Founder Greg Hagood estimates that 80% of the firm’s AUM is in reinsurance, while 20% is in direct insurance. → The proposed strategy was launched in May 2009 and holds approximately \$1.2B in assets across 14 clients.
Team	Highly Advantageous	<ul style="list-style-type: none"> → Nephila Capital was co-founded by Frank Majors and Greg Hagood, both of whom are still with the firm today. Both Mr. Majors and Mr. Hagood focus on risk management and firm strategy while Mr. Majors also spends his time focusing on counterparty relations, while Mr. Hagood focuses on investor relations. → Jessica Laird is the firm’s Head of Risk, Origination and Underwriting teams. Ms. Laird is responsible for the overall strategy, trading and execution of the business and has been with Nephila for 12 years. → Bert Ji is the Head of Portfolio Management and leads initiatives for improve portfolio optimization and construction process. Mr. Ji joined Nephila in 2015 after spending five years at Validus Re. → The firm has strong corporate culture and senior management has had little turnover. → Nephila is a leader in research in catastrophe modeling, and portfolio construction in the ILS space.

Nephila - Iron Catastrophe Fund (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → Nephila's Iron Catastrophe Fund is a lower-risk strategy that is managed around limiting a 1 in 100-year loss to 30%. → The strategy is diversified across regions and perils and seeks senior tranche, more risk remote exposure. → Iron Catastrophe fund can invest across syndicated and non-syndicated reinsurance, primary insurance, catastrophe bonds and catastrophe derivatives including industry loss warranties (ILW) and country weighted industry loss (CWIL). → Nephila claims it has the broadest investible universe with its inclusion of direct insurance and non-syndicated reinsurance, which comes with the scale of the organization. <p><u>Process:</u></p> <ul style="list-style-type: none"> → The strategy uses price signals from the market to help determine exposures and risks that create the optimal portfolio to maximize return for the mandate, in this case a 1 in 100-year loss limit of 30%. → The firm does its baseline modeling using third-party vendor models, Verisk and RMS and then makes several adjustments using in-house research capabilities that have been in development since 2003. → Developments in internal modelling capabilities have allowed the firm to better evaluate factors affecting expected loss amongst other pieces that go into risk management. <ul style="list-style-type: none"> • Material adjustments include adjustments for climate change, Improving data quality from counterparties and adding unmodeled risks like Covid-19, impact of levees breaking, and fraud in Florida for example. → Risk management includes stress testing as well as the increased accuracy in data modeling. If risks can be modeled more accurately, a firm should be able to forecast its expected loss and understand its loss distribution and portfolio construction much better. → Among other stress tests, two of note includes stressing for 30-100% increases in major hurricane activities as well as 50-100% increases in non-climate factors (inflation, etc)
Performance	Advantageous	<ul style="list-style-type: none"> → Performance has been underwhelming in recent periods. The firm has underperformed over the last 4-5 years mainly due to being overweight higher risk securities. → The investment team has felt that the compensation was far more than commensurate for the risk (4x) while many other firms in the industry shifted towards more risk remote exposure due to concerns about the increasing risks of climate change.
Fees	Advantageous	<ul style="list-style-type: none"> → Management Fee: 1.50% → Incentive Allocation: 0% → Subscription frequency: Monthly → Redemption frequency: Semi-Annual (6/30, 12/31) → Gate: 25% Fund Level → Lock-up: 1 year

Nephila Iron Catastrophe Fund

Trailing Annualized Returns (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Since Inception (5/2009)
Nephila	-2.8	-2.3	-0.4	0.4	0.6	1.6	2.5
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	2.5
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	8.5	10.2
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	2.5

Trailing Risk Metrics (May 2009-December 2022)

	Nephila	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	2.5	2.5	10.2	2.5
Annualized Standard Deviation (%)	3.6	3.8	15.1	3.8
Omega Ratio	0.22	0.19	1.20	0.40
Beta - MSCI ACWI	0.06	0.04	1.00	0.05
Beta - Bloomberg US Aggregate	0.30	0.22	0.75	1.00
Correlation - MSCI ACWI	0.25	0.18	1.00	0.19
Correlation - Bloomberg US Aggregate	0.31	0.22	0.19	1.00
Skewness	-6.27	-5.53	-0.33	-0.76
Kurtosis	59.87	37.62	0.67	2.62

Neuberger Berman - NB Insurance-Linked Strategies Fund LP

Rating Criteria	Score	Rationale
Overall	Highly Advantageous	→ Neuberger Berman’s Insurance-Linked Strategies Fund is a strong strategy that focuses on the usage of industry loss warranties as its main vehicle of investment. The strategy is likely more US centric than others here, meaning that multiple US based natural disasters (hurricane, earthquake) in any year may result in poor performance. The team, led by Peter DiFiore and Cedric Drui, is strong and has been working together for several years. Each senior investment team member has years of diverse experience in the space.
Organization	Highly Advantageous	<p>→ NB is a global asset manager headquartered in New York City. The firm is 100% employee owned.</p> <p>→ This strategy was initially founded by Cartesian Capital in 2009. In November 2018, Neuberger Berman acquired the group, and it became part of the Neuberger Berman platform.</p> <p>→ Having the greater resources of Neuberger Berman may be helpful for counterparty, brokerage and research capabilities of the NB ILS team. ILS team can focus solely on investment function with the operational infrastructure of NB platform.</p>
Team	Highly Advantageous	<p>→ Investment team has had strong cohesion with much of the personnel having worked together for 10+ years.</p> <p>→ The NB ILS team consists of nine individuals. Peter DiFiore, who co-leads the business, is an impressive individual with a variety of ILS experience ranging from working from vendor modeling firm, RMS to management team of Cartesian Re ILS strategy. Cedric Drui, another industry veteran, who spent time at both previously mentioned companies, co-leads the business with Mr. DiFiore.</p> <p>→ The NB ILS team is split between NYC, Hamilton, Bermuda, and London.</p> <p>→ The underwriting team will be speaking with counterparties constantly and will propose structures with counterparties and then run numbers and then some iteration of structuring and pricing. When they arrive at an opportunity, they think makes sense, it gets kicked to the underwriting committee to deliberate sizing and inclusion in the portfolio.</p> <p>→ Team utilizes numerous consultants on retainer for advising on topics related to meteorology, climatology and seismology</p>

Neuberger Berman - NB Insurance-Linked Strategies Fund LP (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → The strategy will primarily focus on industry loss warranties as its main investment. The team prefers these because of the flexibility and transparency they feel these instruments offer. Depending on market environment, the fund may allocate to catastrophe bonds as well. → NB ILS believes that industry loss warranties have more favorable competitive dynamics than catastrophe bonds or collateralized reinsurance because they are privately sourced and structured. → The strategy's exposure is US centric. Reasons the team believes this is the right approach include: <ul style="list-style-type: none"> • The data for US risk is easier to understand and more transparent. • Third party agents are better at helping facilitate the structure of ILW deals in the US. • Structure of risk for ILW deals in the US provides better pricing for NB. <p><u>Process:</u></p> <ul style="list-style-type: none"> → NB ILS structures its portfolio around a risk target, and then looks for opportunities that provide the best compensation around that risk budget. → The team has developed what it calls a strong network of counterparties that it can trade with. The firm is counterparty agnostic since all investments are fully collateralized. Counterparties may include insurers, reinsurers, capital markets participants and operating companies. → NB uses a framework in its modeling that asks and seeks answers for the following questions: <ul style="list-style-type: none"> • What is the probability of an event occurrence? • How severe is the event? • How does the event impact property? • What is the resulting insured loss? → The strategy sticks to securities, regions, perils and structures it feels like it can accurately model and interpret. More esoteric types of risk become harder to model, meaning there is less confidence that in what expected loss truly could be. → NB ILS targets diversification across perils, severity and structure. Even within one type of security type (ILW), there exists possibility to diversify exposure. Being able to narrow peril scope, raise attachment points, and focus on single events instead of aggregate can help the team with its risk management of the portfolio.
Performance	Highly Advantageous	<ul style="list-style-type: none"> → On both a rolling period and trailing period basis, the strategy has outperformed peers as well as demonstrated a strong risk- adjusted return as evidenced by the high Omega ratio. The strategy will be more US-centric meaning that multiple US based natural disasters (hurricane, earthquake) in any year may result in poor performance.

Neuberger Berman - NB Insurance-Linked Strategies Fund LP (con't)

Rating Criteria	Score	Rationale
Fees	Advantageous	<ul style="list-style-type: none">→ Management Fee: 1.25%→ Incentive Allocation: 15%, subject to a high-water mark.→ Subscription frequency: Monthly→ Redemption frequency: Quarterly→ Gate: 25% investor-level→ Lock-up: 1 year

NB Insurance-Linked Strategies Fund LP

Trailing Annualized Returns (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Since Inception (6/2009)
Neuberger Berman	2.4	4.9	5.5	5.9	5.3	6.2	7.5
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	2.5
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	8.5	9.5
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	2.5

Trailing Risk Metrics (June 2009-December 2022)

	NB	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	7.5	2.5	9.5	2.5
Annualized Standard Deviation (%)	3.6	3.8	14.9	3.8
Omega Ratio	1.07	0.18	1.16	0.39
Beta - MSCI ACWI	0.01	0.05	1.00	0.05
Beta - Bloomberg US Aggregate	0.06	0.22	0.73	1.00
Correlation - MSCI ACWI	0.03	0.18	1.00	0.19
Correlation - Bloomberg US Aggregate	0.07	0.22	0.19	1.00
Skewness	0.92	-5.51	-0.37	-0.75
Kurtosis	2.09	37.37	0.71	2.60

Pillar - Juniperus Insurance Linked Opportunity Fund Limited

Rating Criteria	Score	Rationale
Overall	Highly Advantageous	<ul style="list-style-type: none"> → Pillar is one of the longest standing ILS managers with a firm inception of 2008. Over the long-term, the strategy has generated strong returns relative to peers and benchmarks, including protecting capital in the challenging 2017-2018 ILS market. Firm founder Steve Velotti is impressive, and his leadership of the investment operation is a large plus. 2022 was a tough year for the fund’s performance, dropping 12.9% in September 2022 from Hurricane Ian.
Organization	Highly Advantageous	<ul style="list-style-type: none"> → Pillar was originally founded in April 2008 as Juniperus Capital Limited and is headquartered in Bermuda. The firm was renamed in June 2012 to Pillar Capital Management Limited. → The firm is currently 50% owned by members of the management team and 50% by Transatlantic Holdings (i.e., Trans Re). Trans Re is a traditional reinsurance subsidiary of Alleghany Corporation and is headquartered in New York City. In October 2022, Trans Re was purchased by Berkshire Hathaway Inc. and Trans Re is now a wholly owned subsidiary of Berkshire Hathaway. Trans Re maintains two of the five board seats at Pillar but is not involved in portfolio management nor day-to-day decisions. → All owners are required to invest in the strategy at the same LP terms, with the actual amount determined by their net worth and/or financial position. Additionally, all shareholders are required to invest 20% of any firm dividends back into the strategy. → Pillar is a Bermuda exempted company and licensed as an insurance manager. Additionally, the firm is an SEC registered investment advisor. To transact in private collateralized reinsurance markets, Pillar also operates JC Re Limited as a Class 3 insurer under the Bermuda Insurance Act of 1978. This is a segregated accounts company that Pillar’s funds utilize to obtain exposure to specific segments of the ILS market (i.e., everything but catastrophe bonds).
Team	Highly Advantageous	<ul style="list-style-type: none"> → Pillar employs nine investment professionals led by Stephen Velotti, Tom Cosenza, Jeff Franklin and Stewart Foster. → Mr. Velotti is a highly capable investment manager for the fund and a strong communicator and educator in the insurance linked securities space. → As an ILS/reinsurance manager, the entire team operates in an analogous fashion as an insurance company would. The key areas are sourcing, underwriting/modeling, and portfolio management. The concepts of pricing and risk management are embedded in all functions.

Pillar - Juniperus Insurance Linked Opportunity Fund Limited (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → Pillar seeks to create a portfolio of reinsurance-related securities/contracts that provide the optimal risk/reward posture given the market environment. → Pillar believes that success in the ILS market comes down to deal-flow, team experience and insight, simplicity over complexity, and pragmatic portfolio construction. → The goal of the portfolio is to optimize around its Omega Score subject to expected return targets. → An additional element of their philosophy is their focus on smaller insurance companies. <p><u>Process:</u></p> <ul style="list-style-type: none"> → Pillar excels with broker access and moderately incorporates direct cedant interactions. The firm’s partnership arrangements and direct insurance underwriting has been steadily improving since a more focused effort was place on these areas in 2017. 2017. → Pillar works with a small managing general agent (~40 people) in New York for gaining access to more granular exposures (e.g., individual buildings) across the country. → Portfolio construction is iterative and involves both systematic and discretionary components. Each opportunity/deal that is reviewed is analyzed in isolation as well as in the context of being added to the portfolio. These metrics incorporate event loss tables and simulation data from the AIR Catastrophe Modeling software. Pillar maintains an internally developed portfolio management system called the “Pillar Risk Optimization System,” or “PROS,” that accomplishes the following: <ul style="list-style-type: none"> • Incorporates Pillar’s risk modifications (e.g., litigation risk, data quality, non-modeled risks, etc.). • Calculates expected returns/risks for individual trades. • Calculates marginal impact on the total portfolio. • Re-prices trades as the portfolio develops (i.e., as events occur or as time passes). • Efficient frontier analysis. • Portfolio reporting.
Performance	Advantageous	<ul style="list-style-type: none"> → While the fund has struggled in more recent periods, the long-term performance of the fund has been impressive, outpacing the peer index. Recent trailing periods have seen larger losses due in-part to Hurricane Ian in September 2022. This strategy is higher volatility meaning possibly higher earning (and loss) potential than other respondents.

Pillar - Juniperus Insurance Linked Opportunity Fund Limited (con't)

Rating Criteria	Score	Rationale
Fees	Advantageous	<ul style="list-style-type: none"> → Management Fee: 1.50% → Incentive Allocation: 15% over a hurdle of the 1-month t-bill rate + 0.25%. Subject to a high-water mark. → Subscription frequency: Monthly → Redemption frequency: Semi-Annual (6/30, 12/31) → Gate: Slow-pay provision¹ → Lock-up: 1 year

¹ Redemptions are paid out on a pro-rata basis as policies/contracts expire, subject to any outstanding claims/side pocket procedures.

Pillar Juniperus Insurance Linked Opportunity Fund Limited

Trailing Annualized Returns
(As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Since Inception (6/2008)
Pillar	-9.4	-6.6	-1.9	-0.1	0.3	3.8	6.1
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	2.5
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	8.5	5.7
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	2.7

Trailing Risk Metrics
(June 2008-December 2022)

	Pillar	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	6.1	2.5	5.7	2.7
Annualized Standard Deviation (%)	7.2	3.7	17.1	4.0
Omega Ratio	0.82	0.16	0.98	0.41
Beta - MSCI ACWI	0.05	0.04	1.00	0.06
Beta - Bloomberg US Aggregate	0.55	0.20	1.03	1.00
Correlation - MSCI ACWI	0.11	0.18	1.00	0.24
Correlation - Bloomberg US Aggregate	0.31	0.22	0.24	1.00
Skewness	-3.17	-5.62	-0.64	-0.45
Kurtosis	16.68	39.35	1.53	2.34

Schroders - Schroders Capital All-ILS Fund Ltd.

Rating Criteria	Score	Rationale
Overall	Highly Advantageous	→ Schroders Capital All-ILS Fund is supported by a strong, tenured team and comprehensive process. The strategy utilizes pieces of life insurance in addition to natural catastrophe exposure through a mix that targets 60-70% private transactions. The strategy has historically had a return and volatility profile closer to that of bonds.
Organization	Advantageous	<ul style="list-style-type: none"> → Schroders is a large European asset manager that has existed since the early 1800s, originally as a commercial credit provider. The firm is publicly traded on the London Stock Exchange. → As of September 2022, the firm managed about \$839.9B across multi-asset and private / public investments. There is approximately \$315m in proposed All-ILS strategy. → Schroders Capital ILS was originally an independent company, Secquaero Advisors, which was established in February 2007. In 2013, Secquaero entered into a joint-venture agreement with Schroders and became a fully integrated business unit into Schroders in 2019.
Team	Highly Advantageous	<ul style="list-style-type: none"> → Schroders Capital ILS team is based in Zurich and London. Team of 32, most of which is investment staff dedicated to the ILS space. → Stephan Ruoff serves as the Global Head of ILS. Mr. Ruoff has 27 years of experience, most recently as the CEO of Tokio Millennium Re. → Daniel Ineichen serves as the Head of Portfolio Management and joined the group in 2007. → Dr. Christoph Hummel is the Head of Analytics and is supported by a team of five, including actuaries and natural catastrophe specialists. Dr. Hummel has 21 years of experience in the industry. → Flavio Matter is the Head of Origination and is supported by five underwriters. He has been with Schroders for eight years and has 17 years of experience. → Scott Mitchell is the group's Head of Life ILS. Mr. Mitchell is supported by a portfolio manager, two actuaries and an investment analyst. Mr. Mitchell has been at Schroders Capital ILS for five years and has 22 years of life insurance experience.

Schroders - Schroders Capital All-ILS Fund Ltd. (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → The All-ILS fund focuses on managing tail risk and drawdown in single events, while targeting a long-term asset mix of 60-70% private transactions. → Schroders believes that its use of life insurance linked securities and Lloyd’s syndicates is a differentiating diversifying tool away from peak peril natural catastrophe (US/Japan/Europe wind, and US/Japan earthquake). <p><u>Process:</u></p> <ul style="list-style-type: none"> → The All-ILS Fund’s investment universe encompasses a wide variety of investments including catastrophe bonds, collateralized reinsurance, private reinsurance, derivatives, life insurance and Lloyd’s syndicates. <ul style="list-style-type: none"> • Life ILS are structured transactions that include mortality and morbidity transactions. These are lower yielding and lower volatility than most catastrophe-based transactions. Reasonable expectations are that these would diversify natural catastrophe exposure and dampen volatility. → In addition to vendor models, the team utilizes a proprietary tool called SPOT which is used to help understand the portfolio’s risk profile, particularly on tail risk. The tool will also help optimize the portfolio and can also be used as portfolio construction tool. → Proprietary models account for adjustments not considered in the vendor models. <ul style="list-style-type: none"> • These includes El Niño and La Niña, climate change, improvement of building codes and inflation. → Once modeling is concluded, the team will have a view of relative attractiveness of a deal based on it being under- or overvalued to market price. → Quantitative factors that are considered in position sizing include quality of input data, contribution to tail risk and relative compensation for risk taken. Most positions will be sized somewhere between 0.5% and 1.5% of the portfolio.
Performance	Advantageous	<ul style="list-style-type: none"> → Strategy performance has been solid. On a trailing basis, the strategy has performed slightly better in most trailing periods than the peer index. The strategy’s negative skew and large kurtosis indicate that the fund has had some periods of larger negative performance (larger kurtosis indicates more outliers).
Fees	Highly Advantageous	<ul style="list-style-type: none"> → Management Fee: Option 1: 0.95%, Option 2: 0.75% → Incentive Allocation: Option 1: 0%, Option 2: 15% over an 8% hurdle → Subscription frequency: Monthly → Redemption frequency: Semi-Annual (6/30, 12/31) → Gate: None → Lock-up: None

Schroders Capital All-ILS Fund Ltd.

Trailing Annualized Returns (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Since Inception (6/2008)
Schroders	-0.5	0.1	0.4	1.0	0.5	1.7	3.1
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	2.5
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	8.5	5.7
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	2.7

Trailing Risk Metrics (June 2008-December 2022)

	Schroder	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	3.1	2.5	5.7	2.7
Annualized Standard Deviation (%)	3.7	3.7	17.1	4.0
Omega Ratio	0.24	0.16	0.98	0.41
Beta - MSCI ACWI	0.03	0.04	1.00	0.06
Beta - Bloomberg US Aggregate	0.20	0.20	1.03	1.00
Correlation - MSCI ACWI	0.16	0.18	1.00	0.24
Correlation - Bloomberg US Aggregate	0.21	0.22	0.24	1.00
Skewness	-5.60	-5.62	-0.64	-0.45
Kurtosis	44.81	39.35	1.53	2.34

Amundi - Amundi Insurance Linked Securities Strategies

Rating Criteria	Score	Rationale
Overall	Advantageous	→ Amundi ILS is a capable strategy and seeks to provide best in class security selection without making active geographic or peril bets. The firm’s approach is differentiated to other respondents. Chin Liu and Campbell Brown lead the strategy and are both knowledgeable investors within the ILS space. The proposed fee schedule is attractive.
Organization	Highly Advantageous	<ul style="list-style-type: none"> → Amundi Asset Management US, Inc. is the US asset management business of Amundi, Europe’s largest asset manager by AUM. Amundi is publicly traded and manages \$1.85T in assets, \$832M of which are within insurance linked strategies. → This strategy was originally managed by Pioneer Investments starting in 2014. Amundi acquired Pioneer Investments in 2017. → Benefits of a large asset manager may include being able to leverage equity and credit team research to evaluate sponsors and other companies in the ILS space. → There are currently 3 clients in the proposed commingled strategy, but most of Amundi ILS client relationships are separately managed
Team	Advantageous	<ul style="list-style-type: none"> → The team is led by Chin Liu, a Managing Director of Insurance Linked Strategies and Portfolio Manager. Mr. Liu has been with the group since 2007. Mr. Liu is responsible for structuring and implementing custom ILS strategies for the firm’s diversified fixed income portfolios. He is also responsible for fixed income investment solutions at Amundi US. → Campbell Brown is a Portfolio Manager on the team and joined Amundi in 2018. Prior to Amundi, Mr. Brown worked as a Property Treaty Underwriter for Odyssey Reinsurance Company. Within the ILS team, Mr. Brown is responsible for catastrophe modeling, risk analysis, securities analysis, underwriting and portfolio construction. → Mei Li rounds out the senior investment staff. Ms. Li is an Associate Portfolio Manager and has been with Amundi US since 2012. Ms. Li responsibilities include catastrophe modeling, risk analysis, security evaluation and portfolio construction. → The rest of the investment team includes eight members and are split between Boston, Dublin and London. → Mr. Liu and Mr. Campbell share final authority and responsibility for all decisions.

Amundi - Amundi Insurance Linked Securities Strategies (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Advantageous	<p><u>Philosophy</u></p> <ul style="list-style-type: none"> → Amundi takes an active approach to portfolio construction but does not make active region or peril decisions. The team’s goal is to allocate the portfolio to mimic underwriting exposures of the global reinsurance industry. → Investors can expect Amundi’s approach to move towards less risk remote opportunities should the team feel it is being appropriately compensated for that risk. Less risk remote means that it is tied to an event that is more likely to occur and require claims being paid out instead of just earning yield. → Amundi’s stated target portfolio will be diversified from both a regional and peril perspective. <ul style="list-style-type: none"> • Targeted allocation ranges in the portfolio are as follows: <ul style="list-style-type: none"> – Quota Shares (sidecars): 40-80% – Industry Loss Warranties (ILW): 0-30% – Collateralized re-insurance: 0-30% – Catastrophe Bonds: 5-25% <p><u>Process</u></p> <ul style="list-style-type: none"> → Amundi’s deal flow is not tied to a specific reinsurer, and the team says that it is “sponsor agnostic”. → To develop a target portfolio, Amundi performs a quantitative evaluation of the global reinsurance market and uses an optimization process to help arrive at target weights for different securities. → Modeling is done using third-party vendor Verisk as well as proprietary quantitative and qualitative tools. → In addition to Verisk, the team focuses on different analyses to understand quality and accuracy of modeling <ul style="list-style-type: none"> • For example, the team compares modeled loss and actual loss and then reflects exposures accordingly for what the model has missed. → Security selection also includes both quantitative and qualitative inputs. <ul style="list-style-type: none"> • Quantitative inputs include analysis of the property type as well as an assessment of the loss curves of individual securities. • Qualitative inputs include underwriting, pricing, alignment of interests and cycle management
Performance	Advantageous	→ The proposed strategy has had a decent track record since 2015. Since inception, the strategy has been highly correlated to the peer index, which is unsurprising given the philosophy of the strategy not making active region or peril bets.
Fees	Highly Advantageous	<ul style="list-style-type: none"> → Management Fee: 0.75% → Incentive Allocation: 0% → Subscription frequency: Semi-Annual (12/15, 5/1) → Redemption frequency: Semi-Annual (3/31, 10/31). 30% of redeemed assets available within 90 days written notice, 100% available within 180 days written notice. → Gate: None → Lock-up: Rolling One-Year lock from date of subscription.

Amundi Insurance Linked Securities Strategies
Trailing Annualized Returns
 (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	Since Inception (1/2015)
Amundi	2.4	1.2	3.7	2.9	2.6	3.7
EurekaHedge ILS Advisers	-3.1	-1.1	0.4	-0.4	-0.4	0.2
MSCI ACWI	-18.0	-1.2	4.5	5.8	8.7	7.3
Bloomberg Aggregate	-13.0	-7.5	-2.7	0.0	0.9	0.8

Trailing Risk Metrics
 (January 2015-December 2022)

	Amundi	EH ILS Advisers Index	MSCI ACWI	Bloomberg US Agg
Annualized Returns (%)	3.7	0.2	7.3	0.8
Annualized Standard Deviation (%)	4.6	4.5	15.4	4.4
Omega Ratio	0.13	0.01	0.84	0.15
Beta - MSCI ACWI	0.00	0.05	1.00	0.09
Beta - Bloomberg US Aggregate	0.09	0.23	1.06	1.00
Correlation - MSCI ACWI	0.02	0.19	1.00	0.30
Correlation - Bloomberg US Aggregate	0.09	0.22	0.30	1.00
Skewness	-3.88	-5.11	-0.39	-0.57
Kurtosis	21.23	29.66	0.82	2.08

AlphaCat - AlphaCat Diversified Fund II Ltd.

Rating Criteria	Score	Rationale
Overall	Advantageous	<p>→ AlphaCat is a dedicated ILS manager that incorporates a strong research team at Validus Research. The Diversified Fund II is a continuation of a previous iteration (Diversified I) and will follow the same mandate. The investment team has had some turnover in recent years. AlphaCat is 100% owned by global insurer AIG. AlphaCat maintains its decision-making autonomy in the arrangement.</p>
Organization	Advantageous	<p>→ AlphaCat was founded in 2008 through Validus Re and is based in Hamilton, Bermuda. As of September 2022, the firm manages \$3.3B in assets.</p> <p>→ In July 2018, AlphaCat Managers was 100% acquired by AIG, a global insurance organization based in New York City. Despite being owned by AIG, AlphaCat operates as distinct business unit and retains autonomy for its investment process. The backing of AIG may be beneficial for balance sheet efficiency.</p> <p>→ AlphaCat Diversified Fund II has been seeded by AIG with \$50m. The fund currently has this sole investor, but it should be noted that the mandate is a continuation of AlphaCat Diversified I, which has track record going back to 2009.</p> <p>→ AlphaCat utilizes Validus Re for research and modeling capabilities through a shared service model. Prior to AlphaCat being 100% owned by AIG, it was 100% owned by Validus. AIG’s acquisition of Validus Holding Companies included AlphaCat Managers Ltd.</p> <p>→ Validus Reserves as a fronting facility² for traditional property catastrophe insurance. This exists because AlphaCat is unable to write insurance due to regulations and registration requirements.</p> <ul style="list-style-type: none"> • In these types of relationships, there exists the possibility of conflicts of interest. To help mitigate this, an allocation policy exists between Validus Re and AlphaCat.

² Fronting facilities are bi-party agreements where one company (Validus) writes insurance/reinsurance, and the underlying risk is transferred to the second party (AlphaCat) via the agreement.

AlphaCat - AlphaCat Diversified Fund II Ltd. (con't)

Rating Criteria	Score	Rationale
Team	Advantageous	<ul style="list-style-type: none"> → AlphaCat has a service level agreement with Validus Research (also owned by AIG) for scientific, catastrophe modeling and associated software technology. → AlphaCat is fully responsible for investment decisions including underwriting, trading and portfolio management, while Validus provides relevant research on securities in the strategy's investable universe. The Validus has an impressive research operation with over 60 employees, 8 PhDs and advisors in meteorology and seismology. → AlphaCat Investment Committee oversees setting of investment parameters within fund investment guidelines and are responsible for approving individual investments that are not within the Investment Parameters. → The AlphaCat Investment team has six members and is led by the portfolio manager, Adam Szakmary. Mr. Szakmary has been with AlphaCat for close to two years. He replaces Alex Winfield who left the firm to relocate to London. Mr. Szakmary's prior experience includes Hiscox Re and Blue Capital Management. → The AlphaCat team had several founding members depart the organization following the acquisition by AIG. → The rest of the senior team includes Ed Sweeney, SVP, Underwriter who has been at AlphaCat for close to two years and has ten years of experience in the field. Sun Siang Liew is the most tenured member of the team with 16 years at AlphaCat. Ms. Liew is the Head of Portfolio Analytics.

AlphaCat - AlphaCat Diversified Fund II Ltd. (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Highly Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → The fund’s mandate is to target high quality natural catastrophe focused reinsurance and catastrophe bond transactions. AlphaCat refers to the risk/return profile as remote risk and moderate return, with a focus on tail management. The team expects a 5-7% net return annually. → The team prefers to work with small and medium sized insurance companies where possible as they find those parties’ buying behaviors more consistent and less opportunistic. <p><u>Process:</u></p> <ul style="list-style-type: none"> → AlphaCat estimates that between 1000-1500 reinsurance transactions are modeled annually as well as all property focused catastrophe bonds that come to market. In part due to its relationships with AIG and Validus Re, the firm estimates it sees over 90% of estimated transaction flow. → The team blends top-down and bottom-up research. Broad market opportunity dictates risk appetite to geography, perils and cedants. Actual securities are selected by market pricing adequacy, terms and conditions, exposure quality and transparency, and other market factors. → Bottom-up research starts with the modeling done through Validus’ Research and its Validus View of Risk system. This is a proprietary tool that is applied to transactions in the market. The tool allows for analysis of key perils to those deals as well as continuous research and implementation of new models that may impact portfolio construction. For example, a new earthquake model was created having in-house modeling technology that is separate than third-party vendor models may be a distinguishing factor in a firm’s ability to build a portfolio that mirrors its stated mandate. → The team also employs a multi-step underwriting scoring process that includes analysis of the counterparty as well as the deal itself. → For any major event potentially causing a valuation impact to the Fund, AlphaCat will issue pre and post event reporting and commentary to investors typically every 24-48 hours.
Performance	Highly Advantageous	<ul style="list-style-type: none"> → The strategy has had a successful run of earning bond+ returns at less than bond volatility. Protection in heavy natural catastrophe has been impressive with the strategy’s worst month at only -2.5% (September 2017). The strategy’s risk and return record appears to be in line with the more risk remote universe that the strategy is targeting for investment.
Fees	Advantageous	<ul style="list-style-type: none"> → Management Fee: 1.00% → Incentive Allocation: 10%, subject to a high-water mark. → Subscription frequency: Monthly → Redemption frequency: Semi-Annual (1/1, 7/1) → Gate: 25% fund-level → Lock-up: None

AlphaCat Diversified Fund II Ltd
Trailing Annualized Returns
 (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	10 YR	Since Inception (1/2009)
AlphaCat	4.8	3.0	2.9	4.3	3.6	3.9	4.7
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	1.4	2.6
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	8.5	10.0
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.1	2.5

Trailing Risk Metrics
 (January 2009-December 2022)

	AlphaCat	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	4.7	2.6	10.0	2.5
Annualized Standard Deviation (%)	2.1	3.7	15.8	3.8
Omega Ratio	0.46	0.19	1.19	0.41
Beta - MSCI ACWI	0.00	0.04	1.00	0.05
Beta - Bloomberg US Aggregate	0.06	0.22	0.88	1.00
Correlation - MSCI ACWI	0.03	0.17	1.00	0.21
Correlation - Bloomberg US Aggregate	0.10	0.22	0.21	1.00
Skewness	0.10	-5.60	-0.30	-0.74
Kurtosis	4.34	38.58	0.52	2.60

K2 Advisors - K2 Pyxis Fund Ltd.

Rating Criteria	Score	Rationale
Overall	Advantageous	→ K2 Advisors' Pyxis Fund is a rules-based strategy that seeks to build a portfolio of liquid catastrophe bonds. The Pyxis Fund's team has longevity together and the firm's ownership by Franklin Templeton may provide strong research, counterparty and operational efficiencies.
Organization	Advantageous	<p>→ K2 was founded in 1994 and has primarily been a solutions provider, doing both commingled fund of fund strategies as well as bespoke solutions for institutional clients. The firm is headquartered in Stamford, CT.</p> <p>→ K2 Advisors is a wholly owned subsidiary of Franklin Templeton, a global investment management organization. Franklin Templeton manages approximately \$1.3 trillion in assets.</p> <p>→ K2 Advisors operates as an investment group within the Franklin Templeton Alternatives platform and manages about \$10.4 billion in assets as of September 2022.</p> <p>→ The ILS team below manages a variety of products including custom funds as well.</p> <p>→ K2 Pyxis fund was incepted on 1/1/2018 and is one of the newer funds of the respondents.</p>
Team	Advantageous	<p>→ The investment team is led by Michael Rich, the portfolio manager of the Pyxis Fund. He has been with K2 for 11 years.</p> <p>→ The rest of the team includes:</p> <ul style="list-style-type: none"> • Jordan Strah – Research Analyst (6 years of experience, 1 w K2) • Anthony Zanolta – Co-Head of Investment Management (29 years of experience, 8 with K2) • Brian Barrett – VP / Head Trader (20 years of experience, all with K2) <p>→ The team does not utilize any third-party consultants for investment research.</p>

K2 Advisors - K2 Pyxis Fund Ltd. (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Advantageous	<p><u>Philosophy</u></p> <p>→ The K2 Pyxis Fund is a catastrophe bond strategy that seeks liquid catastrophe bonds through a rules-based screening approach.</p> <p><u>Process</u></p> <p>→ The team utilizes Moody's RMS as its third-party vendor modeling software.</p> <p>→ The initial investment universe starts with about 190 catastrophe bonds and 20% of this universe is initially removed through two screens:</p> <ul style="list-style-type: none"> • Screen one removes securities with the highest and lowest spreads, and private bonds based on liquidity and transparency considerations. Highest spreads out to reduce drawdown risk. Lowest spreads because they don't provide commensurate return for modeled risk. • The second screen scores the remaining bonds (about 80% of initial universe) on 13 risk factors including valuation, structure, risk modeling, duration, currency, liquidity, collateral and sponsor's credit rating. • Each factor is weighted, and a prospective bond is assigned a score. <p>→ Portfolio construction:</p> <ul style="list-style-type: none"> • Target portfolio weights determined by relative scoring of bonds clearing the threshold described previously. Actual fund weights may not mirror the exact model portfolio because of liquidity constraints. • The strategy does not hedge non-US currency exposures and favors USD-denominated securities. <p>→ Risk management guidelines include:</p> <ul style="list-style-type: none"> • 35% max contribution to expected loss by region or peril • 99% value at risk: -40%
Performance	Advantageous	→ K2 Pyxis Fund has had similar return and risk to the EurekaHedge ILS Advisers index. The strategy has the benefit of starting in 2018, having avoided a bad industry year in 2017 and the resulting overhang associated with exposure to 2017 events. This fund has the shortest track record of respondents.
Fees	Highly Advantageous	<p>→ Management Fee: 0.75%</p> <p>→ Incentive Allocation: 0%</p> <p>→ Subscription frequency: Bi-weekly</p> <p>→ Redemption frequency: Bi-weekly</p> <p>→ Gate: 10% fund-level</p> <p>→ Lock-up: None</p>

K2 Pyxis Fund Ltd.

Trailing Annualized Returns
(As of December 31, 2022)

	2022	2 YR	3 YR	Since Inception (1/2018)
K2	-1.7	1.3	2.1	2.0
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0

Trailing Risk Metrics
(January 2018-December 2022)

	K2 Pyxis	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	2.0	-0.4	5.8	0.0
Annualized Standard Deviation (%)	2.5	3.9	17.7	5.1
Omega Ratio	0.02	0.00	0.69	0.10
Beta - MSCI ACWI	0.05	0.07	1.00	0.11
Beta - Bloomberg US Aggregate	0.06	0.22	1.30	1.00
Correlation - MSCI ACWI	0.39	0.34	1.00	0.37
Correlation - Bloomberg US Aggregate	0.13	0.29	0.37	1.00
Skewness	-0.51	-4.34	-0.37	-0.45
Kurtosis	5.29	23.67	0.20	1.17

Resolute - The 1609 Fund Ltd.

Rating Criteria	Score	Rationale
Overall	Advantageous	<ul style="list-style-type: none"> → Resolute Global is a multi-dimensional organization that has its own insurance outfit, reinsurance group and Lloyd's Syndicate. Most of this strategy's risk will stem from traditional insurance in personal/commercial auto with some specialty risk as well. Equity investments in the fund related to Resolute's insurance outfit (Producer's National) provide economic benefits to the strategy through underwriting income but also add a little equity risk. This strategy has a different risk dynamic than the others and may not be as affected by global natural catastrophe.
Organization	Advantageous	<ul style="list-style-type: none"> → Resolute Global was founded in 2011. The team is headquartered in Hamilton, Bermuda with additional offices in Stamford, CT and London, UK. → Resolute owns several entities that contribute to the strategy's deal flow. This includes an insurance company called Producer's National Corporation (PNC), a Bermuda reinsurer called Prospero Re, and a Lloyd's Corporate Member. There is organizational complexity but having it all under one roof could serve to be advantageous from an economic standpoint. → The firm is employee owned. The three partners have large stakes: Tom Libassi and Paul Nealon own controlling stakes at 25.5%, followed by Don Kramer (19.6) and then Resolute's employees make up the rest (29.4).
Team	Highly Advantageous	<ul style="list-style-type: none"> → The firm's senior management and managing partners are Don Kramer, Paul Nealon and Tom Libassi. Resolute's direct insurance company (Producer's National Corporation) and Bermuda reinsurer (Prospero Re) both have their own teams that Resolute senior management oversee as directors of those two entities. Partners have experience in both reinsurance as well as direct insurance and have strong knowledge of the dynamics in both marketplaces. → Senior leadership covers a variety of responsibilities including risk management, modelling, property reinsurance, specialty reinsurance as well as oversight of the firm's ownership of Prospero Re, PNC and other holdings. → The 1609 Fund is Resolute's sole fund and sole investment focus of the team. → An investment committee is responsible for determining sector allocations and risk budgets.

Resolute - The 1609 Fund Ltd. (con't)

Rating Criteria	Score	Rationale
Investment Philosophy & Process	Advantageous	<p><u>Philosophy:</u></p> <ul style="list-style-type: none"> → Resolute will invest in niche insurance and reinsurance opportunities globally. This includes specialty risk (marine & energy, event cancellation, travel, space, aviation) and writing direct insurance (personal/commercial auto, for example) as well as a smaller percentage of risk to catastrophe. Specialty risk may be more difficult to accurately model than traditional sources of risk. → The fund includes equity exposure to both Producer’s National Corporation and Helios. The benefit of both is underwriting income to the fund as well as pure investment income, but likely will make the fund more correlated to economic risk. Resolute says that the transparency they receive from having these in-house makes their ability to underwrite direct opportunities into the fund that much better → The inclusion of direct insurance, specifically in traditional and non-traditional auto will likely truncate both left tail and right tail of the return distribution for the strategy. Insurance risk and return profile is based on high frequency and low severity events (auto accidents), while reinsurance is based on low frequency and high severity events (hurricanes, tornadoes, etc.). → This strategy may be less affected by natural catastrophe than others here due to its allocations in personal and commercial auto insurance, and marine & energy. <p><u>Process:</u></p> <ul style="list-style-type: none"> → Each of the entities owned by Resolute provide opportunities in that specific line of business. → After the team determines if a contract is profitable, it is entered into a proprietary program called ReSolution to quantify its impact on the existing portfolio. → ReSolution monitors correlation across the portfolio and provides “real-time” view of risk, which is tracked probabilistically and on an absolute basis by region and peril. → Risk management / portfolio construction → The 1609 Fund targets a median return of 10% with a 1 in 20-year tail risk of less than 15%. → The strategy can pursue up to 30% leverage

Resolute - The 1609 Fund Ltd. (con't)

Rating Criteria	Score	Rationale
Performance	Advantageous	<ul style="list-style-type: none"> → Since inception, the fund has struggled, largely due to a poor 2017 with Hurricanes Harvey, Irma and Maria causing losses and trapping investable capital. → To Resolute's credit, the team changed much of the fund's scope including making many of the acquisitions listed above and gaining more ability to invest in a variety of opportunities, not just reinsurance. Since the change in the fund's investable universe (12/2018), an investor entering the fund in January 2019 would have earned 3.9% annualized, compared to the peer universe return of 0.6%. It is likely that the strategy's equity position and insurance profits and loss related to Producer's National will be correlated.
Fees	Advantageous	<ul style="list-style-type: none"> → Management Fee: 1.50% → Incentive Allocation: 20% over a 5% hurdle. Subject to a high-water mark. → Subscription frequency: Monthly → Redemption frequency: Monthly → Gate: None → Lock-up: 1 year

Resolute The 1609 Fund Ltd

Trailing Annualized Returns (As of December 31, 2022)

	2022	2 YR	3 YR	5 YR	7 YR	Since Inception (1/2014)
Resolute	-4.7	-2.8	-1.0	-3.6	-3.0	0.1
<i>EurekaHedge ILS Advisers</i>	-3.1	-1.1	0.4	-0.4	-0.4	0.8
<i>MSCI ACWI</i>	-18.0	-1.2	4.5	5.8	8.7	7.0
<i>Bloomberg Aggregate</i>	-13.0	-7.5	-2.7	0.0	0.9	1.4

Trailing Risk Metrics (January 2014-December 2022)

	Resolute	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
Annualized Returns (%)	0.04	0.77	7.00	1.40
Annualized Standard Deviation (%)	6.32	4.24	14.74	4.20
Omega Ratio	0.18	0.02	0.87	0.19
Beta - MSCI ACWI	-0.01	0.05	1.00	0.08
Beta - Bloomberg US Aggregate	0.19	0.23	1.03	1.00
Correlation - MSCI ACWI	-0.02	0.18	1.00	0.30
Correlation - Bloomberg US Aggregate	0.13	0.23	0.30	1.00
Skewness	-3.65	-5.39	-0.39	-0.65
Kurtosis	23.44	33.27	1.00	2.35

Summary

- Insurance linked strategies (ILS) may be worth considering for PCRA, as these strategies have historically been an uncorrelated source of return to traditional financial markets, especially equity markets.
- While ILS may provide uncorrelated sources of return, many strategies in the space are negatively skewed. When insured events require claims, the fund must meet those obligations. In some cases (hurricanes, earthquakes, or other large natural disasters), this can result in large negative losses in a fund.
- PCRA may consider interviewing managers at the next meeting to learn more about the respondents that were favorably rated.

Appendix

Calendar Year Returns

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
AlphaCat	4.8	1.2	2.7	8.3	4.5	0.5	3.3	3.7	4.6	5.5	5.0	6.1	6.2	10.3
Amundi	2.4	0.1	8.7	4.1	-0.7	-6.0	10.5	11.4	---	---	---	---	---	---
GAM FCM	-3.0	4.6	4.9	6.7	3.0	0.5	5.6	3.3	5.1	9.9	9.6	9.3	14.0	9.6
Pillar	-9.4	-3.7	8.3	8.7	-2.8	-3.4	6.4	9.8	12.6	15.0	17.2	-7.2	3.5	31.6
Resolute	-4.7	-0.9	2.9	-6.4	-8.5	-8.1	5.8	6.1	16.9	---	---	---	---	---
Neuberger Berman	2.4	7.4	6.6	5.8	7.1	0.3	7.4	8.8	8.6	8.0	9.6	10.4	8.2	---
Schroders	-0.5	0.8	1.0	3.2	0.8	-5.8	4.1	4.0	4.1	6.0	6.2	3.4	7.2	11.0
Nephila	-2.8	-1.7	3.3	4.1	-0.9	-0.5	2.6	3.9	4.4	4.4	6.9	0.5	4.8	---
K2	-1.7	4.3	4.0	5.7	-1.8	---	---	---	---	---	---	---	---	---
<i>EH ILS Advisers Index</i>	<i>-3.1</i>	<i>1.0</i>	<i>3.5</i>	<i>0.9</i>	<i>-3.9</i>	<i>-5.6</i>	<i>5.2</i>	<i>4.2</i>	<i>5.4</i>	<i>7.6</i>	<i>5.9</i>	<i>-0.1</i>	<i>7.5</i>	<i>9.0</i>
<i>MSCI ACWI</i>	<i>-18.0</i>	<i>19.0</i>	<i>16.8</i>	<i>27.3</i>	<i>-8.9</i>	<i>24.6</i>	<i>8.5</i>	<i>-1.8</i>	<i>4.7</i>	<i>23.4</i>	<i>16.8</i>	<i>-6.9</i>	<i>13.2</i>	<i>35.4</i>
<i>Bloomberg US Agg</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>	<i>6.0</i>	<i>-2.0</i>	<i>4.2</i>	<i>7.8</i>	<i>6.5</i>	<i>5.9</i>

Correlation Matrix – Common Period (5 Years)

	AlphaCat	Amundi	GAM FCM	Pillar	Resolute	Neuberger Berman	Schroders	Nephila	K2	EH ILS Adviser Index	MSCI ACWI	Bloomberg US Agg
AlphaCat	1.00	---	---	---	---	---	---	---	---	---	---	---
Amundi	0.22	1.00	---	---	---	---	---	---	---	---	---	---
GAM FCM	0.31	0.51	1.00	---	---	---	---	---	---	---	---	---
Pillar	0.36	0.53	0.81	1.00	---	---	---	---	---	---	---	---
Resolute	-0.03	0.36	0.08	0.11	1.00	---	---	---	---	---	---	---
Neuberger Berman	0.39	0.27	0.59	0.34	-0.06	1.00	---	---	---	---	---	---
Schroders	0.30	0.63	0.80	0.67	0.12	0.46	1.00	---	---	---	---	---
Nephila	0.36	0.62	0.91	0.87	0.14	0.50	0.74	1.00	---	---	---	---
K2	0.24	0.52	0.59	0.45	0.26	0.52	0.49	0.55	1.00	---	---	---
EH ILS Adviser Index	0.30	0.71	0.88	0.83	0.14	0.49	0.78	0.90	0.70	1.00	---	---
MSCI ACWI	-0.03	0.14	0.39	0.32	0.08	0.10	0.22	0.31	0.39	0.34	1.00	---
Bloomberg US Agg	0.11	0.11	0.39	0.45	0.14	0.04	0.27	0.37	0.13	0.29	0.37	1.00

Correlation Matrix – 8 Years (excludes K2 due to shorter track record)

	AlphaCat	Amundi	GAM FCM	Pillar	Resolute	Neuberger Berman	Schroders	Nephila	<i>EH ILS Advisers Index</i>	<i>MSCI ACWI</i>	<i>Bloomberg US Agg</i>
AlphaCat	1.00	---	---	---	---	---	---	---	---	---	---
Amundi	0.44	1.00	---	---	---	---	---	---	---	---	---
GAM FCM	0.45	0.61	1.00	---	---	---	---	---	---	---	---
Pillar	0.40	0.54	0.78	1.00	---	---	---	---	---	---	---
Resolute	0.34	0.69	0.41	0.29	1.00	---	---	---	---	---	---
Neuberger	0.44	0.36	0.56	0.40	0.23	1.00	---	---	---	---	---
Schroders	0.49	0.79	0.82	0.61	0.60	0.42	1.00	---	---	---	---
Nephila	0.33	0.47	0.82	0.85	0.16	0.48	0.54	1.00	---	---	---
<i>EH ILS Advisers Index</i>	0.49	0.83	0.88	0.75	0.61	0.48	0.89	0.68	1.00	---	---
<i>MSCI ACWI</i>	-0.07	0.02	0.30	0.26	0.00	0.02	0.10	0.27	0.19	1.00	---
<i>Bloomberg US Agg</i>	0.10	0.09	0.34	0.40	0.12	0.00	0.22	0.34	0.22	0.30	1.00

Appendices

Investment Manager Status Report

Overview of Watch List Policies

- The Board is responsible for selecting and monitoring investment managers on the Association's roster and recognizes the importance of diligent manager oversight.
- The Board must be informed of changes in strategy, personnel, and organizational structure, to effectively evaluate the Association's managers.
- However, overly aggressive "management" of managers (i.e., rapid hiring and firing of managers) can be counterproductive.
 - Achieving superior returns requires patience. Frequent changes in managers usually results in poor performance, since each change can incur substantial transaction costs, as an entire portfolio of securities is restructured.
- Watch List Policies represent an intermediate state of heightened oversight, triggered by any change that could jeopardize an Investment Manager's ability to successfully fulfill their role for the Association.
- This document presents an overview of the Association's current Watch List Policy and our recommendations.

Watch List and Probation Policy

In-Compliance

→ The investment manager is acting in accordance with its investment guidelines.

Watch List

→ An elevated state of review. There is a problem with performance, an unusual change in characteristics, an alternation in management style or key investment personnel, and/or any irregularities that diminish the Board's confidence in the manager.

Probation

→ An elevated state of Watch List status. Based on continued concern with one or more of the alert issues, failure for a manager to improve upon stated issues within a time period justifies termination.

Termination

→ The Board has voted to terminate the manager.

PCRA Investment Policy Statement Language: Portfolio Monitoring Procedures

- The Trustees will meet with the Consultant no less frequently than quarterly to review portfolio performance, review portfolio weights relative to target weights and managers' performance. Further, the Board will endeavor to meet with each of its investment managers in accordance with PERAC requirements.
- The investment managers managing separate accounts on behalf of the System will be issued investment manager guidelines and they will be monitored at two levels of contract review: Watchlist and Probation, the latter being a more heightened level of review.
- The Consultant will recommend to the Board when a manager should be placed on or removed from Watchlist or Probation. When an investment manager is placed on the Watchlist/Probation, it is effective immediately. There is no minimum time requirement on the Watchlist/Probation before a termination may be made. An investment manager's contract may be terminated for any reason at any time, whether on Watchlist/Probation or not.
- A representative listing of potential reasons an investment manager may be added to Watchlist/Probation is detailed on the next page. During an investment manager's tenure on the Watchlist/Probation, the investment consultant will provide the Board with regular reports, including background information and support, about the progress the investment manager is or is not making. An investment manager may be removed from heightened alert if the Board believes the issues that placed the firm on the Watchlist/Probation are resolved.
- Should the manager's performance not improve over a reasonable time period, the Consultant will recommend further action and possible termination after a careful review of the manager's performance, portfolio structure and the market environment. Before a manager is officially dismissed, the Consultant will recommend to the Board a plan of action for managing (internally, externally, or in combination) or liquidating the assets.
- Circumstances may warrant that the Trustees take immediate action to terminate a manager. Therefore, the Trustees reserve the right to bypass the course outlined above and remove a manager immediately if deemed prudent and in the best interests of the Association participants.

PCRA Investment Policy Statement Language: Watch List and Probation Policy

Organizational Issues

- Change in ownership or control of the company
- Significant change in team composition or responsibilities
- Material change in the business organization of the investment manager
- Departure of significant personnel

Performance

- 1, 3 and 5-year performance net of fees below benchmark
- 1, 3 and 5-year performance net of fees below peers (below median of relevant peer universe)
- Performance inconsistent with the investment manager's style and risk controls

Investment Process

- Deviation from investment style
- Deviation from risk controls

Other

- Material guideline violation not brought to our attention by the investment manager
- Material guideline violation not sufficiently explained by the investment manager
- Failure to comply with terms of contract
- Any extraordinary regulatory action or other proceeding affecting the investment
- Failure to abide by Massachusetts law and investment restrictions
- Unsatisfactory client service

Active Manager Roster¹

Investment Manager	Recommendation as of 12/31/22
Fisher Midcap Value	In-Compliance
Newton Small Cap Growth (formerly Mellon)	In-Compliance
Vulcan Partners Small Cap Value	In-Compliance
Systematic Small Cap FCF	In-Compliance
Aristotle International Equity	In-Compliance
Walter Scott International Equity	In-Compliance
ABS Emerging Markets	In-Compliance
Driehaus Emerging Markets Growth	In-Compliance
First Eagle Global Value	In-Compliance
Kopernik Global All Cap	In-Compliance
Lee Munder Global Multi-cap	In-Compliance
Wellington Durable Enterprises	In-Compliance

¹ Excluding illiquid asset classes of private equity and non-core real estate.

Active Manager Roster¹ (con't)

Investment Manager	Recommendation as of 12/31/22
Lord Abbett Short Duration	In-Compliance
Lord Abbett Core Fixed Income	In-Compliance
Rhumblin Tips	In-Compliance
Eaton Vance High Yield	In-Compliance
First Eagle Bank Loan Select (Formerly THL Bank Loan Select)	In-Compliance
Manulife Strategic Fixed Income	In-Compliance
Mesirow High Yield	In-Compliance
Eaton Vance Emerging Market Debt	In-Compliance
ABS Offshore SPC - Global Segregated	In-Compliance
Entrust Special Opportunities Fund III, Ltd	Watch List
Old Farm Partners Master Fund	In-Compliance
EnTrustPermal Special Opportunities Evergreen Fund	In-Compliance
TA Realty Core Property Fund	In-Compliance
JPMorgan Strategic Property	In-Compliance
IFM Global Infrastructure	In-Compliance

¹ Excluding illiquid asset classes of private equity and non-core real estate.

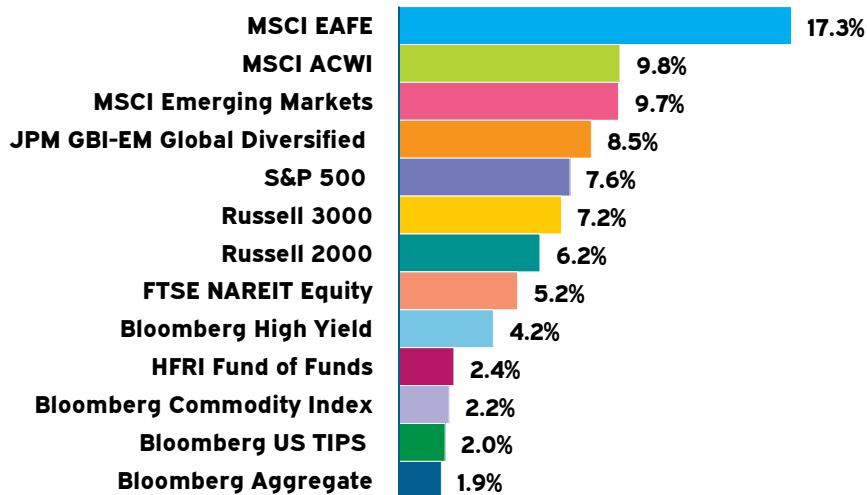
Economic and Market Update
Data As of January 31, 2023

Commentary

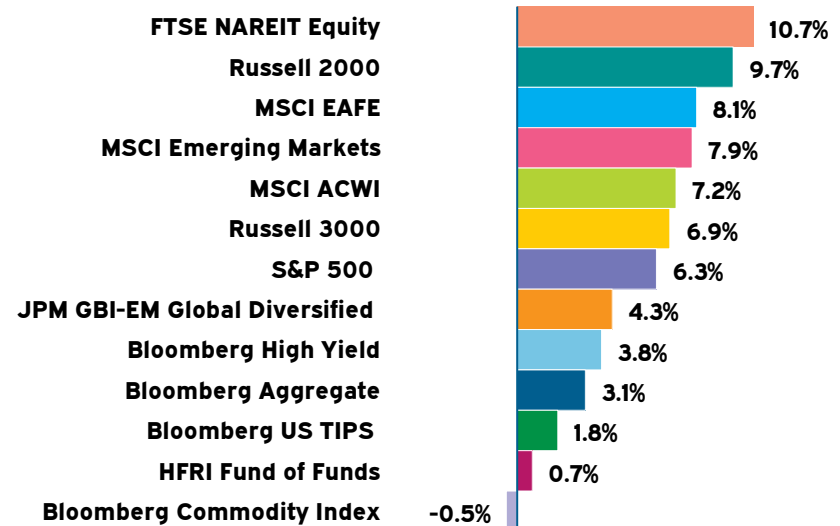
- After a very tough first three quarters of 2022, most asset classes posted gains in the fourth quarter and in January of 2023 on signs that policy tightening would slow, given cooling inflation.
- Chairman Powell's February press conference reiterated previous messaging on high and persistent inflation and the need for an extended period of high interest rates. However, he acknowledged that disinflationary forces were visible in some sectors of the economy but said they were not yet broad-based. Markets focused though on signs that inflation is falling and that the size of future Fed rate hikes could be lower.
 - US equity markets rallied in January 2023 with the Russell 3000 index up 6.9% and growth-oriented areas performing best.
 - Developed equity markets outside the US also had a strong January (+8.1%), as investor sentiment turned bullish. The weakening US dollar, falling inflation, and an improved economic outlook have all been supportive. In February the ECB signaled further rate hikes, but headline inflation has fallen more quickly than expected as energy costs and mild weather helped lift investor sentiment.
 - Emerging market equities enjoyed a very strong start to the year, returning 7.9% and outperforming the US. A weaker US dollar, declining inflation globally, and signs of China reopening its economy all contributed to the positive results.
 - In 2022, bonds experienced one of the worst years on record given inflation levels and the rapid rise in interest rates. Optimism over declining inflation and a slower pace of policy tightening benefited bonds in the fourth quarter, though, and supported positive fixed income returns in January 2023.
- This year, the path of inflation and monetary policy, slowing global growth, China reopening its economy, and the war in Ukraine will be key.

Index Returns¹

Fourth Quarter 2022



YTD 2023



- After broad declines in Q3 driven by expectations for further policy tightening, most major asset classes were up in the fourth quarter, a trend that has continued into 2023, on hopes of inflation and policy tightening peaking.
- Outside of commodities, all other public market asset classes declined in 2022. It was the first time since the 1960s that both stocks and bonds declined together in a calendar year.

¹ Source: Bloomberg and FactSet. Data is as of January 31, 2023.

Domestic Equity Returns¹

Domestic Equity	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	6.3	7.6	-8.2	9.9	9.5	12.7
Russell 3000	6.9	7.2	-8.2	9.5	9.1	12.3
Russell 1000	6.7	7.2	-8.5	9.6	9.4	12.5
Russell 1000 Growth	8.3	2.2	-16.0	9.9	11.2	14.5
Russell 1000 Value	5.2	12.4	-0.4	8.5	6.9	10.1
Russell MidCap	8.3	9.2	-3.3	9.0	8.0	11.1
Russell MidCap Growth	8.7	6.9	-8.5	6.5	8.3	11.7
Russell MidCap Value	8.1	10.5	-0.7	9.3	6.9	10.2
Russell 2000	9.7	6.2	-3.4	7.5	5.5	9.4
Russell 2000 Growth	9.9	4.1	-6.5	4.3	4.7	9.5
Russell 2000 Value	9.5	8.4	-0.5	9.9	5.8	8.8

US Equities: Russell 3000 Index rose 6.9% in January after gaining 7.2% for the fourth quarter. Historic inflation and rapidly rising interest rates led to significant declines (-19.2%) in 2022.

- US stocks rose sharply in January as investors expressed optimism that the Federal Reserve will moderate its rate hike schedule as inflation continues to decrease.
- Small cap stocks outperformed large cap stocks in January while growth stocks outperformed value stocks across the market capitalization spectrum.
- Consumer discretionary and communication services were the leading sectors in the Russell 3000 in January. Their resurgence marks a reversal from 2022 when they were the largest detractors amid fears of inflation and a potential recession.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Foreign Equity Returns¹

Foreign Equity	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	8.1	14.3	-5.7	3.6	1.4	4.2
MSCI EAFE	8.1	17.3	-2.8	4.2	2.1	4.9
MSCI EAFE (Local Currency)	6.3	8.7	2.6	6.2	4.8	7.6
MSCI EAFE Small Cap	7.5	15.8	-8.9	2.5	0.4	6.4
MSCI Emerging Markets	7.9	9.7	-12.1	1.4	-1.5	2.1
MSCI Emerging Markets (Local Currency)	6.5	6.6	-8.4	3.4	1.2	5.1
MSCI China	11.8	13.5	-10.1	-2.4	-4.7	3.2

Developed international equities (MSCI EAFE) rose 8.1% in January after an impressive 17.3% gain in the fourth quarter. Emerging markets (MSCI EM) rallied 7.9% in January after returning 9.7% for the fourth quarter in 2022.

- International developed market equities had a solid start to the year, continuing their strong performance in Q4 helped by declining inflation, hope of avoiding a recession, and a weaker US dollar. Economically sensitive sectors like information technology and consumer discretionary helped growth outperform value stocks. China's reopening boosted the consumer discretionary sector (luxury goods, travel, and leisure).
- Emerging market equities started strongly, this year, too with optimism over developments in China, falling inflation, and a weaker dollar all contributing.
- In China, the ending of their zero COVID policy, continued monetary policy support, as well as support for the real estate sector, were all key.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Fixed Income Returns¹

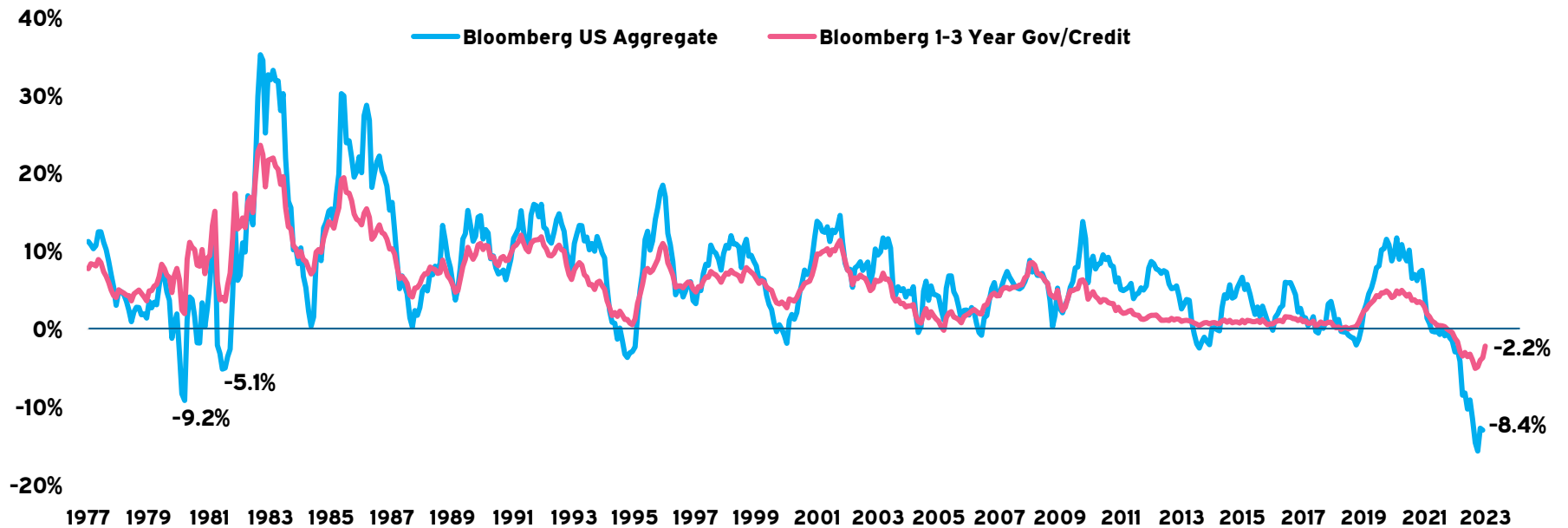
Fixed Income	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	3.1	2.2	-8.3	-2.1	1.0	1.7	4.7	6.3
Bloomberg Aggregate	3.1	1.9	-8.4	-2.3	0.9	1.4	4.3	6.5
Bloomberg US TIPS	1.8	2.0	-8.4	1.1	2.7	1.4	4.0	7.0
Bloomberg High Yield	3.8	4.2	-5.2	1.3	3.0	4.3	8.1	4.4
JPM GBI-EM Global Diversified (USD)	4.3	8.5	-7.9	-4.4	-2.5	-1.7	7.0	5.0

Fixed Income: The Bloomberg Universal rose 3.1% in January 2023 after posting a 2.2% gain for the fourth quarter of 2022. Last year was one of the worst on record, with the broad bond market declining 13%.

- Improvements in global inflation risks and generally positive economic updates drove rates lower on the expectation that policy might be easing later in the year and recession risks could be less than feared.
- TIPS trailed the broad US bond market (Bloomberg Aggregate) for the month on declining inflation fears.
- Riskier high yield bonds outperformed in January due to improving risk sentiment.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of January 31, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

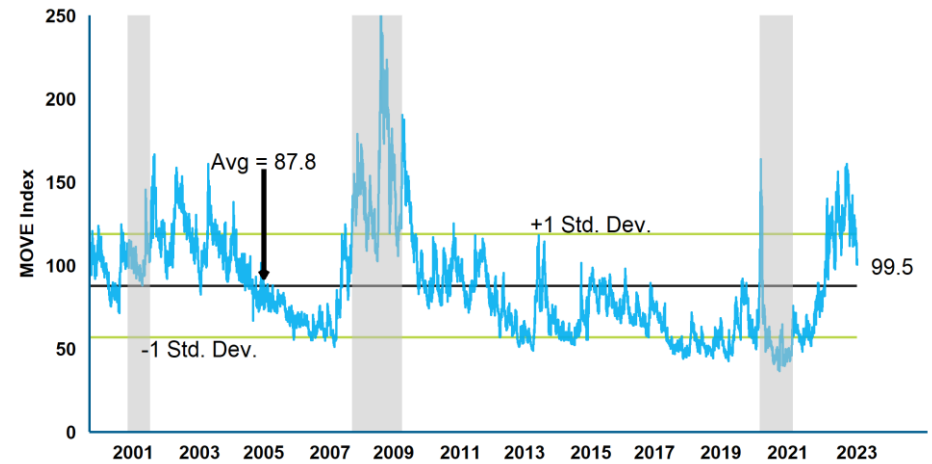
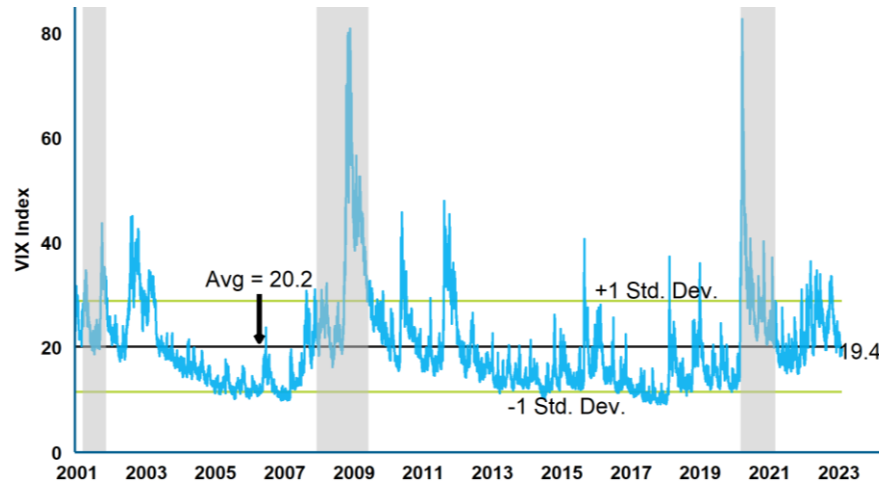
Fixed Income Rolling One-year Returns¹



- Last year was one of the worst return periods for the US bond market given the historic inflation levels and the corresponding rapid rise in interest rates.
- The broad bond market (Bloomberg US Aggregate) declined 13% in 2022 making it one of the worst periods on record. Short-term bonds declined less (-3.7%) but also experienced one of the worst years on record.
- With global inflation falling and the economic outlook improving, fixed income returns turned positive at the end of 2022 and in January 2023.

¹ Source: Bloomberg. Data is as of January 31, 2023.

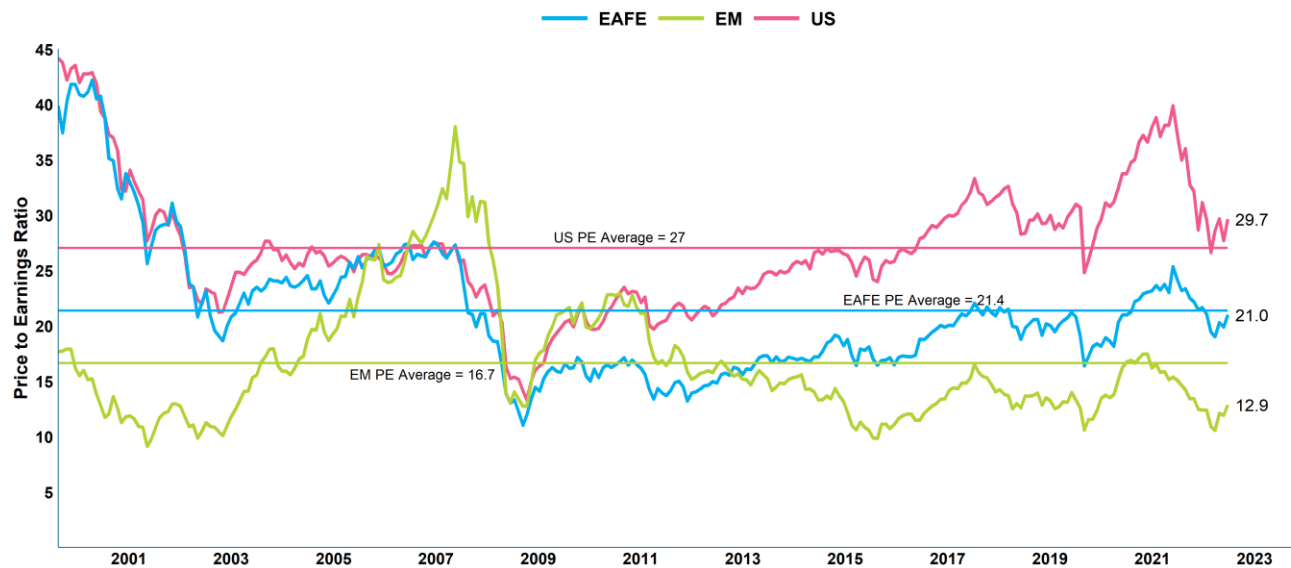
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) finished the year down from its highs and continued to decline in January to below the long run average as investors anticipated the potential end of Fed rate hikes this year.
- Fixed income volatility (MOVE) remained elevated and well above its long-run average at year-end due to the uncertain path of US interest rates as the Federal Reserve continues its hawkish stance on inflation. In January, implied rate volatility eased with a softening of that rate uncertainty.

¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of January 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and January 2023.

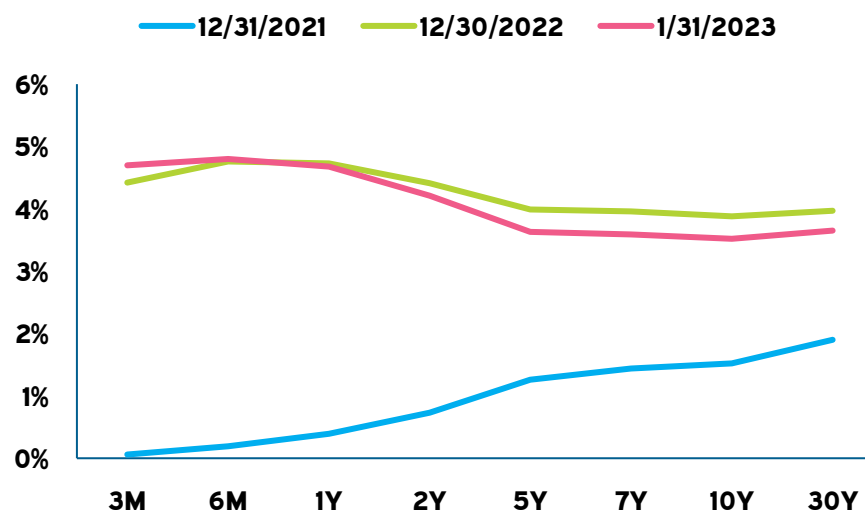
Equity Cyclically Adjusted P/E Ratios¹



- With January’s strong recovery, the US equity price-to-earnings ratio is slightly above its long-run (21st century) average.
- International developed market valuations rose but remain below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of December 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

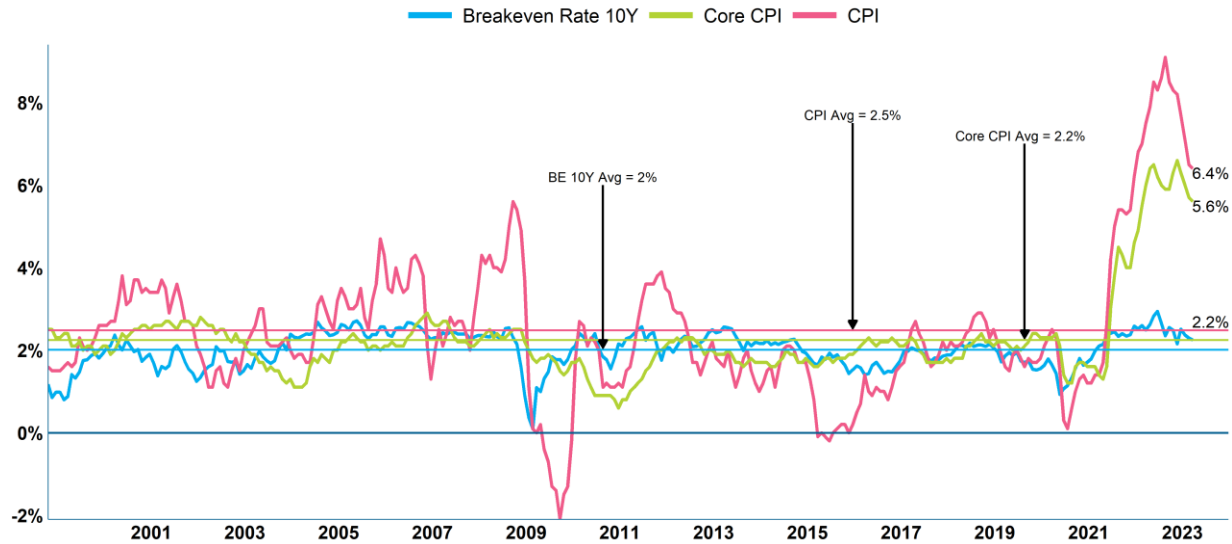
US Yield Curve¹



- In January, policy-sensitive interest rates at the front-end of the curve continued to decline, with the two-year Treasury yield falling from 4.4% to 4.2%. Longer dated ten-year Treasury yields also fell (3.9% to 3.5%). In 2022, the yield curve rose dramatically across maturities and moved from steep to inverted.
- The Fed remains committed to fighting inflation, as it increased rates another 25 basis points to a range of 4.5% to 4.75% at its February meeting.
- The yield spread between two-year and ten-year Treasuries widened to -0.69% in January 2023 after finishing December 2022 at -0.55%. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.

¹ Source: Bloomberg. Data is as of January 31, 2023.

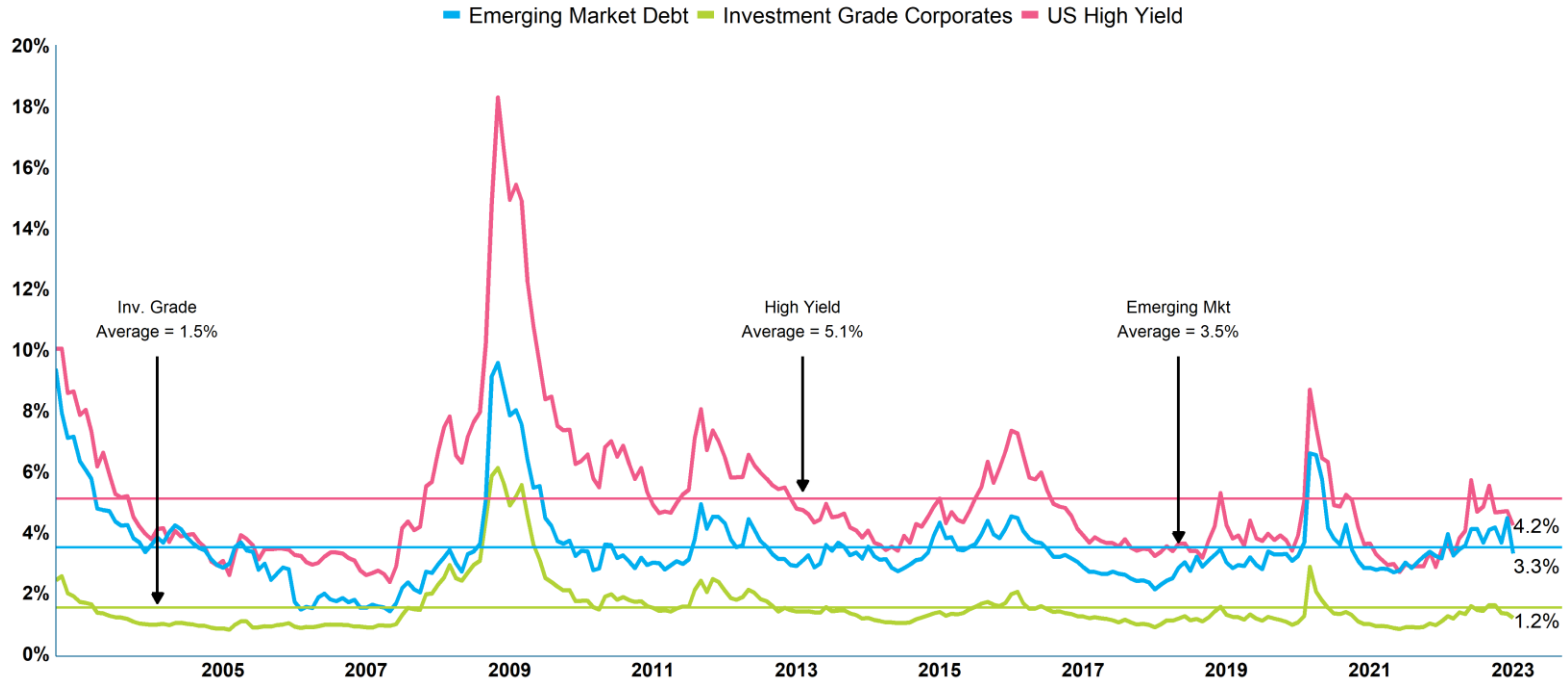
Ten-Year Breakeven Inflation and CPI¹



- The January reading of year over year inflation fell slightly (6.4% versus 6.5%) but came in above expectations, supporting further tightening by the Fed. Prices increased 0.5% from a month prior with shelter being the largest contributor. Energy and food prices rose too.
- Core inflation – excluding food and energy – also continued to decline year over year (5.6% versus 5.7%) but also came in above estimates.
- Inflation expectations (breakevens) largely were unchanged from the prior month and remain well below current inflation levels as investors anticipate a significant moderation in inflation.

¹ Source: Bloomberg. Data is as of January 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

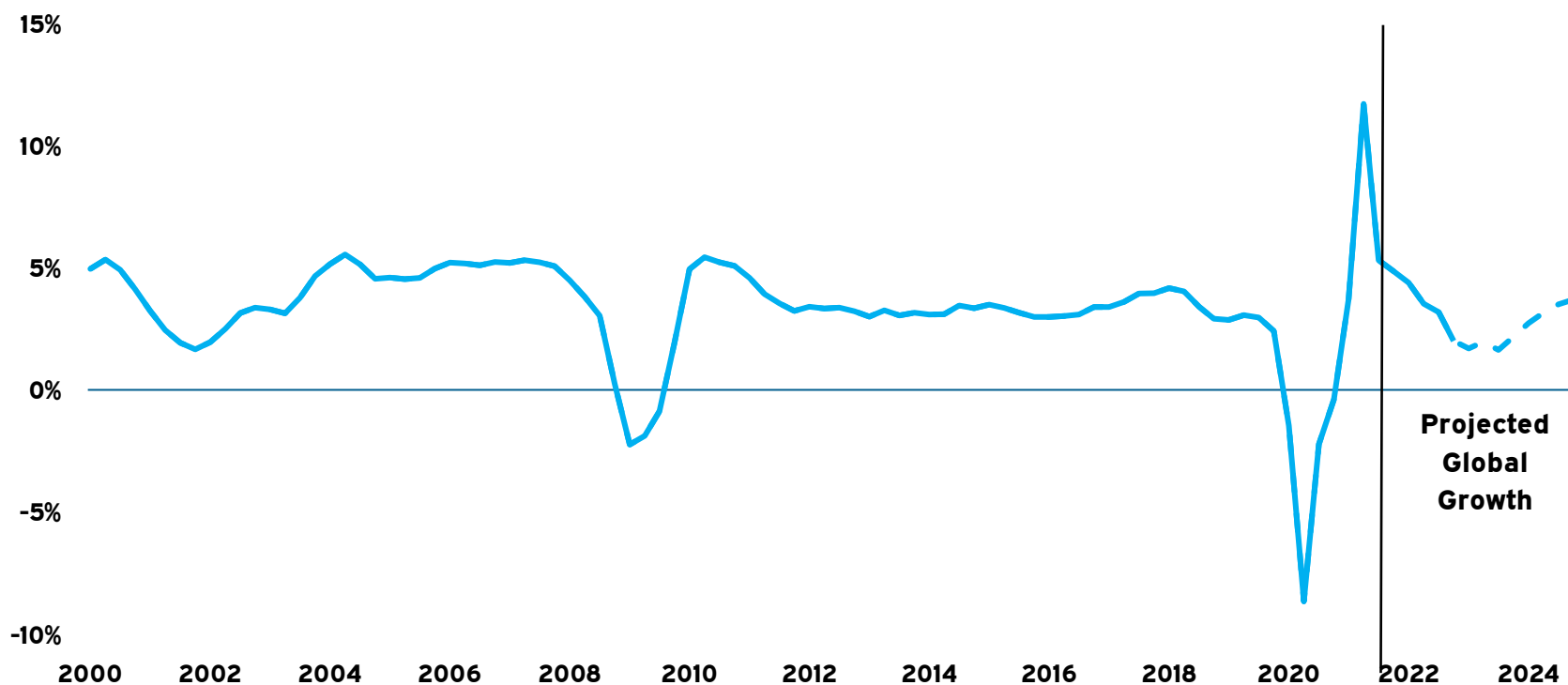
Credit Spreads vs. US Treasury Bonds¹



- Spreads (the added yield above a comparable maturity Treasury) largely fell in January as credit markets outperformed government bonds on improved risk sentiment given signs of slowing inflation.
- High yield spreads fell from 4.7% to 4.2% in January while investment grade spreads declined to 1.2% from 1.3%. Emerging market spreads fell the most (3.3% versus 4.5%) due to China’s reopening and falling inflation.

¹ Sources: Bloomberg. Data is as of January 31, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Real Gross Domestic Product (GDP) Growth¹

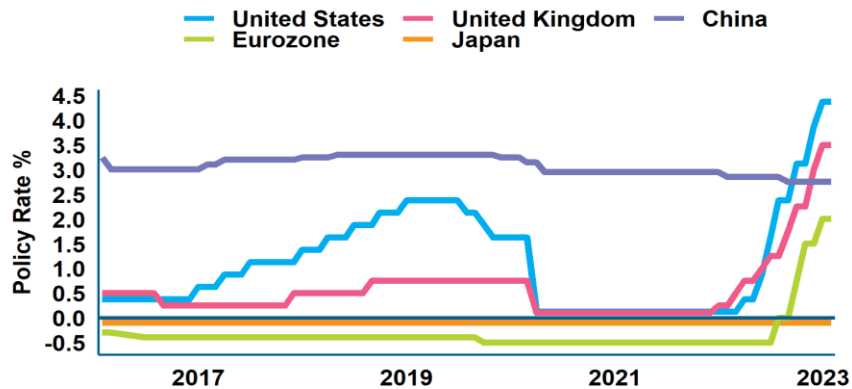


- Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

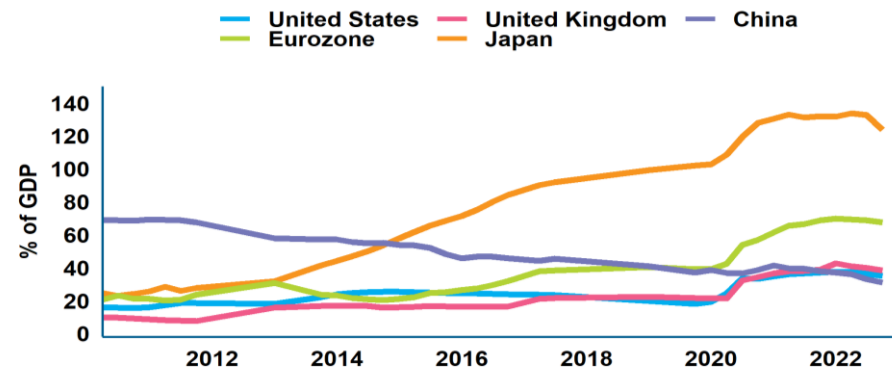
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated January 2023.

Central Bank Response¹

Policy Rates



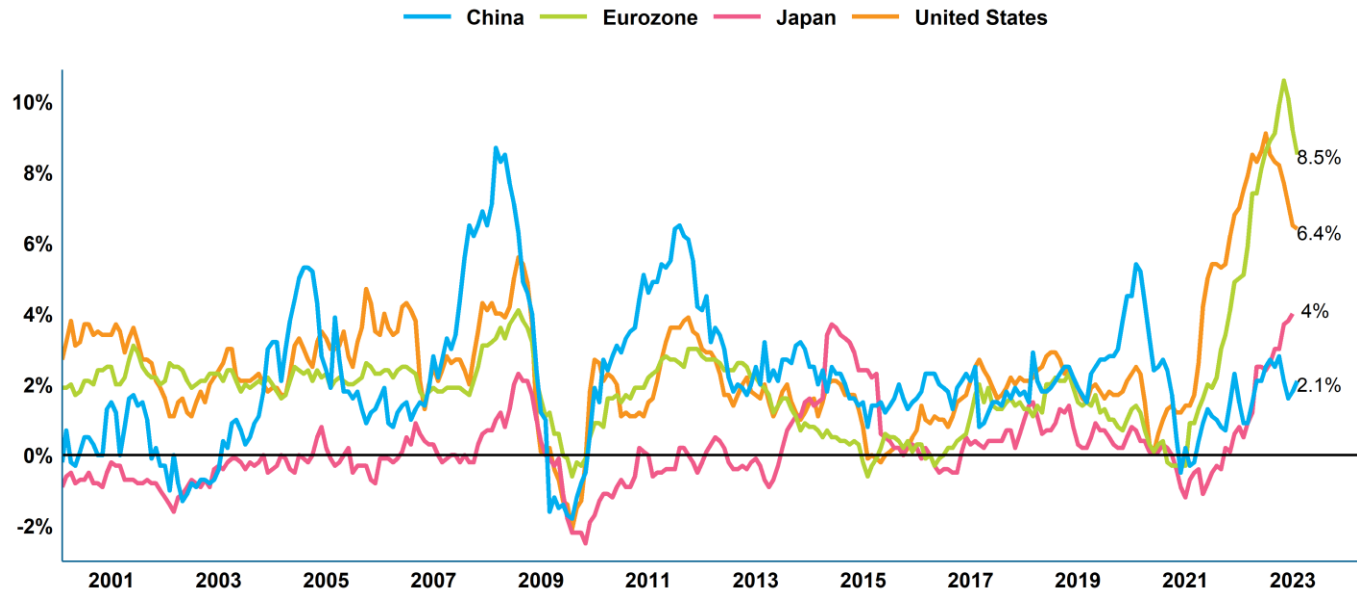
Balance Sheet as % of GDP



- In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. However, global inflation has begun to moderate, and markets anticipate a slowing in the rate of policy tightening in the future.
- In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- China's central bank is expected to maintain its accommodative monetary stance to support consumer demand and investment as well as offer liquidity to the troubled real estate sector.
- The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

¹ Source: Bloomberg. Policy rate data is as of January 31, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

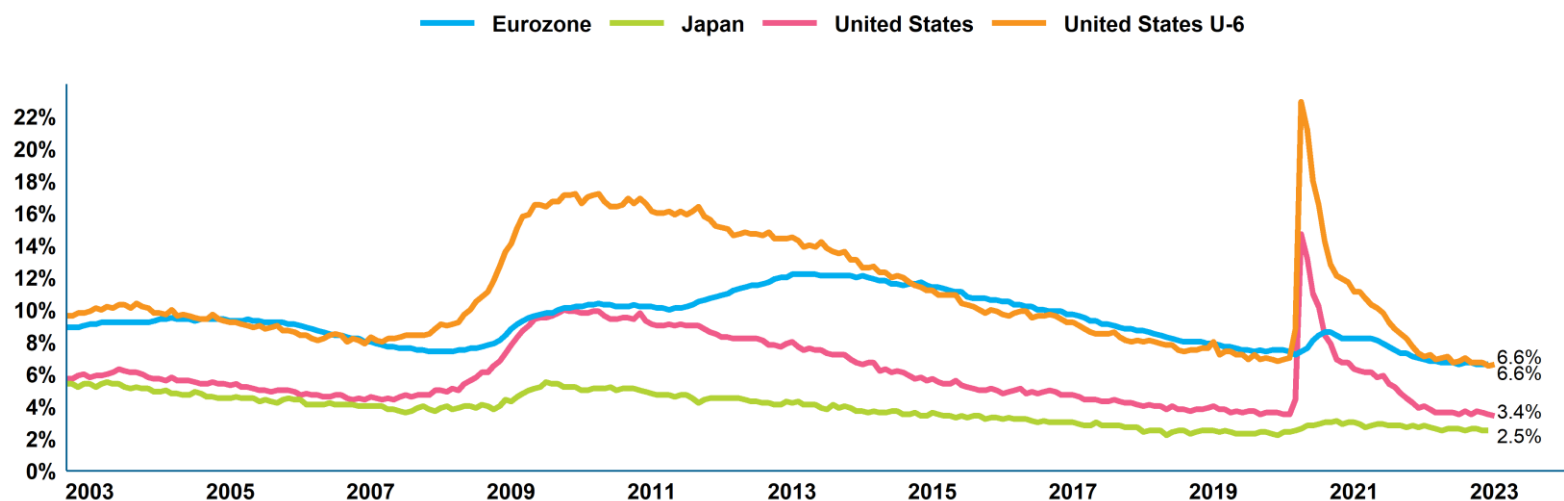
Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall but remain at historic levels due to skyrocketing energy prices and a weak euro.
- Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of January 2023. The most recent Japanese inflation data is as of December 2022.

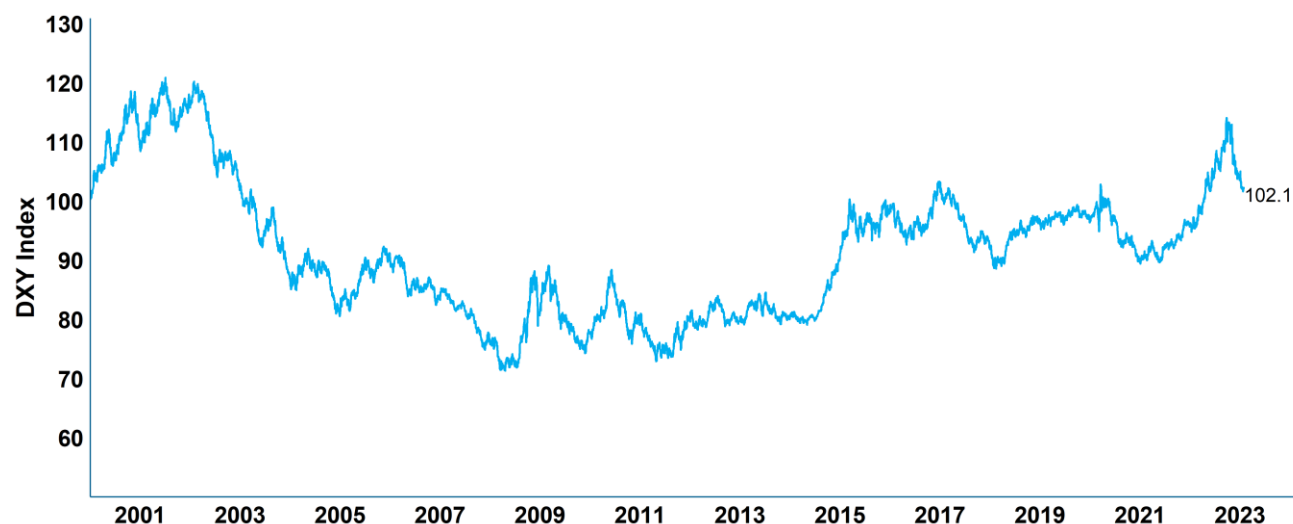
Unemployment¹



- As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- Despite slowing growth and high inflation, the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, recently reached 3.4%, a level not seen in over 50 years.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

¹ Source: Bloomberg. Data is as January 31, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of December 31, 2022.

US Dollar versus Broad Currencies¹



- Overall, the US dollar continued to weaken in January from its recent peak as declining inflation supported the case for the Federal Reserve to slow its tightening.
- The dollar finished the year much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows.
- This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

¹ Source: Bloomberg. Data as of January 31, 2023.

Summary

Key Trends:

- The impacts of record high inflation will remain key, with market volatility likely to stay high.
- Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors in both directions remains.
- Growth will continue to slow globally this year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.
- In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

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Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk-free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

SI: Since Inception

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.

[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.