

Plymouth County Retirement Association

August 30, 2022

Meeting Materials

Agenda

1. Estimated Retirement Association Performance As of July 31, 2022
2. Performance Update As of June 30, 2022
 - Q2 Performance Update
 - Private Markets 2022 Q1 Performance Update
3. Appendices
 - Investment Manager Status Report
 - Meketa Insurance Linked Securities White Paper
 - Economic Market Update As of July 31, 2022
 - Disclaimer, Glossary, and Notes

**Estimated Retirement Association Performance
As of July 31, 2022**

Estimated Aggregate Performance¹

	July ² (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Total Retirement Association	2.9	-5.6	0.0	9.3	7.5	8.1

Benchmark Returns

	July (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Russell 3000	9.4	-13.7	-7.4	12.5	12.2	13.5
MSCI EAFE	5.0	-15.6	-14.3	3.2	2.6	5.8
MSCI Emerging Markets	-0.2	-17.8	-20.1	0.9	1.0	2.8
Barclays Aggregate	2.4	-8.2	-9.1	-0.2	1.3	1.6
Barclays TIPS	4.4	-5.0	-3.6	4.4	4.0	2.0
Barclays High Yield	5.9	-9.1	-8.0	1.9	3.1	4.9
JPM EMBI Global Diversified (Hard Currency)	2.9	-18.0	-19.3	-4.7	-0.8	2.1
S&P Global Natural Resources	3.5	2.1	6.9	10.7	8.4	4.9

Estimated Total Assets

	Estimate
Total Retirement Association	1,289,951,610

¹ The July performance estimates are calculated using index returns as of July 29, 2022 for each asset class. No performance estimate was included for private equity, real estate, infrastructure, and private natural resources asset classes.

² As of July, 2022.

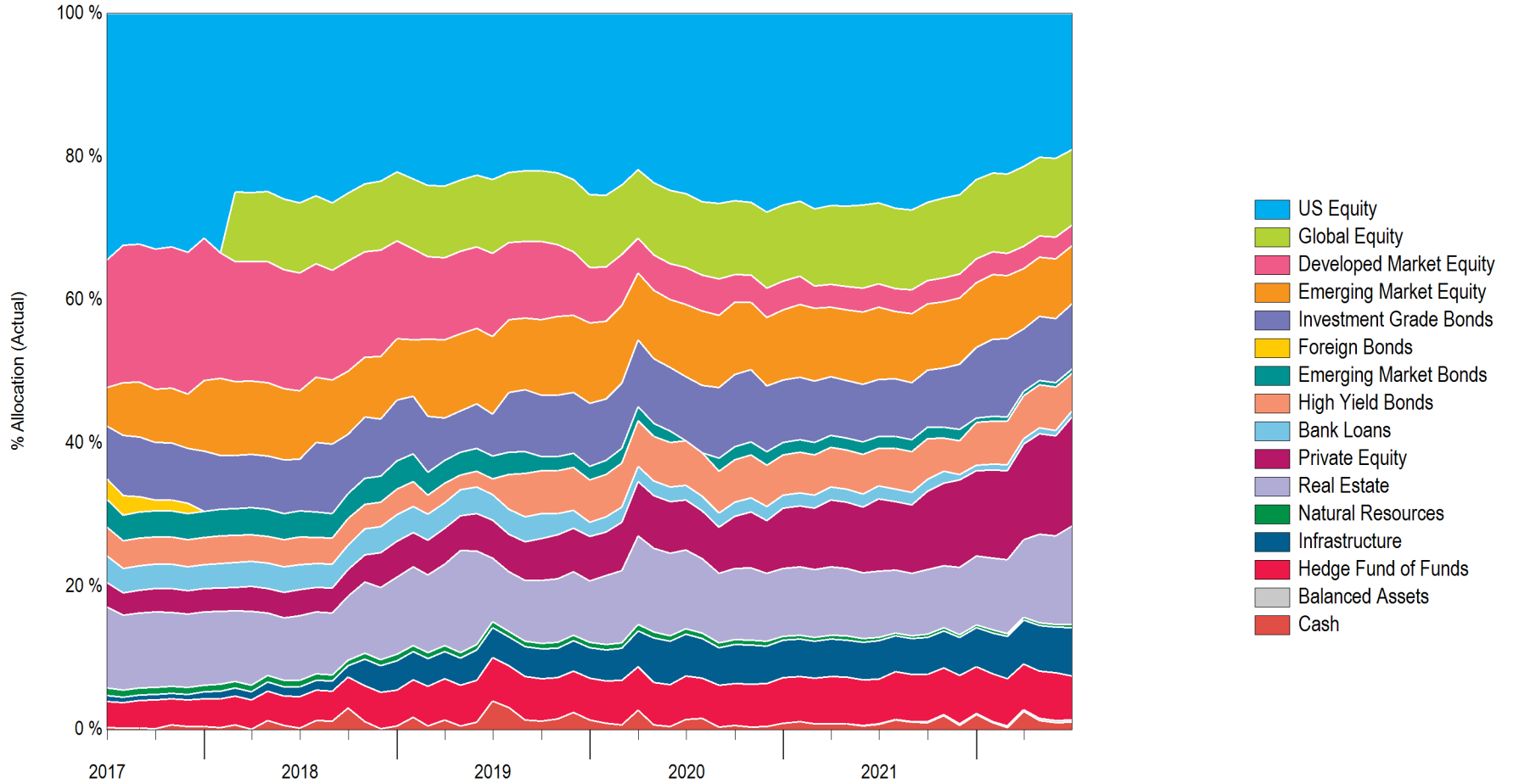
**Performance Update
As of June 30, 2022**

DRAFT

	Allocation vs. Target		Policy	Policy Range	Within IPS Range?
	Current Balance	Current Allocation			
Domestic Equity	\$238,283,923	19%	26%	21% - 36%	No
International Developed Market Equity	\$35,652,633	3%	6%	1% - 16%	Yes
International Emerging Market Equity	\$101,861,930	8%	10%	5% - 20%	Yes
Global Equity	\$132,794,504	11%	10%	5% - 20%	Yes
Core Bonds	\$114,513,888	9%	9%	4% - 14%	Yes
Value-Added Fixed Income	\$83,014,733	7%	6%	2% - 12%	Yes
Private Equity	\$195,332,609	16%	13%	4% - 18%	Yes
Real Estate	\$172,366,492	14%	10%	5% - 15%	Yes
Real Assets	\$90,443,236	7%	6%	2% - 10%	Yes
Hedge Fund of Funds	\$76,876,333	6%	4%	2% - 8%	Yes
Cash	\$12,951,012	1%	0%	0% - 3%	Yes
Total	\$1,254,091,292	100%	100%		

	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Total Equity	\$759,399,206	61%	69%	60% - 80%	Yes
Total Fixed Income	\$197,528,621	16%	15%	5% - 25%	Yes
Total Real Assets and Real Estate	\$284,212,454	23%	16%	7% - 25%	Yes
Cash	\$12,951,012	1%	0%	0% - 3%	Yes

Asset Allocation History
5 Years Ending June 30, 2022



Asset Class Net Performance Summary											
	Market Value (\$)	% of Portfolio	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	1,254,091,292	100.0	-3.0	-6.5	-8.3	-2.9	8.4	7.2	7.9	7.8	Nov-89
Policy Benchmark (Net) (1)			-4.0	-9.2	-11.2	-7.1	6.9	7.0	7.7	--	Nov-89
Actual Allocation (Net)			-3.2	-8.2	-10.1	-5.3	6.8	6.4	--	--	Nov-89
Domestic Equity Assets	238,283,923	19.0	-9.5	-16.4	-21.7	-17.0	9.5	10.0	--	11.5	Jan-16
Russell 3000			-8.4	-16.7	-21.1	-13.9	9.8	10.6	12.6	11.5	Jan-16
International Developed Market Equity Assets	35,652,633	2.8	-8.9	-15.7	-24.9	-20.9	-3.4	-1.5	--	1.2	Jan-16
MSCI EAFE			-9.3	-14.5	-19.6	-17.8	1.1	2.2	5.4	3.9	Jan-16
International Emerging Market Equity Assets	101,861,930	8.1	-6.2	-11.7	-20.3	-25.1	1.6	2.0	--	5.5	Jan-16
MSCI Emerging Markets			-6.6	-11.4	-17.6	-25.3	0.6	2.2	3.1	6.1	Jan-16
Global Equity Assets	132,794,504	10.6	-7.1	-12.9	-15.0	-12.7	5.8	--	--	4.4	Feb-18
MSCI ACWI			-8.4	-15.7	-20.2	-15.8	6.2	7.0	8.8	4.1	Feb-18
Core Fixed Income	114,513,888	9.1	-1.8	-3.9	-7.6	-7.2	0.2	1.5	--	2.1	Jan-16
75% Bbg Aggregate/25% Bbg US TIPs 1-10 year			-1.8	-4.4	-9.1	-8.3	0.1	1.5	1.6	1.9	Jan-16
Value Added Fixed Income	83,014,733	6.6	-4.1	-7.1	-10.7	-10.0	0.3	2.0	--	4.0	Jan-16
Bloomberg US Aggregate TR			-1.6	-4.7	-10.3	-10.3	-0.9	0.9	1.5	1.4	Jan-16
Custom Benchmark - Global Fixed Income			-6.2	-11.4	-20.3	-21.2	-5.2	-1.2	1.1	1.1	Jan-16
Hedge Funds	76,876,333	6.1	-11.5	-13.1	-17.1	-16.4	-0.6	0.9	3.6	3.3	Feb-10
Custom Benchmark			-2.6	-3.9	-6.2	-5.1	4.0	3.7	3.8	3.1	Feb-10
Real Estate (2)	172,366,492	13.7	6.7	7.4	16.1	39.0	17.9	13.2	--	11.1	Jan-16
Custom Benchmark (3)			4.8	4.8	12.5	29.5	12.7	10.0	--	9.1	Jan-16
Private Equity (4)	195,332,609	15.6	4.5	4.5	13.3	34.4	26.7	18.5	--	14.0	Jan-16
MSCI ACWI IMI (1Q Lagged) +2%			2.2	-5.0	1.3	8.4	15.7	13.6	12.1	14.1	Jan-16
Real Assets (5)	90,443,236	7.2	3.1	3.2	7.4	19.7	10.9	6.9	--	4.0	Jan-16
CPI + 3%			1.6	3.7	7.7	12.1	8.0	6.9	5.6	6.5	Jan-16
Cash and Cash Equivalent	12,951,012	1.0									

(1) The custom benchmark is comprised of 26% Russell 3000/ 6% MSCI EAFE/ 10% MSCI Emerging Markets/ 13% Prequin Private Equity FoF 1Q Lag/ 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 market value and performance is one quarter lagged.

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

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

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

Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement Association	1,254,091,292	100.0	--	-3.0	-6.5	-8.3	-2.9	8.4	7.2	7.9	7.8	Nov-89
<i>Policy Benchmark (Net)</i>				-4.0	-9.2	-11.2	-7.1	6.9	7.0	7.7	--	Nov-89
<i>Actual Allocation (Net)</i>				-3.2	-8.2	-10.1	-5.3	6.8	6.4	--	--	Nov-89
<i>InvMetrics Public DB Net Median</i>				-5.4	-10.7	-15.1	-11.2	5.3	6.1	7.3	7.8	Nov-89
<i>InvMetrics Public DB Net Rank</i>				3	4	3	1	2	12	30	52	Nov-89
Domestic Equity Assets	238,283,923	19.0	19.0	-9.5	-16.4	-21.7	-17.0	9.5	10.0	--	11.5	Jan-16
<i>Russell 3000</i>				-8.4	-16.7	-21.1	-13.9	9.8	10.6	12.6	11.5	Jan-16
Rhumblin Russell 1000 Value	53,766,746	4.3	22.6	-8.7	-12.2	-12.8	-6.8	6.9	7.1	--	8.9	Apr-13
<i>Russell 1000 Value</i>				-8.7	-12.2	-12.9	-6.8	6.9	7.2	10.5	9.0	Apr-13
<i>eV US Large Cap Value Equity Net Median</i>				-8.5	-11.8	-12.1	-5.8	8.3	8.1	10.8	9.4	Apr-13
<i>eV US Large Cap Value Equity Net Rank</i>				57	59	58	60	77	72	--	65	Apr-13
Rhumblin Russell 1000 Growth	46,209,015	3.7	19.4	-7.9	-20.9	-28.0	-18.7	12.6	14.3	14.7	14.8	Jul-09
<i>Russell 1000 Growth</i>				-7.9	-20.9	-28.1	-18.8	12.6	14.3	14.8	14.9	Jul-09
<i>eV US Large Cap Growth Equity Net Median</i>				-7.8	-20.7	-29.0	-22.0	9.2	12.1	13.0	13.2	Jul-09
<i>eV US Large Cap Growth Equity Net Rank</i>				52	53	42	36	9	14	9	4	Jul-09
Fisher Midcap Value	56,188,769	4.5	23.6	-12.4	-19.4	-23.2	-15.1	11.4	10.2	11.7	8.4	Apr-07
<i>Russell MidCap Value</i>				-11.0	-14.7	-16.2	-10.0	6.7	6.3	10.6	6.9	Apr-07
<i>Russell MidCap</i>				-10.0	-16.8	-21.6	-17.3	6.6	8.0	11.3	7.8	Apr-07
<i>eV US Mid Cap Value Equity Net Median</i>				-10.1	-12.8	-13.7	-6.8	7.8	6.9	10.6	7.3	Apr-07
<i>eV US Mid Cap Value Equity Net Rank</i>				92	99	99	96	5	1	20	12	Apr-07
Newton Small Cap Growth	41,232,654	3.3	17.3	-6.1	-21.1	-31.7	-35.0	6.3	11.5	13.1	13.2	Aug-09
<i>Russell 2000 Growth</i>				-6.2	-19.3	-29.5	-33.4	1.4	4.8	9.3	10.7	Aug-09
<i>eV US Small Cap Growth Equity Net Median</i>				-6.8	-20.3	-30.7	-31.1	4.8	9.2	11.4	12.8	Aug-09
<i>eV US Small Cap Growth Equity Net Rank</i>				32	57	58	66	33	21	18	36	Aug-09

Total Retirement Association | As of June 30, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Vulcan Partners Small Cap Value	14,696,483	1.2	6.2	-16.9	-19.1	--	--	--	--	--	-19.1	Apr-22
<i>Russell 2000 Value</i>				-9.9	-15.3	-17.3	-16.3	6.2	4.9	9.1	-15.3	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>				-9.4	-13.5	-16.0	-11.8	6.8	5.5	9.6	-13.5	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>				99	98	--	--	--	--	--	98	Apr-22
Systematic Small Cap Free Cash Flow	26,190,256	2.1	11.0	-7.5	-9.6	--	--	--	--	--	-9.6	Apr-22
<i>Russell 2000 Value</i>				-9.9	-15.3	-17.3	-16.3	6.2	4.9	9.1	-15.3	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>				-9.4	-13.5	-16.0	-11.8	6.8	5.5	9.6	-13.5	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>				19	12	--	--	--	--	--	12	Apr-22
International Developed Market Equity Assets	35,652,633	2.8	2.8	-8.9	-15.7	-24.9	-20.9	-3.4	-1.5	--	1.2	Jan-16
<i>MSCI EAFE</i>				-9.3	-14.5	-19.6	-17.8	1.1	2.2	5.4	3.9	Jan-16
Aristotle International Equity	18,930,033	1.5	53.1	-9.4	-16.0	-24.5	-20.2	--	--	--	-9.6	Mar-21
<i>MSCI EAFE</i>				-9.3	-14.5	-19.6	-17.8	1.1	2.2	5.4	-8.8	Mar-21
<i>eV EAFE Core Equity Net Median</i>				-9.8	-14.8	-21.0	-19.4	1.4	2.3	6.2	-9.7	Mar-21
<i>eV EAFE Core Equity Net Rank</i>				42	70	77	58	--	--	--	50	Mar-21
Walter Scott International Equity	16,722,600	1.3	46.9	-8.4	-15.4	-25.4	-21.8	--	--	--	-11.0	Mar-21
<i>MSCI EAFE</i>				-9.3	-14.5	-19.6	-17.8	1.1	2.2	5.4	-8.8	Mar-21
<i>eV EAFE Core Equity Net Median</i>				-9.8	-14.8	-21.0	-19.4	1.4	2.3	6.2	-9.7	Mar-21
<i>eV EAFE Core Equity Net Rank</i>				20	59	82	73	--	--	--	64	Mar-21
International Emerging Market Equity Assets	101,861,930	8.1	8.1	-6.2	-11.7	-20.3	-25.1	1.6	2.0	--	5.5	Jan-16
<i>MSCI Emerging Markets</i>				-6.6	-11.4	-17.6	-25.3	0.6	2.2	3.1	6.1	Jan-16
ABS Emerging Markets	53,752,392	4.3	52.8	-6.3	-12.5	-21.7	-25.5	3.1	--	--	5.9	Dec-18
<i>MSCI Emerging Markets</i>				-6.6	-11.4	-17.6	-25.3	0.6	2.2	3.1	2.6	Dec-18
<i>eV Emg Mkts Equity Net Median</i>				-7.5	-12.8	-19.2	-25.7	0.9	2.1	3.4	3.3	Dec-18
<i>eV Emg Mkts Equity Net Rank</i>				32	46	67	50	28	--	--	23	Dec-18

Total Retirement Association | As of June 30, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Markets Growth	48,109,538	3.8	47.2	-6.0	-10.9	-18.7	-24.8	3.9	--	--	5.0	Mar-19
<i>MSCI Emerging Markets</i>				-6.6	-11.4	-17.6	-25.3	0.6	2.2	3.1	0.9	Mar-19
<i>eV Emg Mkts Equity Net Median</i>				-7.5	-12.8	-19.2	-25.7	0.9	2.1	3.4	1.7	Mar-19
<i>eV Emg Mkts Equity Net Rank</i>				26	22	46	44	20	--	--	18	Mar-19
Global Equity Assets	132,794,504	10.6	10.6	-7.1	-12.9	-15.0	-12.7	5.8	--	--	4.4	Feb-18
<i>MSCI ACWI</i>				-8.4	-15.7	-20.2	-15.8	6.2	7.0	8.8	4.1	Feb-18
First Eagle Global Value Fund	22,880,773	1.8	17.2	-7.1	-10.9	-10.5	-8.9	4.5	--	--	3.1	Feb-18
<i>MSCI ACWI Value NR USD</i>				-8.6	-11.5	-12.3	-8.1	3.9	4.3	6.9	1.6	Feb-18
<i>eV Global Value Equity Net Median</i>				-9.5	-13.1	-14.7	-11.8	5.3	4.6	7.5	1.7	Feb-18
<i>eV Global Value Equity Net Rank</i>				13	22	16	24	62	--	--	32	Feb-18
Kopernik Global All Cap Fund	32,050,147	2.6	24.1	-9.1	-14.7	-14.5	-15.2	11.3	--	--	6.3	Feb-18
<i>MSCI ACWI Value NR USD</i>				-8.6	-11.5	-12.3	-8.1	3.9	4.3	6.9	1.6	Feb-18
<i>eV Global All Cap Value Eq Net Median</i>				-9.7	-13.1	-15.0	-13.4	5.0	4.5	7.3	1.6	Feb-18
<i>eV Global All Cap Value Eq Net Rank</i>				29	79	48	68	8	--	--	7	Feb-18
Lee Munder Global Multi-Cap Strategy	38,341,862	3.1	28.9	-7.9	-14.7	-19.3	-15.0	5.1	--	--	3.9	Mar-18
<i>MSCI ACWI</i>				-8.4	-15.7	-20.2	-15.8	6.2	7.0	8.8	5.2	Mar-18
<i>eV All Global Equity Net Median</i>				-8.6	-15.6	-21.0	-16.2	5.7	6.7	8.8	5.3	Mar-18
<i>eV All Global Equity Net Rank</i>				37	40	38	44	57	--	--	68	Mar-18
Wellington Durable Enterprises, L.P.	39,521,721	3.2	29.8	-4.6	-10.5	-13.4	-10.3	4.0	--	--	6.6	Mar-18
<i>MSCI ACWI</i>				-8.4	-15.7	-20.2	-15.8	6.2	7.0	8.8	5.2	Mar-18
<i>eV All Global Equity Net Median</i>				-8.6	-15.6	-21.0	-16.2	5.7	6.7	8.8	5.3	Mar-18
<i>eV All Global Equity Net Rank</i>				5	12	17	19	71	--	--	32	Mar-18

Total Retirement Association | As of June 30, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Core Fixed Income	114,513,888	9.1	9.1	-1.8	-3.9	-7.6	-7.2	0.2	1.5	--	2.1	Jan-16
<i>75% Bbg Aggregate/25% Bbg US TIPS 1-10 year</i>				-1.8	-4.4	-9.1	-8.3	0.1	1.5	1.6	1.9	Jan-16
Lord Abbett Short Duration Credit Trust II	49,683,078	4.0	43.4	-1.3	-1.9	-4.5	-4.6	--	--	--	0.4	Aug-19
<i>Bloomberg US Credit 1-3 Yr TR</i>				-0.9	-0.9	-3.3	-3.7	0.6	1.4	1.6	0.6	Aug-19
<i>eV US Short Duration - Credit Net Median</i>				-1.1	-1.8	-4.8	-5.0	0.3	1.3	1.8	0.3	Aug-19
<i>eV US Short Duration - Credit Net Rank</i>				62	51	40	38	--	--	--	34	Aug-19
Lord Abbett Core Fixed Income Trust II	41,147,325	3.3	35.9	-1.8	-5.0	-10.4	--	--	--	--	-10.3	Dec-21
<i>Bloomberg US Aggregate TR</i>				-1.6	-4.7	-10.3	-10.3	-0.9	0.9	1.5	-10.6	Dec-21
<i>eV US Core Fixed Inc Net Median</i>				-1.6	-4.9	-10.5	-10.5	-0.7	1.0	1.8	-10.7	Dec-21
<i>eV US Core Fixed Inc Net Rank</i>				75	60	47	--	--	--	--	32	Dec-21
Rhumblin TIPS Trust	23,683,484	1.9	20.7	-3.1	-6.1	-8.9	-5.1	--	--	--	-1.3	Sep-20
<i>Bloomberg US TIPS TR</i>				-3.2	-6.1	-8.9	-5.1	3.0	3.2	1.7	-1.3	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>				-3.1	-6.0	-8.6	-5.0	3.1	3.1	1.7	-1.1	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Rank</i>				52	57	61	53	--	--	--	65	Sep-20
Value Added Fixed Income	83,014,733	6.6	6.6	-4.1	-7.1	-10.7	-10.0	0.3	2.0	--	4.0	Jan-16
<i>Bloomberg US Aggregate TR</i>				-1.6	-4.7	-10.3	-10.3	-0.9	0.9	1.5	1.4	Jan-16
<i>Custom Benchmark - Global Fixed Income</i>				-6.2	-11.4	-20.3	-21.2	-5.2	-1.2	1.1	1.1	Jan-16
Eaton Vance High Yield	11,216,330	0.9	13.5	-6.0	-9.0	-12.7	-11.3	0.4	2.0	4.3	5.7	Apr-06
<i>ICE BofA US High Yield TR</i>				-6.8	-10.0	-14.0	-12.7	0.0	2.0	4.4	5.9	Apr-06
<i>eV US High Yield Fixed Inc Net Median</i>				-6.4	-9.4	-13.1	-11.9	0.4	2.0	4.2	5.5	Apr-06
<i>eV US High Yield Fixed Inc Net Rank</i>				40	42	45	44	50	52	36	30	Apr-06
First Eagle Bank Loan Select Fund	10,377,273	0.8	12.5	-2.4	-4.5	-4.5	-2.4	2.2	2.8	4.4	4.6	Sep-10
<i>Credit Suisse Leveraged Loans</i>				-2.1	-4.4	-4.4	-2.7	2.0	3.0	3.9	4.1	Sep-10
<i>Bank Loan MStar MF Median</i>				-2.5	-5.1	-5.4	-4.0	1.1	2.1	3.1	3.4	Sep-10
<i>Bank Loan MStar MF Rank</i>				30	13	11	8	2	6	1	1	Sep-10

Total Retirement Association | As of June 30, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Manulife Strategic Fixed Income	40,016,936	3.2	48.2	-3.6	-6.6	-10.3	-10.6	--	--	--	0.1	Jul-19
<i>Bloomberg Multiverse TR</i>				-3.4	-8.4	-14.0	-15.4	-3.2	-0.5	0.3	-3.2	Jul-19
Mesirow High Yield	13,885,193	1.1	16.7	-5.1	-9.5	-12.0	-10.3	--	--	--	3.9	Aug-19
<i>Bloomberg US Corporate High Yield TR</i>				-6.7	-9.8	-14.2	-12.8	0.2	2.1	4.5	0.0	Aug-19
<i>eV US High Yield Fixed Inc Net Median</i>				-6.4	-9.4	-13.1	-11.9	0.4	2.0	4.2	0.2	Aug-19
<i>eV US High Yield Fixed Inc Net Rank</i>				28	54	34	31	--	--	--	4	Aug-19
Eaton Vance EMD Opportunities Fund	7,519,001	0.6	9.1	-5.3	-6.5	-15.6	-15.8	--	--	--	-3.5	Aug-20
<i>JP Morgan EMBI Global Diversified</i>				-6.2	-11.4	-20.3	-21.2	-5.2	-1.2	2.2	-10.0	Aug-20
<i>eV Emg Mkts Fixed Inc - Blended Currency Net Median</i>				-6.2	-10.6	-16.9	-20.0	-4.5	-1.2	0.7	-8.0	Aug-20
<i>eV Emg Mkts Fixed Inc - Blended Currency Net Rank</i>				27	9	30	14	--	--	--	10	Aug-20
Hedge Funds	76,876,333	6.1	6.1	-11.5	-13.1	-17.1	-16.4	-0.6	0.9	3.6	3.3	Feb-10
<i>Custom Benchmark</i>				-2.6	-3.9	-6.2	-5.1	4.0	3.7	3.8	3.1	Feb-10
ABS Offshore SPC - Global Segregated Portfolio	34,266,212	2.7	44.6	-2.3	-5.5	-9.7	-9.7	4.3	3.9	5.4	4.9	Aug-10
<i>HFRI Fund of Funds Composite Index</i>				-1.3	-3.9	-6.5	-5.4	4.0	3.6	3.8	3.2	Aug-10
Entrust Special Opportunities Fund III, Ltd.	12,969,036	1.0	16.9	-26.5	-26.5	-29.9	-31.9	-8.1	-4.1	--	1.4	Oct-16
<i>HFRI Fund of Funds Composite Index (QTR)</i>				-3.9	-3.9	-6.0	-4.9	3.9	3.6	3.7	3.9	Oct-16
Old Farm Partners Master Fund, L.P.	10,348,927	0.8	13.5	-4.9	-7.9	-10.9	-9.1	5.3	--	--	4.0	Oct-18
<i>HFRI Fund of Funds Composite Index</i>				-1.3	-3.9	-6.5	-5.4	4.0	3.6	3.8	3.4	Oct-18
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	19,292,157	1.5	25.1	-17.3	-17.3	-21.8	-17.9	-2.0	--	--	2.4	Jan-19
<i>HFRI Fund of Funds Composite Index (QTR)</i>				-3.9	-3.9	-6.0	-4.9	3.9	3.6	3.7	5.1	Jan-19

Note: The data for Entrust Special Opportunities Fund III, Ltd and Entrust Permal Special Opportunities Evergreen Fund, Ltd is based on preliminary performance

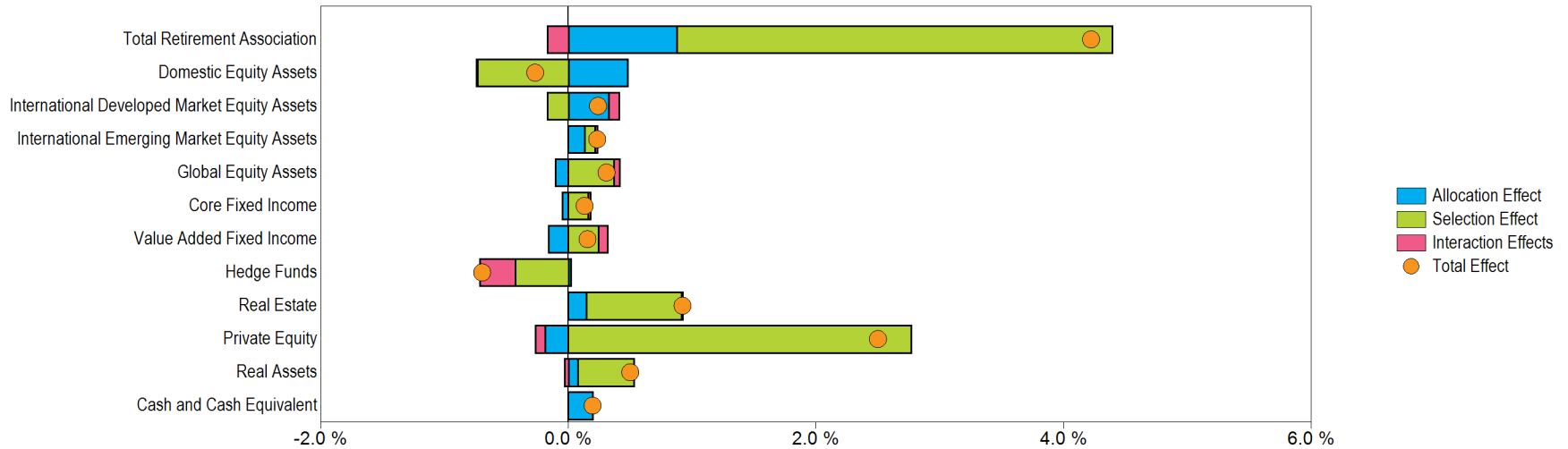
Total Retirement Association | As of June 30, 2022

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Real Estate	172,366,492	13.7	13.7	6.7	7.4	16.1	39.0	17.9	13.2	--	11.1	Jan-16
<i>Custom Benchmark</i>				4.8	4.8	12.5	29.5	12.7	10.0	--	9.1	Jan-16
Core Real Estate	115,002,946	9.2	66.7	4.0	4.9	12.7	33.0	14.7	12.0	--	11.0	Jan-16
<i>NCREIF-ODCE</i>				4.8	4.8	12.5	29.5	12.7	10.5	11.2	10.0	Jan-16
TA Realty Core Property Fund, L.P. <i>NCREIF ODCE</i>	77,631,253	6.2	67.5	5.1	5.1	13.8	36.8	17.5	--	--	15.8	Apr-18
				4.8	4.8	12.5	29.5	12.7	10.5	11.2	10.9	Apr-18
JPMorgan Strategic Property <i>NCREIF-ODCE</i>	37,371,693	3.0	32.5	1.6	4.4	11.0	27.4	10.9	--	--	10.2	Apr-19
				4.8	4.8	12.5	29.5	12.7	10.5	11.2	12.0	Apr-19
Non-Core Real Estate	57,363,546	4.6	33.3	12.9	12.9	23.3	50.9	23.4	14.3	--	9.5	Jan-16
Private Equity	195,332,609	15.6	15.6	4.5	4.5	13.3	34.4	26.7	18.5	--	14.0	Jan-16
<i>MSCI ACWI IMI (1Q Lagged) +2%</i>				2.2	-5.0	1.3	8.4	15.7	13.6	12.1	14.1	Jan-16
Private Equity	180,978,563	14.4	92.7	5.0	5.0	14.1	35.7	27.6	18.6	--	13.6	Jan-16
Venture Capital	14,354,046	1.1	7.3	-1.3	-1.3	4.7	20.2	18.4	14.8	--	13.1	Jan-16
Real Assets	90,443,236	7.2	7.2	3.1	3.2	7.4	19.7	10.9	6.9	--	4.0	Jan-16
<i>CPI + 3%</i>				1.6	3.7	7.7	12.1	8.0	6.9	5.6	6.5	Jan-16
IFM Global Infrastructure <i>CPI + 3%</i>	45,355,079	3.6	50.1	2.5	2.5	3.8	12.8	11.1	--	--	11.5	Oct-18
				1.6	3.7	7.7	12.1	8.0	6.9	5.6	7.4	Oct-18
Cash and Cash Equivalent	12,951,012	1.0	1.0									
Cash	12,951,012	1.0	100.0									

Note: The data for Real Estate, Private Equity, and Real Assets is based on March 31, 2022 fair market value, adjusted for subsequent cash flows.

Note: The data for TA Core Property Fund, JPMorgan Strategic Property and IFM Global Infrastructure is as of June 30, 2022.

Attribution Effects 1 Year Ending June 30, 2022



Attribution Summary 1 Year Ending June 30, 2022

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Domestic Equity Assets	-17.0%	-14.5%	-2.5%	-0.7%	0.5%	0.0%	-0.3%
International Developed Market Equity Assets	-20.9%	-18.4%	-2.5%	-0.2%	0.3%	0.1%	0.2%
International Emerging Market Equity Assets	-25.1%	-25.8%	0.7%	0.1%	0.1%	0.0%	0.2%
Global Equity Assets	-12.7%	-16.4%	3.7%	0.4%	-0.1%	0.0%	0.3%
Core Fixed Income	-7.2%	-8.9%	1.8%	0.2%	0.0%	0.0%	0.1%
Value Added Fixed Income	-10.0%	-13.8%	3.8%	0.2%	-0.2%	0.1%	0.2%
Hedge Funds	-16.4%	-5.8%	-10.6%	-0.4%	0.0%	-0.3%	-0.7%
Real Estate	39.0%	28.6%	10.4%	0.8%	0.1%	0.0%	0.9%
Private Equity	34.4%	8.4%	26.0%	2.8%	-0.2%	-0.1%	2.5%
Real Assets	19.7%	11.3%	8.4%	0.4%	0.1%	0.0%	0.5%
Cash and Cash Equivalent	0.2%	0.2%	0.0%	0.0%	0.2%	0.0%	0.2%
Total	-2.8%	-7.0%	4.2%	3.5%	0.9%	-0.2%	4.2%

Statistics Summary

5 Years Ending June 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement Association	7.2%	10.1%	0.1	1.0	0.6	3.1%
Policy Benchmark (Net)	7.0%	9.4%	--	1.0	0.6	0.0%
Domestic Equity Assets	10.0%	19.7%	-0.1	1.1	0.5	4.4%
Russell 3000	10.6%	17.5%	--	1.0	0.5	0.0%
Rhumblin Russell 1000 Value	7.1%	17.3%	-0.4	1.0	0.4	0.1%
Russell 1000 Value	7.2%	17.4%	--	1.0	0.4	0.0%
Rhumblin Russell 1000 Growth	14.3%	19.0%	-0.4	1.0	0.7	0.1%
Russell 1000 Growth	14.3%	19.0%	--	1.0	0.7	0.0%
Fisher Midcap Value	10.2%	21.7%	0.7	1.1	0.4	5.3%
Russell MidCap Value	6.3%	19.9%	--	1.0	0.3	0.0%
Newton Small Cap Growth	11.5%	24.7%	0.9	1.0	0.4	7.6%
Russell 2000 Growth	4.8%	22.6%	--	1.0	0.2	0.0%
Vulcan Partners Small Cap Value	--	--	--	--	--	--
Russell 2000 Value	4.9%	22.7%	--	1.0	0.2	0.0%
Systematic Small Cap Free Cash Flow	--	--	--	--	--	--
Russell 2000 Value	4.9%	22.7%	--	1.0	0.2	0.0%
International Equity	0.6%	16.3%	-0.3	1.0	0.0	4.8%
International Equity Custom Benchmark	2.1%	16.3%	--	1.0	0.1	0.0%
International Developed Market Equity Assets	-1.5%	17.6%	-0.8	1.1	-0.1	4.5%
MSCI EAFE	2.2%	15.9%	--	1.0	0.1	0.0%
Aristotle International Equity	--	--	--	--	--	--
MSCI EAFE	2.2%	15.9%	--	1.0	0.1	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Walter Scott International Equity	--	--	--	--	--	--
MSCI EAFE	2.2%	15.9%	--	1.0	0.1	0.0%
International Emerging Market Equity Assets	2.0%	16.9%	-0.1	1.0	0.1	2.5%
MSCI Emerging Markets	2.2%	17.1%	--	1.0	0.1	0.0%
ABS Emerging Markets	--	--	--	--	--	--
MSCI Emerging Markets	2.2%	17.1%	--	1.0	0.1	0.0%
Driehaus Emerging Markets Growth	--	--	--	--	--	--
MSCI Emerging Markets	2.2%	17.1%	--	1.0	0.1	0.0%
Global Equity Assets	--	--	--	--	--	--
MSCI ACWI	7.0%	16.2%	--	1.0	0.4	0.0%
First Eagle Global Value Fund	--	--	--	--	--	--
MSCI ACWI Value NR USD	4.3%	16.6%	--	1.0	0.2	0.0%
Kopernik Global All Cap Fund	--	--	--	--	--	--
MSCI ACWI Value NR USD	4.3%	16.6%	--	1.0	0.2	0.0%
Lee Munder Global Multi-Cap Strategy	--	--	--	--	--	--
MSCI ACWI	7.0%	16.2%	--	1.0	0.4	0.0%
Wellington Durable Enterprises, L.P.	--	--	--	--	--	--
MSCI ACWI	7.0%	16.2%	--	1.0	0.4	0.0%
Fixed Income Assets	1.8%	4.9%	0.2	0.6	0.2	4.5%
Bloomberg US Aggregate TR	0.9%	4.0%	--	1.0	0.0	0.0%
Core Fixed Income	1.5%	3.7%	0.0	0.9	0.1	1.7%
75% Bbg Aggregate/25% Bbg US TIPs 1-10 year	1.5%	3.6%	--	1.0	0.1	0.0%
Lord Abbett Short Duration Credit Trust II	--	--	--	--	--	--
Bloomberg US Credit 1-3 Yr TR	1.4%	1.8%	--	1.0	0.2	0.0%

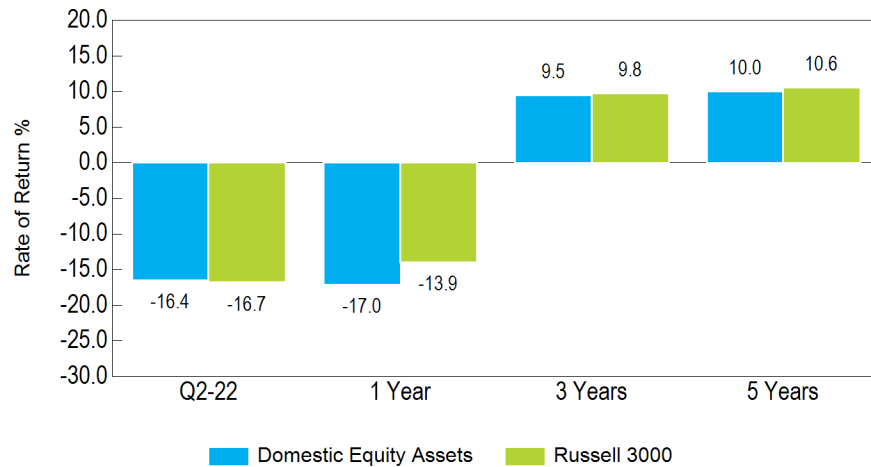
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Lord Abbett Core Fixed Income Trust II	--	--	--	--	--	--
Bloomberg US Aggregate TR	0.9%	4.0%	--	1.0	0.0	0.0%
Rhumblin TIPS Trust	--	--	--	--	--	--
Bloomberg US TIPS TR	3.2%	4.3%	--	1.0	0.5	0.0%
Value Added Fixed Income	2.0%	6.8%	0.2	0.5	0.1	6.8%
Bloomberg US Aggregate TR	0.9%	4.0%	--	1.0	0.0	0.0%
Eaton Vance High Yield	2.0%	7.6%	0.0	0.9	0.1	1.1%
ICE BofA US High Yield TR	2.0%	8.4%	--	1.0	0.1	0.0%
First Eagle Bank Loan Select Fund	2.8%	6.7%	-0.3	1.0	0.3	0.6%
Credit Suisse Leveraged Loans	3.0%	7.0%	--	1.0	0.3	0.0%
Manulife Strategic Fixed Income	--	--	--	--	--	--
Bloomberg Multiverse TR	-0.5%	5.3%	--	1.0	-0.3	0.0%
Mesirow High Yield	--	--	--	--	--	--
Bloomberg US Corporate High Yield TR	2.1%	8.4%	--	1.0	0.1	0.0%
Eaton Vance EMD Opportunities Fund	--	--	--	--	--	--
JP Morgan EMBI Global Diversified	-1.2%	10.1%	--	1.0	-0.2	0.0%
Hedge Funds	0.9%	13.6%	-0.3	2.0	0.0	8.2%
Custom Benchmark	3.7%	6.2%	--	1.0	0.4	0.0%
ABS Offshore SPC - Global Segregated Portfolio	3.9%	8.6%	0.1	1.3	0.3	3.6%
HFRI Fund of Funds Composite Index	3.6%	6.2%	--	1.0	0.4	0.0%
Entrust Special Opportunities Fund III, Ltd.	-4.1%	24.4%	-0.4	2.7	-0.2	18.0%
HFRI Fund of Funds Composite Index (QTR)	3.6%	7.9%	--	1.0	0.3	0.0%
Old Farm Partners Master Fund, L.P.	--	--	--	--	--	--
HFRI Fund of Funds Composite Index	3.6%	6.2%	--	1.0	0.4	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)	3.6%	7.9%	--	1.0	0.3	0.0%
Real Estate	13.2%	7.6%	1.1	1.1	1.6	3.0%
Custom Benchmark	10.0%	6.4%	--	1.0	1.4	0.0%
Core Real Estate	12.0%	5.8%	0.5	0.8	1.9	2.9%
NCREIF-ODCE	10.5%	6.3%	--	1.0	1.5	0.0%
TA Realty Core Property Fund, L.P.	--	--	--	--	--	--
NCREIF ODCE	10.5%	6.3%	--	1.0	1.5	0.0%
JPMorgan Strategic Property	--	--	--	--	--	--
NCREIF-ODCE	10.5%	6.3%	--	1.0	1.5	0.0%
Private Equity	18.5%	11.8%	0.3	0.2	1.5	17.5%
MSCI ACWI IMI (1Q Lagged) +2%	13.6%	15.5%	--	1.0	0.8	0.0%
Real Assets	6.9%	5.7%	0.0	0.9	1.0	5.5%
CPI + 3%	6.9%	1.3%	--	1.0	4.4	0.0%
IFM Global Infrastructure	--	--	--	--	--	--
CPI + 3%	6.9%	1.3%	--	1.0	4.4	0.0%
ISQ Global Infrastructure Fund III (USTE), L.P.	--	--	--	--	--	--
CPI + 3%	6.1%	1.3%	--	1.0	3.8	0.0%

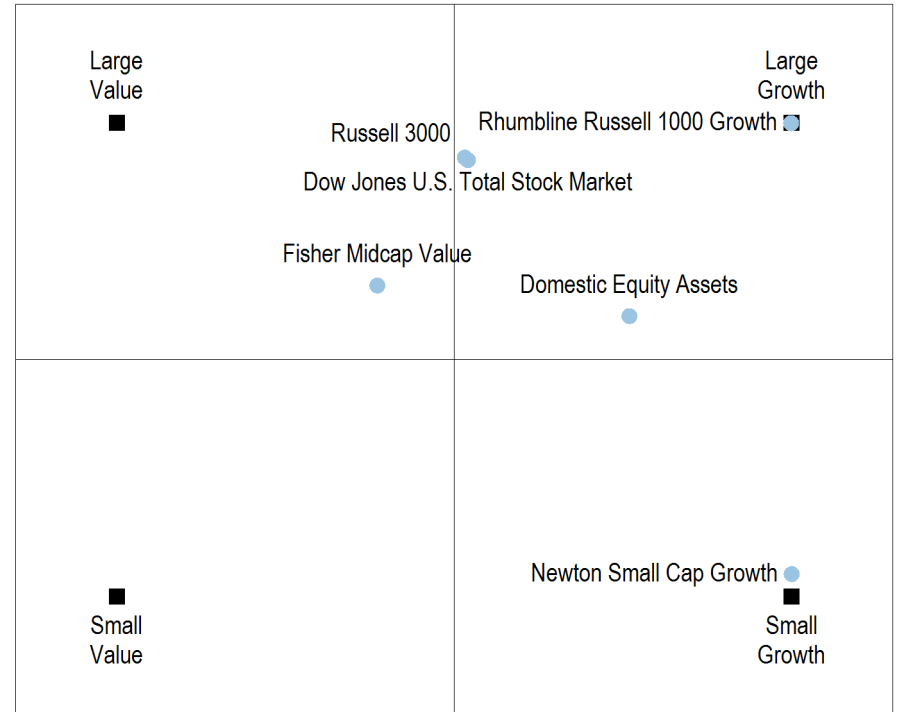
Asset Allocation on June 30, 2022

	Actual	Actual
Fisher Midcap Value	\$56,188,769	23.6%
Newton Small Cap Growth	\$41,232,654	17.3%
Rhumblin Russell 1000 Growth	\$46,209,015	19.4%
Rhumblin Russell 1000 Value	\$53,766,746	22.6%
Systematic Small Cap Free Cash Flow	\$26,190,256	11.0%
Vulcan Partners Small Cap Value	\$14,696,483	6.2%
Total	\$238,283,923	100.0%

Return Summary Ending June 30, 2022

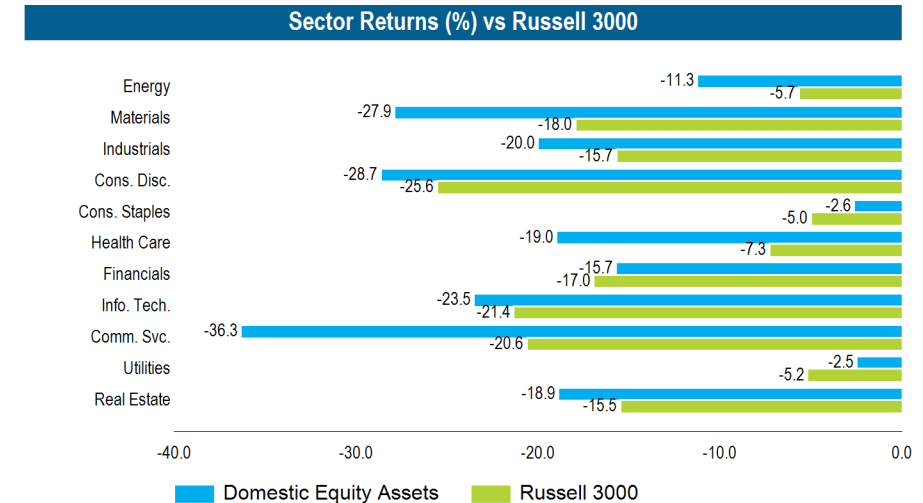
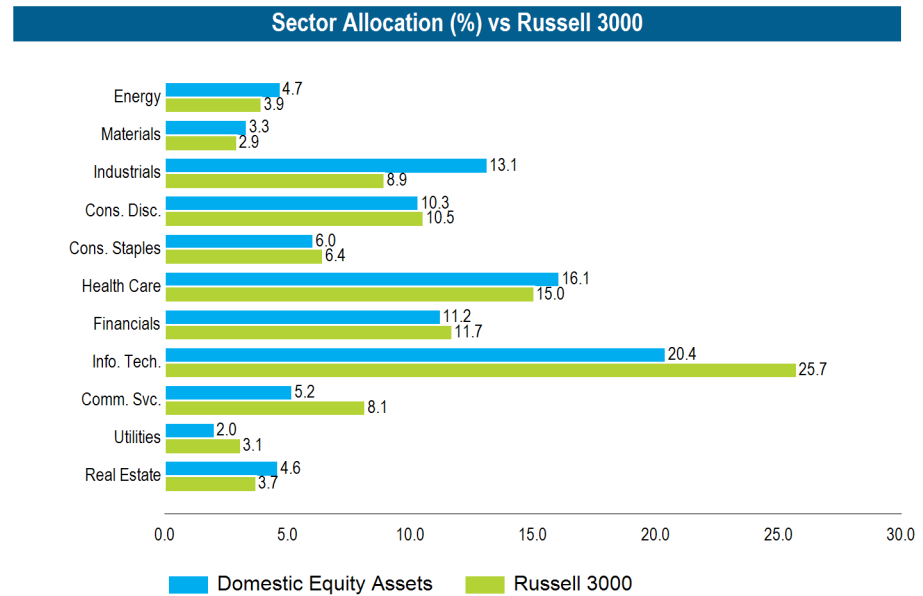


Domestic Equity Assets Style Map



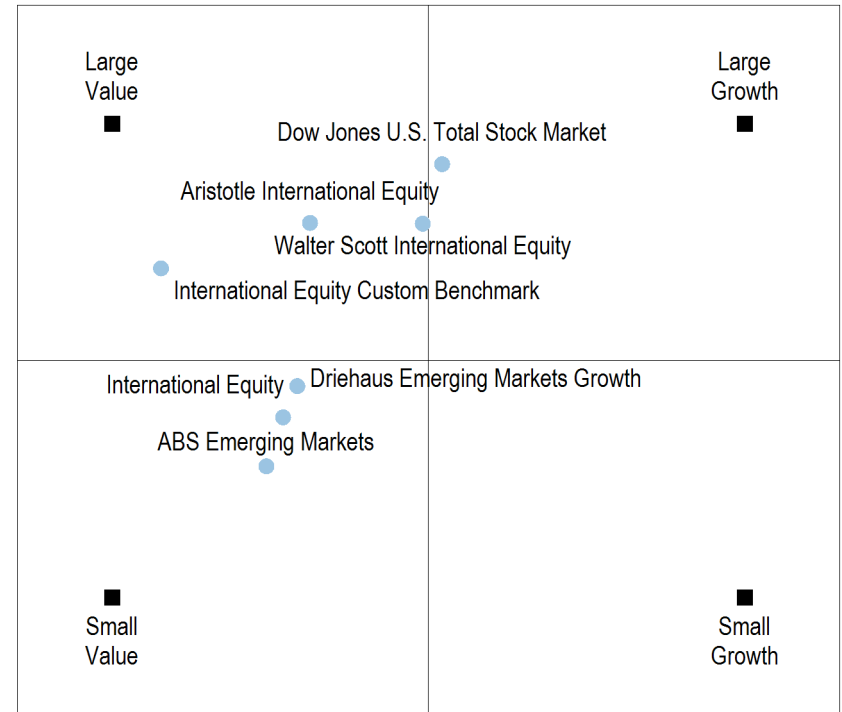
Domestic Equity Assets Equity Characteristics		
	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	238.28	--
Number Of Holdings	1233	2960
Characteristics		
Weighted Avg. Market Cap. (\$B)	234.81	412.78
Median Market Cap (\$B)	10.23	2.45
P/E Ratio	16.67	18.08
Yield	1.41	1.67
EPS Growth - 5 Yrs.	17.91	18.77
Price to Book	3.00	3.64

Top 10 Holdings	
APPLE INC	3.0%
MICROSOFT CORP	2.8%
AMAZON.COM INC	1.4%
GROCERY OUTLET INC	1.0%
ALPHABET INC	1.0%
ALPHABET INC	0.9%
ISHARES RUSSELL 2000 GROWTH ETF	0.9%
BERKSHIRE HATHAWAY INC	0.8%
TESLA INC	0.8%
PLANET FITNESS INC	0.8%
Total	13.3%

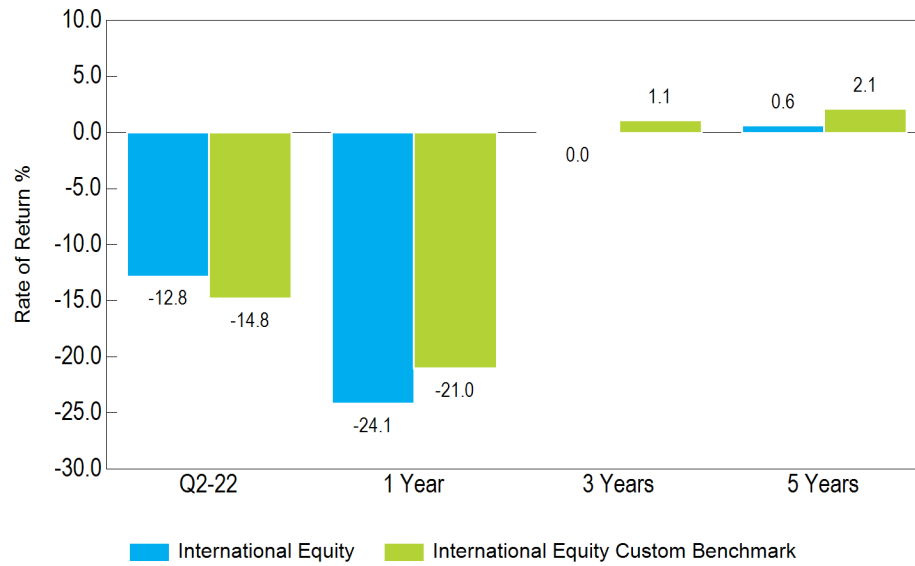


Asset Allocation on June 30, 2022		
	Actual	Actual
ABS Emerging Markets	\$53,752,392	39.1%
Aristotle International Equity	\$18,930,033	13.8%
Driehaus Emerging Markets Growth	\$48,109,538	35.0%
Walter Scott International Equity	\$16,722,600	12.2%
Total	\$137,514,563	100.0%

International Equity Style Map

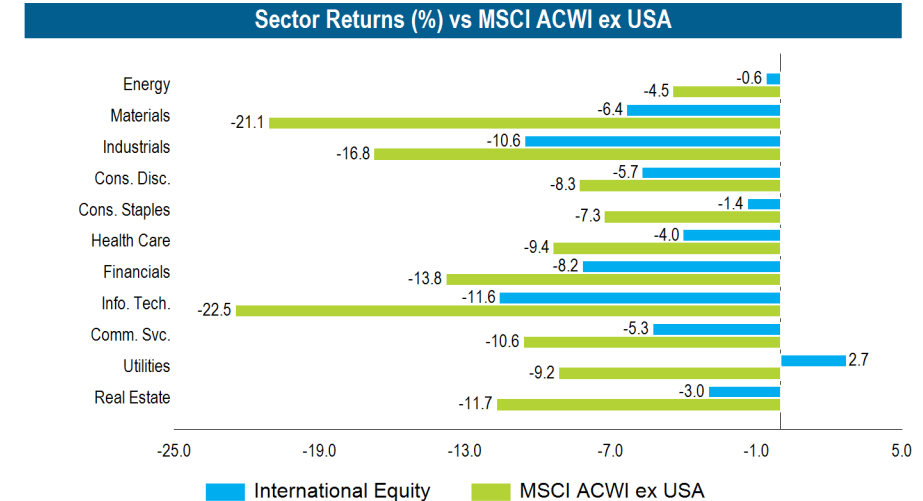
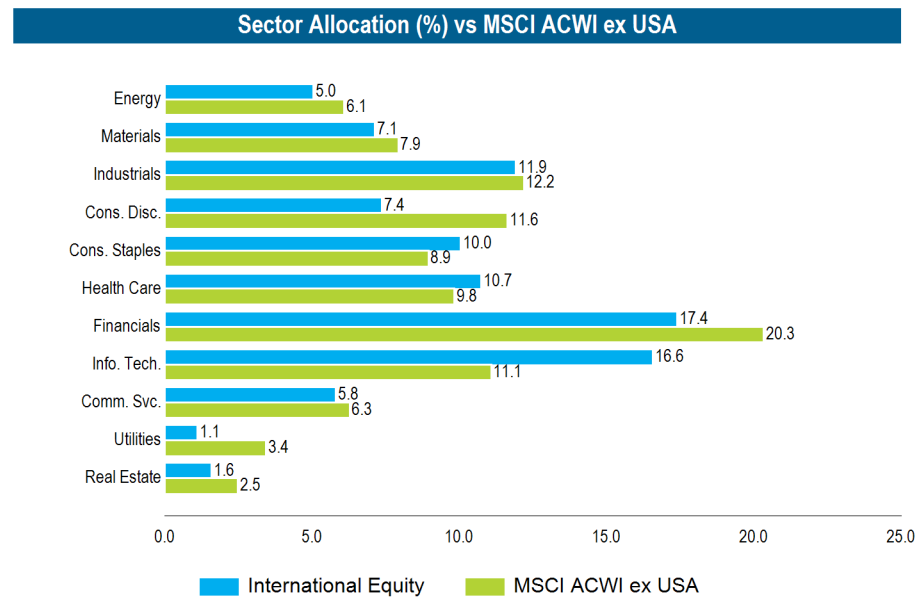


Return Summary Ending June 30, 2022



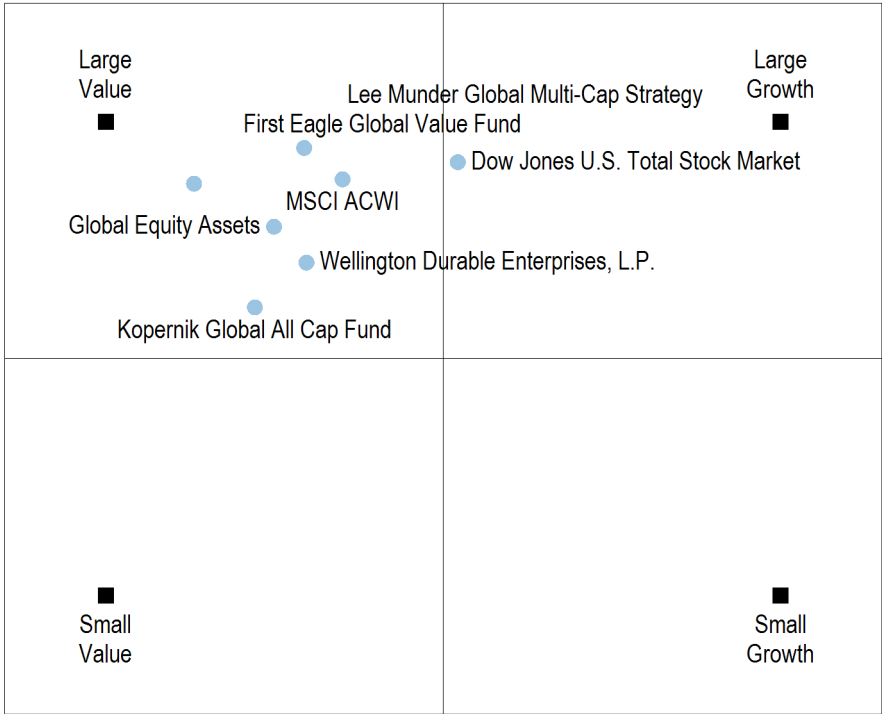
International Equity Equity Characteristics		
	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	137.51	--
Number Of Holdings	168	2170
Characteristics		
Weighted Avg. Market Cap. (\$B)	123.05	81.85
Median Market Cap (\$B)	28.58	8.69
P/E Ratio	16.47	12.31
Yield	2.40	3.48
EPS Growth - 5 Yrs.	13.94	13.48
Price to Book	3.00	2.38

Top 10 Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.2%
SAMSUNG ELECTRONICS CO LTD	3.8%
AIA GROUP LTD	2.4%
TENCENT HOLDINGS LTD	2.1%
RELIANCE INDUSTRIES LTD	1.6%
PT BANK CENTRAL ASIA TBK	1.5%
ICICI BANK LTD	1.5%
GPO FINANCE BANORTE	1.4%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.2%
DASSAULT SYSTEMES SA	1.2%
Total	22.0%

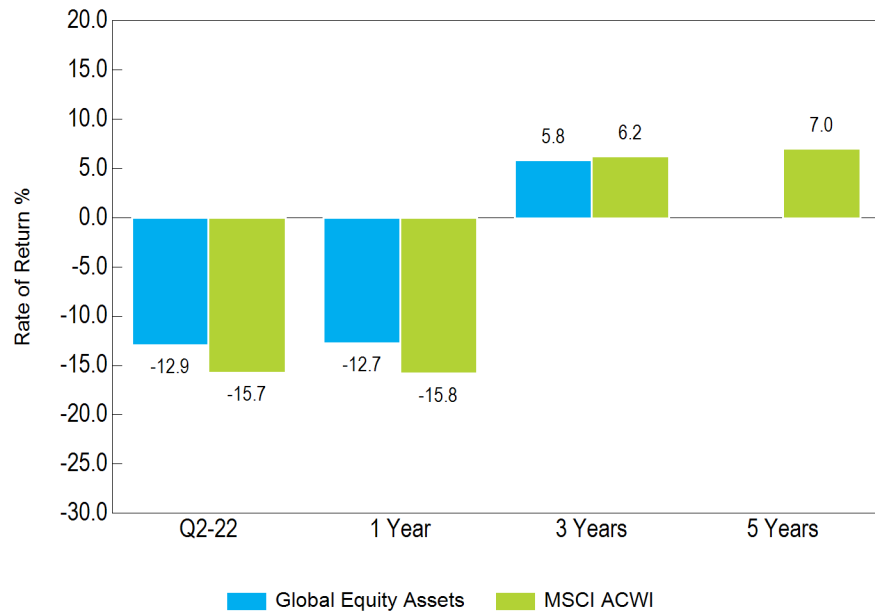


Asset Allocation on June 30, 2022		
	Actual	Actual
First Eagle Global Value Fund	\$22,880,773	17.2%
Kopernik Global All Cap Fund	\$32,050,147	24.1%
Lee Munder Global Multi-Cap Strategy	\$38,341,862	28.9%
Wellington Durable Enterprises, L.P.	\$39,521,721	29.8%
Total	\$132,794,504	100.0%

Global Equity Assets Style Map

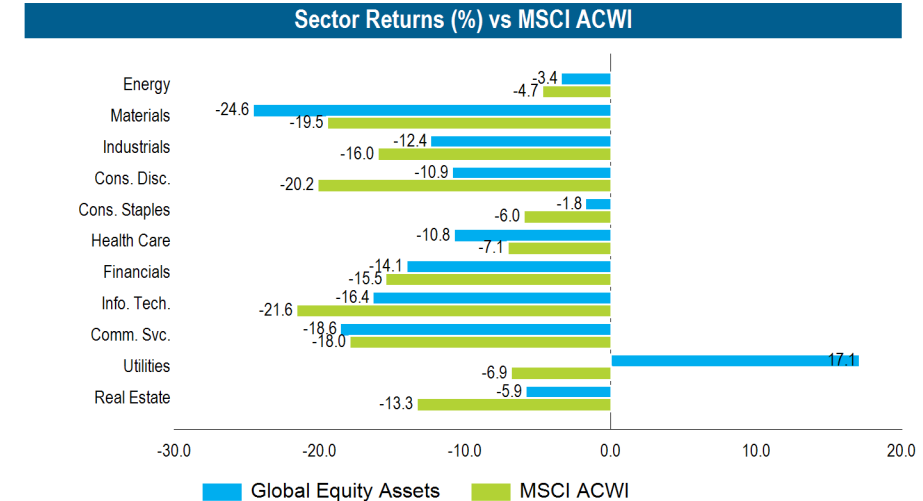
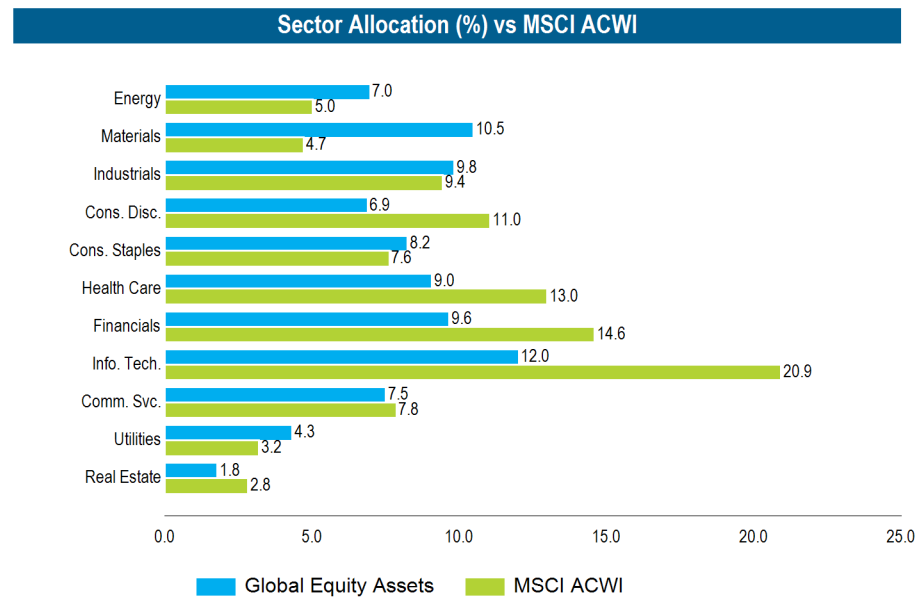


Return Summary Ending June 30, 2022



Global Equity Assets Equity Characteristics		
	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	132.79	--
Number Of Holdings	298	2795
Characteristics		
Weighted Avg. Market Cap. (\$B)	240.69	313.29
Median Market Cap (\$B)	16.41	11.91
P/E Ratio	12.60	15.76
Yield	2.45	2.38
EPS Growth - 5 Yrs.	15.41	16.78
Price to Book	2.74	3.20

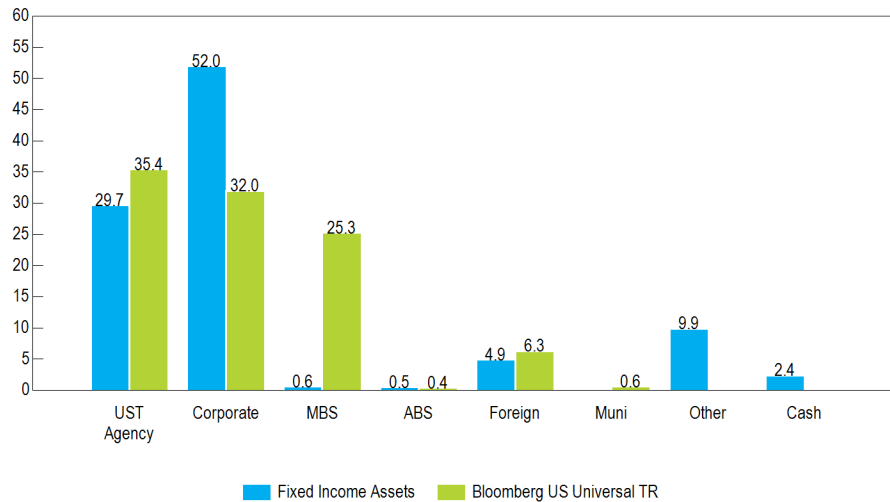
Top 10 Holdings	
MICROSOFT CORP	2.6%
APPLE INC	2.5%
ALPHABET INC	2.3%
AMAZON.COM INC	1.9%
ISHARES CORE MSCI EMERGING MARKETS ETF	1.7%
KT CORP	1.7%
NEWCREST MINING LTD	1.7%
COMCAST CORP	1.2%
ELEVANCE HEALTH INC	1.1%
UNITEDHEALTH GROUP INC	1.1%
Total	17.7%



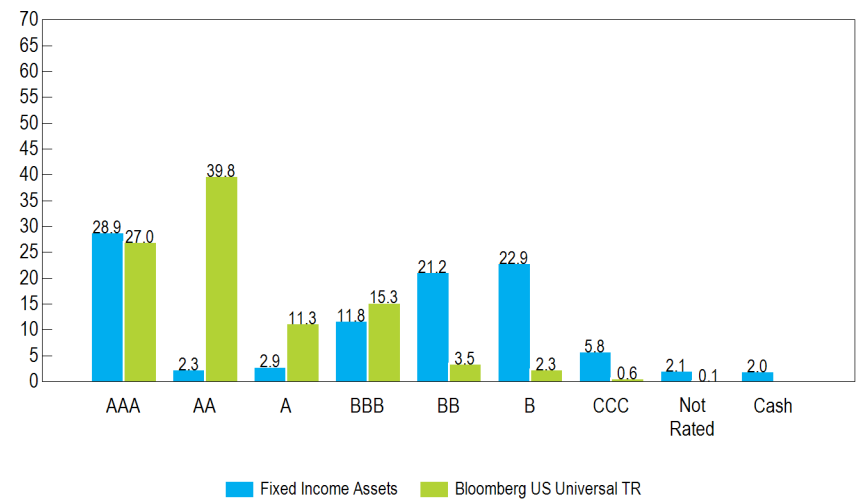
Asset Allocation on June 30, 2022		
	Actual	Actual
Eaton Vance EMD Opportunities Fund	\$7,519,001	3.8%
Eaton Vance High Yield	\$11,216,330	5.7%
First Eagle Bank Loan Select Fund	\$10,377,273	5.3%
Lord Abbett Core Fixed Income Trust II	\$41,147,325	20.8%
Lord Abbett Short Duration Credit Trust II	\$49,683,078	25.2%
Manulife Strategic Fixed Income	\$40,016,936	20.3%
Mesirow High Yield	\$13,885,193	7.0%
Rhumblin TIPS Trust	\$23,683,484	12.0%
Total	\$197,528,621	100.0%

Fixed Income Assets Characteristics vs. Bloomberg US Universal TR			
	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Fixed Income Characteristics			
Yield to Maturity	6.4	4.1	4.6
Average Duration	4.2	6.4	4.1
Average Quality	BBB	AA	BBB
Weighted Average Maturity	6.4	8.6	6.3

Sector Allocation



Credit Quality Allocation



Rhumblin Russell 1000 Value | As of June 30, 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	-12.2	-6.8	6.9	7.1	--	8.9	Apr-13
<i>Russell 1000 Value</i>	-12.2	-6.8	6.9	7.2	10.5	9.0	Apr-13
<i>eV US Large Cap Value Equity Net Median</i>	-11.8	-5.8	8.3	8.1	10.8	9.4	Apr-13
<i>eV US Large Cap Value Equity Net Rank</i>	59	60	77	72	--	65	Apr-13

Top 10 Holdings

BERKSHIRE HATHAWAY INC	2.8%
JOHNSON & JOHNSON	2.6%
EXXON MOBIL CORP	2.0%
JPMORGAN CHASE & CO	1.8%
PFIZER INC	1.7%
META PLATFORMS INC	1.6%
CHEVRON CORP	1.6%
BANK OF AMERICA CORP	1.2%
VERIZON COMMUNICATIONS INC	1.2%
PROCTER & GAMBLE CO (THE)	1.1%
Total	17.7%

Rhumblin Russell 1000 Value Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	53.8	--	61.2
Number Of Holdings	861	858	850
Characteristics			
Weighted Avg. Market Cap. (\$B)	144.2	145.0	169.0
Median Market Cap (\$B)	12.1	12.0	14.7
P/E Ratio	14.4	14.6	17.0
Yield	2.3	2.3	2.0
EPS Growth - 5 Yrs.	14.0	14.1	14.5
Price to Book	2.4	2.4	2.7
Sector Distribution			
Energy	7.2	6.5	7.1
Materials	4.3	4.3	4.1
Industrials	9.9	10.0	11.0
Consumer Discretionary	5.8	5.5	5.0
Consumer Staples	7.3	7.3	7.4
Health Care	17.2	17.4	17.9
Financials	19.6	19.8	20.8
Information Technology	9.0	9.1	9.3
Communication Services	8.8	8.9	7.2
Utilities	5.9	6.0	5.3
Real Estate	5.1	5.1	4.9

Rhumblin Russell 1000 Growth | As of June 30, 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	-20.9	-18.7	12.6	14.3	14.7	14.8	Jul-09
<i>Russell 1000 Growth</i>	-20.9	-18.8	12.6	14.3	14.8	14.9	Jul-09
<i>eV US Large Cap Growth Equity Net Median</i>	-20.7	-22.0	9.2	12.1	13.0	13.2	Jul-09
<i>eV US Large Cap Growth Equity Net Rank</i>	53	36	9	14	9	4	Jul-09

Top 10 Holdings

APPLE INC	11.7%
MICROSOFT CORP	10.8%
AMAZON.COM INC	5.3%
TESLA INC	3.2%
ALPHABET INC	3.2%
ALPHABET INC	2.9%
UNITEDHEALTH GROUP INC	2.5%
NVIDIA CORPORATION	2.0%
VISA INC	1.8%
MASTERCARD INC	1.5%
Total	44.9%

Rhumblin Russell 1000 Growth Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	46.2	--	58.4
Number Of Holdings	521	520	499
Characteristics			
Weighted Avg. Market Cap. (\$B)	721.9	729.2	969.4
Median Market Cap (\$B)	15.3	15.1	18.4
P/E Ratio	25.4	25.4	30.5
Yield	1.0	1.0	0.8
EPS Growth - 5 Yrs.	24.0	24.0	25.3
Price to Book	9.0	9.0	11.8
Sector Distribution			
Energy	1.4	1.2	0.5
Materials	1.4	1.4	1.1
Industrials	7.0	7.1	6.3
Consumer Discretionary	15.3	15.5	17.9
Consumer Staples	5.8	5.9	4.8
Health Care	12.2	12.4	9.0
Financials	2.9	3.0	2.5
Information Technology	42.9	43.7	45.9
Communication Services	7.9	8.1	9.7
Utilities	0.0	0.0	0.0
Real Estate	1.7	1.8	1.9

Fisher Midcap Value | As of June 30, 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	-19.4	-15.1	11.4	10.2	11.7	8.4	Apr-07
<i>Russell MidCap Value</i>	-14.7	-10.0	6.7	6.3	10.6	6.9	Apr-07
<i>Russell MidCap</i>	-16.8	-17.3	6.6	8.0	11.3	7.8	Apr-07
<i>eV US Mid Cap Value Equity Net Median</i>	-12.8	-6.8	7.8	6.9	10.6	7.3	Apr-07
<i>eV US Mid Cap Value Equity Net Rank</i>	99	96	5	1	20	12	Apr-07

Top 10 Holdings

SYNOPSIS INC	3.7%
FREEPORT-MCMORAN INC	3.5%
PERKINELMER INC.	3.3%
CHARLES RIVER LABORATORIES INTERNATIONAL INC	3.1%
RAYMOND JAMES FINANCIAL INC.	2.9%
SVB FINANCIAL GROUP	2.8%
FACTSET RESEARCH SYSTEMS INC.	2.7%
MORNINGSTAR INC	2.6%
IQVIA HOLDINGS INC	2.6%
PROLOGIS INC	2.5%
Total	29.6%

Fisher Midcap Value Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	56.2	--	69.6
Number Of Holdings	69	705	70
Characteristics			
Weighted Avg. Market Cap. (\$B)	20.8	18.6	26.4
Median Market Cap (\$B)	14.3	9.1	16.8
P/E Ratio	13.0	14.3	17.2
Yield	1.1	2.2	0.8
EPS Growth - 5 Yrs.	23.0	13.3	22.2
Price to Book	2.8	2.2	3.4
Sector Distribution			
Energy	6.6	4.9	6.3
Materials	10.1	7.5	13.4
Industrials	15.6	14.4	15.1
Consumer Discretionary	5.4	9.5	4.1
Consumer Staples	1.0	4.0	0.9
Health Care	18.9	7.4	18.7
Financials	17.9	17.9	16.6
Information Technology	19.7	9.4	19.3
Communication Services	0.2	3.6	0.3
Utilities	0.0	9.1	0.0
Real Estate	4.4	12.2	5.3

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	-21.1	-35.0	6.3	11.5	13.1	13.2	Aug-09
<i>Russell 2000 Growth</i>	-19.3	-33.4	1.4	4.8	9.3	10.7	Aug-09
<i>eV US Small Cap Growth Equity Net Median</i>	-20.3	-31.1	4.8	9.2	11.4	12.8	Aug-09
<i>eV US Small Cap Growth Equity Net Rank</i>	57	66	33	21	18	36	Aug-09

Top 10 Holdings

GROCERY OUTLET INC	4.6%
ISHARES RUSSELL 2000 GROWTH ETF	3.9%
PLANET FITNESS INC	3.6%
BIOHAVEN PHARMACEUTICAL HOLDING CO LTD	3.5%
ENERGY RECOVERY INC	3.1%
EQT CORP	2.8%
CACTUS INC	2.7%
PRIVIA HEALTH GROUP INC COMMON STOCK USD.01	2.7%
RAPID7 INC	2.6%
MERCURY SYSTEMS INC	2.2%
Total	31.7%

Boston Company Small Cap Growth Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	41.2	--	52.2
Number Of Holdings	90	1102	96
Characteristics			
Weighted Avg. Market Cap. (\$B)	4.3	2.9	5.3
Median Market Cap (\$B)	2.5	1.2	3.2
P/E Ratio	23.0	17.1	25.0
Yield	0.2	0.8	0.2
EPS Growth - 5 Yrs.	18.7	20.6	26.7
Price to Book	3.2	3.6	3.7
Sector Distribution			
Energy	6.3	6.2	4.9
Materials	1.2	4.4	1.3
Industrials	16.5	17.2	16.7
Consumer Discretionary	10.0	10.4	10.9
Consumer Staples	7.6	4.4	6.3
Health Care	28.3	23.2	29.1
Financials	2.9	5.9	2.6
Information Technology	15.0	21.4	17.7
Communication Services	1.9	2.3	2.4
Utilities	0.0	1.8	0.0
Real Estate	2.2	2.9	1.8

Vulcan Partners Small Cap Value | As of June 30, 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	-19.1	--	--	--	--	-19.1	Apr-22
Russell 2000 Value	-15.3	-16.3	6.2	4.9	9.1	-15.3	Apr-22
eV US Small Cap Value Equity Net Median	-13.5	-11.8	6.8	5.5	9.6	-13.5	Apr-22
eV US Small Cap Value Equity Net Rank	98	--	--	--	--	98	Apr-22

Top 10 Holdings

GROCERY OUTLET INC	4.6%
ISHARES RUSSELL 2000 GROWTH ETF	3.9%
PLANET FITNESS INC	3.6%
BIOHAVEN PHARMACEUTICAL HOLDING CO LTD	3.5%
ENERGY RECOVERY INC	3.1%
EQT CORP	2.8%
CACTUS INC	2.7%
PRIVIA HEALTH GROUP INC COMMON STOCK USD.01	2.7%
RAPID7 INC	2.6%
MERCURY SYSTEMS INC	2.2%
Total	31.7%

Vulcan Partners Small Cap Value Characteristics

	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	14.7	--
Number Of Holdings	25	1371
Characteristics		
Weighted Avg. Market Cap. (\$B)	2.4	2.3
Median Market Cap (\$B)	1.9	0.9
P/E Ratio	14.3	10.5
Yield	1.5	2.3
EPS Growth - 5 Yrs.	10.2	13.7
Price to Book	2.3	1.5
Sector Distribution		
Energy	0.0	4.9
Materials	9.6	3.8
Industrials	19.6	12.8
Consumer Discretionary	9.3	9.5
Consumer Staples	4.5	2.9
Health Care	4.9	10.9
Financials	10.5	28.4
Information Technology	22.2	6.2
Communication Services	0.0	3.2
Utilities	0.0	5.5
Real Estate	16.9	12.0

Systematic Small Cap Free Cash Flow | As of June 30, 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	-9.6	--	--	--	--	-9.6	Apr-22
<i>Russell 2000 Value</i>	-15.3	-16.3	6.2	4.9	9.1	-15.3	Apr-22
<i>eV US Small Cap Value Equity Net Median</i>	-13.5	-11.8	6.8	5.5	9.6	-13.5	Apr-22
<i>eV US Small Cap Value Equity Net Rank</i>	12	--	--	--	--	12	Apr-22

Top 10 Holdings

FIRST CITIZENS BANCSHARES INC	3.3%
MAGNOLIA OIL & GAS CORP	2.1%
CROSS COUNTRY HEALTHCARE INC	1.6%
SILICON MOTION TECHNOLOGY CORP	1.6%
KBR INC	1.6%
NORTHWESTERN CORP	1.6%
WASHINGTON FEDERAL INC.	1.4%
MUELLER INDUSTRIES INC.	1.3%
WEBSTER FINANCIAL CORP	1.3%
ICF INTERNATIONAL INC	1.3%
Total	17.0%

Systematic Small Cap Free Cash Flow Characteristics

	Portfolio	Index
	Q2-22	Q2-22
Market Value		
Market Value (\$M)	26.2	--
Number Of Holdings	151	1371
Characteristics		
Weighted Avg. Market Cap. (\$B)	3.8	2.3
Median Market Cap (\$B)	2.1	0.9
P/E Ratio	11.1	10.5
Yield	1.9	2.3
EPS Growth - 5 Yrs.	18.8	13.7
Price to Book	1.8	1.5
Sector Distribution		
Energy	5.4	4.9
Materials	4.6	3.8
Industrials	21.7	12.8
Consumer Discretionary	12.2	9.5
Consumer Staples	2.4	2.9
Health Care	7.8	10.9
Financials	22.5	28.4
Information Technology	11.6	6.2
Communication Services	1.2	3.2
Utilities	1.9	5.5
Real Estate	5.6	12.0

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	-16.0	-20.2	--	--	--	-9.6	Mar-21
MSCI EAFE	-14.5	-17.8	1.1	2.2	5.4	-8.8	Mar-21
eV EAFE Core Equity Net Median	-14.8	-19.4	1.4	2.3	6.2	-9.7	Mar-21
eV EAFE Core Equity Net Rank	70	58	--	--	--	50	Mar-21

Top 10 Holdings

ACCENTURE PLC	5.5%
SONY GROUP CORPORATION	4.5%
GSK PLC	4.0%
DASSAULT SYSTEMES SA	3.8%
ALCON INC	3.3%
KDDI CORP	3.3%
LVMH MOET HENNESSY LOUIS VUITTON SE	3.2%
PAN PACIFIC INTERNATIONAL HOLDINGS CORP	3.2%
AIA GROUP LTD	3.2%
MUENCHENER RUCK.	3.1%
Total	37.0%

Aristotle International Equity Characteristics

	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	18.9	--
Number Of Holdings	44	792
Characteristics		
Weighted Avg. Market Cap. (\$B)	71.9	73.5
Median Market Cap (\$B)	29.2	11.7
P/E Ratio	15.8	13.2
Yield	2.4	3.6
EPS Growth - 5 Yrs.	13.9	12.1
Price to Book	2.6	2.4
Sector Distribution		
Energy	2.9	4.8
Materials	4.8	7.3
Industrials	19.0	14.9
Consumer Discretionary	13.8	11.3
Consumer Staples	10.4	10.9
Health Care	11.7	13.9
Financials	17.9	17.8
Information Technology	14.4	7.8
Communication Services	3.2	5.0
Utilities	0.0	3.5
Real Estate	0.0	2.9

Walter Scott International Equity | As of June 30, 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	-15.4	-21.8	--	--	--	-11.0	Mar-21
MSCI EAFE	-14.5	-17.8	1.1	2.2	5.4	-8.8	Mar-21
eV EAFE Core Equity Net Median	-14.8	-19.4	1.4	2.3	6.2	-9.7	Mar-21
eV EAFE Core Equity Net Rank	59	73	--	--	--	64	Mar-21

Top 10 Holdings

NOVO NORDISK 'B'	4.1%
AIA GROUP LTD	3.3%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	3.1%
KEYENCE CORP	3.1%
ASML HOLDING NV	2.8%
ALIMENTATION COUCHE-TARD INC	2.8%
ROCHE HOLDING AG	2.6%
CANADIAN NATIONAL RAILWAY CO	2.6%
LVMH MOET HENNESSY LOUIS VUITTON SE	2.5%
NOVARTIS AG	2.5%
Total	29.5%

Walter Scott International Equity Characteristics

	Portfolio Q2-22	Index Q2-22
Market Value		
Market Value (\$M)	16.7	--
Number Of Holdings	51	792
Characteristics		
Weighted Avg. Market Cap. (\$B)	93.3	73.5
Median Market Cap (\$B)	35.1	11.7
P/E Ratio	20.6	13.2
Yield	2.1	3.6
EPS Growth - 5 Yrs.	10.2	12.1
Price to Book	3.8	2.4
Sector Distribution		
Energy	1.7	4.8
Materials	10.2	7.3
Industrials	20.6	14.9
Consumer Discretionary	7.7	11.3
Consumer Staples	9.8	10.9
Health Care	21.7	13.9
Financials	4.9	17.8
Information Technology	15.6	7.8
Communication Services	0.0	5.0
Utilities	1.6	3.5
Real Estate	4.1	2.9

Driehaus Emerging Markets Growth | As of June 30, 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	-10.9	-24.8	3.9	--	--	5.0	Mar-19
MSCI Emerging Markets	-11.4	-25.3	0.6	2.2	3.1	0.9	Mar-19
eV Emg Mkts Equity Net Median	-12.8	-25.7	0.9	2.1	3.4	1.7	Mar-19
eV Emg Mkts Equity Net Rank	22	44	20	--	--	18	Mar-19

Top 10 Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	8.0%
SAMSUNG ELECTRONICS CO LTD	5.8%
TENCENT HOLDINGS LTD	3.8%
RELIANCE INDUSTRIES LTD	2.9%
PT BANK CENTRAL ASIA TBK	2.7%
ICICI BANK LTD	2.6%
GPO FINANCE BANORTE	2.4%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	1.9%
AIA GROUP LTD	1.8%
HOUSING DEVELOPMENT FINANCE CORP LTD	1.6%
Total	33.4%

Driehaus Emerging Markets Growth Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	48.1	--	53.9
Number Of Holdings	88	1290	88
Characteristics			
Weighted Avg. Market Cap. (\$B)	153.3	110.0	171.0
Median Market Cap (\$B)	22.0	6.3	28.7
P/E Ratio	15.1	11.1	18.9
Yield	2.5	3.3	1.8
EPS Growth - 5 Yrs.	16.7	14.3	17.8
Price to Book	3.0	2.5	3.3
Sector Distribution			
Energy	7.0	5.0	7.3
Materials	6.9	8.5	8.0
Industrials	6.2	5.6	5.5
Consumer Discretionary	4.9	14.6	5.4
Consumer Staples	10.0	6.1	8.0
Health Care	6.5	4.2	5.5
Financials	21.6	21.8	23.8
Information Technology	17.6	19.3	21.5
Communication Services	8.8	10.0	9.4
Utilities	1.3	2.9	1.0
Real Estate	1.3	2.1	0.0

First Eagle Global Value Fund | As of June 30, 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	-10.9	-8.9	4.5	--	--	3.1	Feb-18
MSCI ACWI Value NR USD	-11.5	-8.1	3.9	4.3	6.9	1.6	Feb-18
eV Global Value Equity Net Median	-13.1	-11.8	5.3	4.6	7.5	1.7	Feb-18
eV Global Value Equity Net Rank	22	24	62	--	--	32	Feb-18

Top 10 Holdings

ORACLE CORP	4.0%
EXXON MOBIL CORP	3.3%
COMCAST CORP	2.5%
BRITISH AMERICAN TOBACCO PLC	2.4%
C.H. ROBINSON WORLDWIDE INC.	2.4%
ELEVANCE HEALTH INC	2.1%
PHILIP MORRIS INTERNATIONAL INC	2.1%
SCHLUMBERGER LTD	1.9%
DANONE	1.7%
META PLATFORMS INC	1.7%
Total	24.1%

First Eagle Global Value Fund Characteristics

	Portfolio	Index	Portfolio
	Q2-22	Q2-22	Q1-22
Market Value			
Market Value (\$M)	22.9	--	25.7
Number Of Holdings	135	2795	131
Characteristics			
Weighted Avg. Market Cap. (\$B)	137.3	313.3	173.5
Median Market Cap (\$B)	25.8	11.9	29.1
P/E Ratio	14.7	15.8	17.5
Yield	2.6	2.4	2.3
EPS Growth - 5 Yrs.	11.0	16.8	11.9
Price to Book	2.2	3.2	2.4
Sector Distribution			
Energy	6.5	5.0	5.6
Materials	5.0	4.7	6.1
Industrials	11.4	9.4	10.7
Consumer Discretionary	6.3	11.0	5.4
Consumer Staples	13.4	7.6	11.5
Health Care	6.7	13.0	6.2
Financials	14.2	14.6	12.8
Information Technology	10.3	20.9	10.1
Communication Services	5.4	7.8	5.5
Utilities	0.5	3.2	0.5
Real Estate	4.2	2.8	4.1

Kopernik Global All Cap Fund | As of June 30, 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	-14.7	-15.2	11.3	--	--	6.3	Feb-18
MSCI ACWI Value NR USD	-11.5	-8.1	3.9	4.3	6.9	1.6	Feb-18
eV Global All Cap Value Eq Net Median	-13.1	-13.4	5.0	4.5	7.3	1.6	Feb-18
eV Global All Cap Value Eq Net Rank	79	68	8	--	--	7	Feb-18

Top 10 Holdings

KT CORP	5.1%
NEWCREST MINING LTD	4.8%
TURQUOISE HILL RESOURCES LTD	3.2%
EDF	3.2%
KAZATOMPROM JSC NAC	3.1%
CENTRAIS ELETRICAS BRASILEIRAS SA-ELETRONBRAS	2.9%
GOLDEN AGRI-RESOURCES LTD	2.6%
HYUNDAI MOTOR CO	2.4%
SPROTT PHYSICAL URANIUM TR UNIT	2.4%
KOREA ELECTRIC POWER CORP	2.4%
Total	31.9%

Kopernik Global All Cap Fund Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	32.1	--	37.6
Number Of Holdings	105	2795	103
Characteristics			
Weighted Avg. Market Cap. (\$B)	10.6	313.3	12.3
Median Market Cap (\$B)	2.0	11.9	2.7
P/E Ratio	6.8	15.8	7.7
Yield	3.6	2.4	3.0
EPS Growth - 5 Yrs.	10.8	16.8	11.3
Price to Book	1.7	3.2	2.0
Sector Distribution			
Energy	11.8	5.0	14.5
Materials	24.0	4.7	24.2
Industrials	12.3	9.4	10.2
Consumer Discretionary	3.9	11.0	2.8
Consumer Staples	7.4	7.6	7.3
Health Care	3.7	13.0	2.6
Financials	3.7	14.6	2.9
Information Technology	0.8	20.9	0.4
Communication Services	6.5	7.8	8.4
Utilities	10.3	3.2	9.4
Real Estate	1.0	2.8	1.1

Lee Munder Global Multi-Cap Strategy | As of June 30, 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	-14.7	-15.0	5.1	--	--	3.9	Mar-18
MSCI ACWI	-15.7	-15.8	6.2	7.0	8.8	5.2	Mar-18
eV All Global Equity Net Median	-15.6	-16.2	5.7	6.7	8.8	5.3	Mar-18
eV All Global Equity Net Rank	40	44	57	--	--	68	Mar-18

Top 10 Holdings

APPLE INC	5.6%
MICROSOFT CORP	5.3%
ALPHABET INC	4.9%
AMAZON.COM INC	4.3%
ISHARES CORE MSCI EMERGING MARKETS ETF	3.8%
UNITEDHEALTH GROUP INC	2.5%
NORTHROP GRUMMAN CORP	2.4%
ISHARES MSCI SOUTH KOREA ETF	2.2%
ISHARE INC - ISHARES MSCI TAIWAN ETF	2.2%
BRISTOL-MYERS SQUIBB CO	2.1%
Total	35.4%

Lee Munder Global Multi-Cap Strategy Characteristics

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Market Value			
Market Value (\$M)	38.3	--	44.9
Number Of Holdings	71	2795	72
Characteristics			
Weighted Avg. Market Cap. (\$B)	453.5	313.3	596.0
Median Market Cap (\$B)	80.0	11.9	114.6
P/E Ratio	17.4	15.8	20.0
Yield	1.6	2.4	1.3
EPS Growth - 5 Yrs.	20.5	16.8	21.0
Price to Book	3.6	3.2	4.2
Sector Distribution			
Energy	3.1	5.0	2.7
Materials	2.4	4.7	2.2
Industrials	6.8	9.4	6.5
Consumer Discretionary	9.7	11.0	11.4
Consumer Staples	5.9	7.6	5.2
Health Care	14.9	13.0	13.0
Financials	11.9	14.6	12.2
Information Technology	22.4	20.9	23.9
Communication Services	9.5	7.8	10.1
Utilities	1.5	3.2	1.5
Real Estate	1.0	2.8	1.1

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

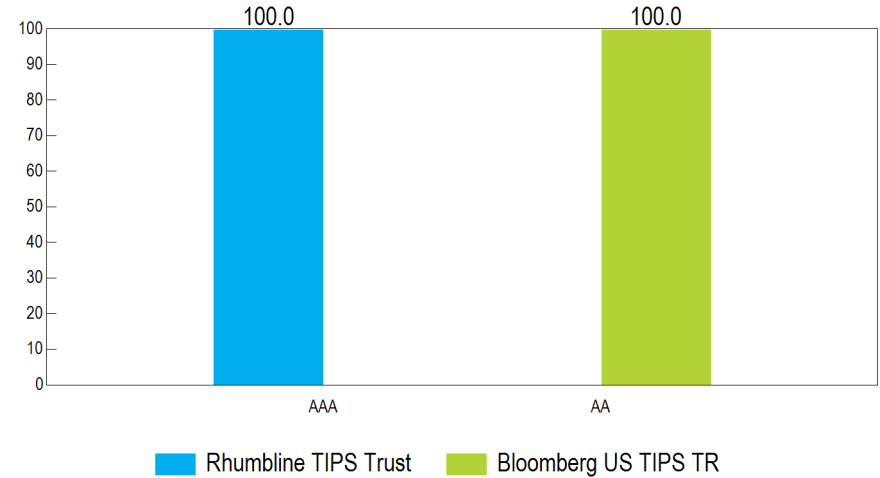
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rhumblin TIPS Trust	-6.1	-5.1	--	--	--	-1.3	Sep-20
<i>Bloomberg US TIPS TR</i>	-6.1	-5.1	3.0	3.2	1.7	-1.3	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Median</i>	-6.0	-5.0	3.1	3.1	1.7	-1.1	Sep-20
<i>eV US TIPS / Inflation Fixed Inc Net Rank</i>	57	53	--	--	--	65	Sep-20

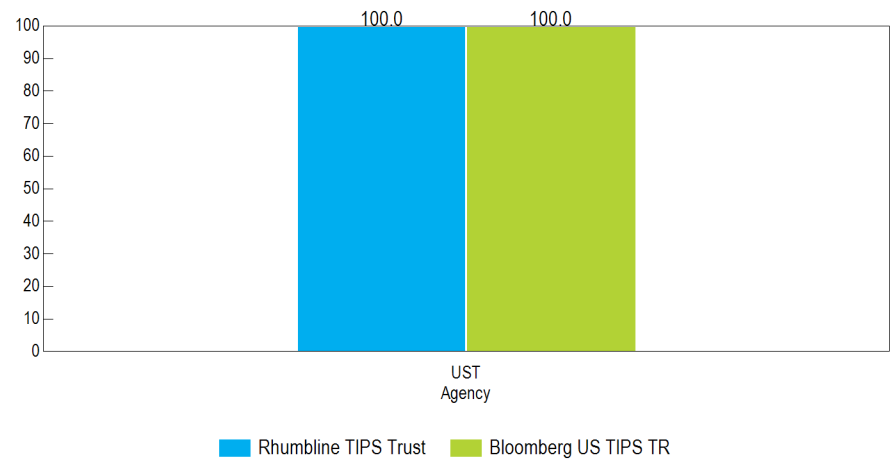
Rhumblin TIPS Trust Characteristics vs. Bloomberg US TIPS TR

	Portfolio Q2-22	Index Q2-22
Fixed Income Characteristics		
Yield to Maturity	3.1	3.1
Average Duration	6.9	6.9
Average Quality	AAA	AA
Weighted Average Maturity	7.4	7.4

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

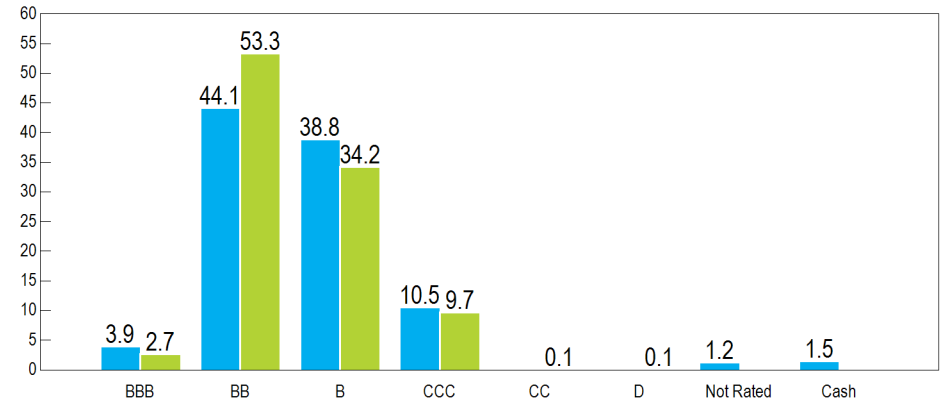
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Eaton Vance High Yield	-9.0	-11.3	0.4	2.0	4.3	5.7	Apr-06
ICE BofA US High Yield TR	-10.0	-12.7	0.0	2.0	4.4	5.9	Apr-06
<i>eV US High Yield Fixed Inc Net Median</i>	-9.4	-11.9	0.4	2.0	4.2	5.5	Apr-06
<i>eV US High Yield Fixed Inc Net Rank</i>	42	44	50	52	36	30	Apr-06

Eaton Vance High Yield Characteristics

vs. ICE BofA US High Yield TR

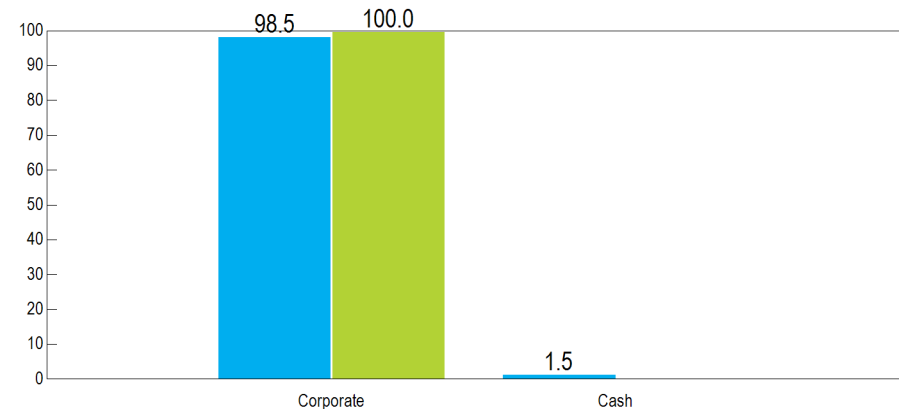
	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Fixed Income Characteristics			
Yield to Maturity	8.2	8.7	5.6
Average Duration	4.4	4.6	4.1
Average Quality	B	B	B
Weighted Average Maturity	6.1	5.9	6.5

Credit Quality Allocation



■ Eaton Vance High Yield ■ ICE BofA US High Yield TR

Sector Allocation



■ Eaton Vance High Yield ■ ICE BofA US High Yield TR

Eaton Vance EMD Opportunities Fund | As of June 30, 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

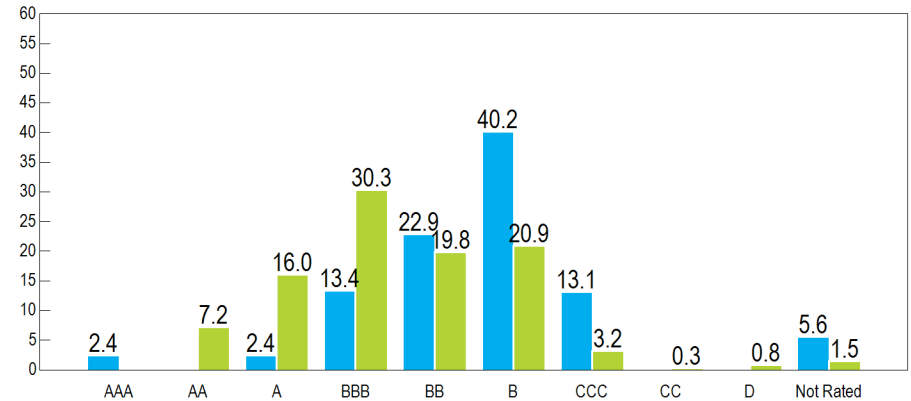
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Eaton Vance EMD Opportunities Fund	-6.5	-15.8	--	--	--	-3.5	Aug-20
JP Morgan EMBI Global Diversified	-11.4	-21.2	-5.2	-1.2	2.2	-10.0	Aug-20
eV Emg Mkts Fixed Inc - Blended Currency Net Median	-10.6	-20.0	-4.5	-1.2	0.7	-8.0	Aug-20
eV Emg Mkts Fixed Inc - Blended Currency Net Rank	9	14	--	--	--	10	Aug-20

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

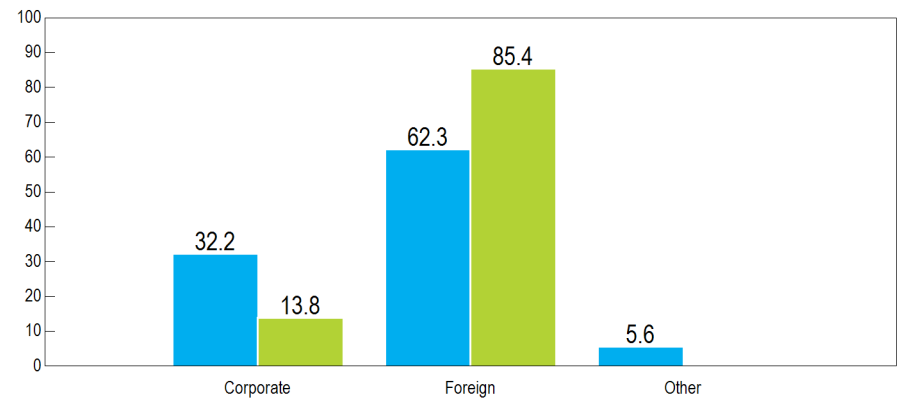
	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Fixed Income Characteristics			
Yield to Maturity		8.3	7.8
Average Duration		3.5	6.8
Average Quality		BB	BBB
Weighted Average Maturity		8.7	11.8
			8.9

Credit Quality Allocation



■ Eaton Vance EMD Opportunities Fund ■ JP Morgan EMBI Global Diversified

Sector Allocation



■ Eaton Vance EMD Opportunities Fund ■ JP Morgan EMBI Global Diversified

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

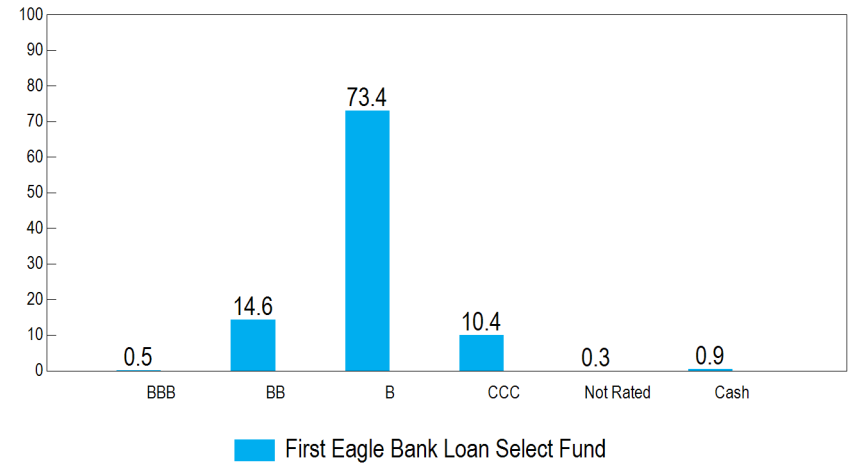
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
First Eagle Bank Loan Select Fund	-4.5	-2.4	2.2	2.8	4.4	4.6	Sep-10
Credit Suisse Leveraged Loans	-4.4	-2.7	2.0	3.0	3.9	4.1	Sep-10
Bank Loan MStar MF Median	-5.1	-4.0	1.1	2.1	3.1	3.4	Sep-10
Bank Loan MStar MF Rank	13	8	2	6	1	1	Sep-10

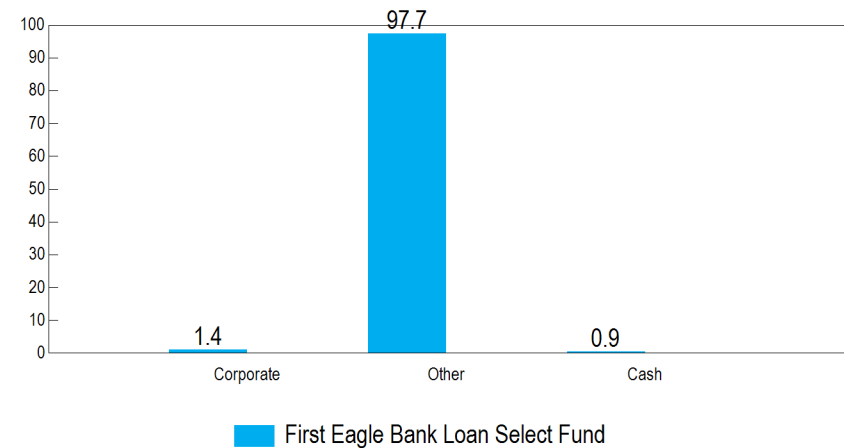
THL Bank Loan Select Fund Characteristics

	Portfolio Q2-22	Portfolio Q1-22
Fixed Income Characteristics		
Yield to Maturity	10.2	7.8
Average Duration	0.2	0.2
Average Quality	B	B
Weighted Average Maturity	4.7	4.8

Credit Quality Allocation



Sector Allocation



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

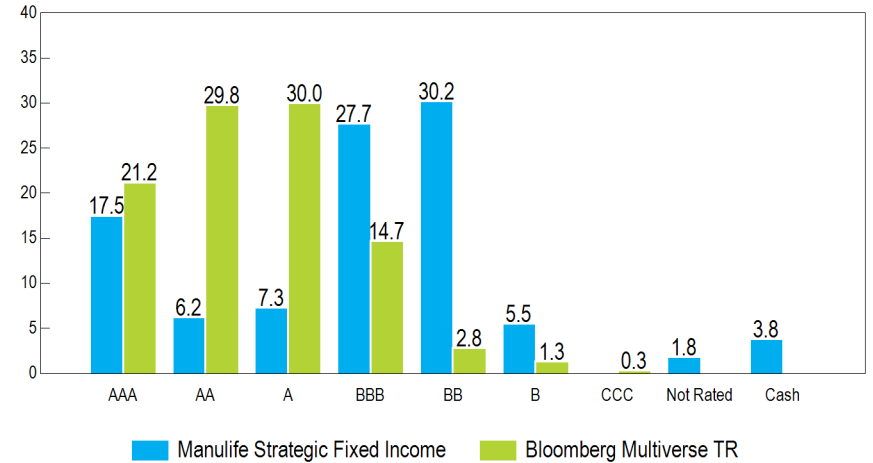
	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Manulife Strategic Fixed Income	-6.6	-10.6	--	--	--	0.1	Jul-19
Bloomberg Multiverse TR	-8.4	-15.4	-3.2	-0.5	0.3	-3.2	Jul-19

Manulife Strategic Fixed Income Characteristics

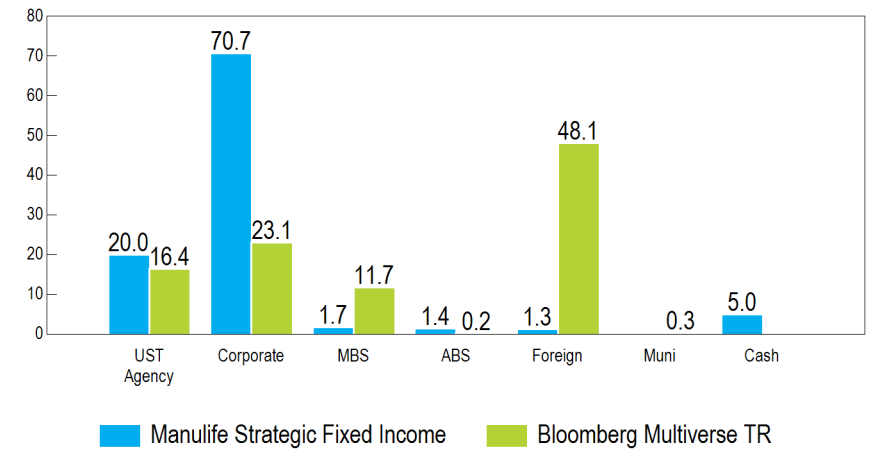
vs. Bloomberg Multiverse TR

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Fixed Income Characteristics			
Yield to Maturity	5.1	3.2	3.3
Average Duration	3.8	6.9	3.6
Average Quality	BBB	A	BBB
Weighted Average Maturity	6.2	10.5	5.5

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

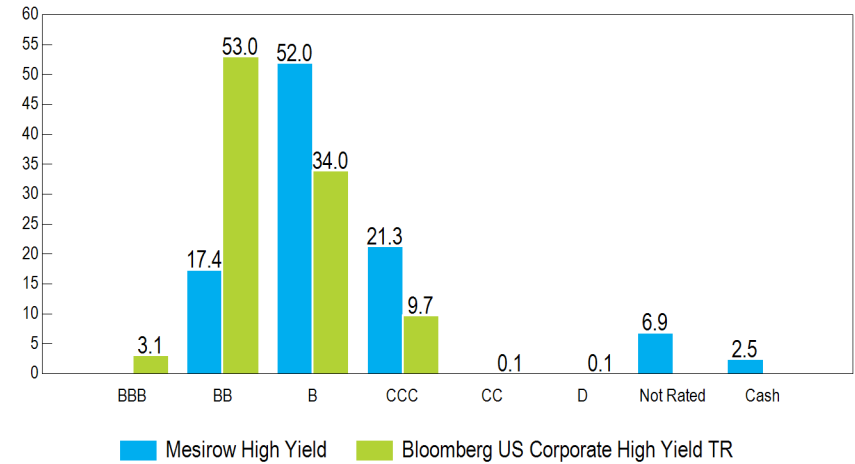
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Mesirow High Yield	-9.5	-10.3	--	--	--	3.9	Aug-19
Bloomberg US Corporate High Yield TR	-9.8	-12.8	0.2	2.1	4.5	0.0	Aug-19
eV US High Yield Fixed Inc Net Median	-9.4	-11.9	0.4	2.0	4.2	0.2	Aug-19
eV US High Yield Fixed Inc Net Rank	54	31	--	--	--	4	Aug-19

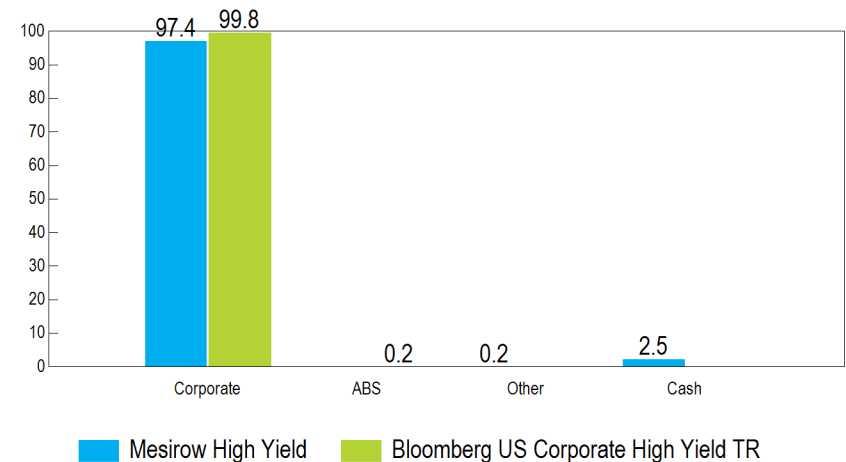
Mesirow High Yield Characteristics vs. Bloomberg US Corporate High Yield TR

	Portfolio Q2-22	Index Q2-22	Portfolio Q1-22
Fixed Income Characteristics			
Yield to Maturity	10.7	8.7	7.9
Average Duration	4.2	4.6	4.2
Average Quality	B	B	B
Weighted Average Maturity	5.5	5.9	5.7

Credit Quality Allocation



Sector Allocation



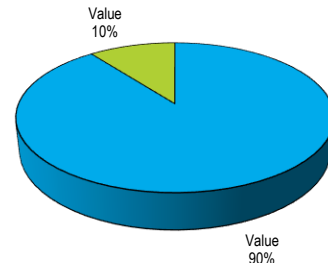
EnTrustPermal Special Opportunities Evergreen Fund, Ltd. | As of June 30, 2022

Account Information

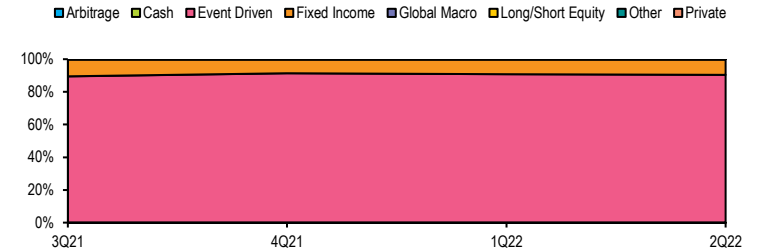
Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$19.3 M
Portfolio Manager:	Team
Location:	New York, NY
Inception Date:	1/1/2019
Account Type:	Limited Partnership
# of Investments:	28
Fee Schedule:	1.00% Management Fee, 10% Performance Fee

Liquidity 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 (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
North America	73	69	66	59
Developed Europe	22	28	30	35
Developed Asia	3	3	4	6
Emerging Markets	2	1	0	0

Exposure Report (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Total Gross Exposure	94	94	92	88
Gross Long Exposure	94	93	91	86
Gross Short Exposure	0	1	1	2
Net Exposure	94	92	90	85

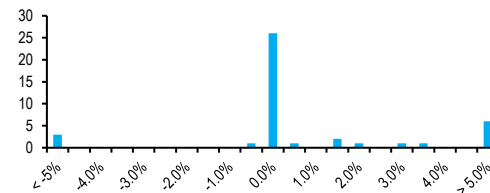
Portfolio Performance Summary

	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 1/2019 (%)
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	-17.3	-17.9	-2.0	NA	2.4
HFRI Fund of Funds Composite Index (QTR)	NA	NA	NA	NA	NA

Top 5 Funds (%)

StubHub - Declaration	9
SeaWorld II - Hill Path	8
Dollar Tree - Mantle Ridge	7
Centene - Politan	6
Project Beat	6

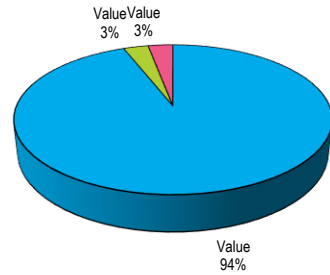
Return Distribution



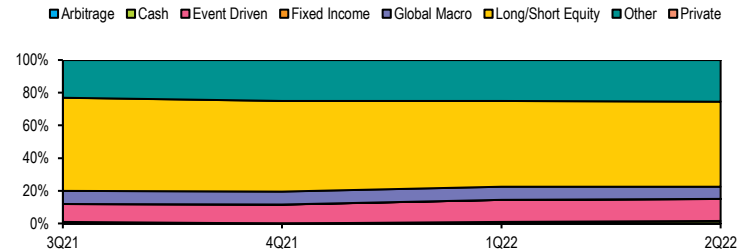
Account Information

Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$10.3 M
Portfolio Manager:	Team
Location:	
Inception Date:	10/1/2018
Account Type:	Limited Partnership
# of Investments:	16
Fee Schedule:	0.5% Management Fee, 5% Performance Fee
Liquidity Constraints:	Quarterly with 65 days' notice

Instrument Allocation



Historical Strategy Allocations



Portfolio Performance Summary

	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 10/2018 (%)
Old Farm Partners Master Fund, L.P.	-7.9	-9.1	5.3	NA	4.0
HFRI Fund of Funds Composite Index	-3.9	-5.4	4.0	3.6	3.4

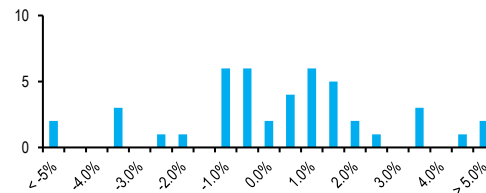
Geographic Exposure Allocation (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
North America	67	66	67	72
Developed Europe	29	29	28	22
Emerging Markets	3	3	4	4
Developed Asia	1	2	1	2

Exposure Report (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Total Gross Exposure	107	123	125	136
Gross Long Exposure	71	82	89	93
Gross Short Exposure	36	41	36	43
Net Exposure	35	41	53	50

Top 5 Funds (%)

Divisar	8
Sio	8
Crake	8
Prospect	6
Float Footed	5

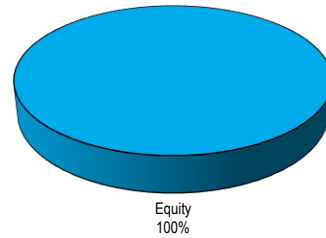
Return Distribution



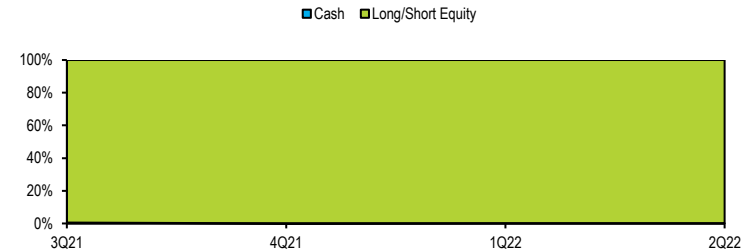
Account Information

Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$53.8 M
Portfolio Manager:	Team
Location:	Greenwich, CT
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



Historical Strategy Allocations



Portfolio Performance Summary

	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 12/2018 (%)
ABS Emerging Markets	-12.5	-25.5	3.1	NA	5.9
MSCI Emerging Markets	-11.4	-25.3	0.6	2.2	2.6

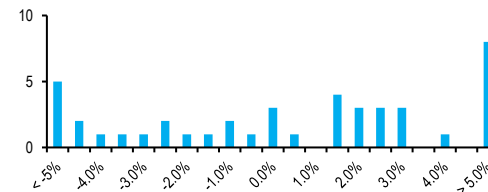
Top 5 Funds (%)

SinoVision Greater China SMA	14
Houshan SMA	11
IvyRock China SMA	10
ANDA SMA	8
WhiteOak SMA	7

Geographic Exposure Allocation (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Emerging Markets	98	97	96	96
North America	0	1	1	2
Developed Europe	1	1	1	1
Developed Asia	1	1	2	0

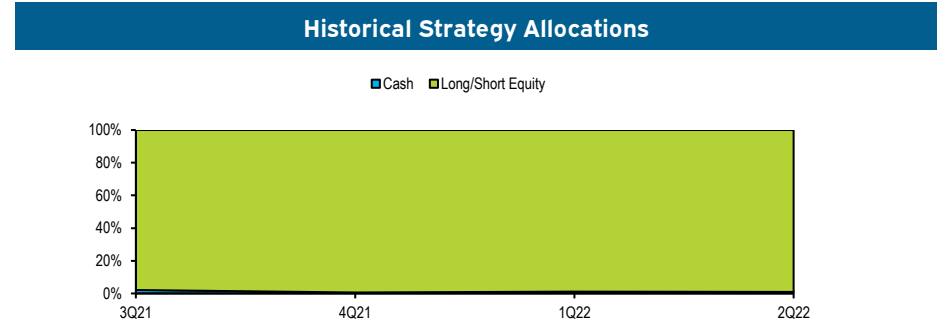
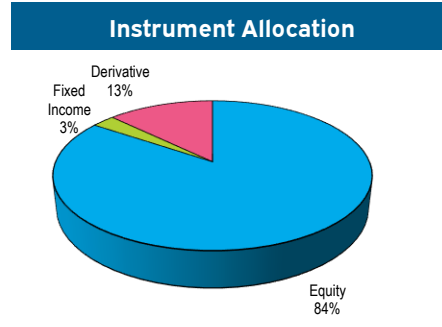
Exposure Report (%)	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Total Gross Exposure	95	96	97	97
Gross Long Exposure	95	96	97	97
Gross Short Exposure	0	0	0	0
Net Exposure	95	96	97	97

Return Distribution



ABS Offshore SPC - Global Segregated Portfolio | As of June 30, 2022

Account Information	
Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$34.3 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



Portfolio Performance Summary

	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 8/2010 (%)
ABS Offshore SPC - Global Segregated Portfolio	-5.5	-9.7	4.3	3.9	5.0
HFRI Fund of Funds Composite Index	-3.9	-5.4	4.0	3.6	3.2

Top 5 Funds (%)

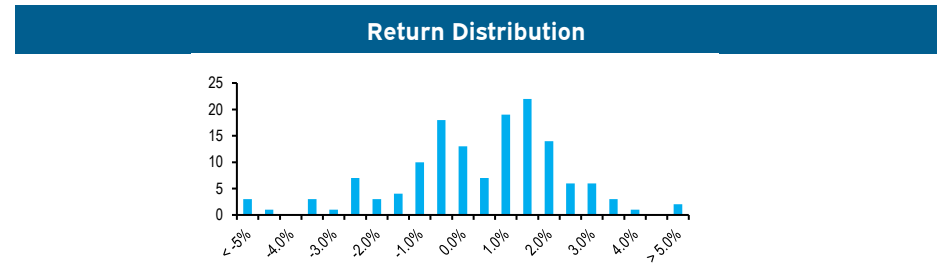
Energy Dynamics	6
Tornado	5
Sagil Latin American Opportunities	5
TPG Public Equity	5
Seligam Tech Spectrum	5

Geographic Exposure Allocation (%)

	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Emerging Markets	13	14	12	12
North America	71	70	68	68
Developed Europe	10	10	14	12
Developed Asia	6	6	7	7

Exposure Report (%)

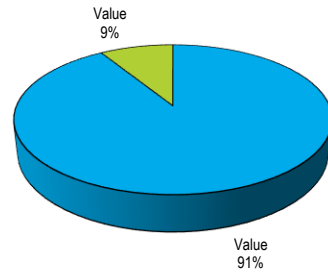
	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Total Gross Exposure	135	148	149	147
Gross Long Exposure	86	95	101	99
Gross Short Exposure	49	53	48	48
Net Exposure	38	43	53	51



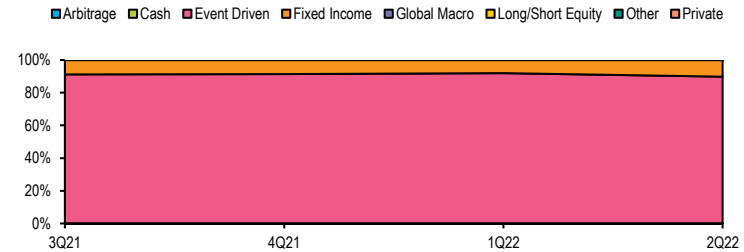
Account Information

Mandate:	Hedge Fund, Fund of Funds
Market Value:	\$13 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

	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	Since 10/2016 (%)
EnTrust Special Opportunities Fund III, Ltd.	-26.5	-31.9	-8.1	-4.1	1.4
HFRI Fund of Funds Composite Index (QTR)	NA	NA	NA	NA	NA

Geographic Exposure Allocation (%)

	6/30/2022	3/31/2022	12/31/2021	9/30/2021
North America	56	59	59	60
Developed Europe	37	36	34	33
Developed Asia	1	1	2	2
Emerging Markets	6	5	5	5

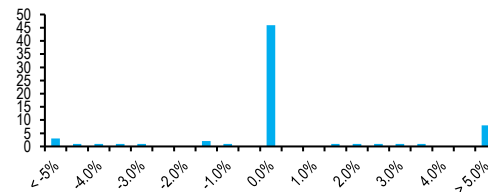
Exposure Report (%)

	6/30/2022	3/31/2022	12/31/2021	9/30/2021
Total Gross Exposure	98	98	98	98
Gross Long Exposure	98	98	98	98
Gross Short Exposure	0	0	0	0
Net Exposure	98	98	98	98

Top 5 Funds (%)

SeaWorld - Hill Path	16
J.G. Wentworth - Axar	9
Deutsche Bank - Hudson Executive	9
IWG - Tosca	8
Nestle	8

Return Distribution



Annual Investment Expense Analysis				
As Of June 30, 2022				
Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Domestic Equity Assets		\$238,283,923		
Rhumblin Russell 1000 Value	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$53,766,746	\$23,630	0.04%
Rhumblin Russell 1000 Growth	0.05% of First 25.0 Mil, 0.04% of Next 25.0 Mil, 0.03% Thereafter	\$46,209,015	\$20,984	0.05%
Fisher Midcap Value	0.65% of Assets	\$56,188,769	\$365,227	0.65%
Newton Small Cap Growth	0.45% of Assets	\$41,232,654	\$185,547	0.45%
Vulcan Partners Small Cap Value	0.83% of Assets	\$14,696,483	\$121,981	0.83%
Systematic Small Cap Free Cash Flow	0.76% of Assets	\$26,190,256	\$199,046	0.76%
International Developed Market Equity Assets		\$35,652,633		
Aristotle International Equity	0.49% of Assets	\$18,930,033	\$92,757	0.49%
Walter Scott International Equity	0.75% of Assets	\$16,722,600	\$125,419	0.75%
International Emerging Market Equity Assets		\$101,861,930		
ABS Emerging Markets	Performance-based 0.35 and 0.10	\$53,752,392	\$188,133	0.35%
Driehaus Emerging Markets Growth	0.55% of Assets	\$48,109,538	\$264,602	0.55%
Global Equity Assets		\$132,794,504		
First Eagle Global Value Fund	0.75% of Assets	\$22,880,773	\$171,606	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	\$32,050,147	\$256,401	0.80%
Lee Munder Global Multi-Cap Strategy	0.45% of Assets	\$38,341,862	\$172,538	0.45%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Wellington Durable Enterprises, L.P.	0.60% of Assets	\$39,521,721	\$237,130	0.60%
Core Fixed Income		\$114,513,888		
Lord Abbett Short Duration Credit Trust II	0.17% of Assets	\$49,683,078	\$84,461	0.17%
Lord Abbett Core Fixed Income Trust II		\$41,147,325		
Rhumblin TIPS Trust	0.04% of First 5.0 Mil, 0.03% Thereafter	\$23,683,484	\$7,605	0.03%
Value Added Fixed Income		\$83,014,733		
Eaton Vance High Yield	0.42% of Assets	\$11,216,330	\$47,109	0.42%
First Eagle Bank Loan Select Fund	0.40% of Assets	\$10,377,273	\$41,509	0.40%
Manulife Strategic Fixed Income	0.35% of Assets	\$40,016,936	\$140,059	0.35%
Mesirow High Yield	0.40% of Assets	\$13,885,193	\$55,541	0.40%
Eaton Vance EMD Opportunities Fund	0.30% of Assets	\$7,519,001	\$22,557	0.30%

Total Retirement Association | As of June 30, 2022

Note: The value is based on March 31, 2022 FMV.

Private Equity	Commitment	Total Contributions	Total Distributions	Value
Ascend Ventures II, L.P.	2,500,000	2,327,488	925,962	74,024
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	4,138,630
Audax Mezzanine Fund IV, L.P.	10,000,000	8,389,440	5,912,018	4,086,028
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	5,253,236	1,071,735	9,851,640
Ironsides Co-Investment Fund VI, L.P.	13,000,000	11,251,173	182,648	13,162,140
DN Partners II, L.P.	5,000,000	2,375,841	23,571	2,426,338
Euro Choice V, L.P.	6,082,223	5,919,759	4,669,551	4,610,277
FS Equity Partners VIII, L.P.	12,000,000	6,198,691	324,324	8,088,780
Globespan Capital Partners V, L.P.	5,000,000	4,852,500	8,895,488	4,697,725
HarbourVest Partners Co-Investment Fund V, L.P.	12,000,000	9,300,000	1,440,447	15,761,371
HarbourVest Partners Co-Investment Fund VI, L.P.	13,000,000	0	0	0
Ironsides Direct Investment Fund V, L.P.	12,000,000	10,244,297	785,087	18,645,582
Kohlberg Investors IX	10,000,000	4,772,024	294,108	5,665,033
Landmark Equity Partners XIV, L.P.	6,000,000	5,837,967	7,223,059	686,092
Leeds Equity Partners IV, L.P.	5,000,000	5,093,100	9,709,704	13,521
Leeds Equity Partners V, L.P.	2,500,000	3,525,207	5,478,607	410,213
Lexington Capital Partners VII, L.P.	10,000,000	8,934,550	12,809,800	1,841,614
LLR Equity Partners V, L.P.	12,000,000	11,040,000	3,065,757	13,721,402
Mesirow Financial Capital Partners IX, L.P.	4,000,000	3,840,731	2,021,056	78,889
Ridgemont Equity Partners III, L.P.	12,000,000	10,213,999	4,487,116	12,772,302
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	7,309,267	1,090,439	9,791,061
Siguler Guff Distressed Opportunities Fund III, L.P.	6,000,000	5,820,000	9,072,499	627,751
Summit Partners Growth Equity Fund IX, L.P.	10,000,000	11,590,999	12,432,065	16,870,065
Summit Partners Venture Capital Fund V	10,000,000	3,337,544	0	2,592,771
Summit Partners Growth Equity Fund XI, L.P.	13,000,000	0	0	0
TRG Growth Partnership II, L.P.	7,500,000	7,366,152	7,872,114	1,098,025

Total Retirement Association | As of June 30, 2022

Note: The value is based on March 31, 2022 FMV.

Private Equity	Commitment	Total Contributions	Total Distributions	Value
Trilantic Capital Partners VI (North America), L.P.	12,000,000	9,660,725	56,520	10,766,111
Waud Capital Partners V, L.P.	10,000,000	7,847,116	0	9,327,440
Wellspring Capital Partners VI, L.P.	12,000,000	11,494,621	2,436,987	14,550,592
Total Plymouth County - PE	280,921,223	195,123,701	116,943,185	186,355,418
Real Assets	Commitment	Total Contributions	Total Distributions	Value
Basalt Infrastructure Partners II	10,000,000	9,416,866	488,876	11,632,191
BlackRock Global Renewable Power Infrastructure Fund III, L.P.	10,000,000	2,022,449	14,116	1,581,406
BTG Pactual Global Timberland Resources Fund, LLC	5,043,536	5,043,536	1,869,240	1,356,215
Global Infrastructure Partners III, L.P.	10,000,000	9,885,454	2,429,488	10,404,297
Global Infrastructure Partners IV, L.P.	10,000,000	5,778,678	0	2,032,101
IFM Global Infrastructure (U.S.), L.P.	60,000,000	35,000,000	3,239,168	45,355,079
ISQ Global Infrastructure Fund III (USTE), L.P.	10,000,000	785,680	14	616,669
JPMorgan Global Maritime Investment	10,000,000	10,034,375	1,809,932	9,343,758
Domain Timbervest Partners III, L.P.	5,000,000	5,000,000	3,201,626	4,220,789
Total Plymouth County - RA	130,043,536	82,967,038	13,052,460	86,542,505
Real Estate	Commitment	Total Contributions	Total Distributions	Value
1921 Realty, Inc.	5,000,000	5,378,194	0	544,540
AEW Partners IX, L.P.	10,000,000	3,950,617	111	2,855,538
AEW Partners Real Estate Fund VIII, L.P.	25,000,000	23,989,589	23,767,042	10,055,281
Berkshire Value Fund V, L.P.	9,000,000	4,673,818	1,014,189	2,570,297
Carlyle Realty Partners VIII, L.P.	18,000,000	11,139,686	8,345,561	7,874,063
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	4,407,797	19,332,400
JPMorgan Strategic Property	27,000,000	27,000,000	785,960	37,371,693
PCCP Equity IX, L.P.	10,000,000	1,497,036	0	0
Real Estate International Partnership Fund I, L.P.	15,000,000	12,677,141	11,372,161	981,636
Rockpoint Real Estate Fund VI, L.P.	9,000,000	5,996,873	90,341	6,526,732
TA Realty Core Property Fund, L.P.	60,000,000	55,373,141	3,286,511	77,631,253
TerraCap Partners V, L.P.	5,000,000	4,992,904	37,177	5,492,989
Total Plymouth County - RE	213,000,000	176,748,716	60,513,400	171,236,422

Note: The data for IFM Global Infrastructure, TA Realty Core Property Fund, and JPMorgan Strategic Property is as of June 30, 2022.

Cash Flow Summary					
Quarter Ending June 30, 2022					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
1921 Realty, Inc	\$544,540	\$0	\$0	\$0	\$550,780
ABS Emerging Markets	\$61,396,722	\$0	-\$15,678	-\$15,678	\$53,752,392
ABS Offshore SPC - Global Segregated Portfolio	\$36,265,342	\$0	-\$87,296	-\$87,296	\$34,266,212
AEW Partners Real Estate Fund IX, L.P.	\$3,802,040	\$823,046	\$0	\$823,046	\$4,785,017
AEW Partners Real Estate VIII	\$6,029,588	\$0	\$0	\$0	\$7,253,009
Aristotle International Equity	\$22,534,208	\$0	-\$24,727	-\$24,727	\$18,930,033
Ascend Ventures II	\$74,024	\$0	-\$69,231	-\$69,231	\$4,793
Ascent Ventures IV	\$1,126	\$0	\$0	\$0	\$0
Ascent Ventures V	\$4,173,442	\$0	\$0	\$0	\$4,138,630
Audax Mezzanine Debt IV	\$4,074,063	\$69,660	-\$1,184,733	-\$1,115,073	\$2,970,955
Basalt Infrastructure Partners II	\$11,632,191	\$0	-\$741,466	-\$741,466	\$10,960,129
Berkshire Value Fund V	\$4,895,897	\$0	-\$571,091	-\$571,091	\$4,598,552
BlackRock Global Renewable Power Infrastructure Fund III, L.P.	\$1,922,743	\$545,482	-\$128,327	\$417,155	\$2,344,175
BTG Pactual Global Timberland Resources	\$1,356,215	\$0	\$0	\$0	\$1,481,339
Carlyle Realty Partners VIII	\$7,874,063	\$1,968,136	-\$1,527,600	\$440,536	\$10,530,767
Cash	\$34,911,020	\$51,569,466	-\$73,528,051	-\$21,958,585	\$12,951,012
Charles River Partnership XI	\$0	\$0	\$0	\$0	\$0
Charlesbank Technology Opportunities Fund	\$8,955,126	\$1,225,783	\$0	\$1,225,783	\$11,077,423
DN Partners II, LP	\$1,851,617	\$0	\$0	\$0	\$2,426,338
Driehaus Emerging Markets Growth	\$53,909,979	\$0	-\$68,653	-\$68,653	\$48,109,538
DSF Multi-Family Real Estate Fund III	\$19,006,222	\$0	-\$8,022,938	-\$8,022,938	\$12,748,553
Eaton Vance EMD Opportunities Fund	\$8,038,640	\$0	-\$5,865	-\$5,865	\$7,519,001

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Eaton Vance High Yield	\$12,330,095	\$0	-\$12,279	-\$12,279	\$11,216,330
Entrust Special Opportunities Fund III, Ltd.	\$17,637,749	\$0	\$0	\$0	\$12,969,036
EnTrustPermal Special Opportunities Evergreen Fund, Ltd.	\$21,376,598	\$1,942,823	\$0	\$1,942,823	\$19,292,157
Euro Choice V Programme	\$4,275,276	\$0	-\$100,688	-\$100,688	\$4,509,590
First Eagle Bank Loan Select Fund	\$10,868,079	\$0	-\$10,627	-\$10,627	\$10,377,273
First Eagle Global Value Fund	\$25,687,362	\$0	-\$44,872	-\$44,872	\$22,880,773
Fisher Midcap Value	\$69,580,384	\$0	-\$99,580	-\$99,580	\$56,188,769
FS Equity Partners VIII, L.P.	\$9,360,276	\$0	\$0	\$0	\$11,170,753
Global Infrastructure Partners III	\$10,953,382	\$0	-\$395,634	-\$395,634	\$11,085,013
Global Infrastructure Partners IV, L.P.	\$5,529,956	\$0	-\$411,469	-\$411,469	\$5,330,276
Globespan Capital V	\$4,697,725	\$0	\$0	\$0	\$4,418,039
HarbourVest Partners Co-Investment V	\$14,943,956	\$0	\$0	\$0	\$14,856,672
IFM Global Infrastructure	\$44,332,807	\$0	-\$101,654	-\$101,654	\$45,355,079
Ironsides Co-Investment Fund VI, L.P.	\$12,305,248	\$0	\$0	\$0	\$13,162,140
Ironsides Direct Investment Fund V, L.P.	\$18,645,582	\$1,000,029	-\$406,078	\$593,950	\$20,055,597
ISQ Global Infrastructure Fund III (USTE), L.P.	\$616,669	\$27,036	-\$27,036	\$0	\$641,510
JP Morgan Global Maritime Investment	\$9,343,758	\$0	-\$768,907	-\$768,907	\$9,192,850
JPMorgan Strategic Property	\$35,773,068	\$0	-\$175,151	-\$175,151	\$37,371,693
Kohlberg Investors IX	\$5,665,033	\$0	\$0	\$0	\$5,792,584
Kopernik Global All Cap Fund	\$37,582,505	\$0	-\$68,944	-\$68,944	\$32,050,147
Landmark Equity Partners XIV	\$653,612	\$0	-\$63,874	-\$63,874	\$550,552
Lee Munder Global Multi-Cap Strategy	\$44,908,893	\$0	-\$45,671	-\$45,671	\$38,341,862
Leeds Equity Partners IV	\$13,521	\$0	\$0	\$0	\$13,505
Leeds Equity Partners V	\$410,213	\$0	\$0	\$0	\$410,213

Total Retirement Association | As of June 30, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
Lexington Capital Partners VII	\$1,726,833	\$2,320	-\$118,436	-\$116,116	\$1,649,629
LLR Equity Partners V, LP.	\$13,721,402	\$0	\$0	\$0	\$14,585,382
LMCG Small Cap Value	\$51,131,437	\$0	-\$51,131,437	-\$51,131,437	--
Lord Abbett Core Fixed Income Trust II	\$43,306,776	\$0	\$0	\$0	\$41,147,325
Lord Abbett Short Duration Credit Trust II	\$50,598,673	\$0	-\$21,279	-\$21,279	\$49,683,078
Manulife Strategic Fixed Income	\$53,524,786	\$0	-\$10,088,464	-\$10,088,464	\$40,016,936
Mesirow Financial Capital Partners IX, LP	\$78,889	\$0	\$0	\$0	\$78,205
Mesirow Financial International Real Estate Fund I	\$981,636	\$0	-\$149,754	-\$149,754	\$831,882
Mesirow High Yield	\$15,338,294	\$0	-\$14,506	-\$14,506	\$13,885,193
Newton Small Cap Growth	\$52,183,452	\$0	-\$48,754	-\$48,754	\$41,232,654
Old Farm Partners Master Fund, L.P.	\$11,235,831	\$0	\$0	\$0	\$10,348,927
PCCP Equity IX, L.P.	\$1,497,036	\$1,672,907	\$0	\$1,672,907	\$3,254,221
Rhumblin Russell 1000 Growth	\$58,422,804	\$0	-\$5,538	-\$5,538	\$46,209,015
Rhumblin Russell 1000 Value	\$61,219,540	\$0	-\$6,136	-\$6,136	\$53,766,746
Rhumblin TIPS Trust	\$25,221,408	\$0	-\$1,946	-\$1,946	\$23,683,484
Ridgemont Equity Partners III, L.P.	\$12,772,302	\$0	\$0	\$0	\$14,178,853
RIMCO Royalty Partners, LP	\$1	\$0	\$0	\$0	\$1
Rockpoint Real Estate Fund VI, L.P.	\$7,018,449	\$550,750	-\$869,924	-\$319,174	\$7,304,562
Searchlight Capital III, L.P.	\$10,178,225	\$0	-\$674,682	-\$674,682	\$10,325,303
Siguler Guff Distressed Opportunities Fund III, LP	\$579,324	\$0	\$0	\$0	\$606,368
Summit Partners Growth Equity Fund IX	\$16,743,377	\$29,001	\$0	\$29,001	\$15,998,524
Summit Partners Venture Capital Fund V	\$3,352,522	\$571,006	\$0	\$571,006	\$3,923,528
Systematic Small Cap Free Cash Flow	\$0	\$28,975,563	\$0	\$28,975,563	\$26,190,256
TA Realty Core Property Fund, L.P.	\$54,613,828	\$20,000,000	-\$781,138	\$19,218,862	\$77,631,253

Total Retirement Association | As of June 30, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Ending Market Value
TerraCap Partners V, L.P	\$5,492,989	\$0	-\$48,432	-\$48,432	\$5,506,382
Timbervest Partners III, LP	\$4,220,789	\$0	-\$244,500	-\$244,500	\$4,052,865
TRG Growth Partnership II	\$1,098,025	\$0	\$0	\$0	\$1,048,262
Trilantic Capital Partners VI, L.P.	\$11,600,364	\$0	-\$841,825	-\$841,825	\$11,233,059
Vulcan Partners Small Cap Value	\$0	\$18,160,933	\$0	\$18,160,933	\$14,696,483
Walter Scott International Equity	\$19,760,109	\$0	-\$70,429	-\$70,429	\$16,722,600
Waud Capital Partners V	\$9,592,838	\$1,012,524	\$0	\$1,012,524	\$10,953,967
Wellington Durable Enterprises, L.P.	\$44,155,955	\$0	-\$61,241	-\$61,241	\$39,521,721
Wellspring Capital Partners VI	\$14,310,414	\$0	\$0	\$0	\$14,515,107
Total	\$1,366,418,860	\$130,146,464	-\$153,886,540	-\$23,740,076	\$1,253,412,835

**Private Markets 2022 Q1
Performance Update**

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

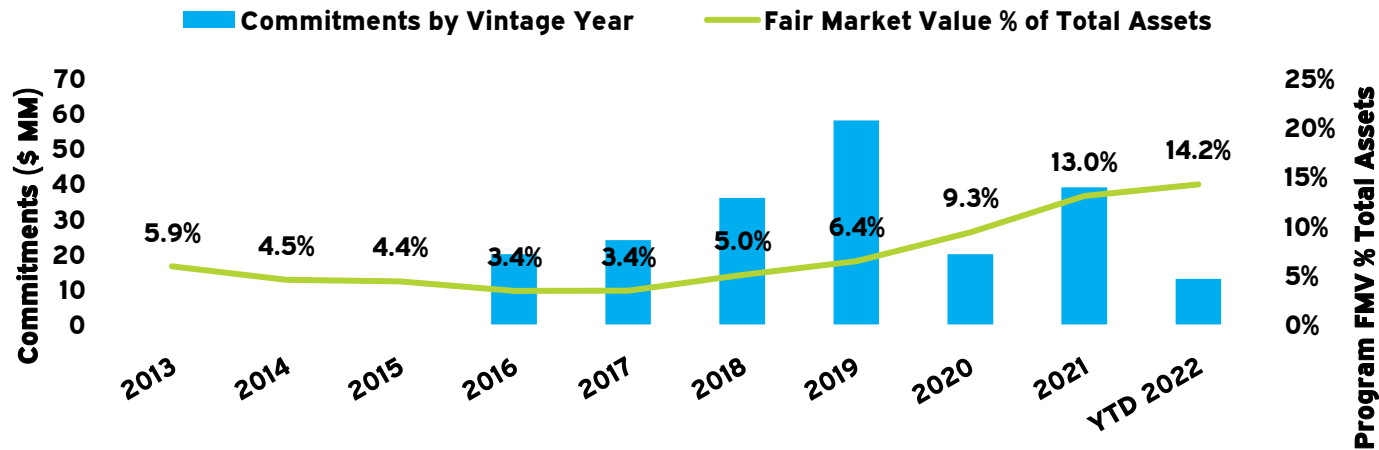
As of March 31, 2022 the Retirement Association had committed \$715.1 million to 67 partnerships. The reported fair market value of the program, in aggregate, was \$439.7 million at the end of the quarter.

Private Equity Program		Real Assets Program		Real Estate Program	
No. of Funds	37	No of Funds	9	No of Funds	21
Committed	397.1	Committed	130.0	Committed	288.0
Contributed	214.2	Contributed	83.0	Contributed	235.3
Distributed	132.9	Distributed	13.2	Distributed	202.2
Fair Market Value	194.2	Fair Market Value	91.6	Fair Market Value	153.9
TVPI	1.52x	TVPI	1.26x	TVPI	1.51x
Since Inception IRR	9.4%	Since Inception IRR	5.9%	Since Inception IRR	7.0%
1-Quarter IRR	4.5%	1-Quarter IRR	2.5%	1-Quarter IRR	9.1%
1-Year IRR	34.7%	1-Year IRR	22.2%	1-Year IRR	38.8%

Private Equity Program

Introduction

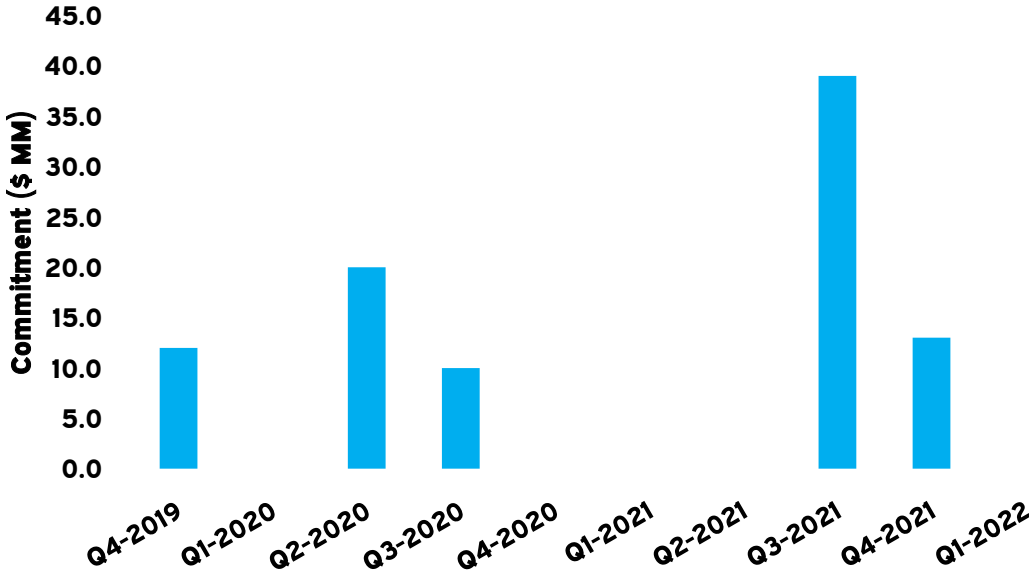
As of March 31, 2022, the Plymouth County Retirement Association (“the Retirement Association”) had committed \$297.1 million to 37 private equity partnerships. The Retirement Association maintains a 13% allocation target to private equity. No new commitments were made during the first quarter of 2022. The fair market value of the private equity program was \$194.2 million, representing 14.2% of the Retirement Association’s total assets.



Program Status	
No. of Investments	37
Committed (\$ MM)	297.1
Contributed (\$ MM)	214.2
Distributed (\$ MM)	132.9
Fair Market Value (\$ MM)	194.2

Performance Since Inception	
DPI	0.62x
TVPI	1.52x
IRR	9.4%

Commitments
Recent Quarterly Commitments

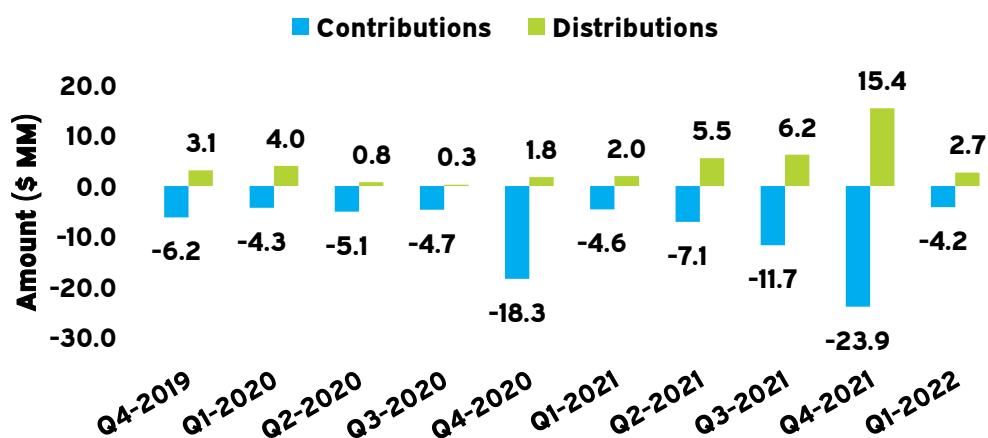


Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
------	----------	--------	-------------

No new commitments made during this quarter.

Cash Flows Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
FS Equity VIII	2019	Buyout	North America	1.27
Trilantic VI	2018	Buyout	North America	1.03
Summit Venture V	2020	Venture Capital	North America	0.76

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
Audax Mezz IV	2016	Private Debt	North America	0.95
HV Co-Invest V	2018	Buyout	North America	0.82
Trilantic VI	2018	Buyout	North America	0.19

Significant Events

- During the first quarter of 2022, the Retirement Association contributed \$4.2 million to its private equity partnerships and received \$2.7 million in distributions, representing a \$1.5 million net cash outflow.
- FS Equity Partners VIII, L.P. called \$1.27 million during the first quarter, primarily to fund a new investment as well as management fees and partnership expenses.
- Trilantic Capital Partners VI, L.P. called \$1.03 million during the quarter to fund a new investment. The Fund distributed \$0.19 million as a return of bridge financing and dividend proceeds from an existing investment.
- Summit Partners Venture Capital Fund V called \$0.76 million during the first quarter to fund several new investments.
- Audax Mezzanine Fund IV, L.P. distributed \$0.95 million during the first quarter. Proceeds stemmed from the sale of several existing investments as well as dividend proceeds from existing investments. Of the total distributions during the first quarter, \$0.09 million were recallable proceeds.
- HarbourVest Partners Co-Investment Fund V, L.P. distributed \$0.82 million during the first quarter. Proceeds stemmed from the sale of two investments as well as dividend proceeds from an existing investment.

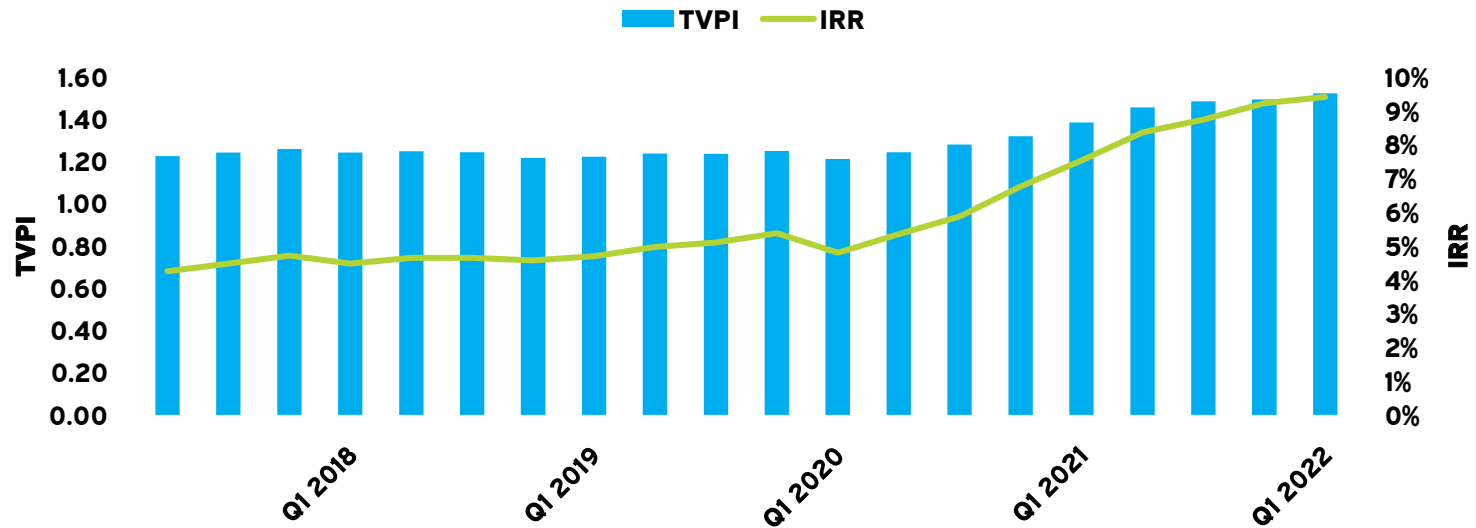
By Strategy

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	125.7	70.8	40.5	153.5	224.3	0.32	1.54	11.8
Fund of Funds	3	17.6	17.3	2.0	21.8	5.2	7.2	1.27	1.57	8.9
Growth Equity	3	30.5	19.0	24.1	20.4	17.0	41.1	1.08	1.98	13.6
Private Debt	1	10.0	8.4	3.2	5.9	4.1	7.3	0.70	1.19	10.3
Secondary	2	16.0	14.8	1.3	20.2	2.4	3.7	1.37	1.53	12.6
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	24.3	7.7	19.0	12.0	19.7	0.78	1.27	3.1
Total	37	297.1	214.2	109.1	132.9	194.2	303.3	0.62	1.52	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	0.5	18.2	0.0	0.5	1.39	1.39	4.8
2005	3	9.5	11.0	0.3	8.0	0.1	0.5	0.73	0.74	-5.3
2006	1	5.0	4.9	0.1	8.9	4.4	4.6	1.83	2.74	14.0
2007	2	12.5	9.7	2.8	7.9	3.5	6.3	0.81	1.17	2.3
2008	2	12.0	11.7	0.3	16.4	1.2	1.6	1.40	1.51	10.4
2009	1	10.0	8.9	1.2	12.9	1.8	2.9	1.45	1.64	14.0
2010	1	2.5	3.5	0.0	5.5	0.4	0.4	1.55	1.67	12.5
2011	1	5.0	5.0	0.2	4.1	4.1	4.3	0.81	1.64	7.8
2012	1	6.1	5.9	1.4	4.7	4.6	6.0	0.79	1.57	9.4
2016	2	20.0	20.0	14.2	18.5	20.1	34.2	0.92	1.93	31.4
2017	2	24.0	22.5	3.9	5.6	29.1	33.0	0.25	1.54	23.4
2018	3	36.0	29.2	7.4	2.5	46.4	53.8	0.08	1.67	25.7
2019	5	58.0	38.1	23.3	7.0	56.1	79.5	0.18	1.66	49.9
2020	2	20.0	8.1	12.2	0.3	9.1	21.3	0.04	1.16	NM
2021	3	39.0	11.5	27.7	0.2	13.2	40.9	0.02	1.16	NM
2022	1	13.0	0.0	13.0	0.0	0.0	13.0	0.00	NA	NA
Total	37	297.1	214.2	109.1	132.9	194.2	303.3	0.62	1.52	9.4

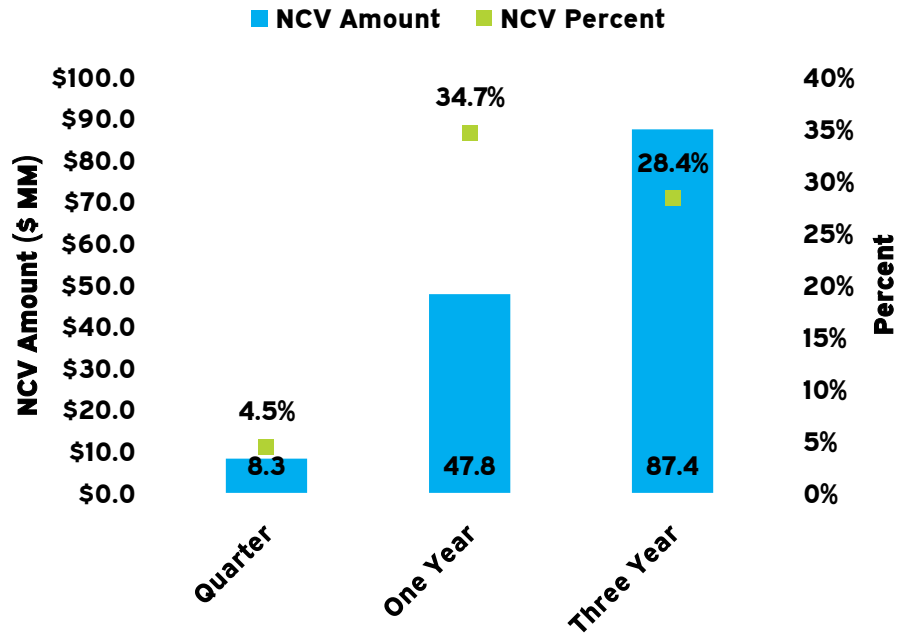
Since Inception Performance Over Time



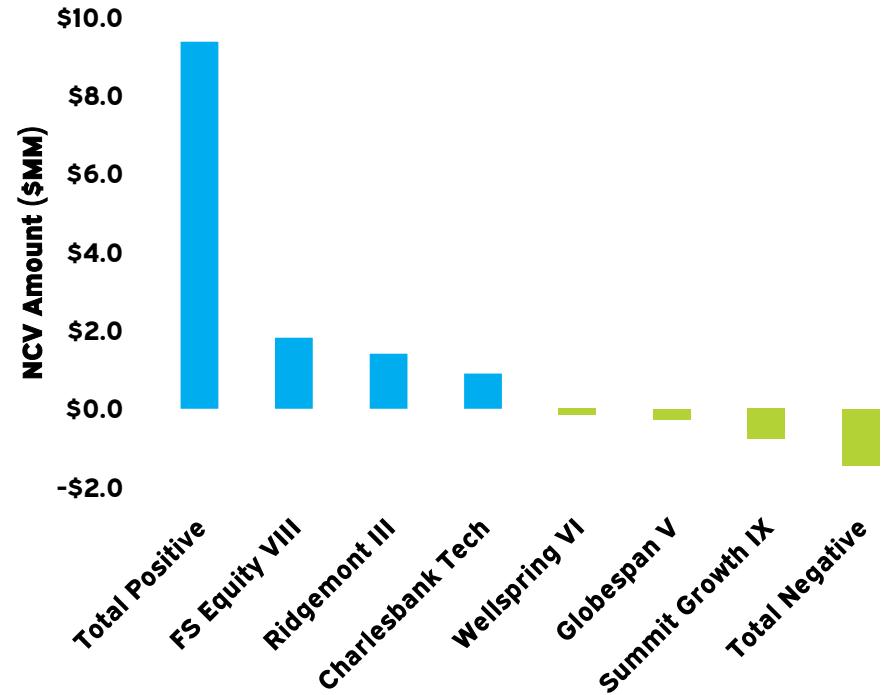
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	34.7	30.1	24.3	14.3	9.4
Public Market Equivalent	4.9	14.3	13.5	11.8	8.5

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	1.37	-25.5	7.9
Charles River X	1999	Venture Capital	5.0	4.4	0.6	2.2	0.0	0.49	1.27	-14.9	6.1
Charles River XI	2000	Venture Capital	1.8	1.8	0.0	2.5	0.0	1.39	1.37	5.5	8.0
Rimco	2001	Buyout	2.0	2.0	0.0	7.7	0.0	3.83	1.60	29.1	13.0
Leeds IV	2004	Buyout	5.0	5.1	0.1	9.7	0.0	1.91	1.59	8.0	10.1
Euro Choice II	2004	Fund of Funds	5.5	5.5	0.4	8.0	0.0	1.46	1.59	7.0	10.1
Ascent Venture IV	2004	Venture Capital	2.5	2.5	0.0	0.4	0.0	0.17	1.59	-27.2	10.1
Mesirow IX	2005	Buyout	4.0	3.8	0.2	2.0	0.1	0.55	1.48	-7.0	8.2
Levine Leichtman DV	2005	Special Situations	3.0	4.9	0.0	5.1	0.0	1.04	1.48	1.3	8.2
Ascend Ventures II	2005	Venture Capital	2.5	2.3	0.2	0.9	0.1 ¹	0.42	1.48	-8.8	8.2
Globespan V	2006	Venture Capital	5.0	4.9	0.1	8.9	4.4	2.74	1.45	14.0	8.5
DN Partners II	2007	Buyout	5.0	2.4	2.6	0.0	2.4	1.03	1.63	0.3	11.4
TRG II	2007	Growth Equity	7.5	7.4	0.2	7.9	1.0	1.21	1.63	3.6	11.4
Siguler Guff III	2008	Fund of Funds	6.0	5.8	0.2	9.1	0.6 ²	1.67	1.63	10.7	12.3

¹ The fair market value of Ascend Ventures II, L.P. is a cash adjusted estimate due to the timing of the report.

² The fair market value of Siguler Guff Distressed Opportunities Fund III, L.P. is a preliminary estimate per the GP.

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 (%)
Landmark XIV	2008	Secondary	6.0	5.8	0.2	7.3	0.6	1.35	1.63	9.8	12.3
Lexington VII	2009	Secondary	10.0	8.9	1.2	12.9	1.8	1.64	1.78	14.0	16.5
Leeds V	2010	Buyout	2.5	3.5	0.0	5.5	0.4 ¹	1.67	1.82	12.5	17.0
Ascent Venture V	2011	Venture Capital	5.0	5.0	0.2	4.1	4.1	1.64	1.99	7.8	17.7
Euro Choice V	2012	Fund of Funds	6.1	5.9	1.4	4.7	4.6	1.57	1.90	9.4	15.6
Summit Growth IX	2016	Growth Equity	10.0	11.6	11.0	12.6	16.0	2.46	2.01	40.3	23.6
Audax Mezz IV	2016	Private Debt	10.0	8.4	3.2	5.9	4.1	1.19	1.38 ²	10.3	11.3
LLR V	2017	Buyout	12.0	11.0	2.5	3.1	14.6	1.60	1.81	21.6	28.0
Wellspring VI	2017	Buyout	12.0	11.5	1.4	2.5	14.5	1.48	1.81	26.1	28.0
HV Co-Invest V	2018	Buyout	12.0	9.3	2.7	1.4	14.9	1.75	1.64	37.1	27.0
Ironsides Direct V	2018	Buyout	12.0	10.2	2.2	0.8	19.5	1.98	1.64	24.4	27.0
Trilantic VI	2018	Buyout	12.0	9.7	2.5	0.2	12.1	1.28	1.64	17.0	27.0
Charlesbank Tech	2019	Buyout	12.0	5.3	7.5	1.1	9.9	2.08	1.40	NM	25.8

¹ The fair market value of Leeds Equity Partners V, L.P. is a cash adjusted estimate due to the timing of the report.

² The Peer TVPI and IRR used for Audax Mezzanine Fund IV is the associated Private Debt benchmark as defined in the appendix.

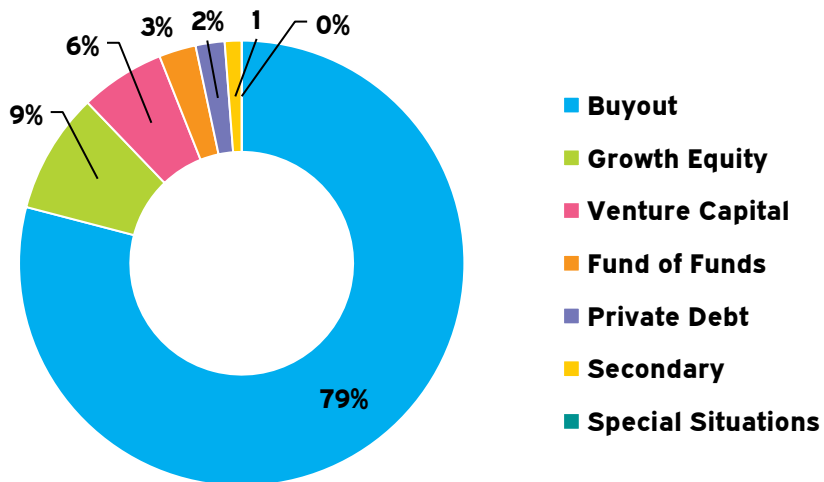
Fund Performance: Sorted By Vintage And Strategy (con't)

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
FS Equity VIII	2019	Buyout	12.0	7.5	4.5	0.3	11.2	1.54	1.40	33.6	25.8
Ridgemont III	2019	Buyout	12.0	10.2	3.9	4.5	14.2	1.83	1.40	56.3	25.8
Searchlight III	2019	Buyout	12.0	7.3	5.3	1.1	11.0	1.65	1.40	51.9	25.8
Waud V	2019	Buyout	10.0	7.8	2.2	0.0	9.9	1.27	1.40	26.4	25.8
Kohlberg IX	2020	Buyout	10.0	4.8	5.5	0.3	5.8	1.28	1.26	NM	NM
Summit Venture V	2020	Venture Capital	10.0	3.3	6.7	0.0	3.4 ¹	1.00	1.26	NM	NM
HV Co-Invest VI	2021	Buyout	13.0	0.0	13.0	0.0	0.0	NA	1.04	NA	NA
Ironsides Co-Inv VI	2021	Buyout	13.0	11.5	1.7	0.2	13.2	1.15	1.04	NM	NM
Summit Growth XI	2021	Growth Equity	13.0	0.0	13.0	0.0	0.0	NA	1.04	NA	NA
Ridgemont IV	2022	Buyout	13.0	0.0	13.0	0.0	0.0	NA	1.00	NA	NA
Total			297.1	214.2	109.1	132.9	194.2	1.52		9.4	

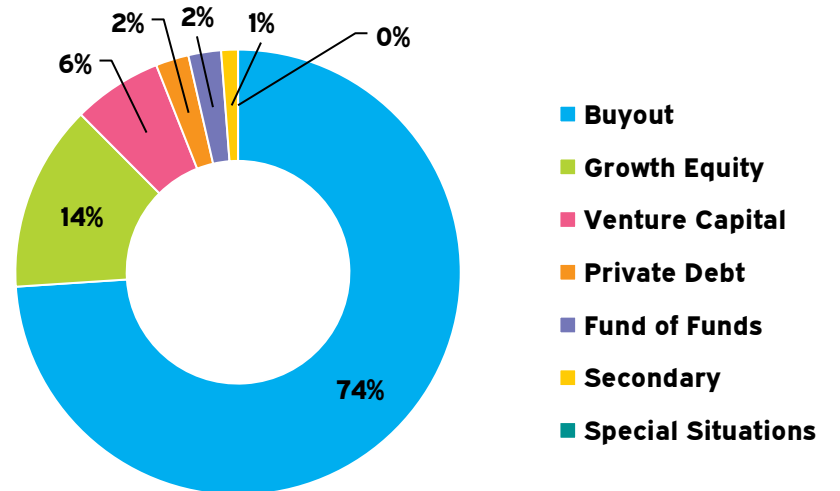
¹ The fair market value of Summit Partners Venture Capital Fund V is a cash adjusted estimate due to the timing of the report.

By Strategy

Percent of FMV

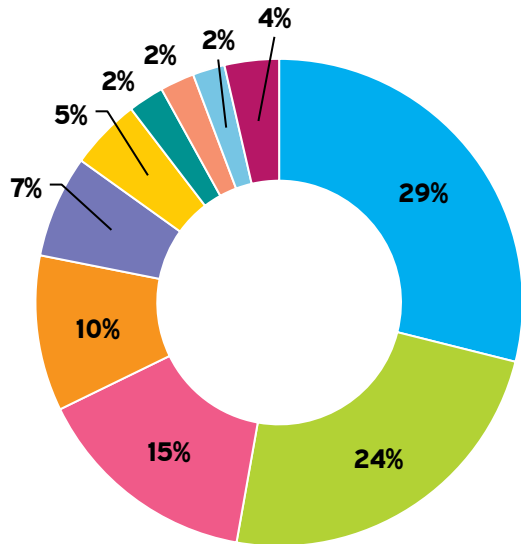


Percent of Exposure

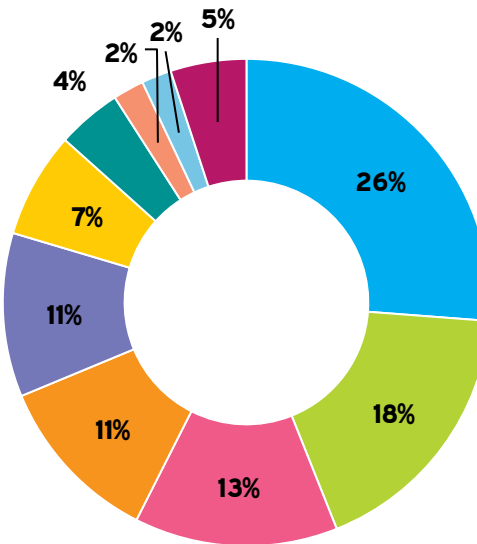


By Vintage

Percent of FMV

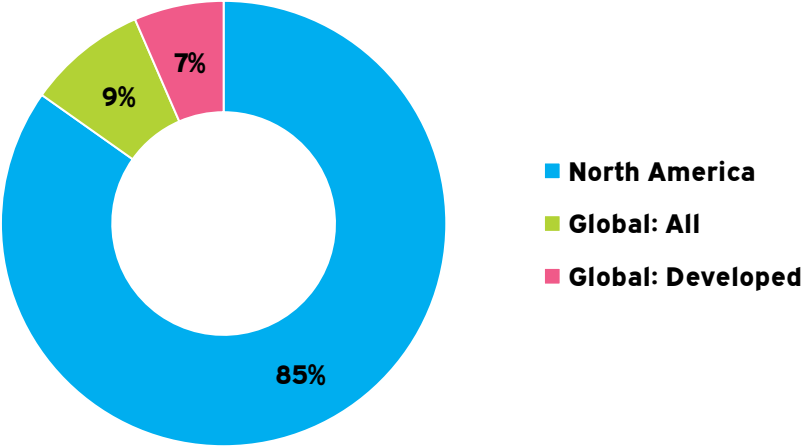


Percent of Exposure

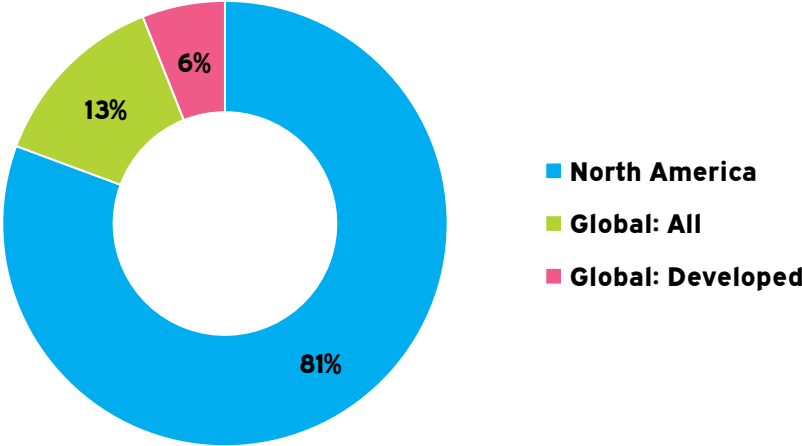


By Geographic Focus

Percent of FMV



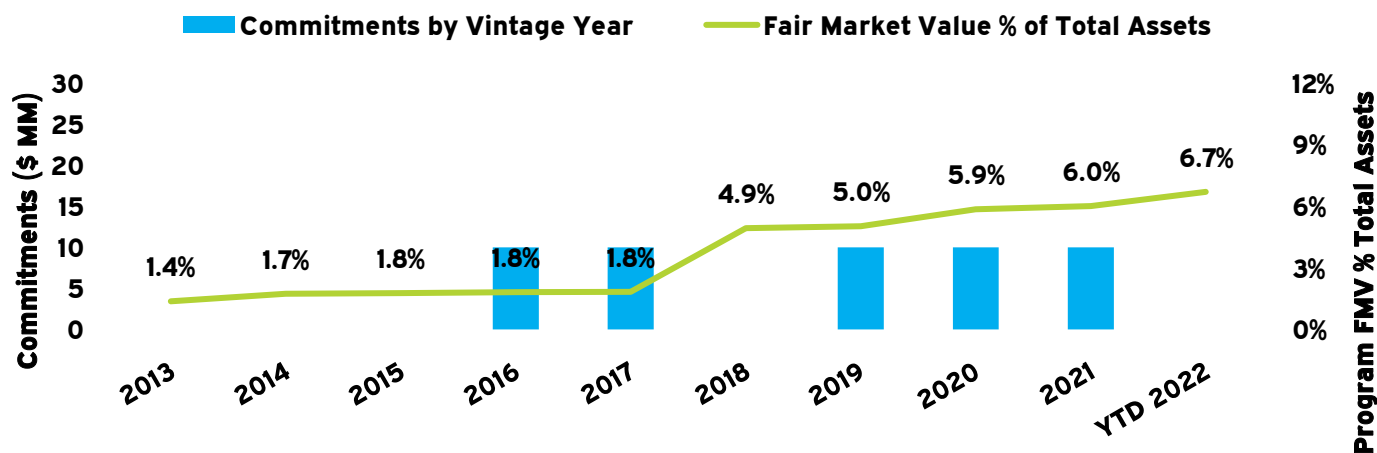
Percent of Exposure



Real Assets Program

Introduction

As of March 31, 2022, the Plymouth County Retirement Association (“the Retirement Association”) had committed \$130.0 million to nine partnerships. No new commitments were made during the first quarter of 2022. The fair market value of the Retirement Association’s Real Assets program was \$91.6 million, representing 6.7% of total assets, slightly exceeding the program’s 6.0% target.



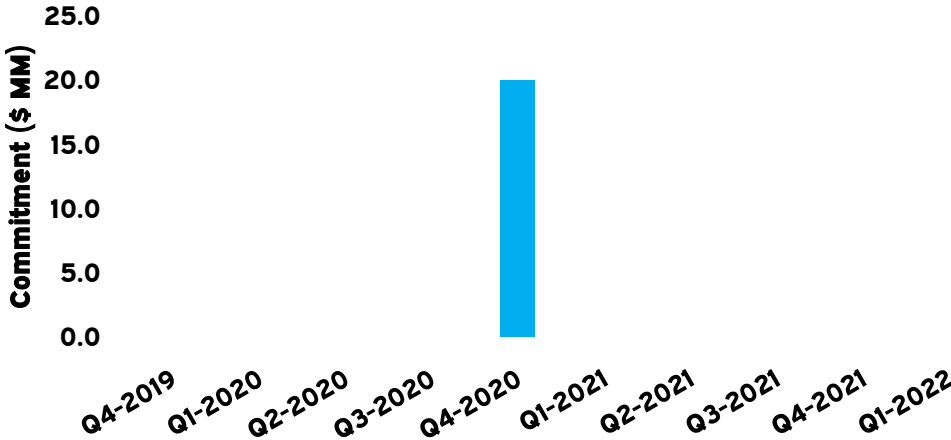
Program Status

No. of Investments	9
Committed (\$ MM)	130.0
Contributed (\$ MM)	83.0
Distributed (\$ MM)	13.2
Fair Market Value (\$ MM)	91.6

Performance Since Inception

DPI	0.16x
TVPI	1.26x
IRR	5.9%

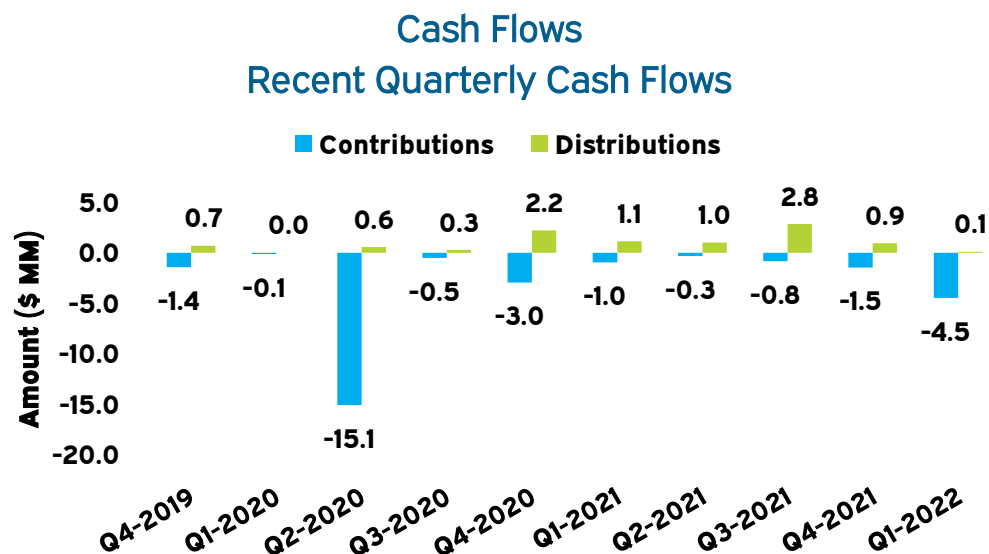
Commitments
Recent Quarterly Commitments



Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
------	----------	--------	-------------

No new commitments made during the Quarter.



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount(\$MM)
GIP IV	2019	Value-Added	Global: Developed	3.50
GIP III	2016	Value-Added	Global: Developed	0.64
BlackRock GRPIF III	2020	Value-Added	Global: All	0.34

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
GIP III	2016	Value-Added	Global: Developed	0.09

Significant Events

- During the first quarter of 2022, the Retirement Association contributed \$4.5 million to its private real assets partnerships and received \$0.1 million in distributions, representing a \$4.4 million net cash outflow.
- Global Infrastructure Partners IV, L.P. called \$3.5 million during the first quarter to fund several new investments, as well as management fees and partnership expenses.
- Global Infrastructure Partners III, L.P. called \$0.64 million during the quarter to fund an existing investment and one new investment. The Fund distributed \$0.09 million as dividend proceeds from its existing investments.
- BlackRock Global Renewable Power Infrastructure Fund III, L.P. called \$0.34 million during the first quarter, primarily to fund the acquisition of several new investments.

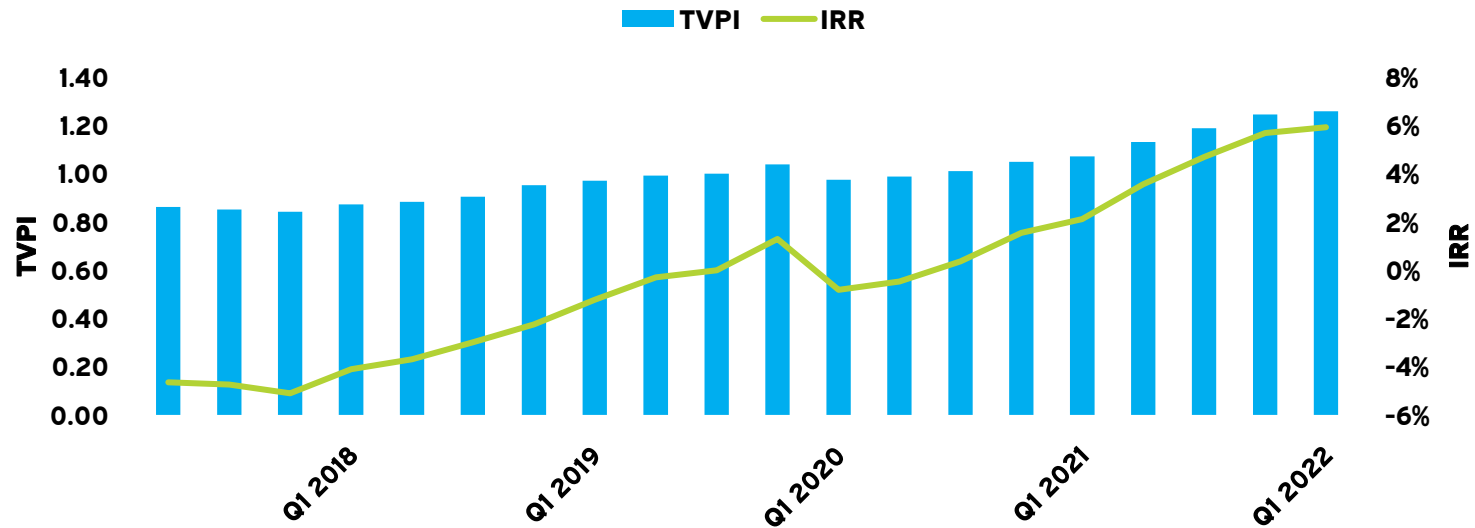
By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Core	2	70.0	44.4	26.1	3.7	56.0	82.1	0.08	1.34	11.1
Natural	2	10.0	10.0	0.0	5.1	5.8	5.8	0.50	1.08	0.9
Opportunistic	1	10.0	10.0	0.3	1.8	10.0	10.2	0.18	1.17	2.4
Value-Added	4	40.0	18.5	23.3	2.6	19.8	43.0	0.14	1.21	9.3
Total	9	130.0	83.0	49.6	13.2	91.6	141.2	0.16	1.26	5.9

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	1	60.0	35.0	25.0	3.2	44.3	69.3	0.09	1.36	11.5
2010	2	15.0	15.0	0.3	5.0	14.3	14.5	0.33	1.28	3.4
2011	1	5.0	5.0	0.0	1.9	1.5	1.5	0.37	0.66	-5.0
2016	1	10.0	9.9	1.3	2.6	11.5	12.8	0.26	1.42	10.9
2017	1	10.0	9.4	1.1	0.5	11.7	12.8	0.05	1.29	9.6
2019	1	10.0	5.8	4.8	0.0	5.7	10.5	0.00	0.99	-1.3
2020	1	10.0	2.0	8.0	0.0	1.9	9.9	0.01	0.96	NM
2021	1	10.0	0.8	9.2	0.0	0.6	9.9	0.00	0.82	NM
Total	9	130.0	83.0	49.6	13.2	91.6	141.2	0.16	1.26	5.9

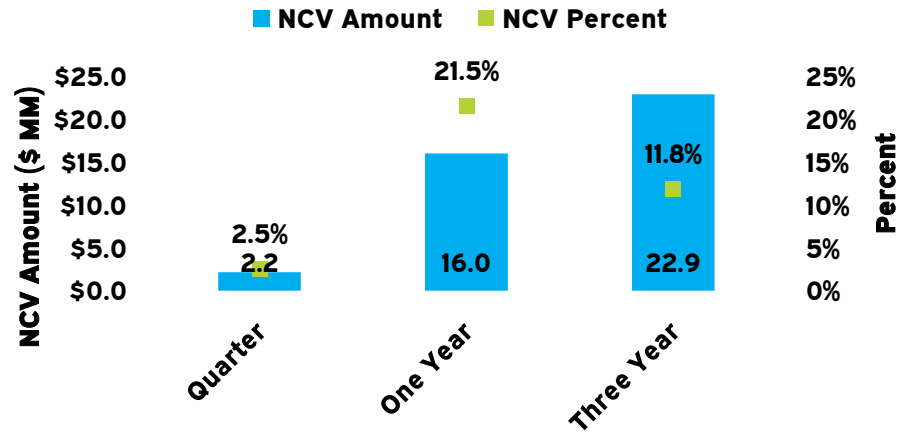
Since Inception Performance Over Time



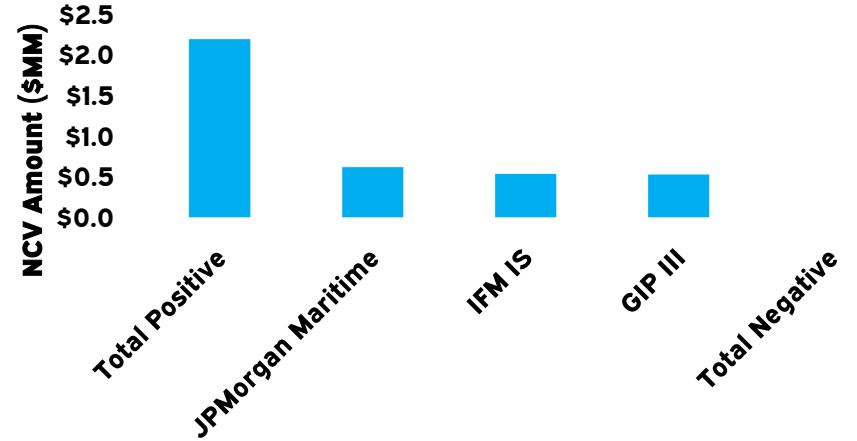
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	22.2	11.4	9.4	6.4	5.9
Public Market Equivalent	27.2	16.5	13.8	11.0	10.9

Periodic NCV



1 Quarter Drivers Of NCV



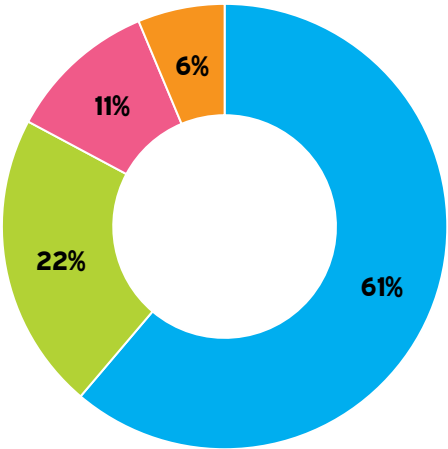
	1Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Since Inception (%)	Inception Date
IFM Global Infrastructure	1.2	16.4	10.9	NA	NA	11.0	10/01/2018
<i>CPI+3%</i>	3.8	11.5	7.2	NA	NA	6.8	NA

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 IS	Open-end	Core	60.0	35.0	25.0	3.2	44.3	1.36	NA	11.5	NA
Timbervest III	2010	Natural Resources	5.0	5.0	0.0	3.2	4.3	1.50	1.45	5.0	13.6
JPMorgan Maritime	2010	Opportunistic	10.0	10.0	0.3	1.8	10.0	1.17	1.45	2.4	13.6
BTG Global Timber	2011	Natural Resources	5.0	5.0	0.0	1.9	1.5	0.66	1.36	-5.0	8.0
GIP III	2016	Value-Added	10.0	9.9	1.3	2.6	11.5	1.42	1.63	10.9	17.7
Basalt IS II	2017	Core	10.0	9.4	1.1	0.5	11.7	1.29	1.49	9.6	18.2
GIP IV	2019	Value-Added	10.0	5.8	4.8	0.0	5.7	0.99	1.11	-1.3	11.4
BlackRock GRPIF III	2020	Value-Added	10.0	2.0	8.0	0.0	1.9	0.96	NM	NM	NM
ISQ IS III	2021	Value-Added	10.0	0.8	9.2	0.0	0.6	0.82	NM	NM	NM
Total			130.0	83.0	49.6	13.2	91.6	1.26		5.9	

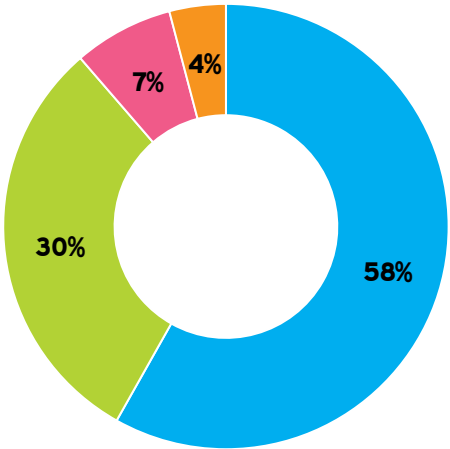
By Strategy

Percent of FMV



- Core
- Value-Added
- Opportunistic
- Natural Resources

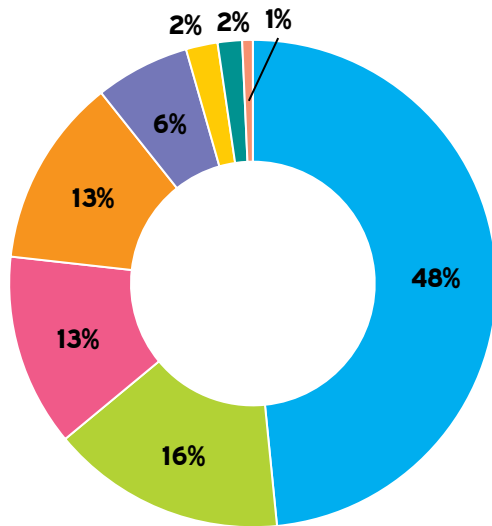
Percent of Exposure



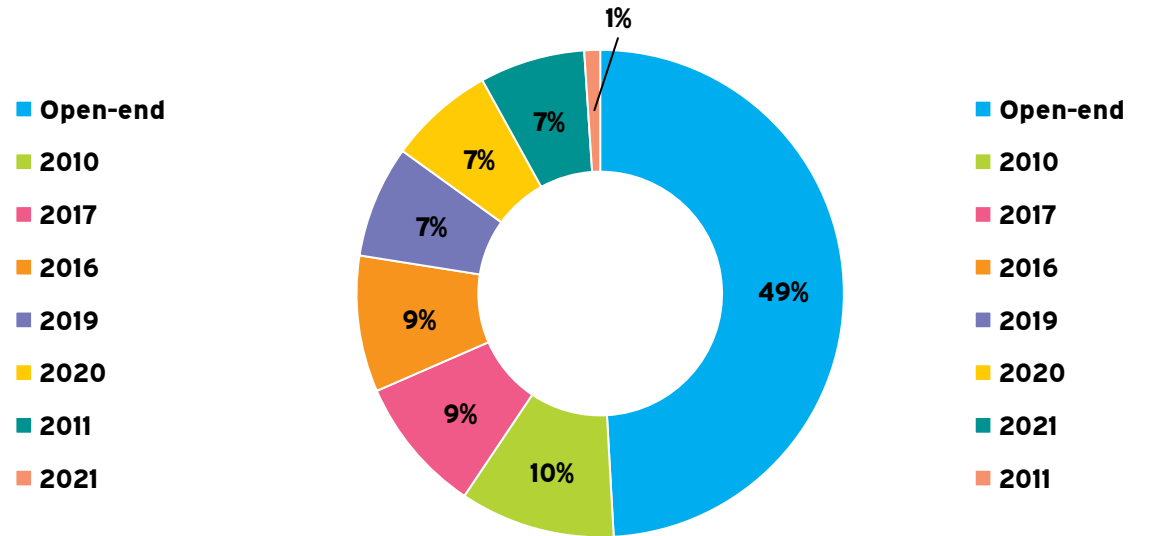
- Core
- Value-Added
- Opportunistic
- Natural Resources

By Vintage

Percent of FMV

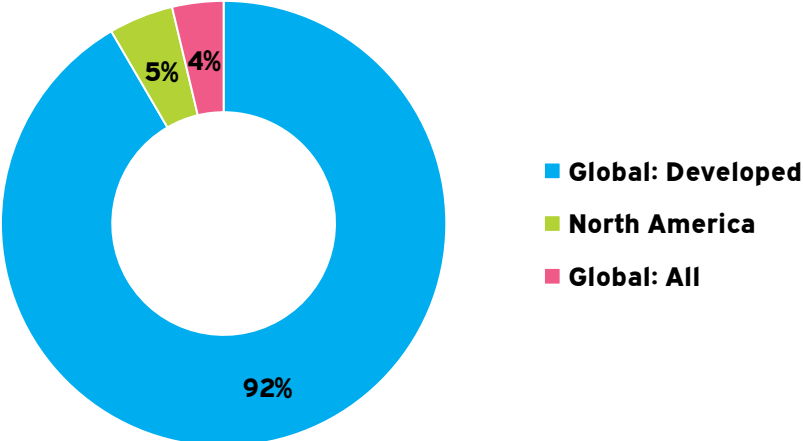


Percent of Exposure

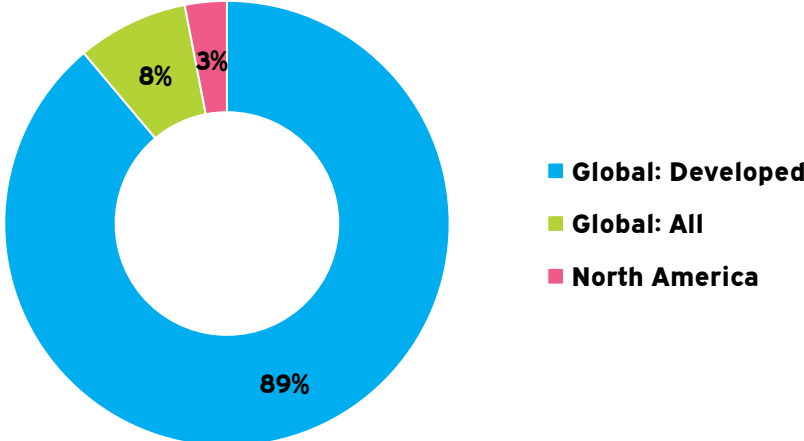


By Geographic Focus

Percent of FMV



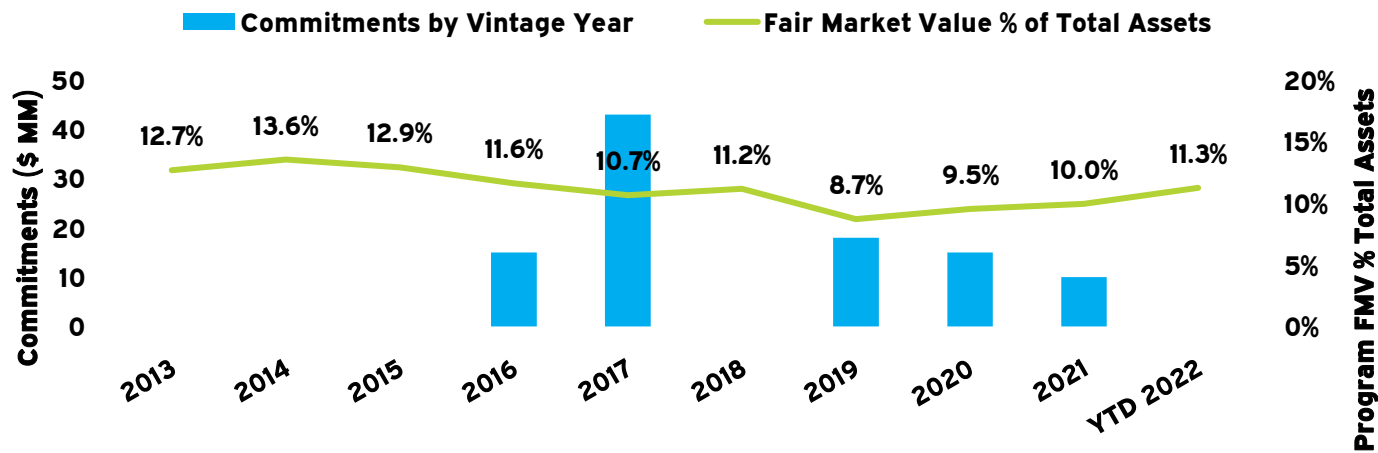
Percent of Exposure



Real Estate Program

Introduction

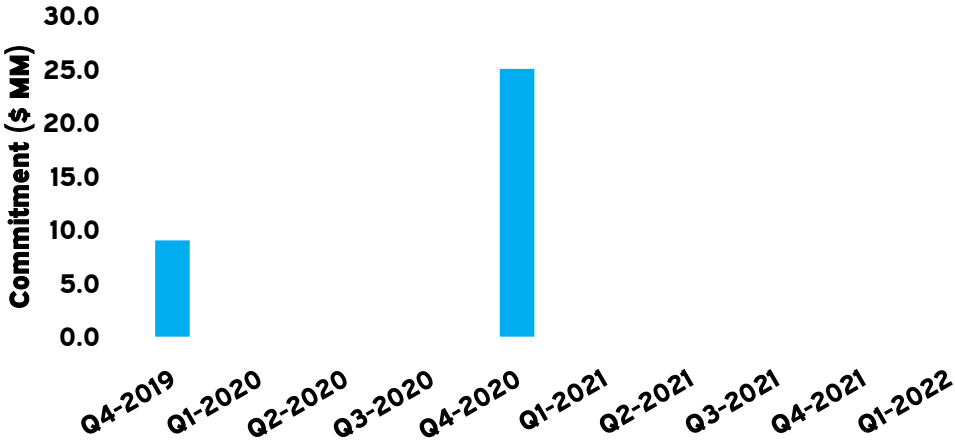
As of March 31, 2022, the Retirement Association had committed \$288.0 million to 21 partnerships. As of quarter end, the fair market value of the real estate portfolio, in aggregate, was \$153.9 million. The net asset value of The Retirement Association's Real Estate Program represents 11.3% of total assets.



Program Status	
No. of Investments	21
Committed (\$ MM)	288.0
Contributed (\$ MM)	235.3
Distributed (\$ MM)	202.2
Fair Market Value (\$ MM)	153.9

Performance Since Inception	
	Program
DPI	0.86x
TVPI	1.51x
IRR	7.0%

Commitments
Recent Quarterly Commitments

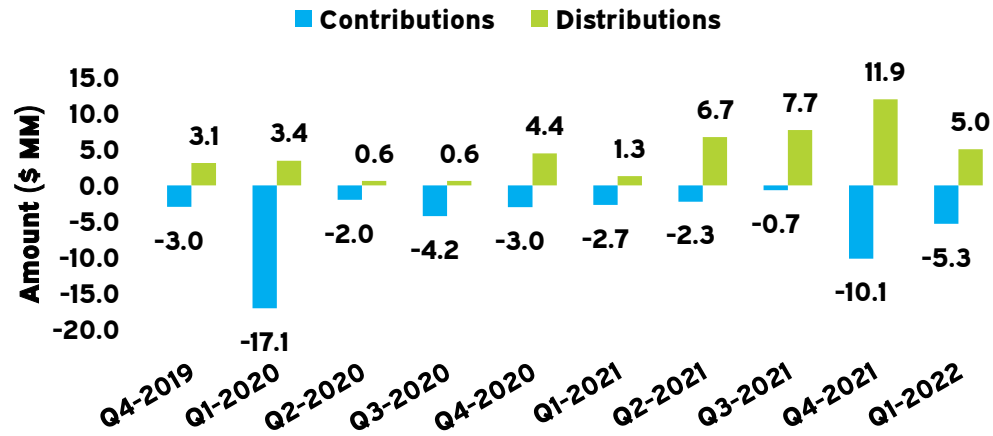


Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
------	----------	--------	-------------

No new commitments made during the quarter

Cash Flows Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
Berkshire Value V	2019	Value-Added	North America	2.36
PCCP Equity IX	2021	Opportunistic	North America	1.50
AEW Partners IX	2020	Opportunistic	North America	0.95

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
AEW Partners VIII	2017	Opportunistic	North America	4.03
TA Realty Core	2018	Core	North America	0.60
DSF III	2016	Value-Added	North America	0.33

Significant Events

- During the first quarter of 2022, the Retirement Association contributed \$5.3 million to its private real estate partnerships and received \$5.0 million in distributions, representing a \$0.3 million net cash outflow.
- Berkshire Value Fund V, L.P. called \$2.36 million during the first quarter to fund several new investments.
- PCCP Equity IX, L.P. issued its first capital call during the quarter. The Fund called \$1.50 million to partially repay the Fund's credit facility, which was used to execute deal acquisitions and follow-on investments.
- AEW Partners IX, L.P. called \$0.95 million during the first quarter to fund several new acquisitions and existing investments.
- AEW Partners Real Estate Fund VIII, L.P. distributed \$4.03 million during the first quarter. Proceeds stemmed from the sale of two existing investments.
- TA Realty Core Property Fund, L.P. distributed \$0.60 million during the quarter as proceeds from its existing investments. The Fund closed on five acquisitions in the first quarter, consisting of three industrial and two multifamily properties.
- DSF Multi-Family Real Estate Fund III, L.P. distributed \$0.33 million during the first quarter as proceeds from its existing investments.

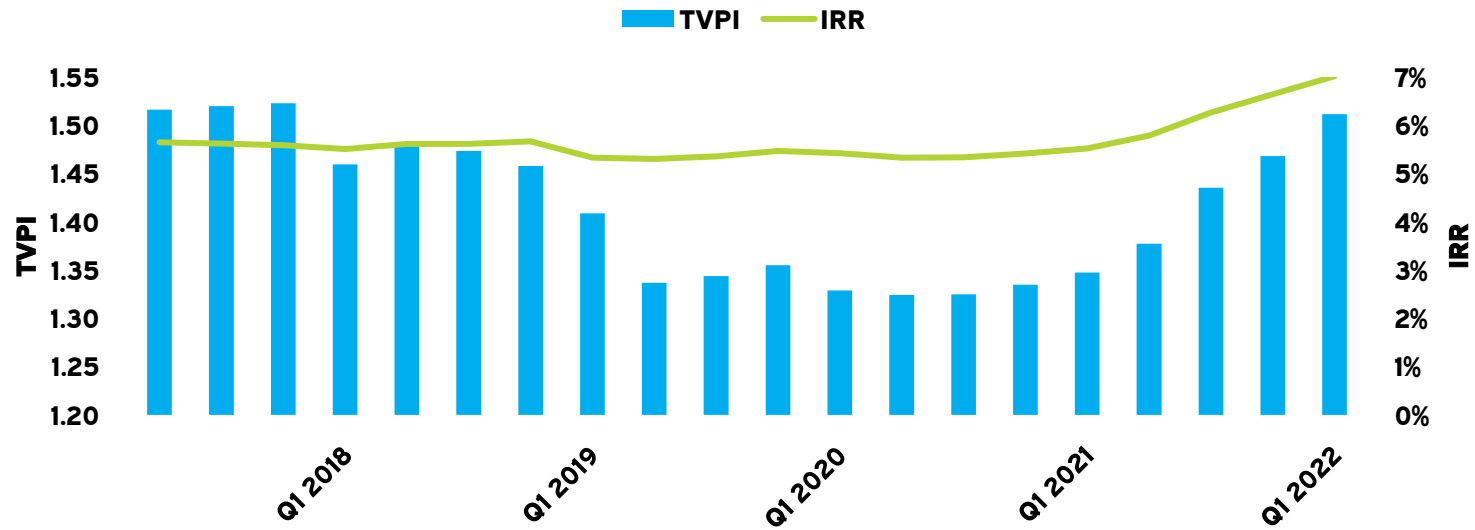
By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Core	5	129.0	108.5	25.0	99.3	90.4	115.4	0.92	1.75	7.6
Fund of Funds	1	15.0	12.7	2.3	11.4	1.0	3.3	0.90	0.97	-0.4
Opportunistic	6	77.0	52.0	33.8	36.5	31.1	64.8	0.70	1.30	8.2
Value-Added	9	67.0	62.1	8.8	55.0	31.5	40.3	0.88	1.39	6.6
Total	21	288.0	235.3	69.9	202.2	153.9	223.8	0.86	1.51	7.0

By Vinatge

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Fair Market		DPI (X)	TVPI (X)	IRR (%)
						Value (\$ MM)	Exposure (\$ MM)			
Open-end	5	129.0	108.5	25.0	99.3	90.4	115.4	0.92	1.75	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	1.0	5.3	1.24	1.27	4.9
2008	1	5.0	5.4	0.0	0.0	0.6	0.6	0.00	0.10	-15.3
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	4.7	20.8	20.8	0.31	1.69	14.7
2017	2	43.0	35.1	16.2	36.4	17.3	33.6	1.04	1.53	26.0
2019	2	18.0	10.7	8.0	1.1	12.8	20.8	0.11	1.31	26.8
2020	2	15.0	8.9	6.0	0.0	9.5	15.6	0.00	1.07	NM
2021	1	10.0	1.5	8.5	0.0	1.6	10.1	0.00	1.06	NM
Total	21	288.0	235.3	69.9	202.2	153.9	223.8	0.86	1.51	7.0

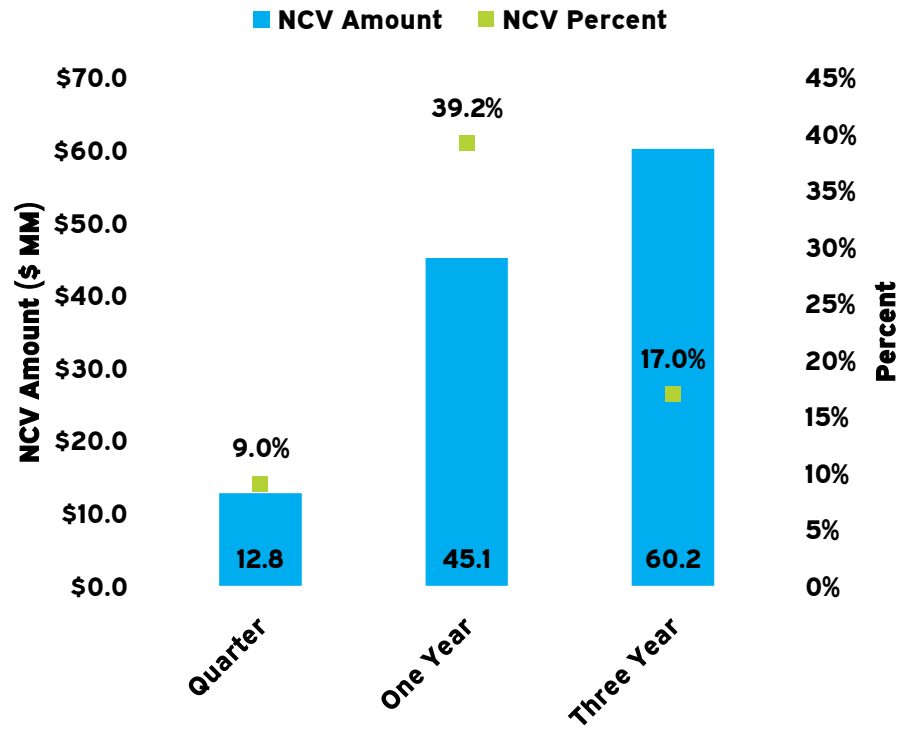
Since Inception Performance Over Time



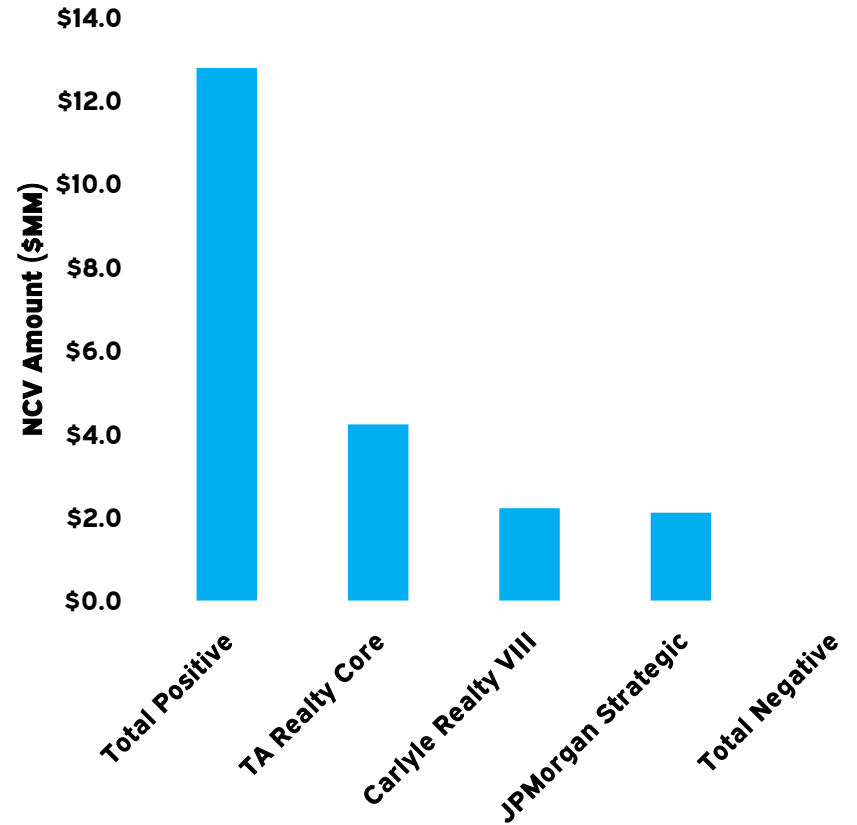
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	38.8	16.6	11.0	9.1	7.0
Public Market Equivalent	27.2	9.2	8.4	9.0	7.8

Periodic NCV



1 Quarter Drivers Of NCV



	2Q22 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Since Inception (%)	Inception Date
JPMorgan Strategic Property	6.3	25.6	9.9	NA	NA	9.9	4/01/2019
<i>NCREIF ODCE Equal Weighted (Net)</i>	7.8	28.7	11.1	NA	NA	11.1	NA
TA Realty Core Property Fund, L.P.	8.3	37.0	16.3	NA	NA	15.8	3/21/2018
<i>NCREIF ODCE Equal Weighted (Net)</i>	7.8	28.7	11.1	NA	NA	10.3	NA

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	35.8	1.33	NA	9.9	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	35.4	25.0	3.1	54.6	1.63	NA	16.1	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	1.61	5.1	17.5
Intercontinental IV	2004	Value-Added	4.0	4.6	0.0	2.4	0.0	0.54	1.30	-8.0	9.8
Mesirow RE Intl	2007	Fund of Funds	15.0	12.7	2.3	11.4	1.01	0.97	1.28	-0.4	6.3

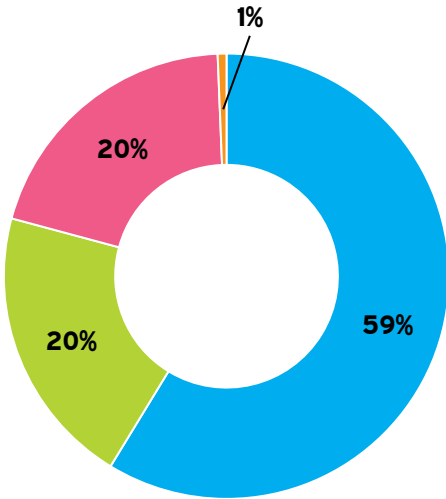
¹ The fair market value of Real Estate International Partnership Fund I is a cash adjusted estimate due to the timing of the report.

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 (%)
Berkshire Multi II	2007	Value-Added	10.0	11.3	0.0	17.9	0.0	1.59	1.28	11.0	6.3
New Boston VII	2007	Value-Added	5.0	3.0	2.0	4.0	0.0	1.33	1.28	5.6	6.3
1921 Realty	2008	Opportunistic	5.0	5.4	0.0	0.0	0.6	0.10	1.37	-15.3	9.0
DSF IV	2011	Value-Added	5.0	5.0	0.0	7.4	0.0	1.48	1.60	11.6	18.1
DSF III	2016	Value-Added	15.0	15.1	0.0	4.7	20.8	1.69	1.46	14.7	12.4
AEW Partners VIII	2017	Opportunistic	25.0	24.0	4.5	27.8	7.3	1.46	1.50	21.7	17.9
Carlyle Realty VIII	2017	Opportunistic	18.0	11.1	11.8	8.6	10.1	1.68	1.50	38.4	17.9
Rockpoint VI	2019	Opportunistic	9.0	6.0	3.0	0.1	7.6	1.29	1.26	34.0	19.0
Berkshire Value V	2019	Value-Added	9.0	4.7	5.0	1.1	5.2	1.33	1.26	22.1	19.0
AEW Partners IX	2020	Opportunistic	10.0	4.0	6.0	0.0	4.0	1.00	1.20	NM	NM
TerraCap V	2020	Value-Added	5.0	5.0	0.0	0.0	5.6	1.12	1.20	NM	NM
PCCP Equity IX	2021	Opportunistic	10.0	1.5	8.5	0.0	1.6	1.06	1.08	NM	NM
Total			288.0	235.3	69.9	202.2	153.9	1.51		7.0	

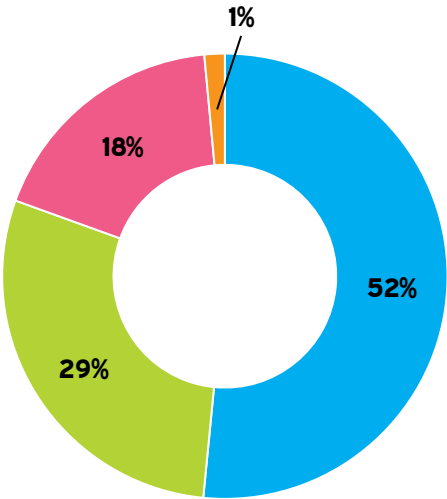
By Strategy

Percent of FMV



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

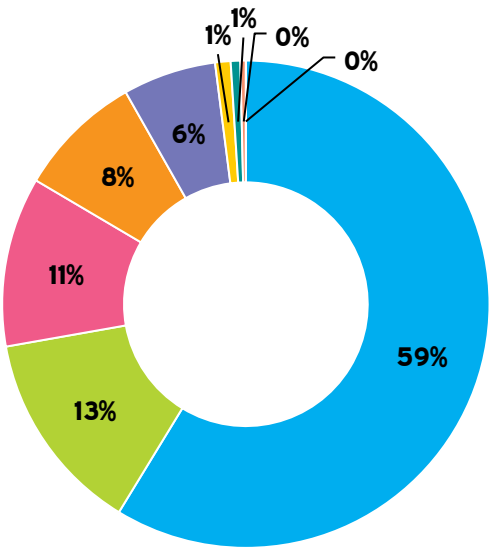
Percent of Exposure



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

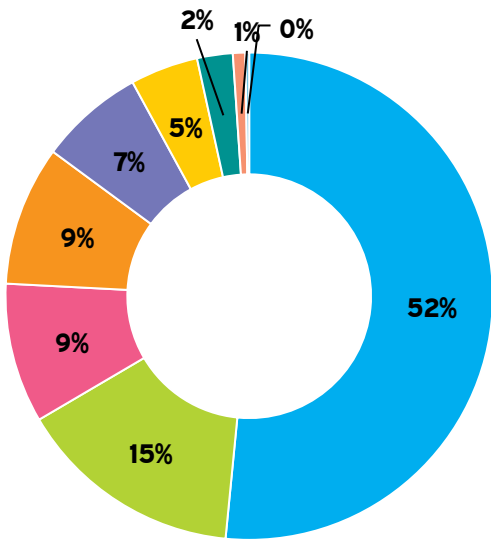
By Vintage

Percent of FMV



- Open-end
- 2016
- 2017
- 2019
- 2020
- 2021
- 2007
- 2008
- 2011

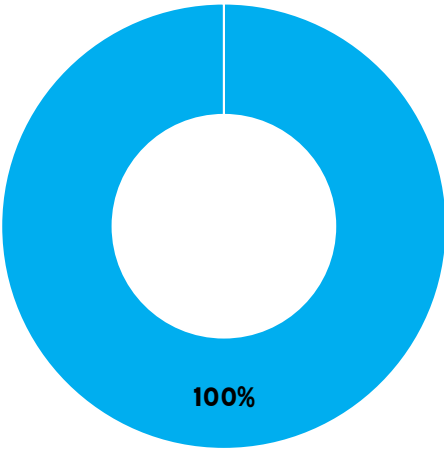
Percent of Exposure



- Open-end
- 2017
- 2016
- 2019
- 2020
- 2021
- 2007
- 2003
- 2008

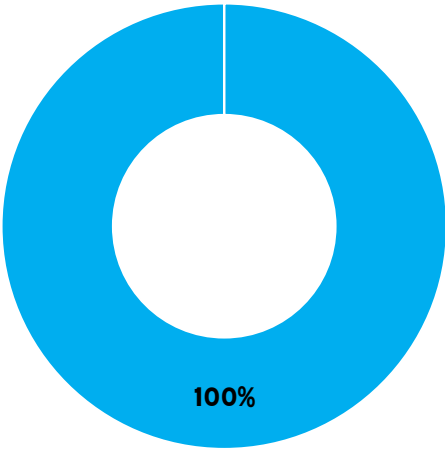
By Geographic Focus

Percent of FMV



■ North America

Percent of Exposure



■ North America

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 6/30/22
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 6/30/22
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
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.

**Meketa Insurance Linked Securities
White Paper**

Insurance-linked Securities

WHITEPAPER

AUGUST 2020

Insurance-linked securities (“ILS”) is an asset class that generally derives its return and risk from property damage insurance contracts related to natural catastrophes (e.g., earthquakes, hurricanes, etc.). In this class, investors provide insurance-related, at-risk capital in exchange for pre-defined premium payments. Investors assume the role of an insurer, as the underlying risk sources are insurance policies and/or derivatives that are analogous to insurance policies. The archetype of ILS is natural catastrophe property reinsurance where investors effectively assume insurance policies from the original insurers of global property damage that stem from natural perils.

CONTRIBUTORS

Colin Bebee, CFA

Frank Benham, CFA, CAIA

ILS generally provides a moderate level of return whose risk sources are completely unrelated to the traditional capital markets. This type of investment provides a unique source of uncorrelated and economically intuitive returns that are typically absent from most investment portfolios. Moreover, ILS has the potential to provide societal benefits by lowering the cost of insurance for end policyholders and diluting the risk of ruin for the most susceptible companies and regions. For institutional investors that are willing to accept the complexity, modest returns, and relatively small market size, we believe that ILS, and in particular natural catastrophe property insurance/reinsurance, can benefit a total portfolio when included as an illiquid diversifying strategy.

Key takeaways

- Insurance is one of the world’s oldest commercial activities, and ILS/reinsurance offers institutional investors the ability to participate in this endeavor via the capital markets.
- Reinsurance is best described as insurance for insurance companies. ILS represents a broader category that is generally dominated by reinsurance but also includes other related segments (e.g., direct/original insurance, insurance for reinsurance companies, etc.).
- The underlying risks of this asset class primarily stem from insurance policies related to natural catastrophes (e.g., earthquake, hurricane, etc.).
- Although ILS/reinsurance is an illiquid asset class, investors can generally fully redeem their investments within one year (unresolved insurance claims may extend this window).

- Compared to other illiquid asset classes (Private Equity, Real Estate, Infrastructure, etc.), ILS offers greater diversification benefits but typically a lower expected return.
- The asset class is unique, complex, and smaller than most traditional markets, but its returns/risks are generated from truly independent sources.
- Similar to other insurance markets, investments in ILS/reinsurance exhibit truncated upside scenarios and the potential for severe drawdowns.
- With mid-to-high single-digit returns and de minimis correlation to traditional markets, ILS/reinsurance can potentially benefit numerous types of investment portfolios as a diversifying strategy.

Introduction

Insurance is predicated on the concept of risk transfer. In a particular transaction, one party (the insurer) receives a known, upfront payment in exchange for assuming a defined but unknown risk that another party (the insured) is unable or unwilling to bear. Properly functioning insurance markets allow for a given set of risks to be more evenly distributed across a larger community. Due to risk aversion, purchasing insurance is perfectly rational despite it being a negative expected return exercise (i.e., a cost). This is most easily exemplified by the fact that insurance lowers the risk of ruin for a given entity. Furthermore, a lower risk of ruin allows for increased economic activity as entities are no longer required (either by law or self-determination) to hold a cash reserve to potentially cover a certain set of risks. Without getting too deep into utility theory (i.e., explanations for how individuals subjectively value outcomes), both policyholders and insurance companies mutually benefit from insurance transactions. This is possible because policyholders are able to reduce risks and have a narrower distribution of outcomes and insurance companies are able to receive a payment for this service – both of which are attractive events for the respective entities.

Reinsurance is the most common form/segment of ILS. At its most basic level, reinsurance is insurance for insurance companies. Like many investment strategies that are utilized by institutional investors today (e.g., middle market direct lending), reinsurance began as a relatively common transaction among corporate entities that has since expanded to the capital markets. For reinsurance, this has resulted in the growth of the “alternative capital” reinsurance market. Whether for regulatory or portfolio/risk management reasons, insurance companies of all sizes utilize the reinsurance marketplace (the combination of traditional and alternative capital) to modify and transform the risk on their books.

Although ILS is a relatively young asset class (e.g., mid-1990s) for institutional investors, it has continually evolved since its inception. Originally, the terms “ILS” and “reinsurance” were used interchangeably and they have both tended to refer to natural catastrophe property reinsurance. Due to the evolution of the asset class,

and the insurance industry more broadly, this is no longer necessarily the case. While the utilization of ILS has been sparse among US institutional investors, it has been widely adopted by institutional investors outside the US. This delayed adoption by US institutions has been seen in a wide variety of other asset classes over time (e.g., Infrastructure). Although the focus of this paper is on natural catastrophe property reinsurance, we will also review other areas that the ILS market has expanded into more recently.

History

Insurance is one of the world's oldest industries. There are examples of insurance-like behavior dating back to the Babylonians where maritime loans could be forgiven in the event of the loss of the ship.¹ Similar agreements occurred from this time up through the Middle Ages. As it relates to formal documentation, historians have traced some of the oldest insurance contracts to roughly the 1300-1345 A.D. timeframe, and the oldest law dealing with insurance is believed to be found in a Barcelona ordinance from 1435.² Moreover, it is believed that the earliest reinsurance agreement stems from a 1370 transaction where the risk of a sea voyage from Italy to Belgium was transferred from one insurer to another via contract.³

Reinsurance eventually became a mainstream business in the mid-1800s when Cologne Re (1848)⁴, Swiss Re (1863)⁵, and Munich Re (1880)⁶ were founded as dedicated reinsurance companies. This industry expanded throughout the 1800s and 1900s, and both insurance and reinsurance companies were tested in the early-1900s as major catastrophes shook the world (e.g., 1904 Baltimore fire, 1906 San Francisco earthquake, 1912 Titanic sinking, World War I, etc.). As a result of these events, there was a divergence among insurers as several were unable to pay claims, and ultimately folded, whereas others began to build their reputation as reliable firms. While there were numerous events that affected insurance companies during the 20th century, the next major crossroads for the industry occurred in the early-1990s with Hurricane Andrew (1992) and the Northridge Earthquake in California (1994). These two events highlighted the need for a larger reinsurance marketplace, as it became evident that the demand for reinsurance exceeded the available supply.

As a response to the need for additional reinsurance supply, the capital markets began to provide alternative risk capital that allowed insurance and reinsurance companies to transfer portions of their risk to other entities in exchange for a premium payment. Catastrophe bonds ("cat bonds"), first issued in 1997, was one of the first methods of transferring risk from insurers/reinsurers to the institutional capital markets.⁷ This marketplace has since grown to include other forms of risk transfer such as private collateralized reinsurance, industry loss warrants, and reinsurance sidecars and quota shares, among others (see Appendix). These other forms are analogous to the evolution of private equity (e.g., private collateralized

¹ Peter L. Bernstein, *Against the Gods* (New York: John Wiley & Sons, Inc., 1996).

² Society of Actuaries, *Reinsurance News* (February 2009 – Issue 65).

³ Society of Actuaries, *Reinsurance News* (February 2009 – Issue 65).

⁴ "History of Gen Re." Retrieved from www.genre.com.

⁵ "Our history." Retrieved from www.swisre.com

⁶ "Facts and figures." Retrieved from www.munichre.com.

⁷ "Catastrophe bonds: A primer and retrospective." The Federal Reserve Bank of Chicago. Chicago Fed Letter 2018 Number 405.

reinsurance), co-investments (e.g., sidecars and quota shares), and equity index futures (e.g., industry loss warrants) if compared to public equity (e.g., cat bonds). All of these instruments are potentially used by ILS asset managers, a market segment that began in the late-1990s and expanded considerably after the Global Financial Crisis. For most ILS asset managers, private collateralized reinsurance makes up the majority of their portfolios.

Insurance is a heavily regulated industry across the globe. In order to abide by various rules and regulations, reinsurance companies (and related asset managers) have naturally gravitated towards certain reinsurance “capitals” of the world such as Bermuda, London, Zurich, and Singapore. All of these areas tended to be early-adopters of functioning insurance/reinsurance markets and thus centers for expertise. Moreover, this geographical positioning has been reinforced by the fact that market participants naturally want to be close to one another as transactions are still largely private in nature.

Strategic mechanics

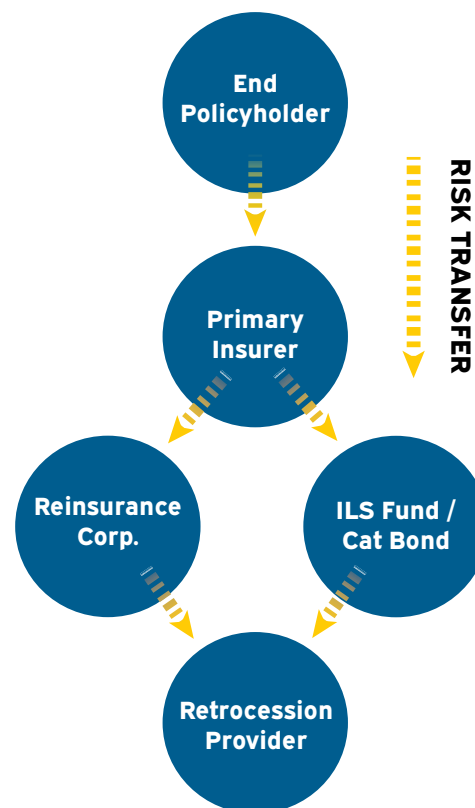
The following diagram details the basic lifecycle path of how risks are transferred from the original entity/individual to the insurance/reinsurance market. Of note, the risk is divisible across various facets (e.g., region, peril, deductible/attachment level, etc.) at each point and may be transferred in part or in whole.

A homeowner of business seeks insurance for a given risk (e.g., hurricane)

A primary insurer underwrites/sells a direct insurance policy to the end policyholder

The primary insurer transfers part or all of the risk to a reinsurance company, ILS fund, or cat bond

In certain incidents, a reinsurer can further transfer part or all of the risk via retrocession (insurance for reinsurance)



As highlighted above, reinsurance companies/ILS funds can purchase their own insurance (i.e., transfer the risk) via the retrocession market, which is served by other reinsurance companies and ILS funds.

As mentioned previously, insurance is a heavily regulated industry. It is for this reason that a unique mechanism must be used to transform insurance policies into investment securities. This is not too dissimilar from traditional financial securitization where special purpose vehicles (“SPVs”) are used to create new investment securities that consist of other assets. The following diagram provides a basic illustration of how this process works for ILS.



In the simplified example above, a cedant transfers the risk of an insurance contract (or more specifically, a collection of contracts) by utilizing a “transformer” mechanism via an SPV in order to transfer the terms and conditions of the policies into an investable security. The SPV, which is typically registered as a reinsurer, is nothing more than an intermediate vehicle that allows the cedant to enter into a risk transfer contract that is collateralized by a corresponding collateral trust. Proceeds from the insurance premium (from the cedant) and the equity injection (from the ILS fund) are held in a collateral trust account and invested in money market-like instruments. The exposures are valued at regular periods based on realized claims, potential claims, and returns on the collateral. Upon expiration of the underlying contracts, the remaining value in the SPV/collateral trust is distributed to the ILS investor. In a best-case scenario, this value includes all of the original equity and insurance premiums, as well as a modest return from the money market-like exposure. In a worst-case scenario, all of the capital in the collateral trust account must be transferred back to the cedant to help pay for claims.

The schematic above represents a simplified version of how insurance exposure is transformed into an investable security, and it is important to note that all ILS transactions use similar methodologies, although they may be more complex in certain circumstances (e.g., partnership transactions may involve multiple SPVs, etc.). This applies to both catastrophe bonds as well as private collateralized reinsurance. To further complicate matters, the holdings of a given fund may be stated as various structures/entities (e.g., SPVs, ISDA swaps, etc.) that obscure the true exposures to an extent. This is due to regulations on what type of entity can actually trade these securities. In particular, certain investments, such as catastrophe bonds, can

be traded by a variety of entities (i.e., open market investments), whereas private collateralized reinsurance can only be transacted/traded by registered reinsurance companies. These registered insurance companies are effectively the SPV entity highlighted above. The registered reinsurance company is typically set-up by the ILS fund manager, and it is important for investors to understand how the costs of this entity are or are not amortized (i.e., does the asset manager pay for these costs from their management fee or are they borne by the fund as an operating expense?). Furthermore, these various constructs have evolved and will likely continue to evolve over time. The complexity that can be embedded in these constructs/vehicles is a reason why operational due diligence is a crucial endeavor when investing in ILS strategies. There can potentially be layers upon layers of SPVs and other entities, and it is important to understand the setup and management of these operationally complex structures. Moreover, it is important to understand how leverage may or may not be embedded into the fund structures.

Market size

The reinsurance market has grown considerably in recent years. As of Q3 2019, it is estimated that the reinsurance marketplace had approximately \$625 billion of capital with over \$90 billion originating from alternative capital sources. Traditional capital originates from dedicated reinsurance companies (e.g., Munich Re), whereas alternative capital comes from ILS-related investment strategies/funds. Prior to the Global Financial Crisis, the majority of the alternative capital stemmed from catastrophe bonds, but that has since declined to roughly one-third of the alternative capital amount (currently there is approximately \$30 billion in outstanding catastrophe bonds). The limited size of the alternative capital market acts as a headwind for large investors to utilize ILS strategies. In addition to potentially impacting pricing, the majority of ILS funds are capacity constrained and will not allow large (e.g., greater than \$1 billion) allocations. The largest managers in the segment currently manage approximately \$5 to \$10 billion and have closed their funds and/or have explored returning capital at points in recent history. This capacity issue, combined with the fact that ILS is a relatively complex private markets asset class, implies that investing in ILS requires careful consideration of an investor's individual portfolio and corresponding resources. ILS funds are also expanding into the direct insurance market (for similar perils), which allows ILS funds to access a materially larger market size (over \$5 trillion).⁸

⁸ Nephila Capital Ltd.

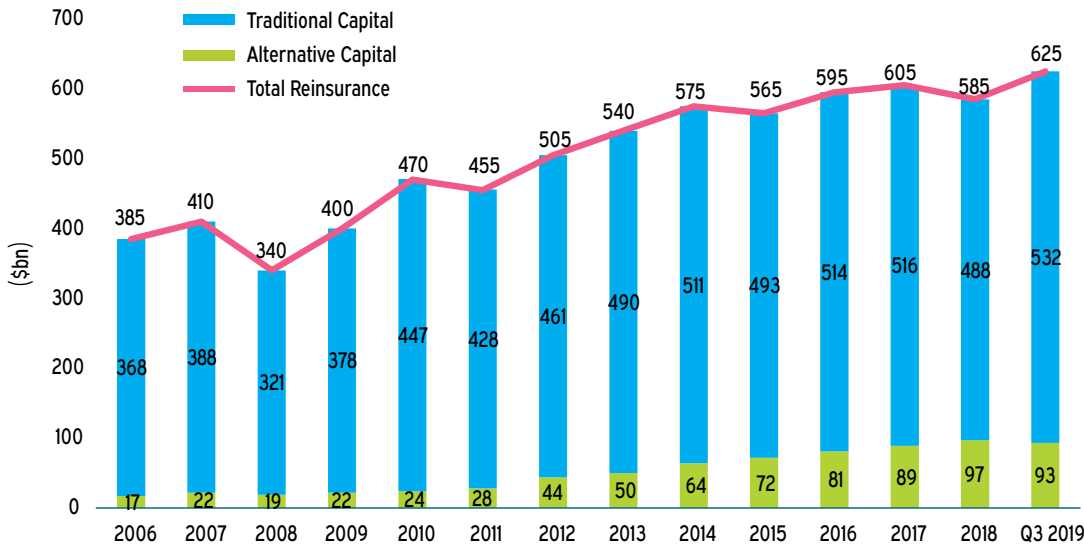


CHART 1
Global Reinsurance Capital

Source: Aon Securities, S&P Global

Contract/market pricing

Reinsurance has a similar payoff structure as fixed income asset classes (e.g., high yield bonds): the best-case scenario is an investor keeps 100% of the yield/premium income and the worst-case scenario is an investor loses both the yield/premium and the principal/collateral value. Considering this asymmetric payoff, investors need to pay close attention to the yields/premiums that are available in the ILS market. This is no different from a high yield bond investor seeking a reasonable credit spread in order to compensate them for the risk of default. The graphic below details regional Rate-On-Line⁹ indices from Guy Carpenter (a global insurance company) that depicts how premium levels have changed over time.

⁹ Rate-On-Line ("ROL") is the premium of a contract divided by the contract limit (e.g., a premium of \$2 million to cover up to \$10 million in damage would be a 20% ROL).

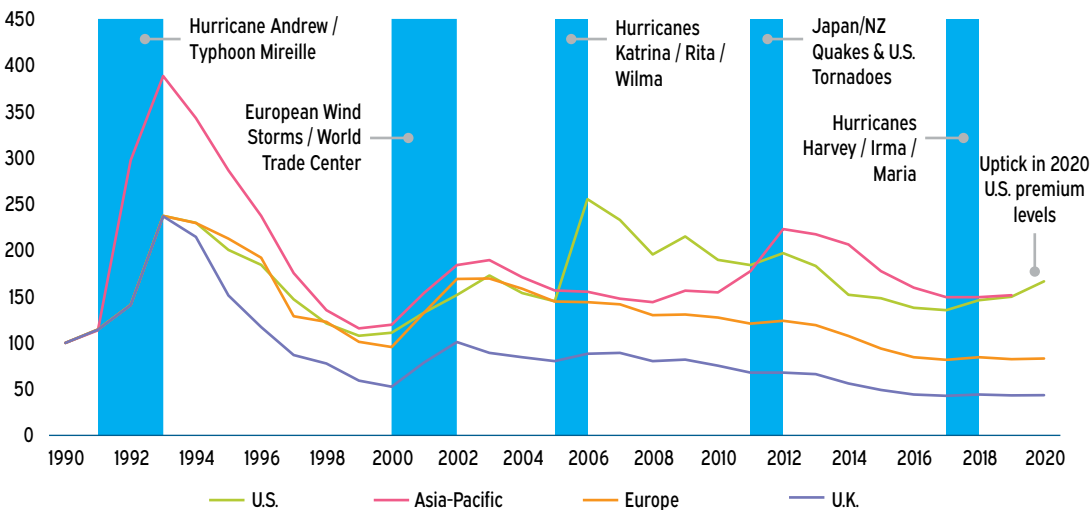


CHART 2
Global Reinsurance Premium Levels¹⁰

¹⁰ Source: Bloomberg, Artemis

As illustrated in the previous chart, premium levels tend to increase after major events occur (highlighted in blue). One major exception was after the 2017 timeframe that saw several major hurricanes. This lack of a premium increase in 2018/2019 has been attributed to several causes:

1. The events of 2017 occurred after several years of relatively light natural catastrophes. As such, insurers/reinsurers were generally in sound financial condition and willing to take on risk.
2. As shown previously, the supply of risk capital had increased since 2012 and thus, reinsurers were naturally willing to accept lower premium levels.
3. This timeframe also occurred during the latter part of an extended equity bull market. The investment portfolios of insurance/reinsurance companies had thus appreciated significantly and further increased their risk appetite and willingness to accept lower premiums.

The explanations above all point to two things: 1) supply/demand for reinsurance and 2) risk appetite among insurers/reinsurers. Monitoring both of these elements (e.g., both have shifted in favor of higher premiums in 2020) are crucial to understanding market pricing.

Historical performance

One of the challenges with examining reinsurance as an asset class is the relatively small amount of representative historical performance data. This is not too dissimilar from other asset classes that have more recently transitioned from traditional commerce transactions to the capital markets (e.g., middle market direct lending). Generally speaking, most practitioners examine two sources of historical data: 1) catastrophe bonds and 2) multi-manager composites.

As it relates to catastrophe bond indices, there are several providers that produce these, each of which tends to be a major reinsurance broker or market participant. For the purposes of this paper, we examined a commonly used cat bond index from Swiss Re, a dedicated reinsurance company who also produces market data. As it relates to multi-manager composites, the most commonly referenced index is from EurekaHedge, which consists of roughly 32 ILS managers. It is important to note that neither of these data sources are perfect representations of what investors would have historically experienced or what they should expect to experience going forward.

As it relates to catastrophe bonds, this is merely a subset of the ILS market and, as publicly traded assets, catastrophe bonds can be subject to public market influences (e.g., yield compression). Catastrophe bonds are structured by securitizing underlying insurance policies into an investable form (identical to the SPV/transformer mechanism highlighted earlier) that are then traded among institutional investors,

typically subject to Rule 144a (i.e., there are various restrictions on who, how, and when they can be sold/resold). From the standpoint of an investor, cat bonds looks similar to a corporate bond with a principal/par value, regular coupon payments (e.g., quarterly), and a maturity (anywhere from one-to-five years but most commonly three).

The tables and graphics below provide basic performance analysis since inception for catastrophe bonds.¹¹

	1-year	3-year	5-year	7-year	10-year	Since 2/2002
Catastrophe Bonds¹²	5.6	2.5	3.9	4.6	5.8	6.9
Global Equity¹³	2.1	6.1	6.5	7.8	9.2	6.7
Investment Grade Bonds¹⁴	8.7	5.3	4.3	4.0	3.8	4.7

	1-year	3-year	5-year	7-year	10-year	Since 2/2002
Catastrophe Bonds	2.9	4.7	3.7	3.3	3.4	3.0
Global Equity	21.6	16.3	14.5	13.2	14.0	15.6
Investment Grade Bonds	3.7	3.3	3.1	3.0	2.9	3.4

	Catastrophe Bonds	Global Equity
Global Equity	0.20	
Investment Grade Bonds	0.15	-0.01

TABLE 1
Trailing Period
Performance – as of
6/30/2020

TABLE 2
Trailing Period Volatility –
as of 6/30/2020

TABLE 3
Historical Monthly
Correlations – as of
6/30/2020

¹¹ We have opted not to provide performance analysis for the EurekaHedge ILS Advisors Index. The diverse strategy types and opaque underlying risk/insurance sources requires numerous caveats that materially detract from the analytical value. With respect to multi-manager indices such as that from EurekaHedge, several issues stem from risk level and insurance-type heterogeneity. In other words, ILS managers/funds vary with respect to their risk targets (typically stated as a 99% Value-at-Risk expectation), underlying source of risk (e.g., property, life, cyber-risk, etc.), and overall objective (e.g., long-short absolute return vs. long-only). This level of characteristic variation, unfortunately, potentially results in a misrepresentation of the asset class.

¹² Swiss Re Global Catastrophe Bond Index

¹³ Global Equity = MSCI ACWI Index

¹⁴ IG Bonds = Bloomberg Barclays Aggregate Index

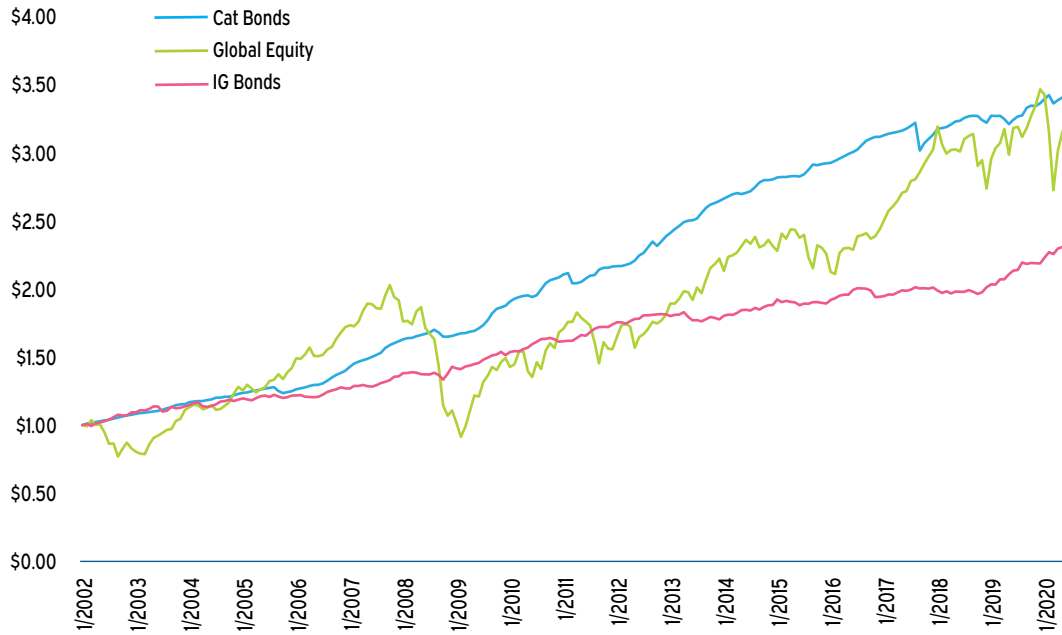


CHART 3
Growth of \$1 – as of 6/30/2020

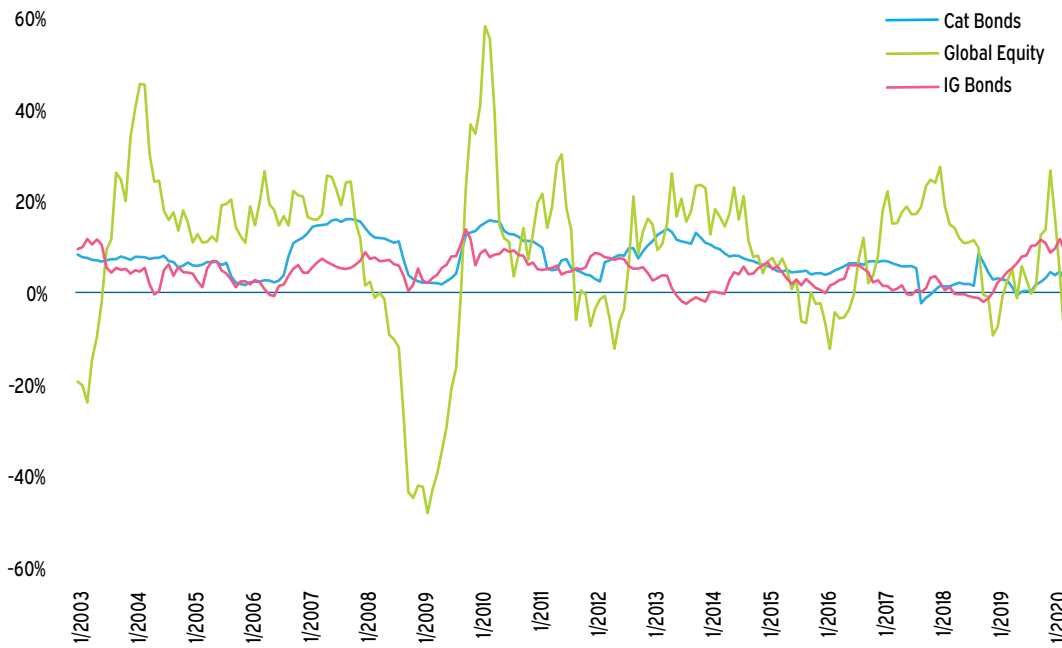
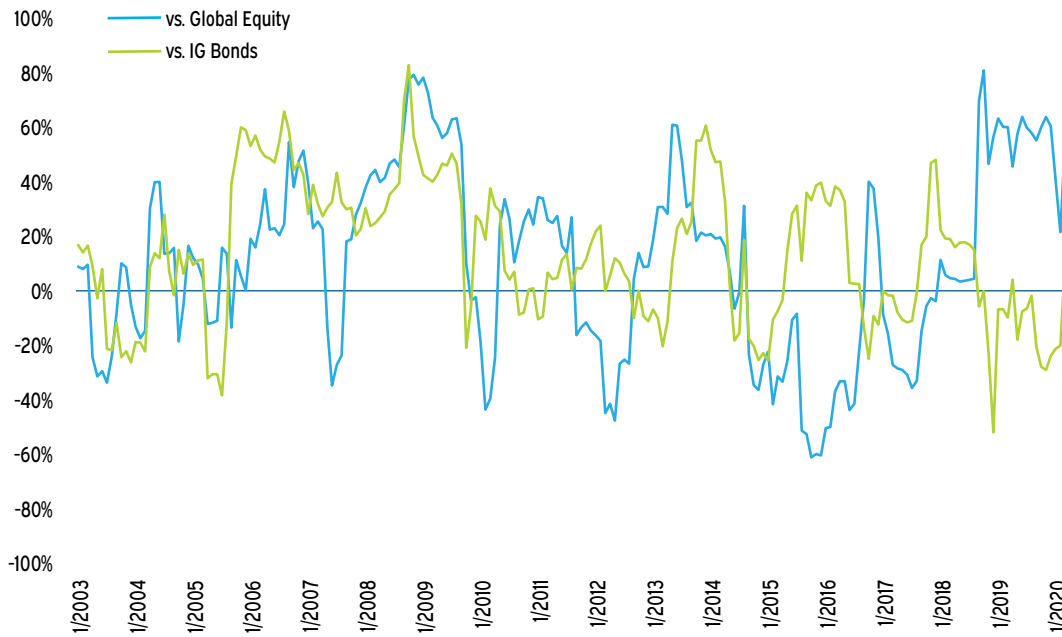


CHART 4
Rolling 1-Year Returns

CHART 5
Rolling 1-Year
Correlations



As detailed in the rolling 1-year correlation graphic above, the linear relationship between cat bonds and global equity can vary immensely when examined over short time periods. This is exactly what one would expect when examining two relatively uncorrelated assets. It is important to note that having a high correlation during a certain period does not necessarily mean that if one asset experiences a material negative return that the other asset also will. A high correlation simply means that both assets are likely to produce below average returns at the same time. This fact is commonly lost when examining correlation data.

To further highlight this point, below is a table that describes four material drawdowns for cat bonds and global equity, respectively. As shown in this table, when equity markets drawdown, cat bonds have tended to produce positive to marginally negative returns. Similarly, during natural catastrophe periods, when cat bonds have experienced negative drawdowns, global equity has tended to be unrelated (in 2008, however, there were both hurricane events as well as the Global Financial Crisis). In summary, the table below further demonstrates the relatively independent behavior of these two assets even during times of material stress.

Event/Backdrop	Dates	Cat Bonds	Global Equity
Equity Drawdowns			
Global Financial Crisis	Nov 07' – Feb 09'	5.4%	-54.9%
European Debt Crisis	May 11' – Sept 11'	4.8%	-20.5%
Geopolitical Turmoil & Rising Rates	Oct 18' – Dec 18'	-1.6%	-12.8%
COVID-19	Jan 19' – Mar 20'	-0.1%	-21.4%
Natural Disaster Drawdowns			
2005 Hurricanes (Katrina/Rita/Wilma)	Sep 05' – Oct 05'	-3.4%	0.2%
2008 Hurricanes (Gustav/Ike)	Sep 08' – Oct 08 [*]	-3.1%	-29.8% [*]
Japan Earthquake/Tsunami	Mar 11'	-3.6%	-0.1%
2017 Hurricanes (Harvey/Irma /Maria)	Sep 17'	-6.3%	1.9%

TABLE 4
Example Market
Drawdowns

^{*}This period coincides with the Global Financial Crisis

As illustrated in the tables and graphics above, catastrophe bonds have experienced strong performance since the inception of the Swiss Re Global Catastrophe Bond Index. In particular, this index has produced returns in-line or above investment grade bonds with a similar level of volatility. Catastrophe bonds have also managed to perform in-line with global equity over this timeframe. While this data makes catastrophe bonds (as a proxy for the broader ILS asset class) seem highly attractive, it comes with several significant caveats:

- This period has multiple biases against global equity. The January 2002 to June 2020 timeframe includes the end of the tech bubble crash, the Global Financial Crisis, and the COVID-19 pandemic. In other words, this period had three historically challenging events in the beginning, middle, and end for global equity.
- Catastrophe bonds are sometimes used as fixed income replacements and/or within fixed income portfolios (e.g., PIMCO has traded catastrophe bonds in traditional fixed income strategies since their inception). Due to this, catastrophe bonds have been, at least in part, influenced by dynamics in the fixed income markets.
- It is important to note that the size of the catastrophe bond market changed throughout this timeframe but has never been near the scale of other yield-oriented asset classes such as investment grade or high yield corporate bonds.¹⁵ The market has increased from several hundred million in the late 1990s to \$30 billion in 2020.¹⁶

¹⁵ As of 6/30/20, the US investment grade and high yield corporate bond markets were approximately \$6.6 trillion and \$1.4 trillion, respectively (as represented by Bloomberg Barclays indices).

¹⁶ Source: Aon Securities (excludes most non-catastrophe related risks)

From Meketa's perspective, a key element of the historical performance analysis of catastrophe bonds is the correlation data. Over the last 18+ years, and despite being a publicly traded asset, catastrophe bonds have demonstrated little relationship with the world's most prevalent asset classes (i.e., global equity and investment grade bonds). This is aligned with economic intuition (i.e., that natural catastrophes tend to

be uncorrelated with the broader economic cycle), and Meketa would expect these correlations to be close to zero on a forward-looking basis, especially as investors implement ILS in private fund structures rather than as a publicly traded subset. While most private markets strategies provide illusory correlation benefits, private ILS strategies have realized gains/losses at very short intervals (i.e., monthly valuations and annual realizations/renewals) and, thus, their observed correlation behavior is a better representation of economic reality.

Implementation

As detailed under the *Risk and Utility Theory* section in the Appendix, the key to any insurance strategy is properly evaluating the probabilities and magnitudes of scenarios and pricing policies accordingly. For ILS/reinsurance managers, this comes down to deal flow/access, actuarial/modeling experience and expertise, negotiating power¹⁷, and portfolio/risk management. Reinsurance can generally be accessed via three methods: 1) cat bond mandates, 2) hedge funds, and 3) private reinsurance funds.¹⁸ From Meketa's standpoint, private reinsurance funds represent the most attractive offerings. As it relates to cat bonds, there are a few primary drawbacks: 1) there is no information edge or negotiating ability as they are public securities, 2) the market size is variable and can be of insufficient size (currently around \$30 billion in aggregate), and 3) dedicated offerings are relatively scarce. For hedge funds, they commonly utilize reinsurance in an opportunistic fashion or as part of a larger insurance book that contains other forms of risk (e.g., life settlements). When used in an opportunistic fashion, the funds typically lack one or more of the ideal attributes listed above. When used as a part of a large insurance book, there are other risks that may increase the strategy's correlation to the traditional capital markets or that may increase the risk an institutional investor already bears (e.g., longevity risk as it relates to life settlements).

Private reinsurance/ILS funds, and more specifically, natural catastrophe property reinsurance/ILS-focused funds, offer investors the best avenue for achieving success in the reinsurance/ILS space. When it comes to evaluating these funds, it is best to focus on the four key attributes highlighted above: 1) deal flow/access, 2) actuarial/modeling experience and expertise, 3) negotiating power, and 4) portfolio/risk management. It should be expected that fees are similar to other private markets strategies (e.g., 1-2% management with the potential for a performance fee of 10-20%). The reinsurance marketplace is continually evolving, and event risks outside of natural catastrophe risks (e.g., cyber security) are growing as potential areas of investment. It is important to remember that one of the most attractive elements of natural catastrophe reinsurance is its uncorrelated behavior to traditional investments, and thus, investors need to examine each new event risk category and its potential relationship to the capital markets prior to investing.

¹⁷ With private reinsurance, there is typically a back-and-forth negotiating process on a given deal where better pricing can potentially be achieved.

¹⁸ Large-scale, sophisticated investors could also set-up separate accounts/entities that can act as a reinsurance company, but this is beyond the scope of this paper.

TABLE 5
Tradeoffs of Investment Options

	Cat Bonds	Hedge Funds	Private/Dedicated Reinsurance/ILS Funds
Pros	<ul style="list-style-type: none"> → Relatively liquid (more frequent commitments and withdrawals). → Lowest cost option. 	<ul style="list-style-type: none"> → Potentially more opportunistic exposure to ILS. → Typically diverse insurance-related risks. 	<ul style="list-style-type: none"> → Dedicated expertise. → Strongest industry relationships and operational infrastructure. → Best-in-class portfolio and risk management tools and approaches. → Customizable risk levels (i.e., multiple funds at each manager).
Cons	<ul style="list-style-type: none"> → Higher correlation to traditional asset classes. → Transaction costs and access can be limit implementations. → Generally minimal actuarial and insurance expertise among managers. → Highly variable underlying market size. → Potentially the most capacity constrained. → Minimal ability for portfolio managers to customize the underlying exposures. 	<ul style="list-style-type: none"> → Variable levels of transparency. → Moderate actuarial and insurance expertise among managers. → Underlying policy-types (e.g., pandemic, cyber security, life insurance, etc.) may increase correlation risks already borne by the investor. → Potentially non-ILS exposures within the funds. → Poorer access to deal flow and relationships. → Liquidity can vary immensely. 	<ul style="list-style-type: none"> → Strategic exposure to the segment – may be forced to put money to work at unattractive prices. → Partial liquidity is generally only at the major renewal periods.

Additionally, due to the complex structures, legal entities, and operations of reinsurance markets and funds, in-depth operational due diligence is an absolute must prior to investing in reinsurance funds. Reinsurance is a private markets strategy and should be treated in a similar fashion as other private markets investments when it comes to due diligence.

Expected return/risk and strategic allocation

Reinsurance has a large amount of variability with respect to expected returns and risks. While these metrics vary at the instrument level, the most relevant divergences for an investor occur at the strategy or implementation level. In particular, managers commonly offer a suite of strategies that meet different risk/return objectives. A close analogy would be that of credit: investments can range from relatively safe and low returning investment grade credit bonds, to distressed debt investments that have significant levels of risk with commensurate expected returns. A nice feature of reinsurance, unlike credit, is that expected correlations with traditional capital markets should not be impacted by the different risk levels/implementations. This allows us to keep a constant correlation assumption while varying the expected return and risk levels based on the implementation.

For the purposes of this paper, we will provide a framework to use when developing expected returns and risk assumptions and analyzing reinsurance within the context of a total portfolio allocation. We will keep this relatively simple, as this could be an entire paper in and of itself. Moreover, we will focus on private reinsurance/ILS funds as that is Meketa's recommended implementation.

For expected returns, there are four metrics to examine: 1) current publicly traded catastrophe bond yields, 2) historical returns of catastrophe bonds and/or reinsurance strategies, 3) current market pricings/premiums and historical loss rates, 4) manager expectations. These metrics typically range from the low single digits (e.g., 3% cat bond yield) to the mid-teens (e.g., 15% target returns for the riskiest private reinsurance strategies). In general, however, most of these metrics will point to an expected long-term return in the 4-8% range (in excess of cash)¹⁹ for commonly used private reinsurance funds.

¹⁹ In order to approach the higher end of this range, a considerable amount of additional downside risk is typically taken on in the strategy.

For expected risks, it is very important to use as forward-looking metrics as possible. Since reinsurance exhibits truncated upside potential and a significant left tail, historical data may not be the most indicative of the level of risk. For example, specific catastrophe bonds have exhibited de minimis drawdowns and volatility levels by pure chance simply because the underlying events/triggers did not occur (e.g., they were high severity but low probability events). This does not mean that there was no risk embedded in those securities, however. Luckily, private reinsurance funds are typically constructed based on a 99% value-at-risk ("VaR") level (i.e., a 1 in 100 event loss). Managers use very similar, if not identical, tools to estimate these levels.²⁰ While a normal distribution does not perfectly align with the return outcomes of reinsurance/ILS, we can use a z-score methodology to back into an expected volatility level for simplification and framing purposes. For example, if we assume a given fund has an expected return of 6% and a commonly referenced 99% VaR level of -25%²¹, we can estimate an expected volatility of 13.3%.²²

²⁰ While the tools are similar, managers will modify certain inputs and parameters based on their viewpoints and research. This is similar to how public equity managers use systems such as BARRA and Axioma, among others.

²¹ In this instance, we are removing the dollar value in the VaR metric. These levels often range from -20% to -50% for ILS funds of different risk levels.

²² 99% (or 1% depending on frame of reference) VaR is 2.33 standard deviations away from the mean.

$$6\% - 2.33 \times 13.3\% = -25\%$$

An interesting observation is that this return/risk ratio is very similar to other asset classes with expected volatilities close to this level (e.g., high yield debt, equity option put-writing, etc.). Once again, due to the truncated upside potential and significant left tail exposure, traditional mean-variance optimization, and corresponding volatility metrics, are not the most optimal methods/metrics for examining ILS strategies. With that said, using a z-score methodology for backing into an expected volatility is useful for obtaining a high-level grasp of the relative "riskiness" of ILS strategies. The takeaway from the example above is that the example ILS fund is fairly risky and expectations should be managed in a similar fashion as those of high yield bonds, for example. Additionally, the distribution of ILS fund returns can vary based on a given fund's design. The probability and severity of the underlying risks can vary significantly, and this adds another challenge to incorporating ILS into a portfolio optimization and/or expected return/risk exercise.

The decision to include reinsurance in a total portfolio should only come after one gains a solid understanding of its intricacies and as part of a comprehensive asset allocation optimization exercise. Due to the relative stability of its correlation to other asset classes, however, one can use a very simple framework²³ to determine if adding reinsurance to a portfolio would improve its Sharpe Ratio. In particular, if the following is true, adding reinsurance can prove beneficial:

$$S_i > S_p \times \rho_{i,p}$$

Where:

S_i = Sharpe Ratio of reinsurance

S_p = Sharpe Ratio of the existing portfolio

$\rho_{i,p}$ = correlation between reinsurance and the existing portfolio

Considering that a fundamental underpinning of reinsurance is its lack of correlation to traditional investment strategies, it could have nearly any positive Sharpe Ratio and its inclusion would improve a portfolio's Sharpe Ratio. While very few institutional investors seek to solely maximize the Sharpe Ratio of their portfolio, the fact that reinsurance/ILS exhibits an expected return in between traditional stocks and bonds while also exhibiting near zero correlation to both implies that its inclusion can be beneficial from a risk/return standpoint while maintaining a similar expected return of the total portfolio. As discussed earlier, the decision to include reinsurance in a total portfolio should only come as part of a comprehensive asset allocation exercise.

Summary and recommendation

Insurance is one of the world's oldest and most consistently profitable industries. With insurance-like transactions occurring for hundreds (if not thousands) of years, insurance has history and economic intuition supporting its continued existence. Insurance represents a crucial part of the global economic system that can improve economic growth by spreading risk and minimizing the risk of ruin. This service, however, is not free, but both insurance sellers and buyers can be considered rationale economic actors, reinforcing insurance as a foundation of a developed society.

Insurance-linked securities (i.e., reinsurance) is a unique asset class that generally derives its return and risk from property damage insurance contracts related to natural catastrophes. Most commonly described as insurance for insurance companies, reinsurance/ILS generally provides a moderate level of return whose risk sources are completely unrelated to the traditional capital markets. As a private market, reinsurance has various intricacies that must be fully understood, but it represents an illiquid diversifying strategy that can enhance the risk-return tradeoff of most any portfolio.

²³ This uses mean-variance analysis preferences. In practice, investors should utilize multi-parameter optimization approaches that are customized to their situation.

Meketa believes that insurance-linked securities represents an attractive asset class to generate a moderate level of return with tremendous diversification benefits. As a moderately illiquid class, however, investors need to consider its inclusion within their broader liquidity budget. Additionally, due to the annual variation in policy premium levels and the potential for severe left tail events (which will need to be recouped), investors should only invest in reinsurance/ILS if they are willing to stick with the strategy for periods of at least 5-10 years.

Moreover, the asset class's relevance for investors can vary. Investors that are too large may run into sizing issues, unlikely to allocate enough to the class for it to be meaningful, whereas small institutions that are inexperienced with private markets classes may not have the resources to properly manage and oversee the strategy. For institutional investors that are willing to accept the complexity, modest returns, and relatively small market size, we believe that an allocation of 2%-7% to reinsurance may be worthwhile. When combined with other diversifying strategies (relative to equity-like investments), reinsurance can help create a more efficient portfolio.

Appendix

Contract basics

This section provides basic information on two key elements of standard private reinsurance contracts: 1) issuance and 2) risk type.

Similar to home or automobile insurance, reinsurance is an insurance policy that is in effect for a specified amount of time (typically one year) and must be renewed. One of the unique features of reinsurance is the renewal periods, which are detailed in the table below:

	January	Majority of global transactions are renewed.
	February	
	March	
	April	Most Japan transactions are renewed.
	May	
Hurricane Season	June	Most US wind and Australia/New Zealand transactions are renewed.
	July	
	August	
	September	
	October	
	November	
	December	

As detailed above, there are three major annual renewal periods: January 1st, April 1st, and June/July 1st. With a standardized renewal cycle (both traditional reinsurers and ILS funds participate at the same time), reinsurance is able to create a more efficient marketplace for sellers and buyers to transact. With that said, once reinsurance contracts are bought/sold (i.e., risk is transferred from a cedant to a reinsurer), the contracts are effectively illiquid. While there may be mechanisms to reduce certain exposures (e.g., retro, ILWs, etc.), most reinsurance will be held until expiration, at which point, the same contract is commonly renewed the following year. This liquidity characteristic is the primary reason why ILS funds generally have quarterly (at best) liquidity. ILS funds commonly obtain liquidity by waiting for renewal periods, holding cash, or buying/selling catastrophe bonds or quota shares. Additionally, due to the unique renewal cycle, ILS funds must re-create regional exposures at the major renewal dates.²⁴

²⁴ This also poses a challenge for new funds entering the market – they cannot get exposure to all regions/perils at inception. Due to this, most new funds will use quota share engagements to obtain a diversified portfolio on day one.

Another important element of the issuance process is how the transactions actually occur. It is not an exaggeration to state that reinsurance is a relationship business. Reinsurance will typically flow through a broker of some kind, but ILS funds may also be able to source transactions directly from cedants, via quasi-marketplaces (e.g., Lloyd's Syndicate), or via other partnership mechanisms, including direct insurance programs²⁵. A vital element for successful ILS funds is deal flow, which manifests itself via relationships, reputation, and operational infrastructure (e.g., direct insurance programs).

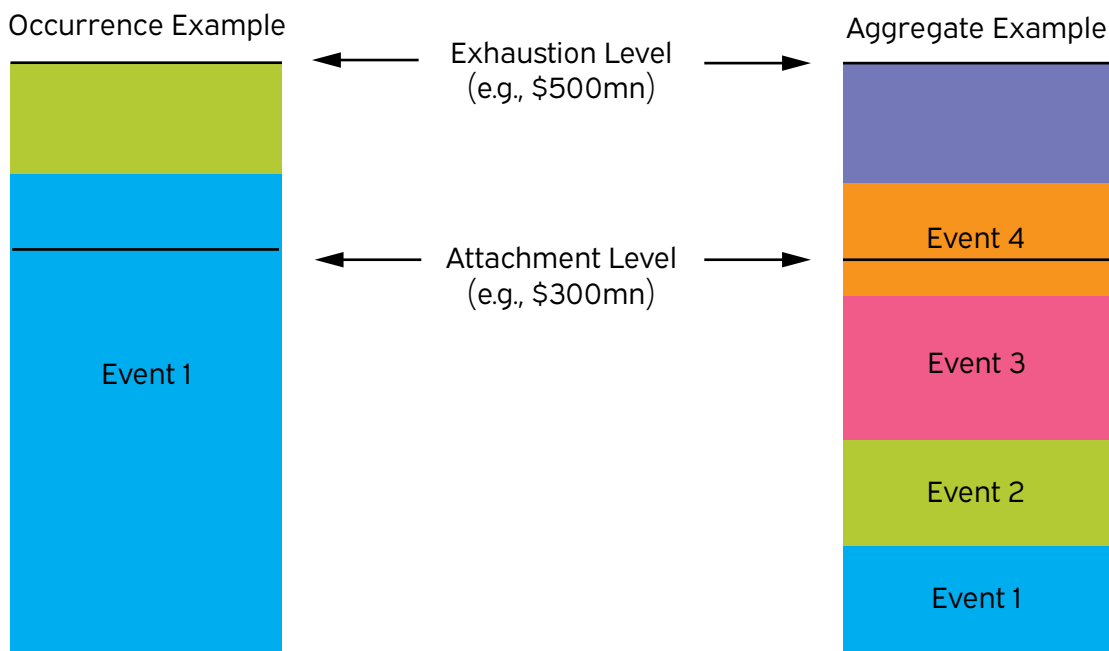
²⁵ With direct insurance programs, ILS funds are able to go straight to the underlying policyholder, bypassing the original insurer/cedant and, thus, obtaining a higher portion of the premium. This mechanism requires additional operational infrastructure and relationships (e.g., fronting) that are beyond the scope of this paper, but this is a key area of growth for ILS funds at the moment.

A second important element of reinsurance contracts is the risk type.²⁶ At a high-level, this can be separated into proportional vs. non-proportional risks. For proportional risks (e.g., quota shares), risk is shared on a proportional basis where premiums and losses are distributed pro rata. For non-proportional reinsurance, risk is shared based on a specified threshold (i.e., once claims reach a level, the reinsurer bears 100% of the exposure up to a limit). A close analogy for non-proportional reinsurance is that of tail risk protection (with a limit).

²⁶ There are additional "types" of risk (e.g., facultative vs. treaty) that could also be described, but proportional vs. non-proportional is a common area to compare/contrast.

Non-proportional risk is generally broken up into two groups: aggregate and occurrence. The basic difference is that aggregate contracts cover multiple events that occur within a window whereas occurrence contracts only cover one event/risk (with an agreed upon definition)²⁷. It is important to note that as a private market, there is a high degree of customization that can occur. The graphic below pictorially describes these variants. The "attachment level" can be thought of as a deductible and the "exhaustion level" can be thought of as an upper threshold amount. The maximum loss for a given reinsurance contract is the difference between those two amounts and is called the notional limit.

²⁷ For the purposes of this paper, we do not discuss per risk vs. per event differences.



Additionally, if contracts hit their limits or otherwise expire (e.g., a single event exceeds the attachment level but does not hit the exhaustion level), there is a mechanism for cedants to renew/continue their coverage. This is referred to as the “reinstatement clauses” in the contracts and can be significantly customized.

Geographic/peril exposures

Despite the fact that certain security types are held within publicly traded assets (i.e., cat bonds), reinsurance is a private market. As a private market, obtaining accurate and up-to-date market-level data is challenging. This issue is exacerbated even further by the fact that contracts are relatively short in maturity, the insurance industry is continually changing, and reinsurance is technically “derived” from another private market: direct insurance. Given all of these caveats, it is still useful to explore data that is indicative, even if not precise, of the aggregate market.

There are degrees of granularity that can be explored, but for the purposes of this paper, we will focus on the highest levels: geographies and perils. While not exactly analogous to market capitalization, one can examine “economic losses” and “insured losses” to gauge the potential size of various insurance/reinsurance markets. Economic losses represent the total amount of damage incurred in a given area for a given peril, and insured losses represents the subset of that which was covered by insurance (and potentially by reinsurance). These figures will differ from what is actually transacted in the reinsurance market, but nonetheless, they provide indications of the aggregate natural catastrophe insurance market. The graphic below provides estimated economic and insured loss data for the last decade (2010-2019) across major regions and perils.

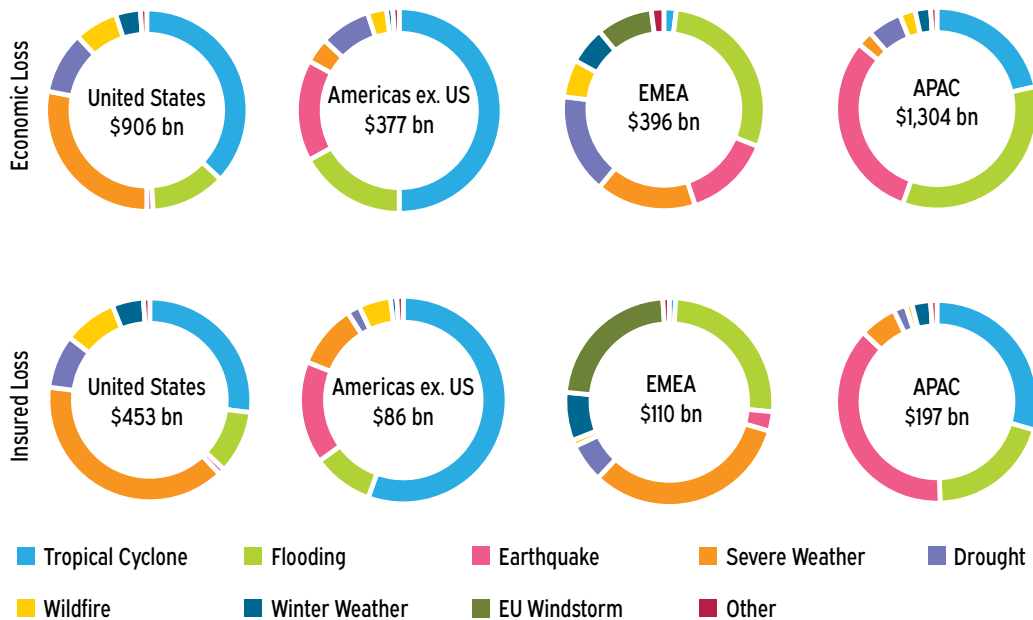


CHART 6
Economic and Insured Losses (2010–2019)

Source: Aon plc

There is a variety of general takeaways from the graphic above:

- The types of perils that impacted the different regions are aligned with what one would expect given their geographies.
- Tropical Cyclone (i.e., Hurricanes and Typhoons), Severe Weather, and Flooding were the dominant events across the globe.
- While insured losses generally resembled the economic losses on a peril percentage basis, there were slight variances in certain regions (e.g., minimal earthquake insured losses compared to economic losses in EMEA).
- The US is better insured than the rest of the world. Roughly half of the economic damage was insured over this time period.
- The APAC (Asia-Pacific) region had the largest economic losses but was significantly underinsured (\$197bn in insured losses vs. \$1.3tn in economic losses) compared to the US. This equates to only a 15% insurance penetration rate.
- For both the Americas (ex. US) and EMEA (Europe, Africa, and the Middle East), only about 25% of the economic losses were insured.
- The economic losses in the EMEA (Europe, Africa, and the Middle East) region were fairly diverse (as expected given the geographic diversity of the region).

Additionally, in regions where insurance penetration is low (e.g., developing Asia, Africa, etc.), there can be a significant drag on economic growth, as these costs are then shared across governments and individual entities (i.e., households and companies). This provides further support for insurance/reinsurance as a societal benefit and an important element of economic growth.

We can also examine how many natural disaster events occurred over time in the various regions. This measure partially normalizes the regions for property values and other variations. The graphic below details the number of natural disaster events that meet all of the following qualifications:

- Economic loss = \$50+ million (inflation-adjusted)
- Insured loss = \$25+ million (inflation-adjusted)
- Fatalities = 10+
- Injured = 50+
- Structures damages/filed claims = 2,000+

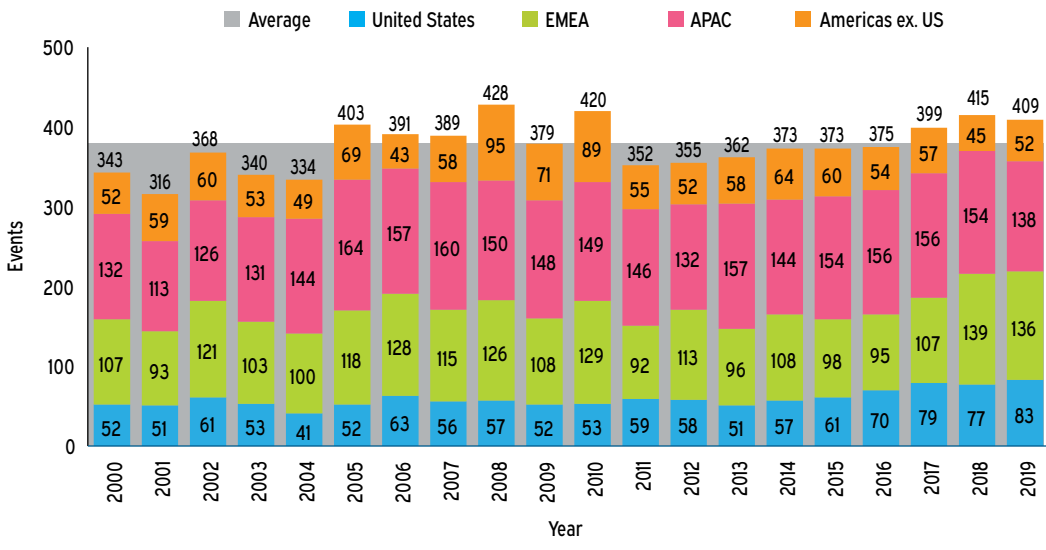


CHART 7
Global Natural Disaster Events
 Source: Aon plc

As detailed in the graphic above, the number of events that have occurred across the globe has been somewhat stable in aggregate, but regions have experienced material variation. For example, the United States experienced a material increase in the 2016-2019 timeframe compared to earlier in the 21st century. This metric can be compared/contrasted with the number of billion dollar economic losses (inflation-adjusted) across the globe as shown below.

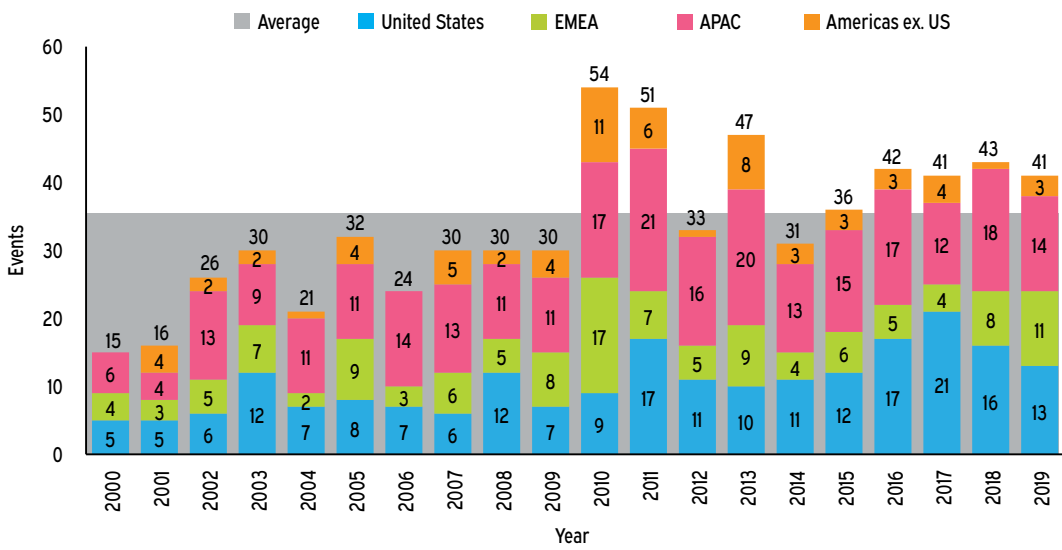


CHART 8
Global Billion Dollar Economic Loss Events
 Source: Aon

When examining the *Global Billion Dollar Economic Loss Events* graphic, there is an obvious trend that large-scale economic losses have been increasing over the last twenty years. Reconciling this takeaway with the fact that the total number of global natural disaster events has remained relatively stable over this same time period leads to three major takeaways (i.e., hypotheses):

1. The magnitude of events have increased.
2. Infrastructure development and/or migration to more susceptible areas (e.g., coasts) has increased.
3. Real property values have increased.

The takeaways above are widely accepted by the insurance/reinsurance industry and are key elements to their decision-making processes. While the purpose of this paper is not to dive into climate change as a topic, this is a significant point of interest for the insurance/reinsurance industry. The widely accepted industry view is that climate change is occurring and vendors are adapting their models and policy pricing accordingly.

Security types/market segments

An ILS portfolio can consist of a variety of security types. These often range from publicly traded catastrophe bonds to privately negotiated sidecar structures. We define the most common security types (i.e., implementations) below:

- **Publicly traded reinsurance companies** Several of the world's largest reinsurance companies (e.g., Swiss Re, Munich Re, etc.) are publicly traded corporations. As such, certain ILS funds may include their common stock (or debt) as holdings within a portfolio. While their revenue, operations, and profits are derived from the reinsurance industry as a whole, there is a large equity market beta component in their returns (i.e., commonality with traditional equity portfolios) that negates most perceived benefits. Meketa does not believe that these securities should be utilized within a client's ILS portfolio as they increase its correlation to traditional markets by definition.
- **Catastrophe bonds ("cat bonds")** These securities are publicly traded debt instruments that are typically created by insurance/reinsurance companies to cover certain risks. In-line with the SPV structure shown previously, the collateral and premiums are held at a separate entity and invested in money market-like investments. The cat bond investor receives a coupon payment (typically a floating rate) and will receive the principal back when the bonds expire. If there are claims, the collateral account will decline and the principal value will decrease. The bonds are commonly three years in maturity.
- **Sidecars** These legal structures allow insurers/reinsurers to separate specific exposures into a separate entity. This separate entity can be used to aggregate risk capital from different entities or simply isolate certain exposures (e.g., impaired policies).

- **Quota share** An agreement in which risk is shared across multiple entities. This is a form of proportional reinsurance where the parties share premiums, losses, and costs of a specific reinsurance portfolio. Quota shares are commonly used in funds that want to gain quick access to an existing portfolio or hard-to-access exposures.
- **Industry loss warrants (“ILWs”)** These are derivative contracts that provide payoffs based on losses across the entire insurance industry, although they are customized to specific regions and perils. The contracts contains specific parameters (i.e., triggers) that are then measured by widely accepted third-party entities. Like all reinsurance, these can be highly customized and can include payoffs during and/or after events have occurred.
- **Private collateralized reinsurance** This is the most common security type and what most practitioners refer to when discussing the asset class. These privately negotiated contracts utilize the SPV structure that was previously discussed, and while similar to cat bonds in structure, they are typically only one year in maturity.
- **Retrocessional reinsurance (“retro”)** This is simply reinsurance for reinsurance companies. Retro represents an additional transfer of risk from the second cedant to a third reinsurer.

Example resinsurance contract metrics and outcomes for California earthquake

Notional limit = \$10 million

- One-year maturity for single event earthquake damages within a specified region in CA

Attachment = \$30 million | Exhaustion = \$40mn

- Event loss less than \$30mn = nothing paid
- Event loss greater than \$40mn = \$10mn paid
- Event loss \$30mn-\$40mn = pro rata \$0-\$10mn paid

Expected Return Calculation

- Premium paid = \$2.8mn
- Collateral posted = \$10mn - \$2.8mn = \$7.2mn
- Expected loss (based on models) = \$1.0mn
- Expected profit = \$2.8mn - \$1.0mn = \$1.8mn
- Cash return on collateral + premium = \$10mn * 1% = \$0.1mn
- **Expected return = (\$1.8mn + 0.1mn) / \$7.2mn = 26.4%**

Risk utility thought experiment

The below describes a basic thought experiment for this concept:

- Suppose one has been offered to participate in a game where the payoff is based on the flipping of a fair coin. If it is heads, the player wins \$100, and if it is tails, the player wins \$0.
- Since there is a 50% chance of landing on either side, the expected value (i.e., the statistical average payoff if one were to conduct this experiment over and over again) is \$50 ($50\% * \$0 + 50\% * \$100 = \50).
- Now, suppose the same individual was offered the choice between: 1) a guaranteed payoff or 2) the chance to play the game. At what value would someone be indifferent between the two? That depends on their risk preferences.
 - A risk averse individual would be willing to accept a guaranteed payment less than \$50 rather than potentially receiving nothing by playing the game.
 - A risk neutral individual would be indifferent between a guaranteed payment of \$50 compared to playing the game.
 - A risk seeking individual would require a payment more than \$50 in order to not play the game.
- This same game can be reversed with the following parameters. If it is heads, the player loses \$100, and if it is tails, the player loses \$0.
- In this game, the expected value is $-\$50$ ($50\% * \$0 + 50\% * -\$100 = -\$50$).
- Similar to the prior game, is there a value at which individuals would be indifferent between paying versus playing the game? This also depends on their risk preferences.
 - A risk averse individual would be willing to pay more than \$50 (i.e., accept a known loss more than \$50) rather than potentially losing \$100.
 - A risk neutral individual would be indifferent between a guaranteed loss of \$50 and playing the game.
 - A risk seeking individual would only pay less than \$50; otherwise they would play the game.

Disclaimers

This document is for general information and educational purposes only, and must not be considered investment advice or a recommendation that the reader is to engage in, or refrain from taking, a particular investment-related course of action. Any such advice or recommendation must be tailored to your situation and objectives. You should consult all available information, investment, legal, tax and accounting professionals, before making or executing any investment strategy. You must exercise your own independent judgment when making any investment decision.

All information contained in this document is provided "as is," without any representations or warranties of any kind. We disclaim all express and implied warranties including those with respect to accuracy, completeness, timeliness, or fitness for a particular purpose. We assume no responsibility for any losses, whether direct, indirect, special or consequential, which arise out of the use of this presentation.

All investments involve risk. There can be no guarantee that the strategies, tactics, and methods discussed in this document will be successful.

Data contained in this document may be obtained from a variety of sources and may be subject to change. We disclaim any and all liability for such data, including without limitation, any express or implied representations or warranties for information or errors contained in, or omissions from, the information. We shall not be liable for any loss or liability suffered by you resulting from the provision to you of such data or your use or reliance in any way thereon.

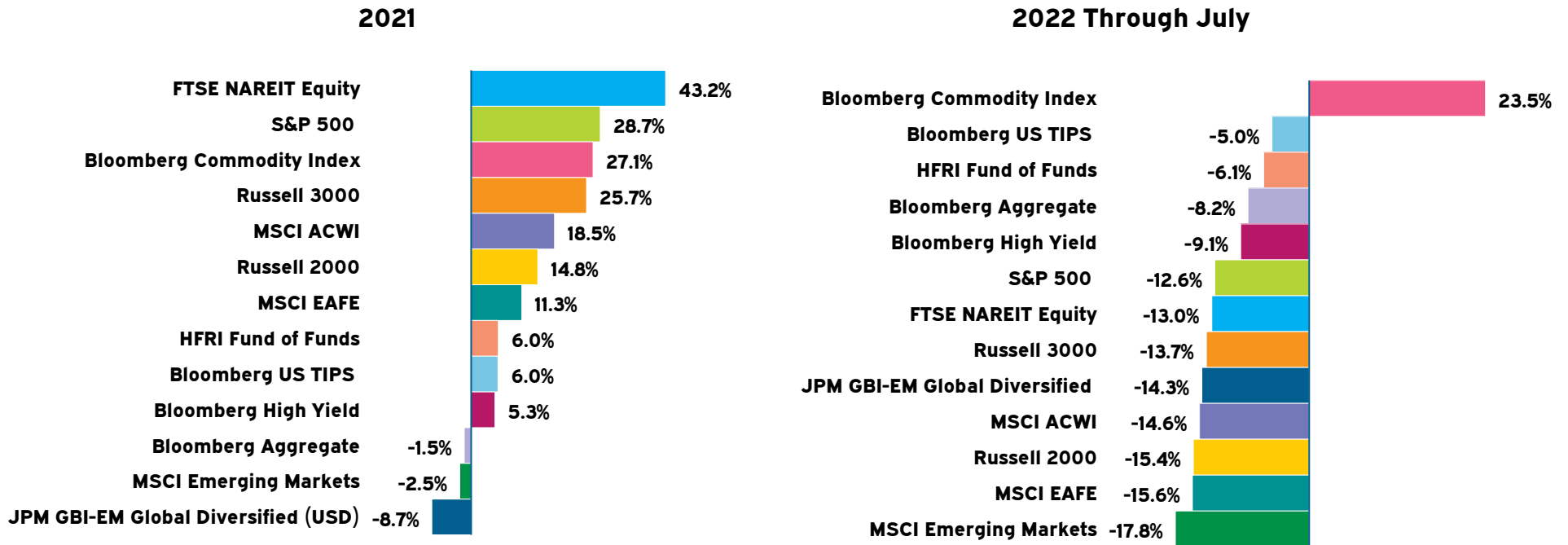
Nothing in this document should be interpreted to state or imply that past results are an indication of future performance. Investing involves substantial risk. It is highly unlikely that the past will repeat itself. Selecting an advisor, fund, or strategy based solely on past returns is a poor investment strategy. Past performance does not guarantee future results.

Economic and Market Update
Data as of July 31, 2022

Commentary

- Global markets posted strong results in July on expectations that policy tightening in the US could end early next year due to slowing growth.
- As expected, the Federal Reserve increased interest rates by another 75 basis points. Notably, much focus was placed on chair Jerome Powell's comments that the pace of policy tightening could slow.
 - Developed market equity indices increased for the month, led by US equities where earnings reports were not as weak as feared. Emerging markets fell for the month driven by China instituting renewed COVID-19 lockdowns and lingering property market issues.
 - Growth stocks again outperformed value stocks in July, but trail significantly year to date.
 - Rates declined for the month as growth slowed and expectations for the pace of policy tightening moderated.
- Persistently high inflation and the expected policy response, the war in Ukraine, lingering COVID-19 issues, and lockdowns in China will all have considerable economic and financial consequences for the global economy.

Index Returns¹



→ Outside of emerging markets and the broad US investment grade bond market (Bloomberg Aggregate), most asset classes appreciated in 2021.

→ While year-to-date returns remain negative, in July most asset classes posted positive returns reflecting an improvement in sentiment related to cooling inflationary pressures and the expected path of policy.

¹ Source: Bloomberg and FactSet. Data is as of July 31, 2022.

Domestic Equity Returns¹

Domestic Equity	July (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	9.2	-16.1	-12.6	-4.6	13.4	12.8	13.8
Russell 3000	9.4	-16.7	-13.7	-7.4	12.6	12.2	13.5
Russell 1000	9.3	-16.7	-13.6	-6.9	12.9	12.5	13.7
Russell 1000 Growth	12.0	-20.9	-19.4	-11.9	16.1	16.3	16.0
Russell 1000 Value	6.6	-12.2	-7.1	-1.4	8.9	8.3	11.1
Russell MidCap	9.9	-16.8	-13.8	-9.8	9.5	9.7	12.3
Russell MidCap Growth	12.2	-21.1	-22.6	-21.8	7.5	11.0	12.8
Russell MidCap Value	8.6	-14.7	-9.0	-2.9	9.4	7.7	11.5
Russell 2000	10.4	-17.2	-15.4	-14.3	7.5	7.1	10.6
Russell 2000 Growth	11.2	-19.3	-21.6	-23.2	4.7	6.9	10.7
Russell 2000 Value	9.7	-15.3	-9.3	-4.8	9.5	6.7	10.2

US Equities: Russell 3000 Index rose 9.4%, and growth indices continued to outperform value in July.

- US stocks rose sharply during the month, led by the technology and consumer discretionary sectors.
- Growth indices outperformed their value counterparts for the month but remain well behind for the year-to-date period.
- Small company stocks outperformed large company stocks in July by over 100 basis points but remain behind year-to-date.

¹ Source: Bloomberg. Data is as of July 31, 2022.

Foreign Equity Returns¹

Foreign Equity	July (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	3.4	-13.7	-15.6	-15.3	2.9	2.4	5.0
MSCI EAFE	5.0	-14.5	-15.6	-14.3	3.2	2.6	5.8
MSCI EAFE (Local Currency)	5.2	-7.8	-6.7	-2.1	5.9	5.2	8.7
MSCI EAFE Small Cap	6.6	-17.7	-19.7	-20.3	3.6	2.3	7.8
MSCI Emerging Markets	-0.2	-11.5	-17.8	-20.1	0.9	1.0	2.8
MSCI Emerging Markets (Local Currency)	0.1	-8.1	-13.6	-14.9	3.6	3.4	5.8
MSCI China	-9.5	3.4	-19.7	-28.3	-3.6	-1.6	4.3

International equities (MSCI EAFE) gained 5.0%, while emerging markets (MSCI EM) fell 0.2% in July.

- Non-US developed market stocks trailed the US for the month, and emerging markets stocks posted negative returns due to China’s drawdown of 9.5%. Both remain notably negative for the year-to-date period (EAFE -15.6%, EM -17.8%), lagging US equities.
- The war in Ukraine, high inflation and the likely monetary policy response, and slowing growth continue to weigh on sentiment.
- Growth stocks had a strong month in July, outperforming value stocks across developed and emerging markets, similar to the US.

¹ Source: Bloomberg. Data is as of July 31, 2022.

Fixed Income Returns¹

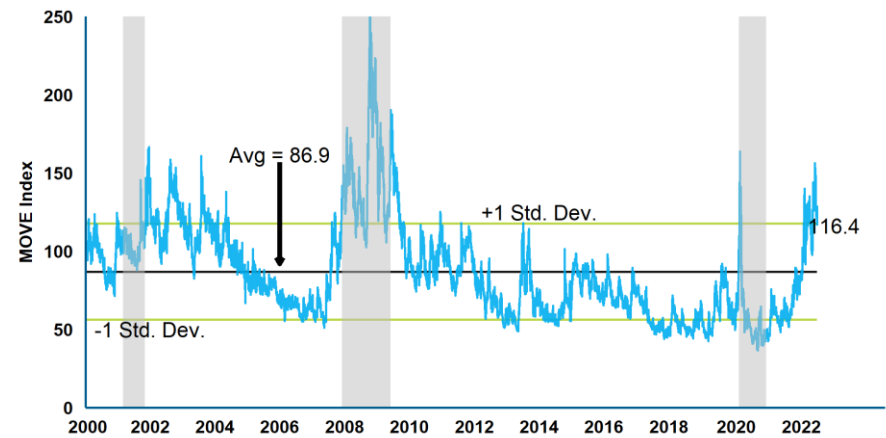
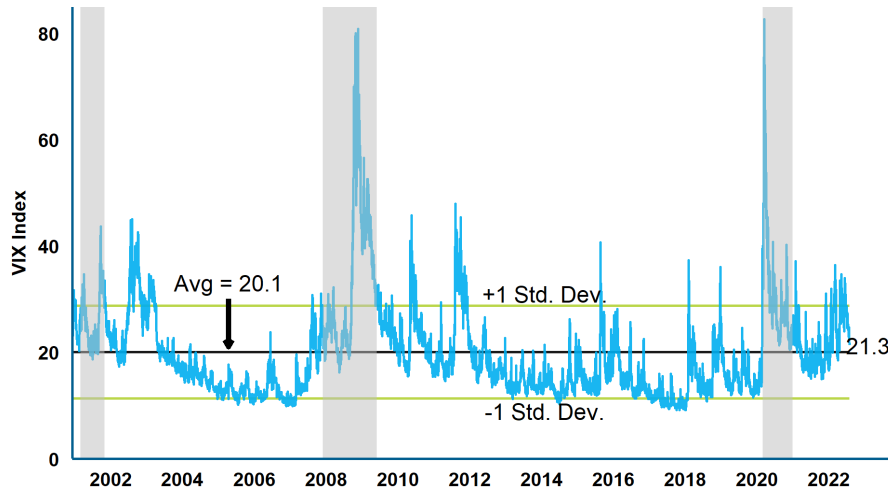
Fixed Income	July (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	2.5	-5.1	-8.7	-9.6	-0.2	1.3	1.9	3.9	6.4
Bloomberg Aggregate	2.4	-4.7	-8.2	-9.1	-0.2	1.3	1.6	3.4	6.6
Bloomberg US TIPS	4.4	-6.1	-5.0	-3.6	4.4	4.0	2.0	3.0	7.4
Bloomberg High Yield	5.9	-9.8	-9.1	-8.0	2.0	3.1	4.9	7.7	4.7
JPM GBI-EM Global Diversified (USD)	0.3	-8.6	-14.3	-18.7	-6.0	-2.7	-1.7	7.3	5.0

Fixed Income: The Bloomberg Universal gained 2.5% in July.

- Fixed income indices broadly benefited from yields declining across the curve. During July, the US 10-year Treasury note yield fell 36 basis points, from 3.01% on June 30th to 2.65% on July 31.
- The high yield index was one of the best performers in July as yields declined along with tightening spreads supported by a historic drop in high yield issuance to the lowest July issuance since 2006.

¹ Source: Bloomberg. JPM GBI-EM is from InvestorForce. Data is as of July 31, 2022.

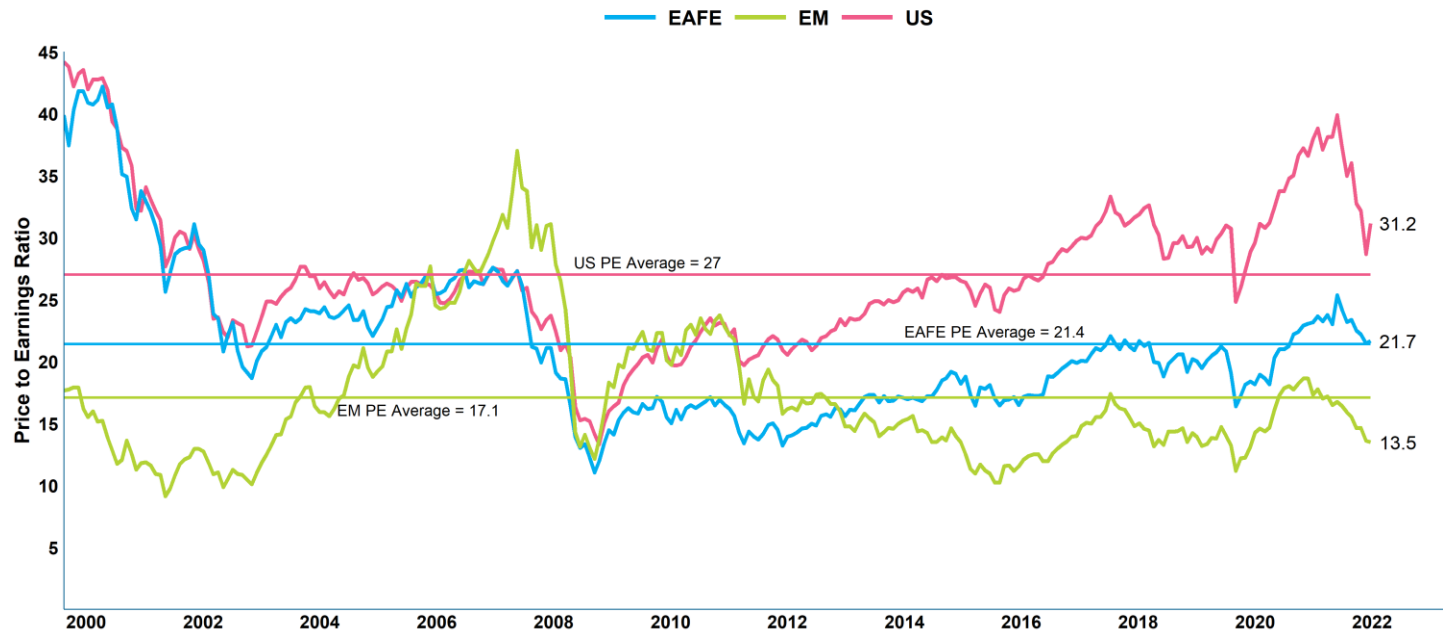
Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) and fixed income (MOVE) declined in July based on potentially peaking monetary policy and possible rate cuts in 2023.
- Despite the July decline, fixed income volatility remains high due to the uncertain path of short-term interest rates.

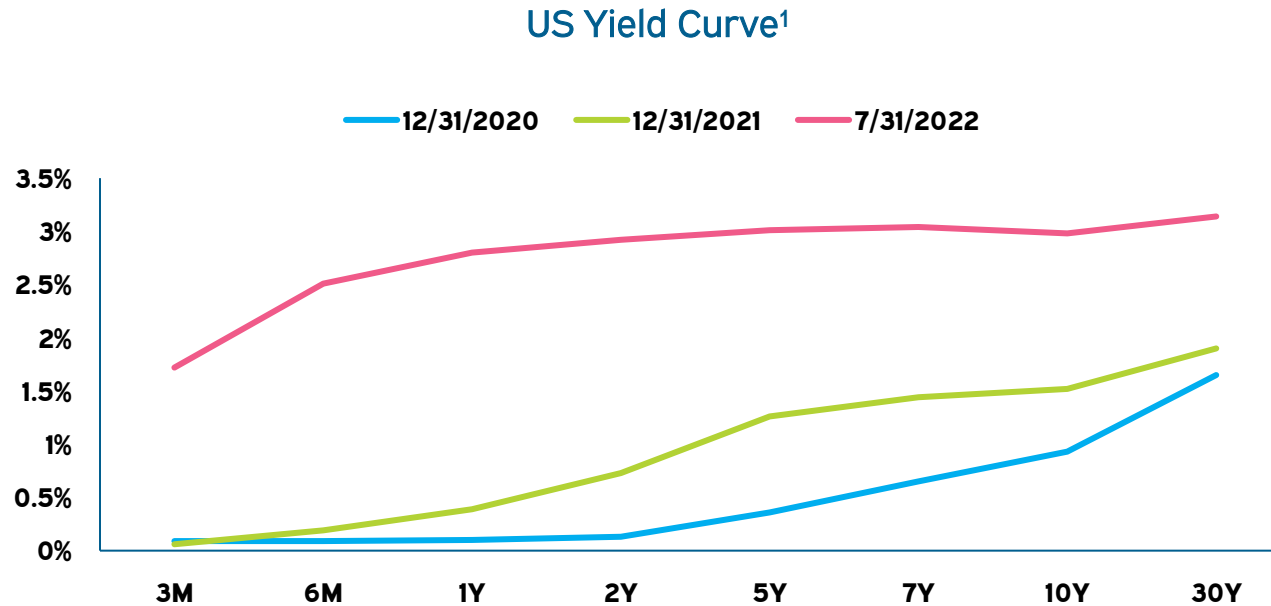
¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of July 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

Equity Cyclically Adjusted P/E Ratios¹



- Strong positive results in July for US equities reversed the recent trend of valuation declines, but they remain well off the peak.
- International developed market valuations remain below the US and are slightly above their own long-term average, with those for emerging markets the lowest and under the long-term average.

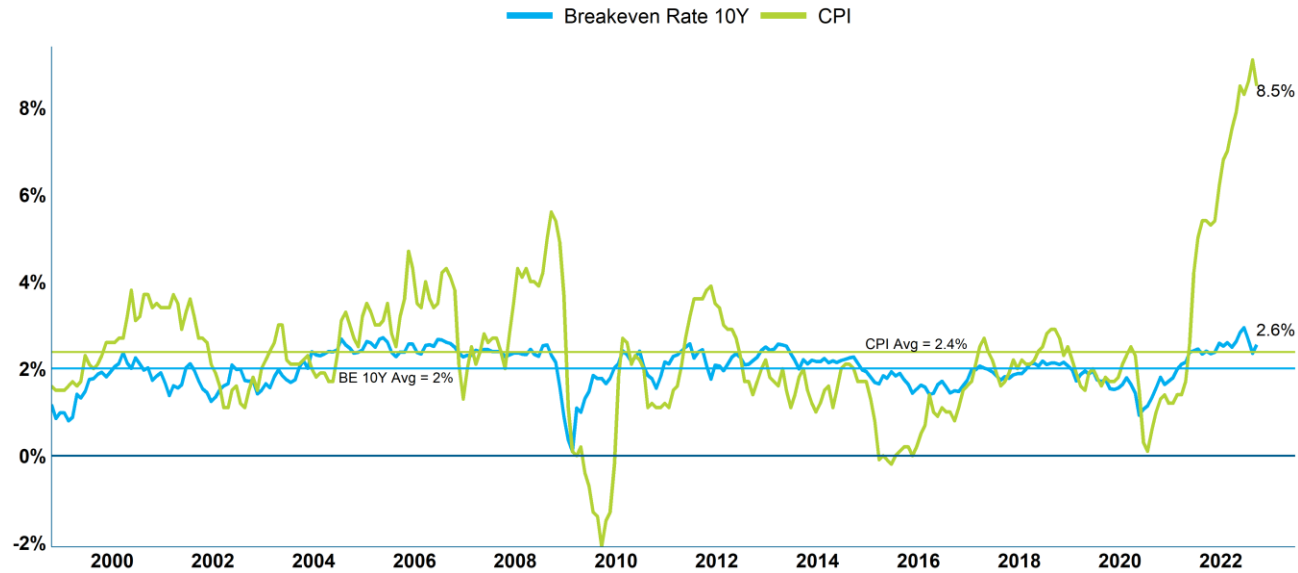
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of July 31, 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.



- Rates across the yield curve remain much higher than at the start of the year.
- In July, longer-dated yields declined as investors reconsidered economic growth prospects and the likelihood that yields have reached their peak for this economic cycle. Shorted dated yields rose on near-term policy actions and messaging that policy officials intend to remain aggressive in fighting inflation pressures into early 2023.
- The yield spread between two-year and ten-year Treasuries became negative, finishing July at -0.23%. Inversions in the yield curve have historically often signaled building recessionary pressures.

¹ Source: Bloomberg. Data is as of July 31, 2022.

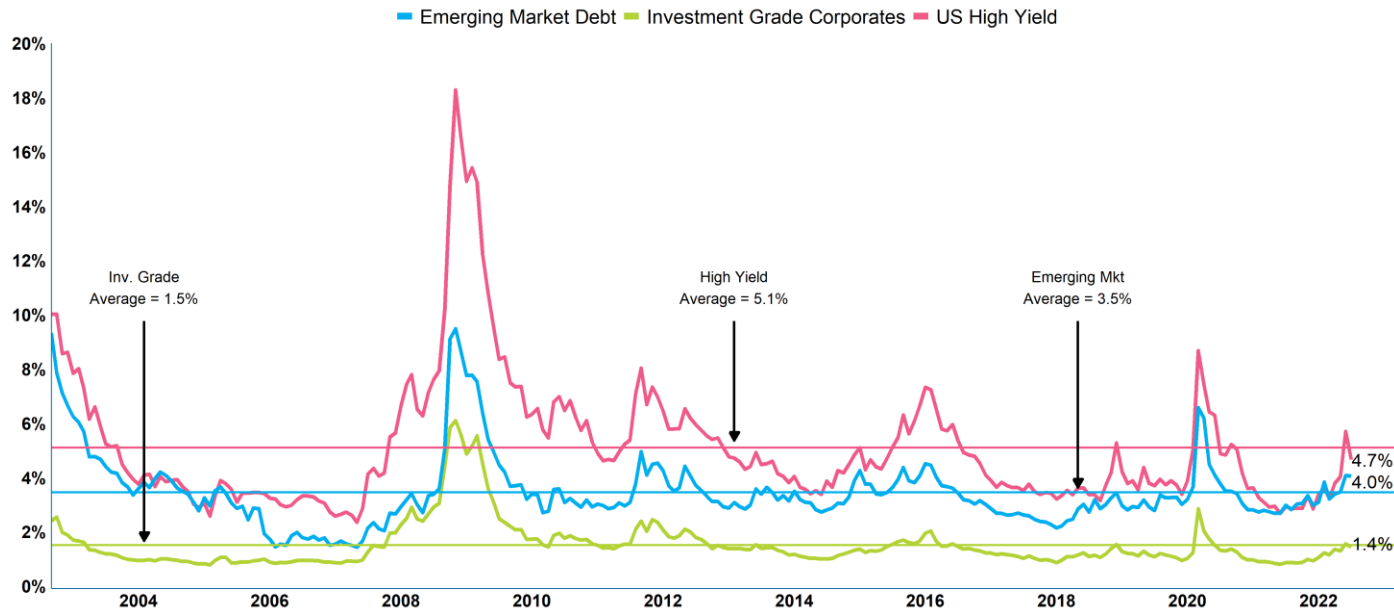
Ten-Year Breakeven Inflation and CPI¹



- In July, inflation expectations (breakevens) rose on the prospects of easing monetary policy next year.
- Trailing twelve-month CPI declined in July (8.5% versus 9.1%) and came in below expectations. Inflation levels in the US remain well above the long-term average of 2.4%.
- Rising prices for energy (particularly oil), food, housing, and for new and used cars, remain key drivers of higher inflation.

¹ Source: Bloomberg. Data is as of July 31, 2022. 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



- Credit spreads (the spread above a comparable maturity Treasury) declined in July, particularly for high yield, as risk appetite returned.
- In the US, spreads for high yield reversed course, declining from 5.7% to 4.7%, while investment grade (1.6% to 1.4%) and emerging market (4.1% to 4.0%) spreads experienced more modest declines.

¹ Sources: Bloomberg. Data is as of July 31, 2022. 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 Economic Outlook

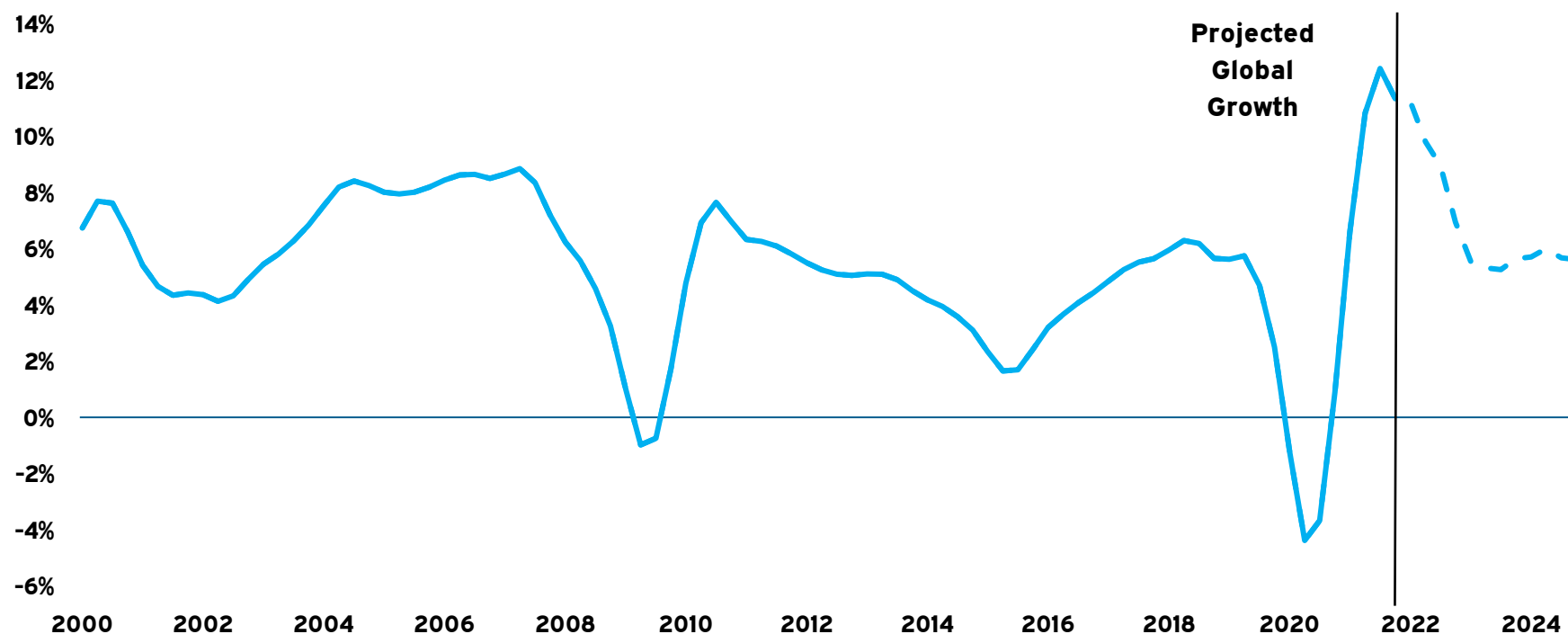
The IMF significantly lowered global growth forecasts again in their latest projections, driven by the economic impacts of persistent inflation in energy and food prices.

- The IMF forecasts global GDP growth to come in at 3.2% in 2022 (0.4% below the prior estimate) and 2.9% in 2023 (0.7% below the prior estimate).
- In advanced economies, GDP is projected to increase 2.5% in 2022 and 1.4% in 2023. The US saw another downgrade in the 2022 (2.3% versus 3.7%) and 2023 (1.0% versus 2.3%) growth forecasts largely due to policy tightening happening faster than previously expected given persistently high inflation. The euro area saw a downgrade too in expected growth (2.6% versus 2.8%) in 2022 and in 2023 (1.2% versus 2.3%) as rising energy prices particularly weigh on the region that is a net importer of energy. The Japanese economy is expected to grow 1.7% this year and next.
- Growth projections for emerging markets are higher than developed markets, at 3.6% in 2022 and 3.9% in 2023. China's growth was downgraded for 2022 (3.3% versus 4.4%) and 2023 (4.9% versus 5.1%) given tight COVID-19 restrictions and continued property sector problems.
- The global inflation forecast was significantly increased for 2022 (7.4% versus 3.8%).

	Real GDP (%) ¹			Inflation (%) ¹		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	3.2	2.9	3.0	7.4	4.8	3.5
Advanced Economies	2.5	1.4	1.6	5.7	2.5	1.5
US	2.3	1.0	2.1	7.7	2.9	1.9
Euro Area	2.6	1.2	0.9	5.3	2.3	1.2
Japan	1.7	1.7	0.5	1.0	0.8	0.5
Emerging Economies	3.6	3.9	4.2	8.7	6.5	5.1
China	3.3	4.9	6.7	2.1	1.8	2.1

¹ Source: IMF World Economic Outlook. Real GDP forecasts from July 2022 Update. Inflation forecasts are as of the April 2022 Update.* Actual 10 Year Average* represents data from 2012 to 2021.

Global Nominal Gross Domestic Product (GDP) Growth¹

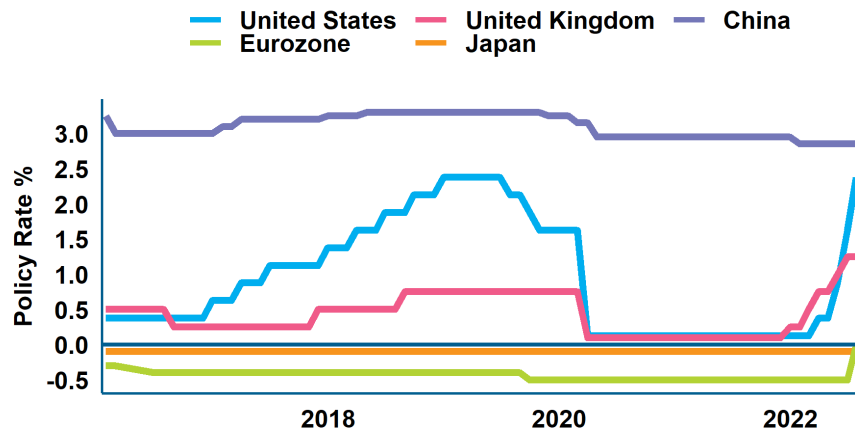


- Global economies are expected to slow in 2022 compared to 2021 with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- Looking forward, the delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

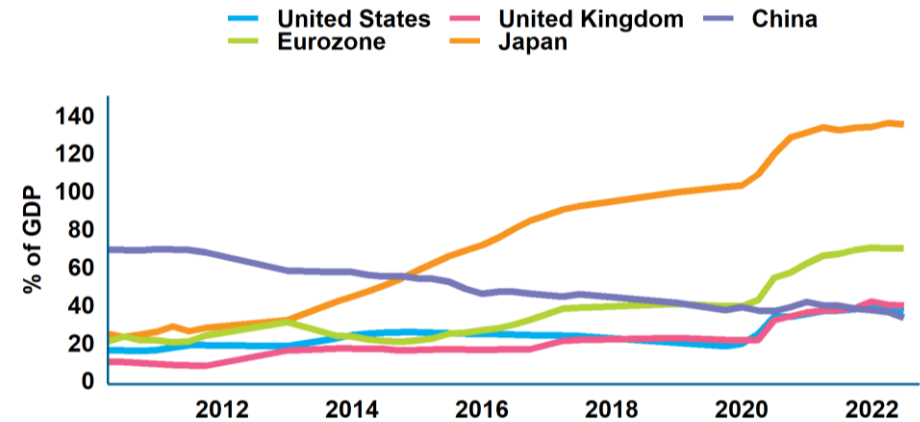
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, nominal, % change YoY). Updated July 2022.

Central Bank Response¹

Policy Rates



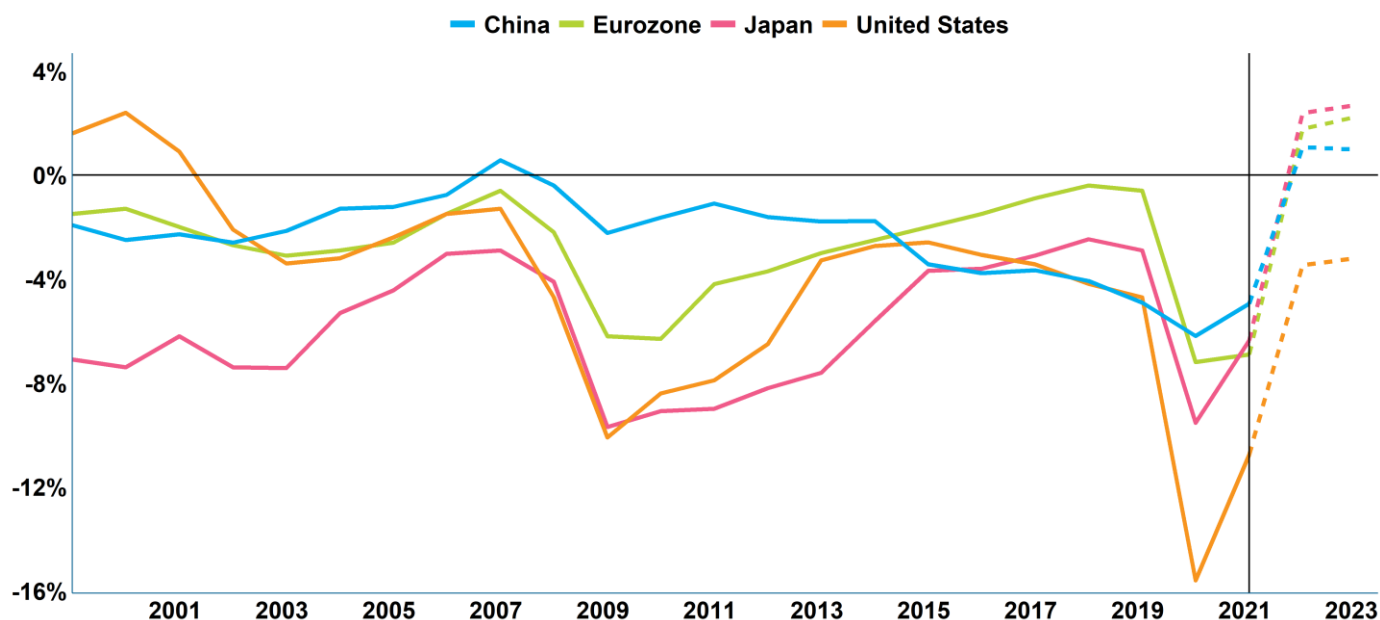
Balance Sheet as % of GDP



- After global central banks took extraordinary action to support economies during the pandemic, including policy rate cuts and emergency stimulus through quantitative easing (QE), many are now aggressively reducing support in the face of high inflation.
- The pace of withdrawing support varies across central banks with the US taking a more aggressive approach. The risk remains for a policy error, particularly overtightening, as record inflation, the war in Ukraine, and a tough COVID-19 policy in China could suppress global growth.
- The one notable central bank outlier is China, where the central bank recently lowered rates and reserve requirements in response to slowing growth.

¹ Source: Bloomberg. Policy rate data is as of July 31, 2022. 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 June 30, 2022.

Budget Surplus / Deficit as a Percentage of GDP¹

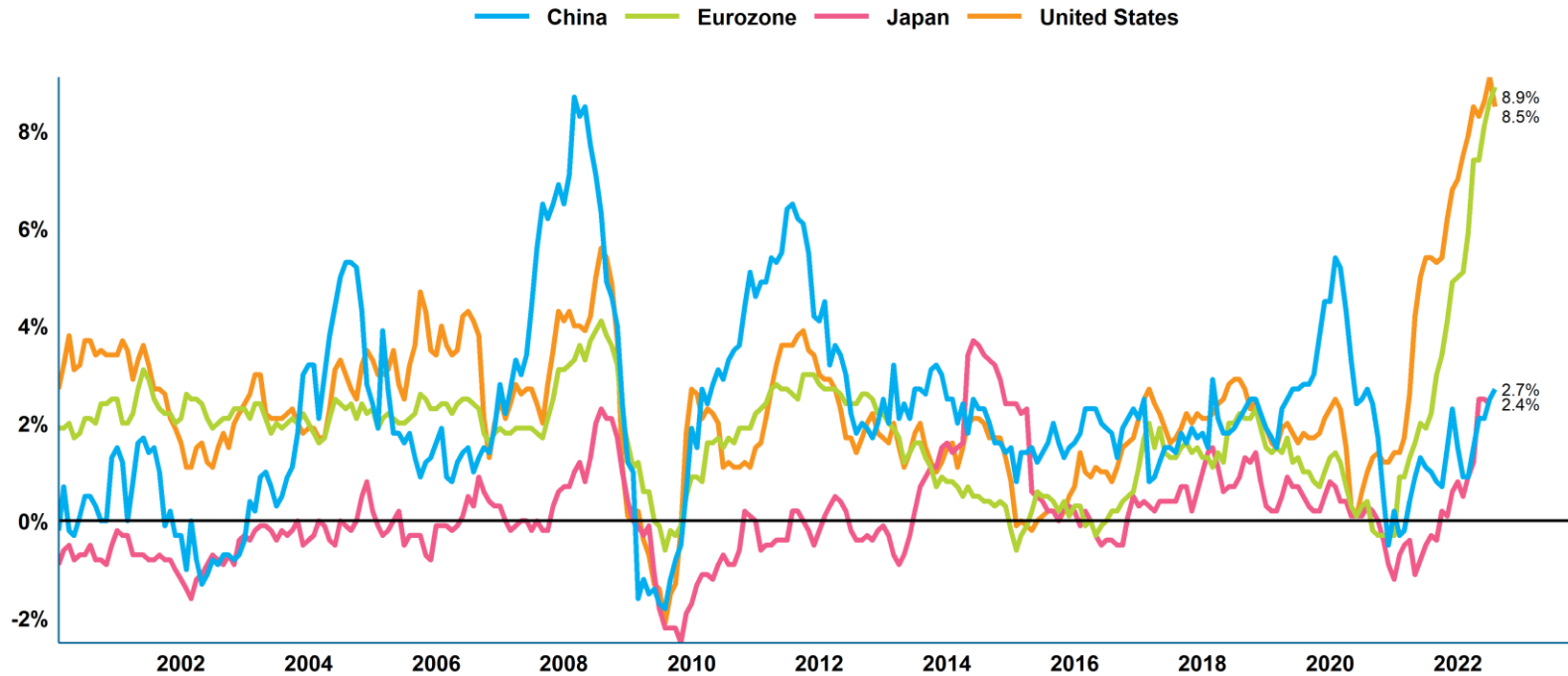


→ Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction's effect on tax revenue in 2020 and 2021.

→ As fiscal stimulus programs end, and economic recoveries continue, deficits should improve in the coming years.

¹ Source: Bloomberg. Data is as of July 31, 2022. Projections via IMF Forecasts from April 2022 Report. Dotted lines represent 2022 and 2023 forecasts.

Inflation (CPI Trailing Twelve Months)¹

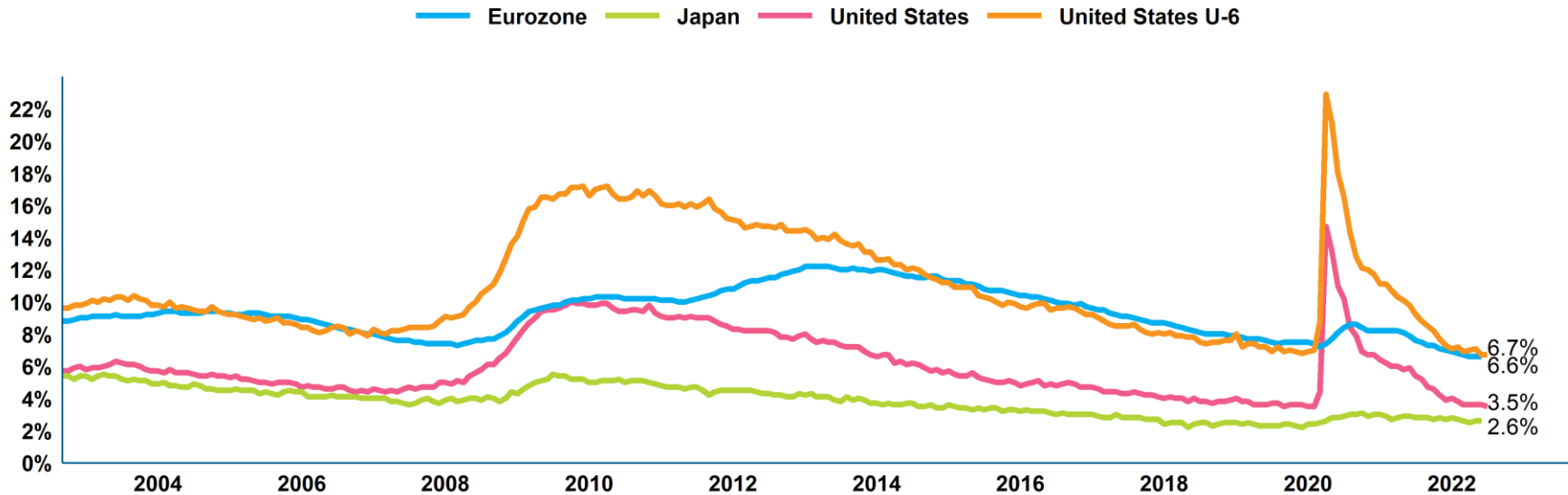


→ Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.

→ Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher prices in many commodities driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of July 2022. The most recent data for Japan is as of June 30, 2022.

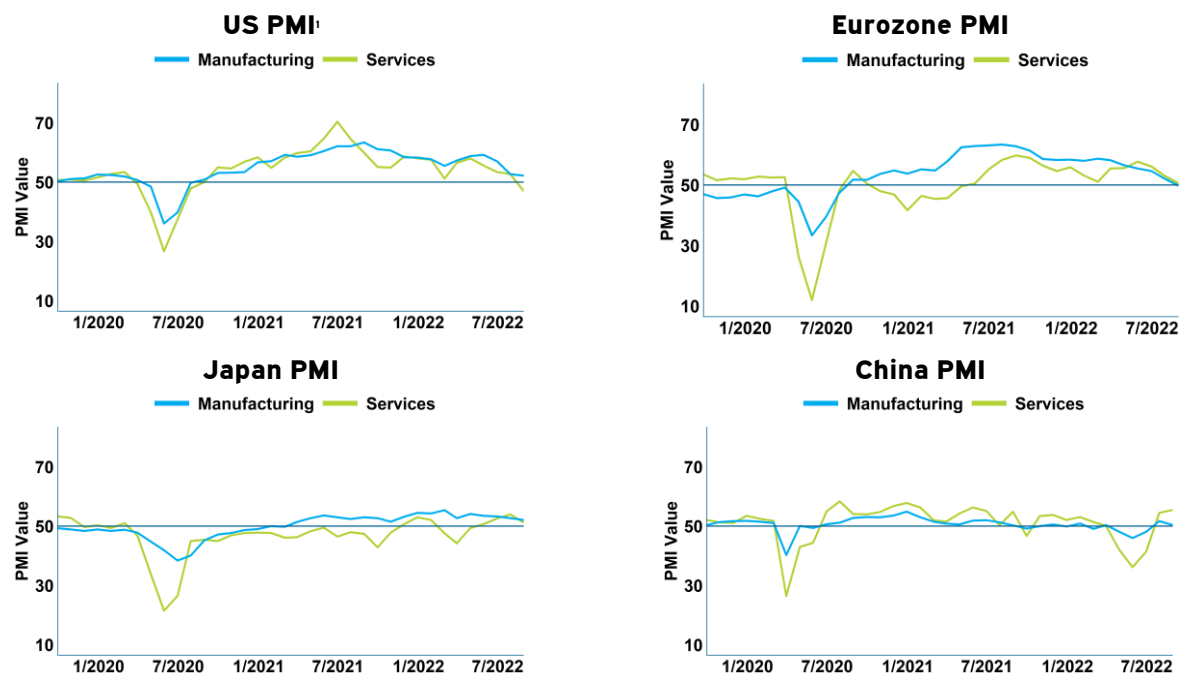
Unemployment¹



- As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- US unemployment, which experienced the steepest rise from the pandemic, declined back to pre-pandemic levels. The broader measure (U-6) that includes discouraged and underemployed workers declined but is much higher at 6.7%.

¹ Source: Bloomberg. Data is as of July 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of June 30, 2022.

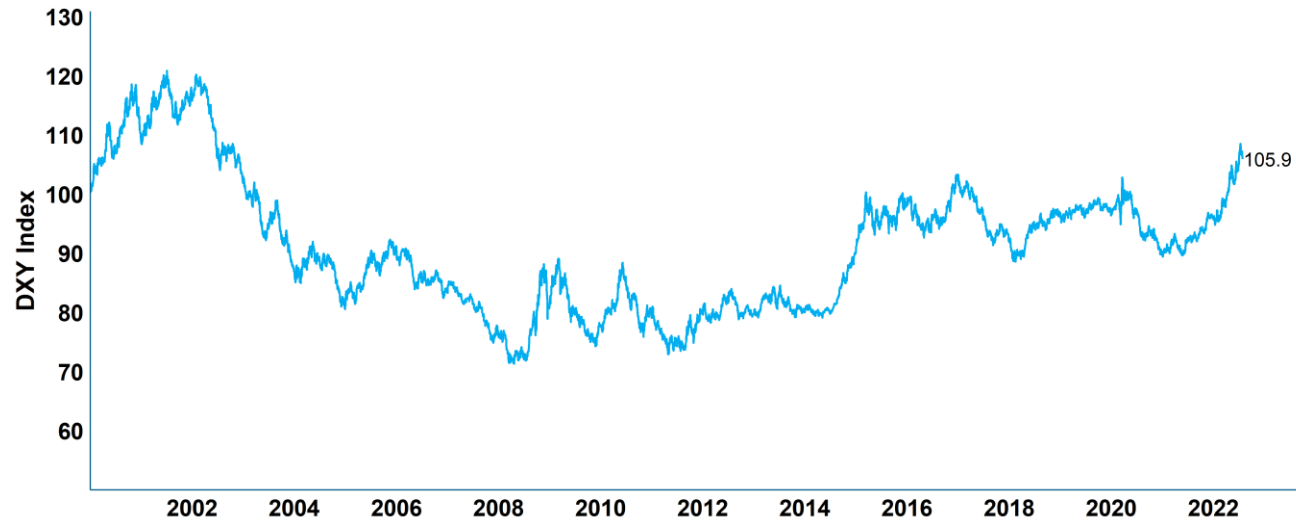
Global PMIs



- After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have largely experienced some pressures recently.
- Service sector PMIs in the US and Europe have recently declined, with the US slipping into contraction territory, while Japan experienced a decline for the month on rising COVID-19 cases in parts of the country. In China the services PMI remained in positive territory.
- Manufacturing PMIs dropped recently across China and developed markets given declines in demand and inflationary pressures.

¹ Source: Bloomberg. US Market Services and Manufacturing PMI, Caixin Services and Manufacturing PMI, Eurozone Market Services and Manufacturing PMI, Jibun Bank Services and Manufacturing PMI. Data is as of July 2022. Readings below 50 represent economic contractions.

US Dollar versus Broad Currencies¹



- In July, the US dollar overall continued its path higher but finished the month off its peak as expectations on the pace of policy tightening by the Fed fell and safe-haven flows declined.
- The euro, yen, and yuan have all experienced significant declines versus the dollar this year, adding to inflation and slowing growth concerns.

¹ Source: Bloomberg. Data as of July 31, 2022.

Summary

Key Trends in 2022:

- The impacts of record high inflation will remain key going forward, with volatility likely to remain high.
- The war in Ukraine has created significant uncertainty, with a wide range of potential outcomes.
- Expect growth to slow globally in 2022 to the long-term trend or below. Inflation, monetary policy, and the war will all be key.
- The end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices will depress consumers' spending in other areas.
- Monetary policy will likely tighten globally but will remain relatively accommodative. The risk of overtightening policy remains.
- Valuations have significantly declined in the US, approaching long-term averages.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including continued strength in the US dollar, higher inflation particularly weighing on Europe, and China maintaining its restrictive COVID-19 policies.

Disclaimer, Glossary, and Notes

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

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

The Russell Indices®, TM, SM are trademarks/service marks of the Frank Russell Company.

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.