

Fresno County Employees' Retirement Association

Investment Performance Review
Period Ending: December 31, 2022



[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

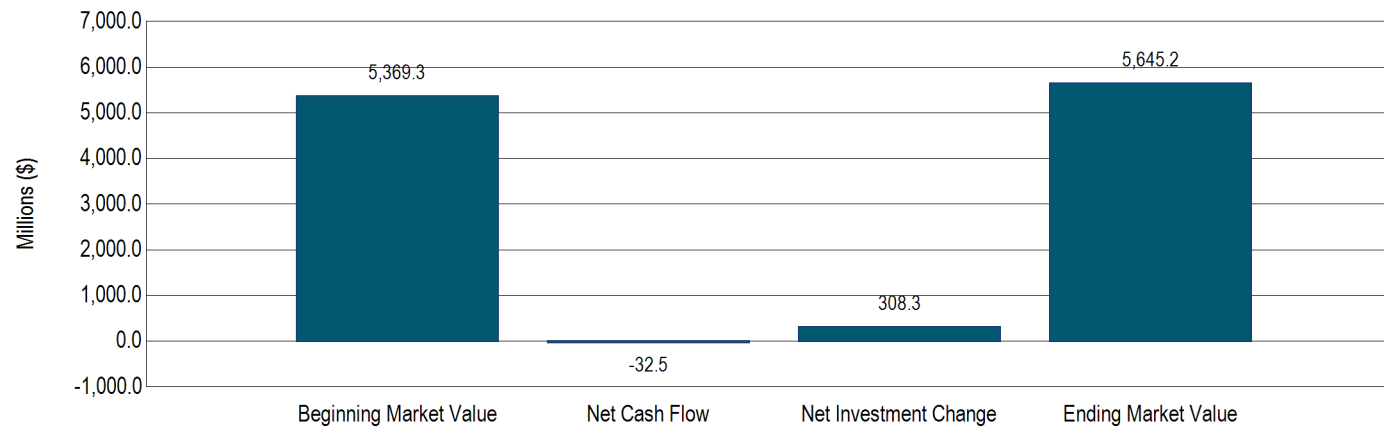
Total Fund
Portfolio Reconciliation

Period Ending: December 31, 2022

Portfolio Reconciliation

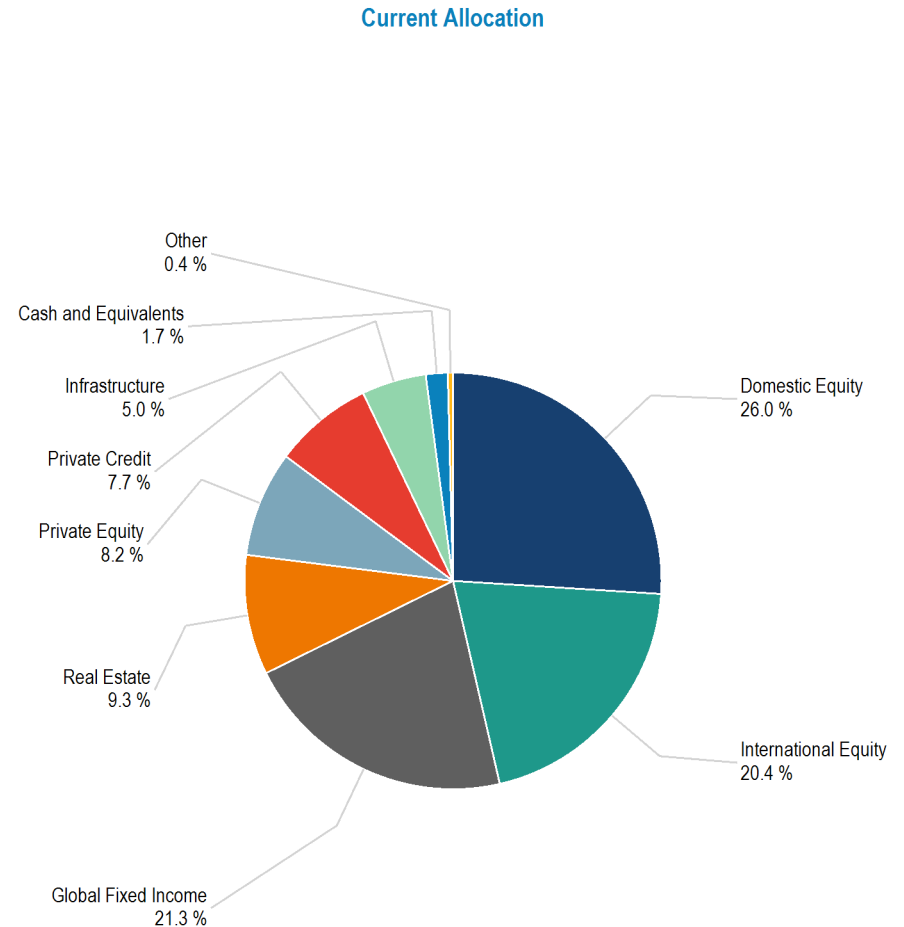
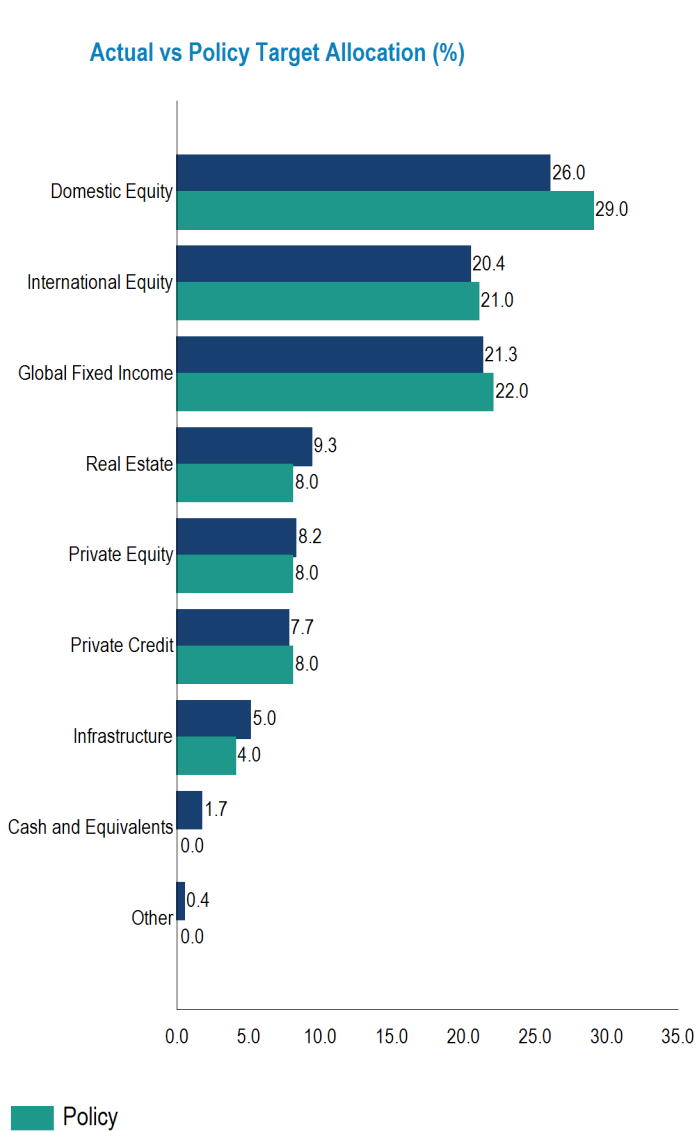
	Last Three Months	Year-To-Date
Beginning Market Value	\$5,369,339,124	\$6,428,347,281
Net Cash Flow	-\$32,474,581	-\$67,417,931
Net Investment Change	\$308,334,299	-\$715,730,507
Ending Market Value	\$5,645,198,842	\$5,645,198,842

Change in Market Value
Last Three Months



Total Fund Asset Allocation

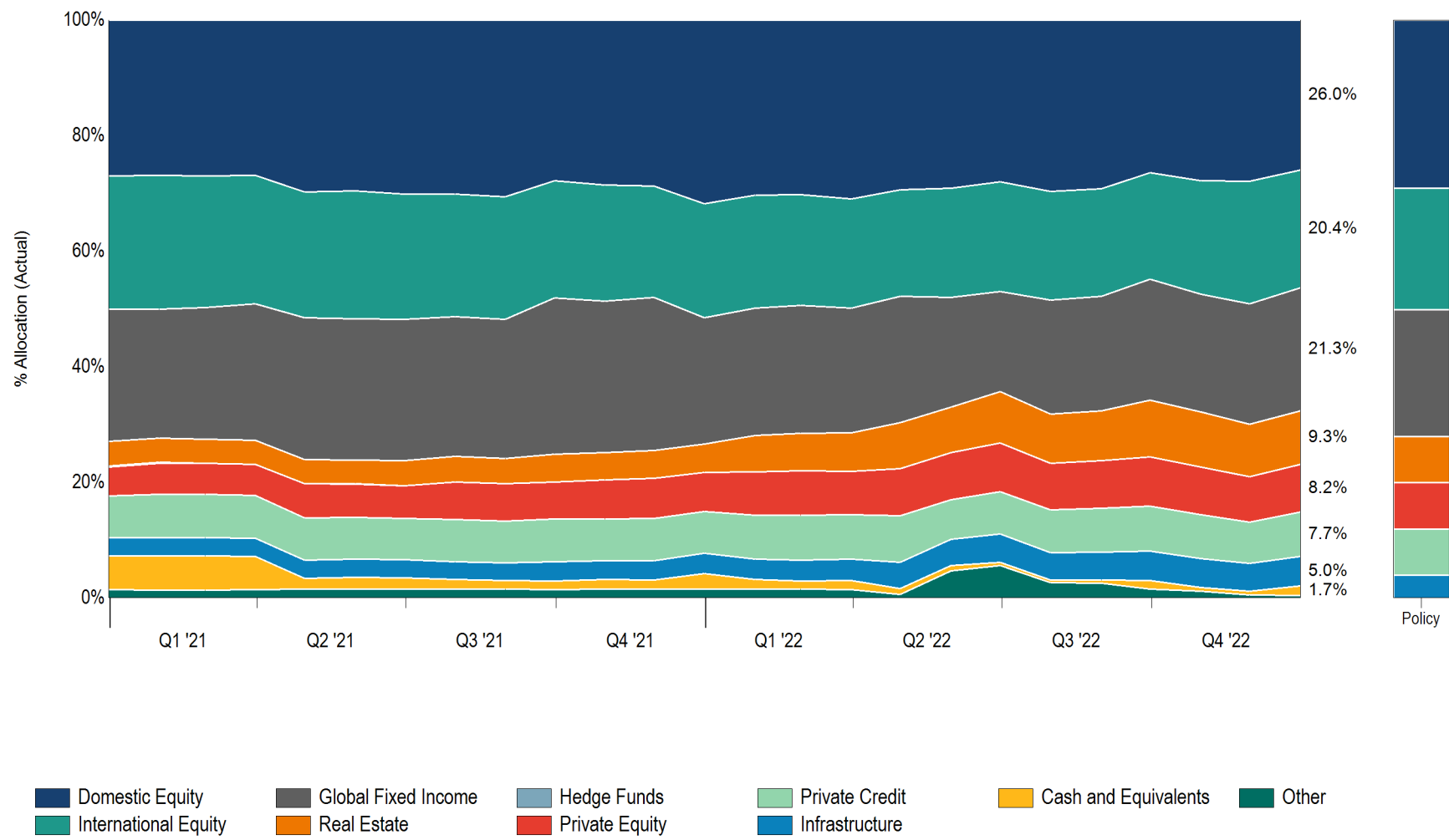
Period Ending: December 31, 2022



Other consists of cash held for the overlay program. The target allocation reflects the most recent asset allocation targets per Asset Allocation Glidepath in IPS.

Total Fund
Asset Allocation History

Period Ending: December 31, 2022



Total Fund

Executive Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2022	2021	2020	2019	2018
Total Fund	5,645,198,842	100.0	5.7	1.2	-11.2	3.3	4.4	5.9	5.1	-11.2	12.6	10.4	16.4	-3.4
Policy Index			5.0	1.1	-10.0	5.4	5.5	6.3	5.0	-10.0	13.7	14.3	15.1	-3.1
Total Equity	2,617,774,176	46.4	10.6	3.0	-19.3	2.7	4.3	7.8	--	-19.3	15.4	16.3	26.0	-9.5
MSCI ACWI IMI NR			9.8	2.6	-18.4	3.9	5.0	7.9	5.0	-18.4	18.2	16.3	26.4	-10.1
Total Domestic Equity	1,465,970,368	26.0	6.7	2.1	-21.5	5.5	7.4	11.0	--	-21.5	23.9	20.7	28.0	-5.1
MSCI USA IMI NR			7.1	2.2	-19.6	6.8	8.4	11.6	8.2	-19.6	25.6	20.5	30.4	-5.7
Total International Equity	1,151,803,809	20.4	15.7	3.7	-16.4	-0.5	1.1	4.1	--	-16.4	4.8	12.3	24.2	-13.6
MSCI ACWI ex USA			14.3	3.0	-16.0	0.1	0.9	3.8	1.5	-16.0	7.8	10.7	21.5	-14.2
Total Fixed Income	1,199,786,652	21.3	3.2	-1.1	-12.4	-2.6	-0.1	1.3	--	-12.4	-1.9	7.4	11.0	-2.9
Fixed Income Custom Benchmark			3.0	0.0	-10.8	-1.4	0.3	0.5	2.3	-10.8	-1.4	9.1	6.8	-1.2
Bloomberg Global Aggregate TR			4.5	-2.7	-16.2	-4.5	-1.7	-0.4	1.5	-16.2	-4.7	9.2	6.8	-1.2
Total Real Estate	525,521,845	9.3	-2.3	-1.3	8.7	8.6	8.2	9.4	--	8.7	19.3	-1.2	6.2	9.2
NCREIF ODCE Net			-5.1	-4.8	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4
Total Infrastructure	284,882,239	5.0	4.0	4.2	8.2	9.4	12.5	--	--	8.2	17.6	2.9	14.6	20.1
NCREIF ODCE Net			-5.1	-4.8	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4
Total Private Equity 1 Qtr Lagged	464,519,148	8.2	-1.0	-3.0	7.2	23.0	18.4	14.5	11.5	7.2	57.2	10.3	4.7	19.6
Russell 2000 1 Qtr Lagged +200bps			-1.7	-18.2	-21.9	6.4	5.6	10.8	9.0	-21.9	50.5	2.4	-7.0	17.5
Total Private Credit 1 Qtr Lagged	435,488,100	7.7	1.1	1.4	5.2	7.3	6.9	6.7	9.1	5.2	14.1	2.8	5.3	7.6
Bloomberg US Corp. High Yield 1 Qtr Lagged +200bps			-0.2	-9.5	-12.4	1.5	3.6	5.7	7.9	-12.4	13.5	5.3	8.5	5.1
Total Custodied Cash	81,033,050	1.4	0.8	1.4	1.6	0.7	1.2	0.7	--	1.6	0.0	0.4	2.1	1.8
91 Day T-Bills			0.8	1.3	1.5	0.6	1.2	0.7	0.6	1.5	0.0	0.5	2.1	1.9
Total County Cash	12,334,630	0.2	0.7	1.3	3.1	2.3	2.3	--	--	3.1	1.6	2.3	2.2	2.4
91 Day T-Bills			0.8	1.3	1.5	0.6	1.2	0.7	0.6	1.5	0.0	0.5	2.1	1.9
Transition	29,371	0.0												
Total Parametric Overlay	23,829,630	0.4												

Policy Index (Floating policy weights updated as of 12/1/2022. See Data Sources and Methodology for monthly policy breakout): 29% MSCI USA IMI, 21% MSCI ACWI ex US, 22% Fixed Income Custom Benchmark, 8% Private Equity Neutralized, 7.15% Private Credit Neutralized, 0.00% Russell 2000, 0.85% Bloomberg US HY and 12% NCREIF ODCE Net. Composite total market values reflect manager exposures and any underlying cash balances. De-risking of the Plan commenced on April 30, 2014. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Parametric Overlay and Transition account values included in Total Fund value.

Fixed Income Custom Benchmark 12/1/2021: 50% Bloomberg U.S. Aggregate Index, 4.5% Bloomberg US Securitized Index, 18.2% Bloomberg High Yield, 18.2% S&P LSTA U.S. Leveraged Loan Index, 9.1% JP Morgan EMBI Global. Total Real Estate reflects current period returns for open ended funds and one quarter lag for closed end funds.

Total Fund

Executive Summary (Gross of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	2022	2021	2020	2019	2018
Total Fund	5,645,198,842	100.0	5.8	1.3	-11.1	3.5	4.6	6.2	5.4	7.5	-11.1	12.8	10.6	16.6	-3.2
Policy Index			5.0	1.1	-10.0	5.4	5.5	6.3	5.0	6.9	-10.0	13.7	14.3	15.1	-3.1
Total Equity	2,617,774,176	46.4	10.6	3.2	-19.1	3.0	4.6	8.1	--	--	-19.1	15.7	16.7	26.4	-9.3
MSCI ACWI IMI NR			9.8	2.6	-18.4	3.9	5.0	7.9	5.0	8.3	-18.4	18.2	16.3	26.4	-10.1
Total Domestic Equity	1,465,970,368	26.0	6.8	2.1	-21.4	5.6	7.5	11.2	8.3	9.7	-21.4	24.0	20.8	28.3	-4.9
MSCI USA IMI NR			7.1	2.2	-19.6	6.8	8.4	11.6	8.2	9.4	-19.6	25.6	20.5	30.4	-5.7
Total International Equity	1,151,803,809	20.4	15.9	3.9	-16.1	-0.1	1.5	4.6	2.9	7.3	-16.1	5.3	12.8	24.8	-13.2
MSCI ACWI ex USA			14.3	3.0	-16.0	0.1	0.9	3.8	1.5	6.7	-16.0	7.8	10.7	21.5	-14.2
Total Fixed Income	1,199,786,652	21.3	3.2	-0.9	-12.1	-2.3	0.2	1.6	3.9	4.2	-12.1	-1.6	7.8	11.4	-2.5
Fixed Income Custom Benchmark			3.0	0.0	-10.8	-1.4	0.3	0.5	2.3	2.8	-10.8	-1.4	9.1	6.8	-1.2
Bloomberg Global Aggregate TR			4.5	-2.7	-16.2	-4.5	-1.7	-0.4	1.5	2.7	-16.2	-4.7	9.2	6.8	-1.2
Total Real Estate	525,521,845	9.3	-2.3	-1.3	8.7	8.6	8.2	9.6	5.9	8.9	8.7	19.3	-1.2	6.2	9.2
NCREIF ODCE Net			-5.1	-4.8	6.6	9.0	7.7	9.1	5.3	--	6.6	21.0	0.3	4.4	7.4
Total Infrastructure	284,882,239	5.0	4.0	4.2	8.2	9.4	12.5	--	--	--	8.2	17.6	2.9	14.6	20.1
NCREIF ODCE Net			-5.1	-4.8	6.6	9.0	7.7	9.1	5.3	--	6.6	21.0	0.3	4.4	7.4
Total Private Equity 1 Qtr Lagged	464,519,148	8.2	-1.0	-3.0	7.2	23.0	18.4	14.6	11.6	--	7.2	57.2	10.3	4.7	19.6
Russell 2000 1 Qtr Lagged +200bps			-1.7	-18.2	-21.9	6.4	5.6	10.8	9.0	11.3	-21.9	50.5	2.4	-7.0	17.5
Total Private Credit 1 Qtr Lagged	435,488,100	7.7	1.1	1.4	5.2	7.3	6.9	7.0	9.3	--	5.2	14.1	2.8	5.3	7.6
Bloomberg US Corp. High Yield 1 Qtr Lagged +200bps			-0.2	-9.5	-12.4	1.5	3.6	5.7	7.9	9.2	-12.4	13.5	5.3	8.5	5.1
Total Custodied Cash	81,033,050	1.4	0.8	1.4	1.6	0.7	1.2	0.7	0.9	1.4	1.6	0.0	0.4	2.1	1.8
91 Day T-Bills			0.8	1.3	1.5	0.6	1.2	0.7	0.6	1.2	1.5	0.0	0.5	2.1	1.9
Total County Cash	12,334,630	0.2	0.7	1.3	3.1	2.3	2.3	--	--	--	3.1	1.6	2.3	2.2	2.4
91 Day T-Bills			0.8	1.3	1.5	0.6	1.2	0.7	0.6	1.2	1.5	0.0	0.5	2.1	1.9
Transition	29,371	0.0													
Total Parametric Overlay	23,829,630	0.4													

Policy Index (Floating policy weights updated as of 12/1/2022. See Data Sources and Methodology for monthly policy breakout): 29% MSCI USA IMI, 21% MSCI ACWI ex US, 22% Fixed Income Custom Benchmark, 8% Private Equity Neutralized, 7.15% Private Credit Neutralized, 0.00% Russell 2000, 0.85% Bloomberg US HY and 12% NCREIF ODCE Net. Composite total market values reflect manager exposures and any underlying cash balances. De-risking of the Plan commenced on April 30, 2014. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Parametric Overlay and Transition account values included in Total Fund value.

Fixed Income Custom Benchmark 12/1/2021: 50% Bloomberg U.S. Aggregate Index, 4.5% Bloomberg US Securitized Index, 18.2% Bloomberg High Yield, 18.2% S&P LSTA U.S. Leveraged Loan Index, 9.1% JP Morgan EMBI Global. Total Real Estate reflects current period returns for open ended funds and one quarter lag for closed end funds.

Total Fund Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Fund	5,645,198,842	100.0	5.7	-11.2	3.3	4.4	5.9	5.1	-11.2	12.6	10.4	16.4	-3.4	6.7	Jun-02
Policy Index			5.0	-10.0	5.4	5.5	6.3	5.0	-10.0	13.7	14.3	15.1	-3.1	6.4	Jun-02
InvMetrics Public DB > \$1B Net Rank			36	51	86	85	95	75	51	83	57	59	36		Jun-02
Total Fund Ex Parametric	5,621,369,212	99.6	5.6	-11.0	3.6	4.5	--	--	-11.0	12.5	11.0	15.3	-2.9	6.0	Dec-16
Policy Index			5.0	-10.0	5.4	5.5	6.3	5.0	-10.0	13.7	14.3	15.1	-3.1	6.8	Dec-16
InvMetrics Public DB > \$1B Net Rank			37	50	83	84	--	--	50	83	46	78	29		Dec-16
Total Equity	2,617,774,176	46.4	10.6	-19.3	2.7	4.3	7.8	--	-19.3	15.4	16.3	26.0	-9.5	--	
MSCI ACWI IMI NR			9.8	-18.4	3.9	5.0	7.9	5.0	-18.4	18.2	16.3	26.4	-10.1	--	
Total Domestic Equity	1,465,970,368	26.0	6.7	-21.5	5.5	7.4	11.0	--	-21.5	23.9	20.7	28.0	-5.1	--	Mar-97
MSCI USA IMI NR			7.1	-19.6	6.8	8.4	11.6	8.2	-19.6	25.6	20.5	30.4	-5.7	--	Mar-97
NT MSCI US Index	838,643,528	14.9	7.1	-19.4	--	--	--	--	-19.4	27.0	--	--	--	10.3	Jun-20
MSCI USA			7.1	-19.5	7.5	9.3	12.5	8.8	-19.5	27.0	21.4	31.6	-4.5	10.6	Jun-20
eV US Large Cap Core Equity Net Rank			75	77	--	--	--	--	77	48	--	--	--		Jun-20
MSCI Factor Mix Index	173,675,721	3.1	9.8	-14.0	--	--	--	--	-14.0	--	--	--	--	-0.3	Apr-21
MSCI USA			7.1	-19.5	7.5	9.3	12.5	8.8	-19.5	27.0	21.4	31.6	-4.5	-3.9	Apr-21
Russell 1000 Value			12.4	-7.5	6.0	6.7	10.3	7.0	-7.5	25.2	2.8	26.5	-8.3	2.3	Apr-21
eV US Large Cap Core Equity Net Rank			31	34	--	--	--	--	34	--	--	--	--		Apr-21
T. Rowe Price Large Cap Growth	139,291,917	2.5	0.5	-35.4	4.8	--	--	--	-35.4	27.4	40.0	29.5	--	8.2	Oct-18
Russell 1000 Growth			2.2	-29.1	7.8	11.0	14.1	10.3	-29.1	27.6	38.5	36.4	-1.5	10.9	Oct-18
eV US Large Cap Growth Equity Net Rank			82	83	66	--	--	--	83	26	27	82	--		Oct-18
PIMCO StocksPLUS Small Fund	314,341,857	5.6	6.9	-23.9	2.5	--	--	--	-23.9	14.5	23.6	29.3	--	4.6	Feb-18
Russell 2000			6.2	-20.4	3.1	4.1	9.0	7.2	-20.4	14.8	20.0	25.5	-11.0	4.6	Feb-18
eV US Small Cap Core Equity Net Rank			75	91	95	--	--	--	91	93	23	15	--		Feb-18

T. Rowe Price replaced Ivy on 10/18/2018. Systematic liquidated on 2/4/2019. Invesco Commodities liquidated 8/16/2019. SSgA S&P 500 Flagship Fund liquidated 12/2/2019. S&P 500 Index Fund transferred 6/1/2020 into NT MSCI US Index. MSCI EAFE liquidated into NT MSCI World Ex-US Index 5/28/2020. Aronson Johnson Ortiz was liquidated 8/16/2020 and a residual balance remains. MSCI Factor Mix Index funded 3/30/2021.

Total Fund Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total International Equity	1,151,803,809	20.4	15.7	-16.4	-0.5	1.1	4.1	--	-16.4	4.8	12.3	24.2	-13.6	--	
MSCI ACWI ex USA			14.3	-16.0	0.1	0.9	3.8	1.5	-16.0	7.8	10.7	21.5	-14.2	--	
NT MSCI World Ex-US Index	395,774,194	7.0	17.2	-13.8	--	--	--	--	-13.8	12.9	--	--	--	9.8	May-20
MSCI World ex USA			16.2	-14.3	1.3	1.8	4.6	1.8	-14.3	12.6	7.6	22.5	-14.1	9.2	May-20
eV Global All Cap Core Eq Net Rank			1	31	--	--	--	--	31	85	--	--	--		May-20
Artisan International Growth	233,633,419	4.1	16.0	-18.4	-0.9	2.8	--	--	-18.4	9.2	9.2	31.3	-10.2	4.9	Apr-13
MSCI EAFE			17.3	-14.5	0.9	1.5	4.7	1.8	-14.5	11.3	7.8	22.0	-13.8	4.3	Apr-13
MSCI EAFE Growth			15.0	-22.9	0.5	2.5	5.6	2.6	-22.9	11.3	18.3	27.9	-12.8	5.0	Apr-13
eV EAFE All Cap Growth Net Rank			4	1	53	16	--	--	1	42	92	32	7		Apr-13
PIMCO RAE International	230,132,142	4.1	17.3	-5.9	2.4	1.3	5.3	--	-5.9	11.5	2.1	17.9	-15.5	-5.4	Feb-22
MSCI EAFE			17.3	-14.5	0.9	1.5	4.7	1.8	-14.5	11.3	7.8	22.0	-13.8	-10.1	Feb-22
MSCI EAFE Value			19.6	-5.6	0.6	0.2	3.5	0.8	-5.6	10.9	-2.6	16.1	-14.8	-6.6	Feb-22
eV EAFE All Cap Value Net Rank			70	13	23	36	28	--	13	44	63	56	50		Feb-22
Mondrian Emerging Markets	147,051,041	2.6	12.6	-15.9	-2.7	-1.2	0.1	1.2	-15.9	-4.9	15.2	18.3	-13.8	4.2	Nov-05
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	1.4	0.6	-20.1	-2.5	18.3	18.4	-14.6	4.6	Nov-05
MSCI Emerging Markets Value NR			9.8	-15.8	-2.6	-1.6	0.1	0.1	-15.8	4.0	5.5	12.0	-10.7	4.2	Nov-05
eV Emg Mkts All Cap Value Equity Net Rank			56	50	71	73	92	43	50	82	40	42	48		Nov-05
Baillie Gifford Emerging Markets	145,213,013	2.6	11.5	-26.5	-4.7	--	--	--	-26.5	-9.1	29.6	28.0	--	2.6	Dec-18
MSCI Emerging Markets			9.7	-20.1	-2.7	-1.4	1.4	0.6	-20.1	-2.5	18.3	18.4	-14.6	2.2	Dec-18
MSCI Emerging Markets Growth NR			9.6	-24.0	-2.9	-1.3	2.7	1.1	-24.0	-8.4	31.3	25.1	-18.3	3.4	Dec-18
Diversified Emerging Mkts MStar MF Rank			24	76	77	--	--	--	76	88	18	14	--		Dec-18

Baillie Gifford Emerging Markets funded 12/10/2018. Mondrian International Small Cap liquidated 2/9/2022. Research Affiliates International Equity liquidated on 7/8/2022.

Total Fund Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Fixed Income	1,199,786,652	21.3	3.2	-12.4	-2.6	-0.1	1.3	--	-12.4	-1.9	7.4	11.0	-2.9	--	
Fixed Income Custom Benchmark			3.0	-10.8	-1.4	0.3	0.5	2.3	-10.8	-1.4	9.1	6.8	-1.2	--	
Bloomberg Global Aggregate TR			4.5	-16.2	-4.5	-1.7	-0.4	1.5	-16.2	-4.7	9.2	6.8	-1.2	--	
Western Asset Management Core Bond	599,151,197	10.6	2.5	-16.1	-3.3	0.3	--	--	-16.1	-1.6	9.4	14.9	-2.3	2.0	Oct-14
Western Asset Management Benchmark			1.9	-13.0	-2.5	0.6	1.9	3.8	-13.0	-2.6	9.4	13.8	-2.1	1.9	Oct-14
eV US Core Fixed Inc Net Rank			5	98	96	43	--	--	98	53	14	1	99		Oct-14
PGIM Strategic Credit	339,242,861	6.0	5.3	--	--	--	--	--	--	--	--	--	--	-0.4	Aug-22
33% Bloomberg US HY/33% CS Lev Loan/33% JPM EMBI Gbl Div Index			4.9	-10.1	-1.0	1.4	3.2	--	-10.1	2.9	4.9	12.5	-1.8	0.0	Aug-22
HPS Institutional Credit	208,354,337	3.7	2.2	--	--	--	--	--	--	--	--	--	--	1.1	Jun-22
50% Credit Suisse HY/50% Credit Suisse Leveraged Loan Index			3.1	-5.8	1.1	2.7	3.8	4.9	-5.8	5.5	4.1	11.1	-0.6	3.5	Jun-22
RBC Access Capital	51,789,096	0.9	1.8	-10.9	-2.9	--	--	--	-10.9	-1.5	4.3	6.4	--	0.0	Oct-18
Bloomberg US Securitized Index			2.1	-11.7	-3.1	-0.4	0.8	2.4	-11.7	-1.1	4.2	6.4	1.0	-0.1	Oct-18
eV US Securitized Fixed Inc Net Rank			26	49	63	--	--	--	49	89	36	54	--		Oct-18
Total Real Estate	525,521,845	9.3	-2.3	8.7	8.6	8.2	9.4	--	8.7	19.3	-1.2	6.2	9.2	--	
NCREIF ODCE Net			-5.1	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4	--	
Invesco Core Real Estate	214,882,520	3.8	-5.2	6.8	7.8	7.5	9.2	5.4	6.8	20.1	-2.4	5.7	8.5	5.4	Oct-07
NCREIF ODCE Net			-5.1	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4	5.3	Oct-07
Harrison Street	124,800,672	2.2	-0.7	9.6	--	--	--	--	9.6	--	--	--	--	9.6	Jan-22
NCREIF ODCE Net			-5.1	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4	6.6	Jan-22
Closed End Real Estate 1 Qtr Lagged	185,838,653	3.3	0.2	9.3	9.9	10.7	--	--	9.3	18.6	2.4	9.9	14.1	--	
NCREIF ODCE Net 1 Qtr Lagged			0.3	21.0	11.4	9.3	9.7	5.6	21.0	13.6	0.5	4.6	7.7	--	
Total Infrastructure	284,882,239	5.0	4.0	8.2	9.4	12.5	--	--	8.2	17.6	2.9	14.6	20.1	--	
NCREIF ODCE Net			-5.1	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4	--	
IFM Infrastructure	284,882,239	5.0	4.0	8.2	9.4	12.5	--	--	8.2	17.6	2.9	14.6	20.1	11.9	May-15
NCREIF ODCE Net			-5.1	6.6	9.0	7.7	9.1	5.3	6.6	21.0	0.3	4.4	7.4	8.3	May-15
CPI + 5%			1.2	11.7	10.1	9.0	7.7	7.4	11.7	12.4	6.4	7.4	7.0	8.1	May-15
S&P Global Infrastructure			11.0	-0.2	1.7	3.9	6.5	3.6	-0.2	11.9	-5.8	27.0	-9.5	4.5	May-15

RBC Access Capital funded 10/10/2018. Invesco Commodities liquidated 8/16/2019. SSgA TIPS liquidated 12/16/2019. Northern Trust Collective TIPS Index Fund liquidated 3/25/2019. Grosvenor liquidated 4/1/2020. Western Asset Management Agency MBS funded 9/2/2020. TCW TALF Opportunities Fund LP liquidated 2/3/2021. Eaton Vance Senior Loan Fund liquidated 1/3/2021. Ares US Real Estate Opportunity Fund III was funded 6/22/2021. Western Asset Management Agency Treasuries and Western Asset Management Investment Grade Credit liquidated 4/23/2021. Western Asset Management track record reflects the prior mandate of investment grade credit; universe and benchmark rankings prior to 2021 are not applies to applies. GCM Better Futures Fund liquidated 6/7/2021. Brandywine Global Sovereign liquidated on 12/10/2021. Harrison Street funded 1/5/2022. Eaton Vance Senior Loan Fund liquidated 9/6/2022. Brandywine Global Sovereign has a residual value of \$129,432.89 as of 12/31/2022. Loomis Sayles High Yield has a residual value of \$131,537.76 as of 12/31/2022. PIMCO Emerging Local Bond Ins has a residual value of \$988,189.21 as of 12/31/2022.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2022

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2022	2021	2020	2019	2018	Inception	Inception Date
Total Private Equity 1 Qtr Lagged	464,519,148	8.2	-1.0	7.2	23.0	18.4	14.5	11.5	7.2	57.2	10.3	4.7	19.6	--	
<i>Russell 2000 1 Qtr Lagged +200bps</i>			-1.7	-21.9	6.4	5.6	10.8	9.0	-21.9	50.5	2.4	-7.0	17.5	--	
Total Private Credit 1 Qtr Lagged	435,488,100	7.7	1.1	5.2	7.3	6.9	6.7	9.1	5.2	14.1	2.8	5.3	7.6	--	
<i>Bloomberg US Corp. High Yield 1 Qtr Lagged +200bps</i>			-0.2	-12.4	1.5	3.6	5.7	7.9	-12.4	13.5	5.3	8.5	5.1	--	
FCERA Private Credit	362,222,824	6.4	1.6	5.7	7.4	--	--	--	5.7	14.1	2.8	5.3	--	7.1	Jul-18
High Sierra Credit Investors	73,265,276	1.3	-4.1	--	--	--	--	--	--	--	--	--	--	-4.1	Jul-22
Total Custodied Cash	81,033,050	1.4	0.8	1.6	0.7	1.2	0.7	--	1.6	0.0	0.4	2.1	1.8	--	
<i>91 Day T-Bills</i>			0.8	1.5	0.6	1.2	0.7	0.6	1.5	0.0	0.5	2.1	1.9	--	
Total County Cash	12,334,630	0.2	0.7	3.1	2.3	2.3	--	--	3.1	1.6	2.3	2.2	2.4	--	
<i>91 Day T-Bills</i>			0.8	1.5	0.6	1.2	0.7	0.6	1.5	0.0	0.5	2.1	1.9	--	
Transition	29,371	0.0													
Transition	29,371	0.0													
Total Parametric Overlay	23,829,630	0.4													
Parametric Overlay	23,829,630	0.4													

GCM Better Futures Fund liquidated 6/7/2021.

Real Estate Closed End Funds (Net of Fees)

Period Ending: December 31, 2022

Real Estate - Closed End Funds											
Fund	Inception Date	% of Portfolio	Total Commitment	Contributions	Distributions	Estimated Market Value	One Quarter Return	One Year Return	Three Years Return	Five Years Return	(IRR) Since Inception
Kennedy Wilson Real Estate Fund V	2016	0.0%	\$30,000,000	\$28,113,444	\$34,808,482	\$2,545,411	-8.2%	-27.3%	-9.6%	-0.1%	1.7%
Gerding Edlen Green Cities III	2016	0.3%	\$20,000,000	\$19,412,739	\$6,503,345	\$17,304,031	-0.2%	-1.1%	-0.3%	2.8%	4.3%
Invesco Value-Add Fund V	2017	0.5%	\$30,000,000	\$23,673,010	\$3,739,277	\$30,297,027	0.1%	8.9%	13.4%	N/A	10.7%
Kennedy Wilson Real Estate Fund VI	2019	0.4%	\$30,000,000	\$29,634,259	\$18,203,991	\$22,195,977	-2.3%	13.5%	15.7%	N/A	13.8%
Ares US Real Estate Opportunity Fund III	2021	0.7%	\$75,000,000	\$45,955,432	\$15,066,446	\$40,431,795	2.4%	17.7%	N/A	N/A	23.3%
Oaktree Real Estate Opportunities Fund VIII, L.P.	2021	0.5%	\$75,000,000	\$39,627,295	\$12,750,000	\$29,983,153	-0.6%	3.6%	N/A	N/A	6.6%
PCCP Equity IX	2022	0.5%	\$50,000,000	\$25,599,715	\$0	\$26,517,963	1.1%	7.4%	N/A	N/A	7.4%
Invesco Real Estate VI	2022	0.3%	\$50,000,000	\$16,563,296	\$0	\$16,563,296	N/A	N/A	N/A	N/A	N/A
Total		3.3%	\$360,000,000	\$228,579,190	\$91,071,541	\$185,838,653					

Private Equity Non Marketable Securities Overview

Period Ending: December 31, 2022

Private Equity								
Fund	Vintage Year	Commitment	Unfunded Commitment	Paid-In Capital	Capital Distributed	NAV*	TVPI	Since Inception IRR
FCERA PE Portfolio								
Blackstone Capital Partners IV, L.P.	2003	\$20,000,000	\$597,726	\$22,648,846	\$53,391,175	\$51,025	2.4x	29.60%
Hamilton Lane Private Equity Fund IX L.P.	2016	\$100,000,000	\$9,951,676	\$90,048,324	\$80,861,586	\$88,873,181	1.9x	18.84%
Hamilton Lane Private Equity Fund VI, L.P.	2007	\$70,000,000	\$7,104,295	\$62,895,705	\$96,745,307	\$8,091,261	1.7x	9.13%
Horsley Bridge XI Growth Buyout L.P.	2016	\$30,000,000	\$3,244,347	\$26,755,653	\$19,796,029	\$36,628,375	2.1x	25.15%
Landmark Equity Partners XIV, L.P.	2009	\$30,000,000	\$791,302	\$29,210,859	\$36,983,926	\$2,333,222	1.3x	9.64%
New Mountain Partners III, L.P.	2007	\$15,000,000	\$659,743	\$15,967,442	\$37,875,321	\$628,593	2.4x	14.67%
NMP III Continuation Fund, L.P.	2021	\$3,402,119	\$642,050	\$2,769,979	\$930,994	\$2,824,660	1.4x	29.74%
Warburg Pincus Equity Partners, L.P.	1998	\$20,000,000	\$0	\$20,000,000	\$33,046,892	\$78,834	1.7x	10.26%
Warburg Pincus Private Equity VIII, L.P.	2001	\$25,000,000	\$0	\$26,100,000	\$58,384,663	\$0	2.2x	14.50%
Warburg Pincus Private Equity X, L.P.	2007	\$25,000,000	\$0	\$25,046,896	\$44,407,751	\$553,696	1.8x	9.51%
Warburg Pincus Private Equity XII, L.P.	2015	\$34,000,000	\$459,000	\$33,558,364	\$27,669,088	\$42,921,423	2.1x	19.29%
Total FCERA PE Portfolio		\$372,402,119	\$23,450,139	\$355,002,068	\$490,092,732	\$182,984,270	1.90x	13.87%
Hamilton Lane PE Portfolio								
Altaris Health Partners V, L.P.	2020	\$10,000,000	\$5,042,566	\$4,947,442	\$0	\$5,355,583	1.1	8.49%
Aurora Equity Partners VI, L.P.	2019	\$10,000,000	\$5,239,286	\$4,761,914	\$1,720	\$4,851,173	1.0x	2.09%
Avista Capital Partners IV, L.P.	2018	\$10,000,000	\$1,268,428	\$12,363,476	\$17,811,598	\$5,388,787	1.9x	34.83%
Avista Capital Partners V, L.P.	2019	\$10,000,000	\$671,276	\$10,396,339	\$1,067,615	\$11,796,945	1.2x	20.90%
Avista Healthcare Partners VI, L.P.	2022	\$15,000,000	\$15,000,000	\$0	\$0	\$0	N/A	0.00%
Bridgepoint Development Capital IV, L.P.	2020	\$9,657,756	\$7,941,454	\$1,716,302	\$0	\$1,424,894	0.80x	(26.32%)
Cinven Seventh Fund	2019	\$8,485,495	\$3,467,811	\$5,017,684	\$0	\$5,299,077	1.1x	3.94%
CVC Capital Partners VIII, L.P.	2020	\$9,780,038	\$4,134,655	\$5,645,143	-\$240	\$5,569,216	1.00x	(2.66%)
Gridiron Capital Fund IV, L.P.	2019	\$10,000,000	\$969,611	\$10,030,389	\$1,040,361	\$16,571,926	1.8x	38.99%
Gridiron Capital Fund V, L.P.	2022	\$15,000,000	\$15,000,000	\$0	\$0	\$0	N/A	0.00%
H.I.G. Growth Buyouts & Equity Fund III, L.P.	2019	\$10,000,000	\$6,314,018	\$3,685,982	\$0	\$3,626,397	1.0x	(1.23%)
Hamilton Lane Secondary Fund IV, L.P.	2017	\$75,000,000	\$32,766,477	\$64,407,538	\$61,219,536	\$43,289,731	1.6x	18.61%
HGGC Fund IV, L.P.	2019	\$10,000,000	\$5,172,342	\$6,129,507	\$1,462,785	\$5,167,103	1.1x	5.91%
Insight Partners XI, L.P.	2019	\$10,000,000	\$273,185	\$9,730,000	\$17,768	\$15,524,069	1.6x	26.86%
Insight Partners XII, L.P.	2021	\$20,000,000	\$6,800,000	\$13,200,000	\$26,784	\$11,091,511	0.8x	(16.66%)
JFL Equity Investors V, L.P.	2019	\$10,000,000	\$2,150,173	\$7,849,827	\$0	\$8,629,136	1.1x	6.41%
K4 Private Investors, L.P.	2018	\$5,000,000	\$349,573	\$4,650,930	\$507	\$7,641,939	1.6x	17.91%
K5 Private Investors, L.P.	2020	\$10,000,000	\$5,228,266	\$4,771,734	\$0	\$4,822,410	1.0x	1.21%
Keensight Nova VI SLP	2021	\$18,195,370	\$17,922,988	\$272,382	\$0	\$74,879	0.3x	(72.51%)
Kelso Investment Associates X, L.P.	2018	\$7,500,000	\$1,800,590	\$6,773,679	\$1,742,316	\$10,714,272	1.8x	37.11%
NewQuest Asia Fund IV, L.P.	2019	\$10,000,000	\$2,371,907	\$8,667,044	\$1,039,131	\$9,396,841	1.2x	18.22%
Oak Hill Capital Partners V, L.P.	2020	\$10,000,000	\$771,891	\$9,254,714	\$30,109	\$11,802,660	1.3x	21.55%
Oak Hill Capital Partners VI, L.P.	2022	\$15,000,000	\$15,000,000	\$0	\$0	-\$369,080	N/A	0.00%
Platinum Equity Capital Partners V, L.P.	2019	\$10,000,000	\$1,098,316	\$9,375,751	\$845,501	\$12,776,548	1.5x	25.84%
Platinum Equity Capital Partners VI, L.P.	2022	\$15,000,000	\$14,129,442	\$870,558	\$0	\$700,635	0.8x	(19.52%)
Platinum Equity Small Cap Fund, L.P.	2018	\$7,500,000	\$2,578,553	\$5,481,052	\$1,273,747	\$7,668,055	1.6x	24.69%
SK Capital Partners Fund V, L.P.	2018	\$10,000,000	\$1,551,125	\$9,699,683	\$1,330,877	\$9,787,604	1.1x	7.07%
SK Capital Partners VI, LP	2021	\$15,000,000	\$15,000,000	\$0	\$0	\$0	N/A	0.00%
Sterling Group Foundation Fund, L.P.	2022	\$15,000,000	\$15,000,000	\$0	\$0	\$0	N/A	0.00%
Sterling Group Partners V, L.P.	2020	\$10,000,000	\$5,853,898	\$3,958,402	\$0	\$4,718,468	1.2x	28.36%
STG Allegro Fund, L.P.	2021	\$15,000,000	\$14,179,113	\$820,887	\$0	\$405,280	0.5x	(50.63%)
STG VI, L.P.	2020	\$10,000,000	\$5,303,430	\$4,696,570	\$0	\$5,168,610	1.1x	9.61%
Stripes VI, LP	2022	\$15,000,000	\$12,233,384	\$2,766,616	\$36,962	\$2,185,497	0.8x	(22.64%)
TCV XI, L.P.	2020	\$10,000,000	\$4,881,525	\$5,118,476	\$0	\$4,856,856	0.9x	(4.45%)
The Eighth Cinven Fund	2022	\$19,480,346	\$19,480,346	\$0	\$0	\$0	N/A	0.00%
The Resolute Fund V, L.P.	2021	\$15,000,000	\$4,571,907	\$10,432,052	\$53,523	\$16,759,353	1.6x	74.92%
Thomas H. Lee Equity Fund VIII, L.P.	2019	\$7,500,000	\$1,140,887	\$7,327,619	\$6,714,313	\$5,315,221	1.6x	37.22%
TPG Partners VIII, L.P.	2019	\$10,000,000	\$2,774,156	\$8,655,271	\$2,185,361	\$9,369,019	1.3x	28.17%
Verdane Capital X AB	2019	\$7,337,084	\$437,025	\$6,917,506	\$709,260	\$8,145,623	1.3x	17.67%
Verdane Capital XI	2022	\$7,385,406	\$7,385,406	\$0	\$0	-\$39,149	N/A	0.00%
Verdane Edda III	2022	\$7,385,406	\$7,385,406	\$0	\$0	\$0	N/A	0.00%
ZMC III, L.P.	2019	\$6,764,374	\$2,558,558	\$4,205,816	\$2,118	\$3,823,917	0.9x	(7.74%)
Sub Total - Hamilton Lane PE Portfolio		\$531,971,275	\$293,198,974	\$274,598,285	\$98,611,652	\$279,311,006	1.4x	19.76%
Total Private Equity		\$904,373,394	\$316,649,113	\$629,600,353	\$588,704,384	\$462,295,276	1.70x	14.29%

*NAV provided by Hamilton Lane as of 9/30/2022 adjusted for cash flows that occurred during Q4 2022. Cash flows shown are as of 12/31/2022.

Private Credit Non Marketable Securities Overview

Period Ending: December 31, 2022

Private Credit								
Fund	Vintage Year	Commitment	Unfunded	Paid-In Capital	Capital Distributed	NAV	TVPI	Since Inception IRR
FCERA Private Credit Portfolio								
EQT European Special Situations Debt	2017	\$40,490,450	\$16,140,771	\$33,425,449	\$15,826,526	\$17,998,669	1.06	2.3%
OHA Strategic Credit Fund II	2016	\$40,000,000	\$14,000,000	\$26,000,000	\$13,626,237	\$21,454,972	1.44	13.3%
TSSP Adjacent Opportunities Partners	2016	\$30,000,000	\$14,707,603	\$30,585,708	\$15,244,807	\$25,463,003	1.33	8.9%
GSO European Senior Debt	2015	\$30,000,000	\$7,860,984	\$48,989,368	\$40,121,142	\$12,485,163	1.07	4.5%
CVI Credit Value Fund III	2015	\$30,000,000	\$1,500,000	\$28,500,000	\$29,811,680	\$7,280,389	1.31	7.5%
Colony Distressed Credit III	2014	\$20,000,000	\$2,734,614	\$21,738,035	\$23,045,891	\$3,010,857	1.20	6.1%
Oaktree Opportunities IX	2012	\$15,000,000	\$0	\$15,000,000	\$11,620,156	\$11,488,076	1.66	7.7%
KKR Mezzanine Partners	2010	\$30,000,000	\$944,937	\$37,108,974	\$38,974,495	\$4,025,404	1.16	5.9%
Angelo Gordon VII	2010	\$30,000,000	\$0	\$30,000,000	\$36,780,993	\$0	1.23	5.5%
Colony Distressed Credit I	2009	\$40,000,000	\$0	\$42,267,526	\$64,304,647	\$0	1.52	13.8%
Lone Star Fund IV	2002	\$20,000,000	\$954,801	\$19,045,199	\$44,421,429	\$48,854	2.33	30.2%
TCG BDC II - Carlyle	2017	\$150,000,000	\$4	\$149,999,996	\$148,402,956	\$38,305,584	1.24	9.0%
CPC V - Carlyle	2017	\$150,000,000	\$20,748,973	\$192,740,234	\$63,489,207	\$168,076,118	1.20	7.8%
AlpInvest FC Credit Fund - Carlyle	2017	\$100,000,000	\$23,812,309	\$76,978,494	\$37,649,414	\$52,585,736	1.17	10.2%
Total Pre-2022 FCERA Private Credit Portfolio		\$725,490,450	\$103,404,996	\$752,378,983	\$583,319,580	\$362,222,824	1.26	11.0%
Aksia High Sierra Private Credit Portfolio								
ACORE Capital Special Situations	2020	\$30,000,000	\$13,400,000	\$23,200,000	\$6,300,000	\$17,100,000	1.00	n.m.
Arbour Lane Credit Opportunity Fund III (A)	2021	\$30,000,000	\$17,200,000	\$13,200,000	\$0	\$11,500,000	0.90	n.m.
Barings Global Private Loan Fund 4 SCSp	2022	\$50,000,000	\$24,400,000	\$26,100,000	\$0	\$26,100,000	1.00	n.m.
Fortress Lending Fund III (D)	2022	\$30,000,000	\$11,400,000	\$18,600,000	\$0	\$18,600,000	1.00	n.m.
Total Aksia High Sierra Private Credit		\$140,000,000	\$66,400,000	\$81,100,000	\$6,300,000	\$73,300,000	1.00	n.m.
Total FCERA Private Credit Portfolio		\$865,490,450	\$169,804,996	\$833,478,983	\$589,619,580	\$435,522,824		

Data provided by Aksia.

Fresno County Employees' Retirement Association Manager Review (Net of Fees)

Period Ending: December 31, 2022

Name	Allocation Group	Verus Outlook	#1	#2	#3	#4	#5	#6	Verus Manager Research Views
T. Rowe Price Large Cap Growth	Domestic Equity Large Cap Growth	Watch	✓	⚠	✓	✓	✓	-	
PIMCO StocksPLUS Small Fund	Domestic Equity Small Cap Core	No Issues	✓	⚠	✓	⚠	⚠	-	
Artisan International Growth	International Equity	No Issues	✓	⚠	✓	✓	✓	-	
PIMCO RAE Fundamental	International Equity	No Issues	⚠	✓	✓	✓	✓	-	
Mondrian Emerging Markets	Emerging Markets Equity	Terminate	✓	⚠	⚠	⚠	⚠	-	Watch status for concerns around style drift coupled with underperformance. Refer to memo from March 2021 meeting.
Baillie Gifford Emerging Markets	Emerging Markets Equity	No Issues	✓	⚠	✓	✓	✓	-	

Legend

⚠	Flag Indicates Manager/Fund has not met the described rule.
✓	Checkmark indicates Manager/Fund has met the described rule.
-	Dash-mark indicates the rule is not applicable to the Manager/Fund.
	Colored cell indicates a change from last quarter

Manager Review Rules

- Rule 1 - Manager has underperformed the benchmark index more than half the time over the last 20 quarters.
- Rule 2 - Equity manager has returned less than 110% of the benchmark index for the three year period.
- Rule 3 - Manager has underperformed the 50th percentile in the appropriate style universe in more than two of the last five years of consecutive returns.
- Rule 4 - Manager's Sharpe Ratio is worse than the 50th Percentile in an appropriate style universe for the five year period ((five year return minus five year risk free rate)/[standard deviation]).
- Rule 5 - Manager's Information Ratio is worse than the 50th Percentile in an appropriate style universe for the five year period ((excess return over benchmark)/[tracking error]).
- Rule 6 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Fresno County Employees' Retirement Association
Manager Review (Net of Fees)

Period Ending: December 31, 2022

Name	Allocation Group	Verus Outlook	#1	#2	#3	#4	#5	#6	Verus Manager Research Views
Western Asset Investment Core Bond	Domestic Fixed Income	No Issues	✓	R	R	R	R	-	
PGIM Strategic Credit	Multi-Sector Credit	Watch	-	-	-	-	-	-	Provisional watch status for concerns around portfolio manager Michael Collins' pending retirement in April 2024. Refer to memo from February 2023 meeting.

Legend



Flag Indicates Manager/Fund has not met the described rule.



Checkmark indicates Manager/Fund has met the described rule.

-

Dash-mark indicates the rule is not applicable to the Manager/Fund.

Colored cell indicates a change from last quarter

Manager Review Rules

Rule 1 - Manager has underperformed the benchmark index more than half the time over the last 20 quarters.

Rule 2 - Fixed Income manager has returned less than 105% of the benchmark index for the three year period.

Rule 3 - Manager has underperformed the 50th percentile in the appropriate style universe in more than two of the last five years of consecutive returns.

Rule 4 - Manager's Sharpe Ratio is worse than the 50th Percentile in an appropriate style universe for the five year period ((five year return minus five year risk free rate)/[standard deviation]).

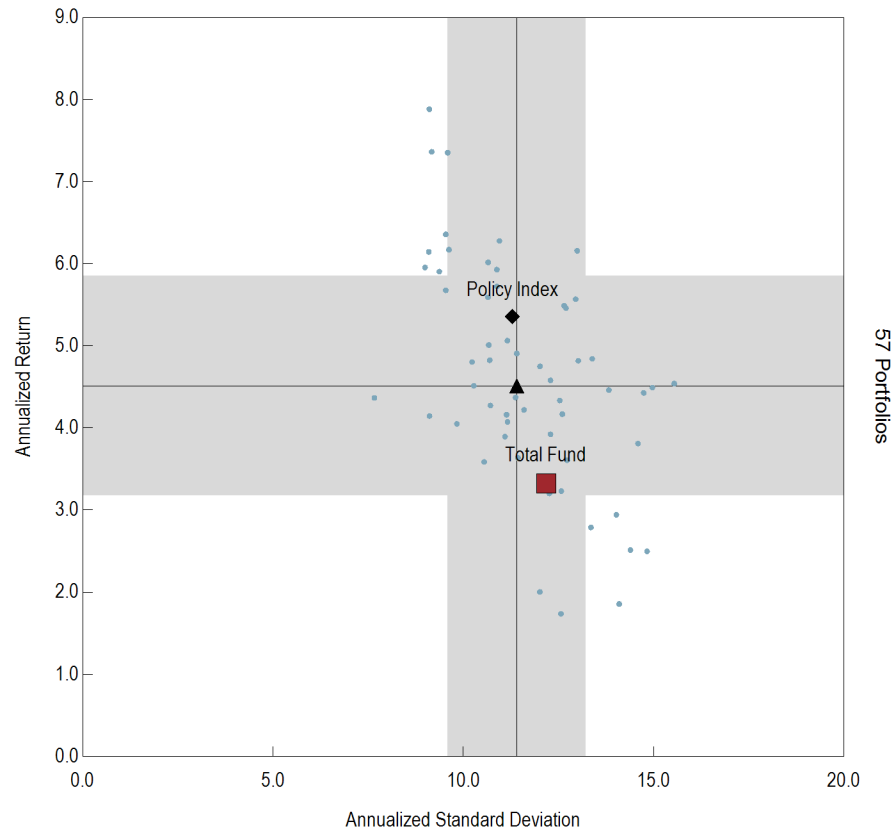
Rule 5 - Manager's Information Ratio is worse than the 50th Percentile in an appropriate style universe for the five year period ([excess return over benchmark]/[tracking error]).

Rule 6 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

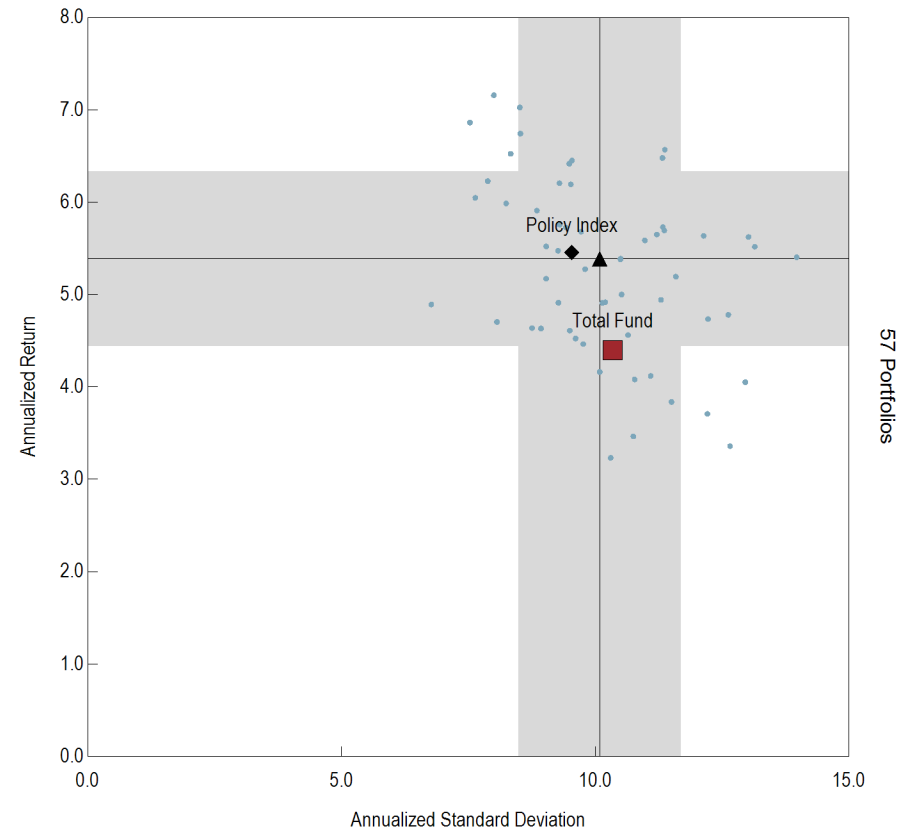
Total Fund Risk Analysis (Net of Fees)

Period Ending: December 31, 2022

3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	3.3%	12.2%	0.2
Policy Index	5.4%	11.3%	0.4
InvMetrics Public DB > \$1B Net Median	4.5%	11.4%	0.3

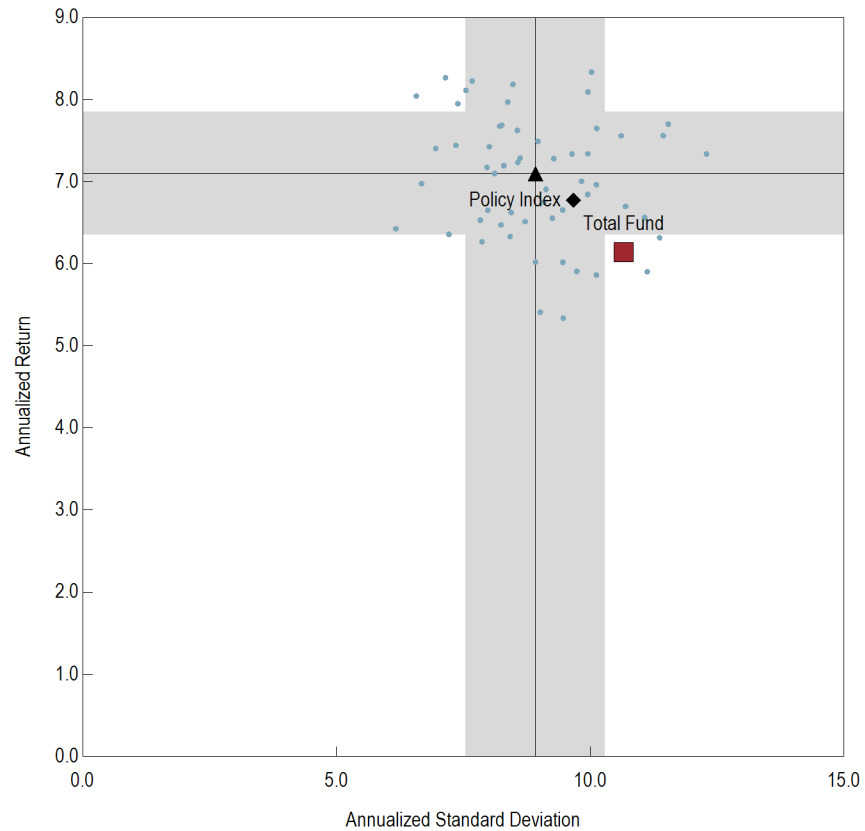
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	4.4%	10.3%	0.3
Policy Index	5.5%	9.5%	0.4
InvMetrics Public DB > \$1B Net Median	5.4%	10.1%	0.4

Total Fund Risk Analysis (Net of Fees)

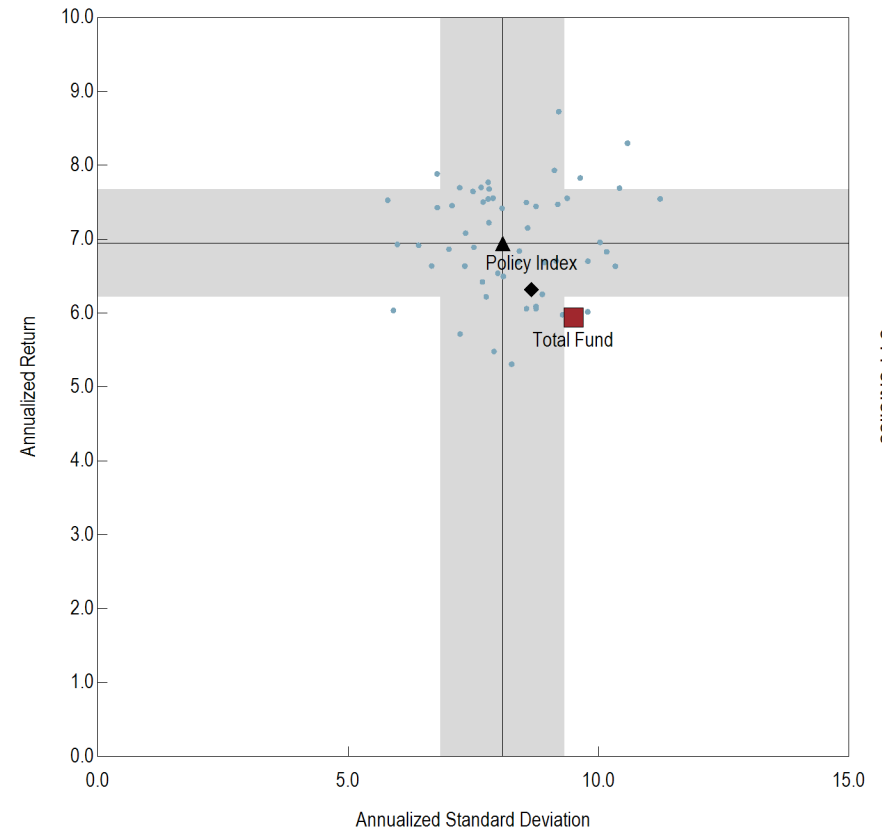
Period Ending: December 31, 2022

7 Years



57 Portfolios

10 Years



54 Portfolios

7 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	6.1%	10.7%	0.5
Policy Index	6.8%	9.7%	0.6
InvMetrics Public DB > \$1B Net Median	7.1%	8.9%	0.7

10 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	5.9%	9.5%	0.5
Policy Index	6.3%	8.7%	0.6
InvMetrics Public DB > \$1B Net Median	6.9%	8.1%	0.7

Total Fund Risk Analysis (Net of Fees)

Period Ending: December 31, 2022

3 Years

	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	12.17%	-2.37%	1.06	0.97	98.82%	110.66%	-0.94	2.16%	0.21	0.37
Total Equity	20.95%	-1.26%	1.02	0.99	98.17%	101.90%	-0.65	1.84%	0.10	0.20
Total Domestic Equity	22.29%	-1.40%	1.02	0.99	96.70%	101.14%	-0.63	2.03%	0.21	0.38
Total International Equity	20.55%	-0.62%	1.04	0.98	107.82%	104.99%	-0.23	2.68%	-0.06	-0.04
Total Domestic Fixed Income	7.95%	1.20%	1.02	0.57	131.33%	105.67%	0.22	5.24%	-0.29	-0.23
Total Real Estate	5.59%	3.40%	0.58	0.73	63.50%	83.40%	-0.09	4.53%	1.41	1.78
Total Infrastructure	5.73%	6.37%	0.34	0.24	56.12%	-53.22%	0.06	7.41%	1.52	2.79
Total Alternative Illiquids	9.18%	14.12%	-0.01	0.00	11.66%	-38.52%	0.18	23.93%	1.45	10.50

5 Years

	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	10.35%	-1.44%	1.07	0.97	103.30%	109.86%	-0.57	1.84%	0.30	0.55
Total Equity	18.26%	-0.71%	1.01	0.99	97.85%	100.74%	-0.41	1.60%	0.17	0.35
Total Domestic Equity	19.62%	-1.15%	1.01	0.99	95.57%	100.55%	-0.56	1.84%	0.31	0.54
Total International Equity	17.86%	0.19%	1.03	0.98	107.68%	101.93%	0.09	2.29%	-0.01	0.09
Total Domestic Fixed Income	6.42%	0.77%	0.88	0.49	99.51%	89.42%	0.17	4.63%	-0.07	0.13
Total Real Estate	4.52%	3.69%	0.59	0.73	68.96%	83.40%	0.14	3.60%	1.54	1.73
Total Infrastructure	6.63%	9.16%	0.43	0.18	111.06%	-53.22%	0.68	7.06%	1.70	4.73
Total Alternative Illiquids	8.09%	12.46%	-0.04	0.01	8.75%	-44.16%	0.03	21.49%	1.33	8.05

Total Fund
Risk Analysis (Net of Fees)

Period Ending: December 31, 2022

7 Years

	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	10.66%	-1.25%	1.09	0.98	102.23%	113.16%	-0.34	1.86%	0.48	0.63
Total Equity	18.52%	-0.99%	1.03	0.99	97.25%	102.95%	-0.53	1.49%	0.33	0.45
Total Domestic Equity	19.08%	-1.62%	1.04	0.99	94.08%	103.27%	-0.60	2.04%	0.43	0.55
Total International Equity	18.86%	-0.09%	1.04	0.98	106.29%	102.77%	0.04	2.43%	0.20	0.34
Total Domestic Fixed Income	6.68%	1.56%	0.85	0.41	119.08%	81.01%	0.28	5.19%	0.19	0.44
Total Real Estate	4.19%	2.12%	0.78	0.85	102.44%	72.91%	0.24	1.96%	1.67	4.36
Total Alternative Illiquids	5.79%	11.85%	-0.02	0.00	22.80%	-35.57%	-0.11	19.60%	1.81	20.73

10 Years

	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	9.50%	-0.90%	1.08	0.97	103.03%	110.63%	-0.22	1.71%	0.55	0.68
Total Equity	16.43%	-0.41%	1.03	0.99	101.25%	101.95%	-0.12	1.50%	0.43	0.53
Total Domestic Equity	16.84%	-1.02%	1.04	0.99	98.65%	103.35%	-0.28	2.00%	0.61	0.70
Total International Equity	16.95%	0.19%	1.03	0.98	106.29%	100.84%	0.14	2.29%	0.20	0.31
Total Domestic Fixed Income	5.83%	1.08%	0.86	0.43	110.08%	81.52%	0.21	4.43%	0.21	0.43
Total Real Estate	3.73%	2.20%	0.79	0.81	100.72%	72.91%	0.14	1.84%	2.32	5.08
Total Alternative Illiquids	6.02%	10.24%	0.03	0.01	20.11%	-25.25%	-0.25	16.81%	1.65	5.24

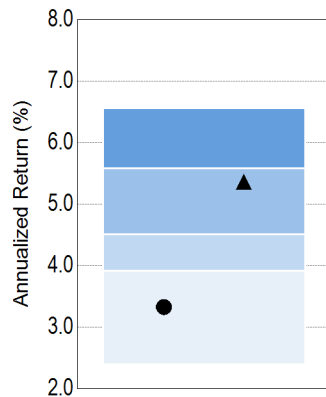
Total Fund

Peer Universe Statistics - 3 Years (Net of Fees)

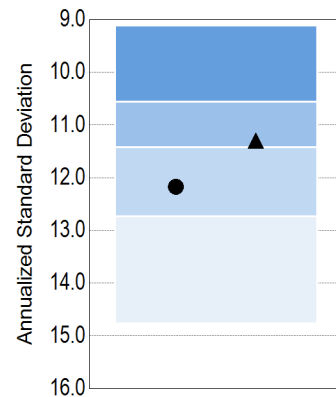
Period Ending: December 31, 2022

Total Fund vs. InvestorForce Public DB > \$1B Net Universe

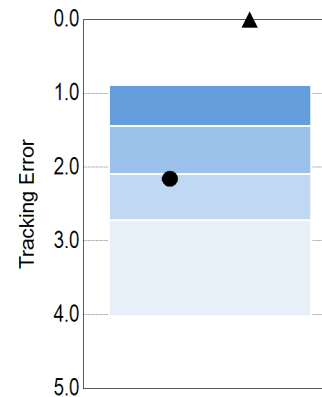
Annualized Return



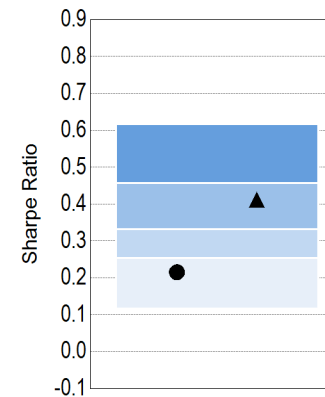
Annualized Standard Deviation



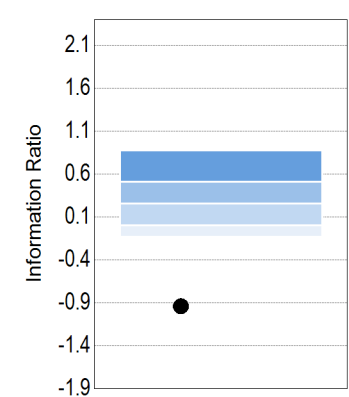
Tracking Error



Sharpe Ratio



Information Ratio



● Total Fund
Value 3.3
Rank 86
▲ Policy Index
Value 5.4
Rank 31

● Total Fund
Value 12.2
Rank 59
▲ Policy Index
Value 11.3
Rank 48

● Total Fund
Value 2.2
Rank 58
▲ Policy Index
Value 0.0
Rank 1

● Total Fund
Value 0.2
Rank 84
▲ Policy Index
Value 0.4
Rank 28

● Total Fund
Value -0.9
Rank 99
▲ Policy Index
Value --
Rank --

Universe
5th %tile 6.6
25th %tile 5.6
Median 4.5
75th %tile 3.9
95th %tile 2.4

Universe
5th %tile 9.1
25th %tile 10.5
Median 11.4
75th %tile 12.7
95th %tile 14.8

Universe
5th %tile 0.9
25th %tile 1.4
Median 2.1
75th %tile 2.7
95th %tile 4.0

Universe
5th %tile 0.6
25th %tile 0.5
Median 0.3
75th %tile 0.3
95th %tile 0.1

Universe
5th %tile 0.9
25th %tile 0.5
Median 0.3
75th %tile 0.0
95th %tile -0.1

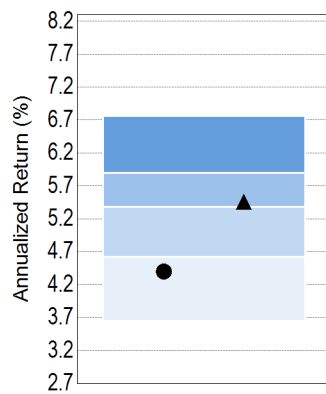
Total Fund

Peer Universe Statistics - 5 Years (Net of Fees)

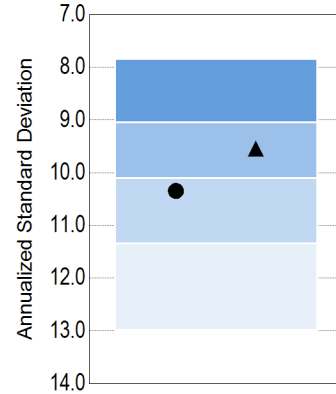
Period Ending: December 31, 2022

Total Fund vs. InvestorForce Public DB > \$1B Net Universe

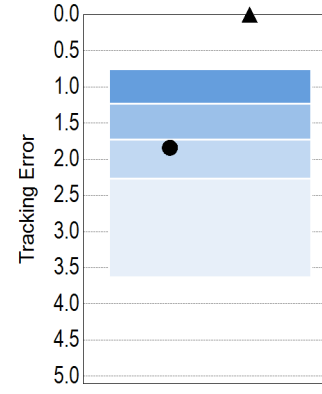
Annualized Return



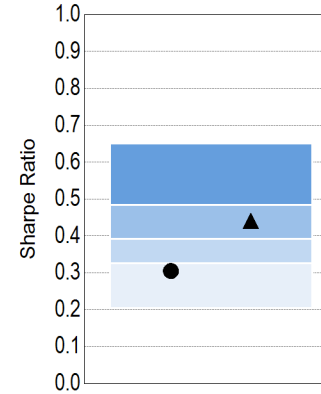
Annualized Standard Deviation



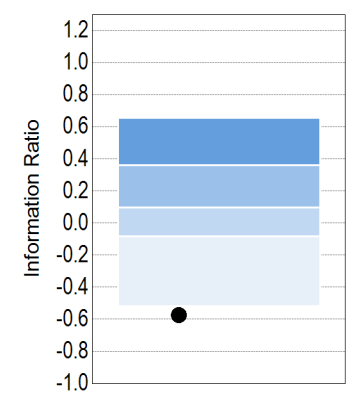
Tracking Error



Sharpe Ratio



Information Ratio



● Total Fund
Value
Rank

4.4
85

● Total Fund
Value
Rank

10.3
56

● Total Fund
Value
Rank

1.8
60

● Total Fund
Value
Rank

0.3
80

● Total Fund
Value
Rank

-0.6
96

▲ Policy Index
Value
Rank

5.5
47

▲ Policy Index
Value
Rank

9.5
41

▲ Policy Index
Value
Rank

0.0
1

▲ Policy Index
Value
Rank

0.4
37

▲ Policy Index
Value
Rank

--
--

Universe
5th %tile
25th %tile
Median
75th %tile
95th %tile

6.8
5.9
5.4
4.6
3.7

Universe
5th %tile
25th %tile
Median
75th %tile
95th %tile

7.8
9.0
10.1
11.3
13.0

Universe
5th %tile
25th %tile
Median
75th %tile
95th %tile

0.8
1.2
1.7
2.3
3.6

Universe
5th %tile
25th %tile
Median
75th %tile
95th %tile

0.7
0.5
0.4
0.3
0.2

Universe
5th %tile
25th %tile
Median
75th %tile
95th %tile

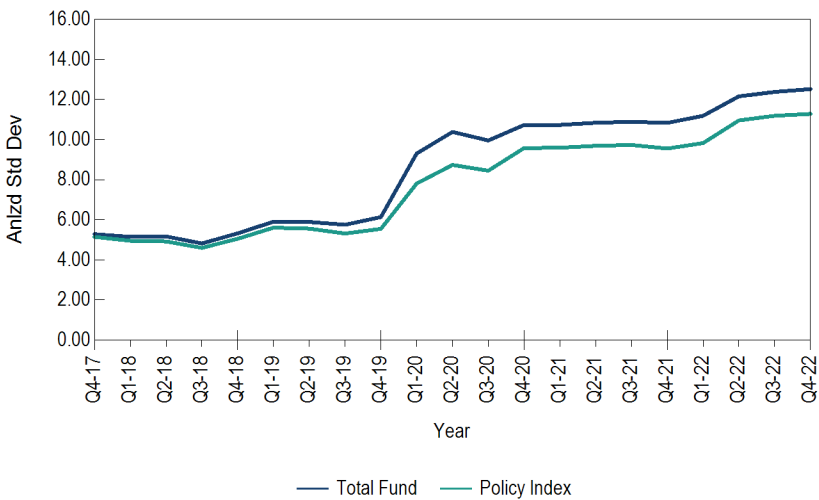
0.7
0.4
0.1
-0.1
-0.5

Total Fund

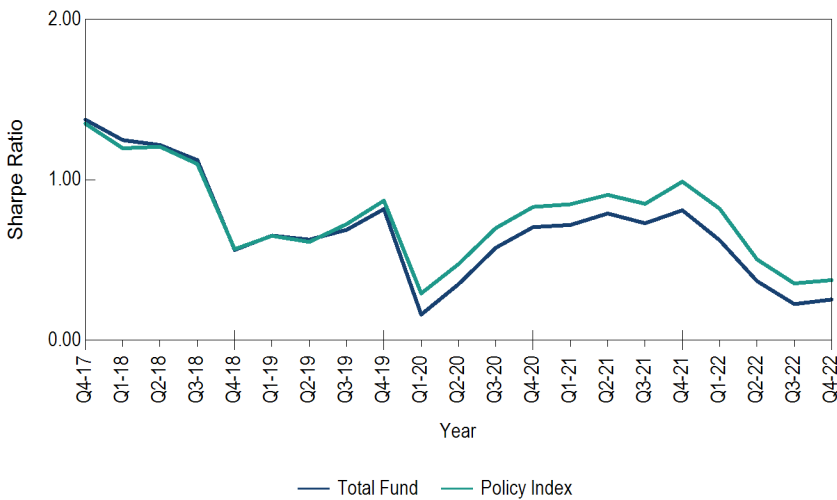
Risk Analysis - 5 Years (Net of Fees)

Period Ending: December 31, 2022

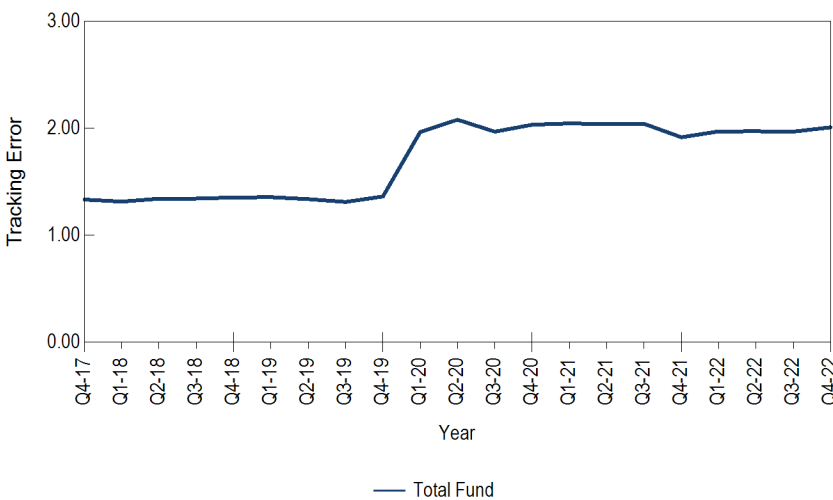
Rolling 5 Year Annualized Standard Deviation



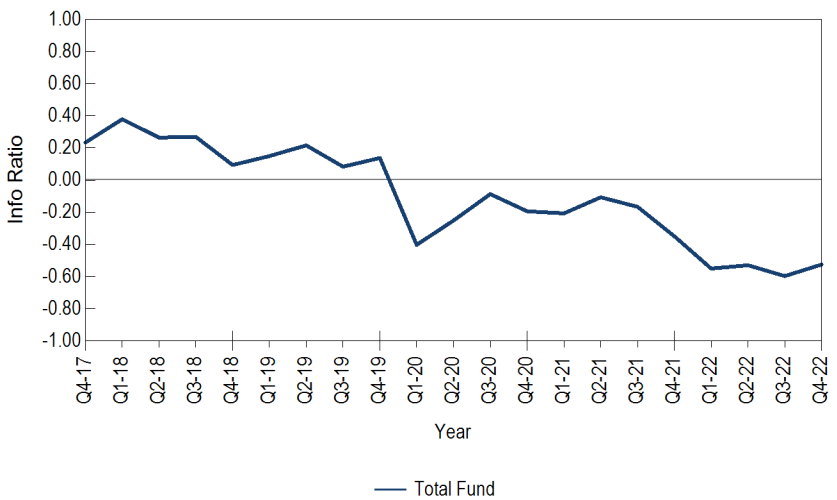
Rolling 5 Year Sharpe Ratio



Rolling 5 Year Tracking Error

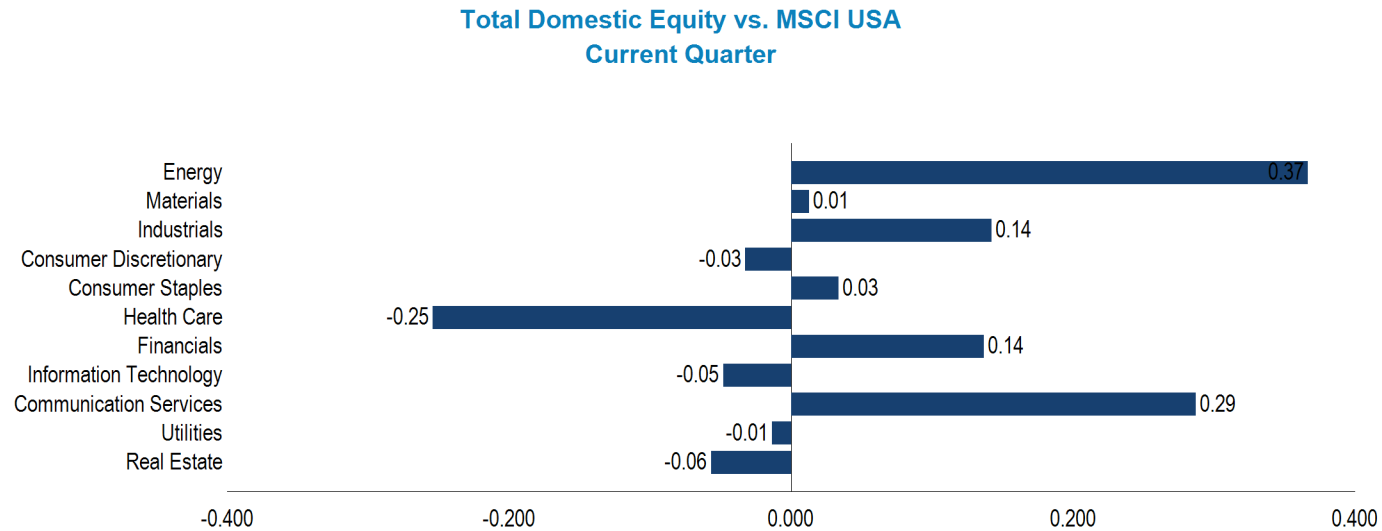


Rolling 5 Year Information Ratio



Total Domestic Equity Performance Attribution by Sector (Net of Fees)

Period Ending: December 31, 2022



GICS Sector	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess Return	Allocation Effect (Local)	Selection Effect (Local)	Active Contrib.	Passive Contrib.	Total Contrib.
Energy	3.68%	4.63%	-0.95%	21.79%	21.95%	-0.15%	-0.14%	-0.01%	-0.15%	0.69%	0.54%
Materials	2.22%	2.57%	-0.35%	15.64%	15.58%	0.06%	-0.03%	0.00%	-0.03%	0.22%	0.19%
Industrials	7.27%	7.93%	-0.66%	16.81%	17.75%	-0.94%	-0.07%	-0.07%	-0.14%	0.84%	0.70%
Consumer Discretionary	12.08%	11.69%	0.39%	-9.69%	-9.76%	0.08%	-0.07%	0.01%	-0.06%	-1.98%	-2.03%
Consumer Staples	6.18%	6.62%	-0.44%	12.18%	12.70%	-0.52%	-0.02%	-0.03%	-0.06%	0.37%	0.31%
Health Care	16.12%	14.94%	1.18%	13.21%	12.90%	0.31%	0.07%	0.05%	0.12%	0.86%	0.98%
Financials	9.70%	10.78%	-1.08%	12.95%	13.07%	-0.12%	-0.06%	-0.01%	-0.08%	0.64%	0.56%
Information Technology	28.85%	26.82%	2.03%	4.30%	4.00%	0.29%	-0.06%	0.08%	0.02%	-0.84%	-0.82%
Communication Services	8.85%	8.12%	0.73%	-2.81%	-2.16%	-0.65%	-0.07%	-0.06%	-0.13%	-0.75%	-0.88%
Utilities	2.71%	3.01%	-0.30%	8.80%	8.70%	0.09%	0.00%	0.00%	0.00%	0.05%	0.05%
Real Estate	2.34%	2.89%	-0.56%	3.28%	3.87%	-0.58%	0.02%	-0.01%	0.00%	-0.09%	-0.09%
Total				6.65%	7.13%	-0.49%	-0.44%	-0.04%	-0.49%	0.00%	-0.49%

Please note that attribution portfolio return is calculated based on portfolio holding returns and beginning of period portfolio weights, the effects of transactions during the period are not reflected in the return. The attribution portfolio return will vary from the composite return. PIMCO Stock Plus Small Fund is not included in holdings analysis.

Total Domestic Equity
Performance Attribution Summary (Net of Fees)

Period Ending: December 31, 2022

Portfolio: Total Domestic Equity
Benchmark: MSCI USA

Portfolio Total Return 6.72%

Equity Only

Portfolio 7.69%

Benchmark 7.12%

Return From Active Mgmt 0.57%

Local Returns

Portfolio 7.69%

Benchmark 7.12%

Active Equity Return 0.57%

Country Selection 0.08%

Stock Selection 0.49%

Currency Contributions

Portfolio 0.00%

Benchmark 0.00%

Active Currency Contributions 0.00%

Chart uses return-based methodology. PIMCO Stock Plus Small Fund is not included in holdings analysis.

Total International Equity
Performance Attribution by Country (Net of Fees)

Period Ending: December 31, 2022

Total International Equity vs. MSCI ACWI ex USA

Current Quarter

	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess USD Return	Active Return	Allocation Effect (Local)	Selection Effect (Local)	Currency Effect
ARGENTINA	0.30%	0.00%	0.30%	8.92%	10.55%	-1.63%	0.02%	0.02%	-0.01%	0.00%
AUSTRALIA	3.46%	4.99%	-1.53%	4.70%	16.01%	-11.30%	-0.35%	0.00%	-0.02%	-0.33%
AUSTRIA	0.12%	0.11%	0.01%	17.68%	31.13%	-13.45%	-0.01%	0.00%	0.01%	-0.01%
BELGIUM	0.78%	0.62%	0.17%	12.29%	22.69%	-10.40%	-0.07%	0.01%	-0.18%	0.11%
BRAZIL	2.28%	1.69%	0.60%	8.54%	1.63%	6.91%	0.25%	0.20%	0.07%	-0.01%
CANADA	7.54%	8.25%	-0.71%	8.42%	7.65%	0.77%	0.12%	0.05%	0.09%	-0.02%
CHILE	0.00%	0.17%	-0.17%	--	7.55%	-7.55%	0.00%	0.02%	0.00%	-0.02%
CHINA	6.30%	9.18%	-2.88%	-15.54%	13.74%	-29.28%	-1.81%	-1.59%	-0.09%	-0.12%
COLOMBIA	0.00%	0.04%	-0.04%	--	18.05%	-18.05%	0.00%	-0.01%	0.00%	0.00%
CZECH REPUBLIC	0.00%	0.04%	-0.04%	--	7.49%	-7.49%	0.00%	0.01%	0.00%	0.00%
DENMARK	1.29%	1.65%	-0.37%	36.30%	31.69%	4.61%	0.13%	0.01%	0.11%	0.00%
EGYPT	0.00%	0.02%	-0.02%	--	28.37%	-28.37%	0.00%	-0.01%	0.00%	0.01%
FINLAND	0.83%	0.64%	0.19%	5.96%	16.43%	-10.47%	-0.03%	0.01%	0.02%	-0.05%
FRANCE	7.02%	7.07%	-0.04%	22.79%	22.36%	0.43%	0.52%	-0.08%	0.08%	0.52%
GERMANY	4.60%	4.73%	-0.13%	13.59%	24.58%	-10.99%	-0.39%	0.08%	-1.10%	0.63%
GREECE	0.00%	0.08%	-0.08%	--	28.95%	-28.95%	-0.02%	-0.01%	0.00%	-0.01%
HONG KONG	3.14%	1.89%	1.24%	-17.63%	18.43%	-36.05%	-0.89%	-0.69%	-0.19%	-0.01%
HUNGARY	0.00%	0.04%	-0.04%	--	36.01%	-36.01%	-0.01%	-0.01%	0.00%	-0.01%
INDIA	3.17%	4.49%	-1.31%	7.53%	2.02%	5.51%	0.33%	0.15%	0.17%	0.02%
INDONESIA	0.69%	0.65%	0.04%	0.88%	-3.21%	4.09%	0.06%	0.06%	0.01%	0.00%
IRELAND	0.44%	0.37%	0.07%	7.98%	18.50%	-10.51%	-0.04%	0.00%	-0.01%	-0.03%
ISRAEL	0.62%	0.53%	0.09%	8.63%	0.88%	7.75%	0.08%	0.08%	0.00%	0.00%
ITALY	1.57%	1.41%	0.16%	37.94%	26.73%	11.21%	0.18%	0.01%	0.16%	0.01%
JAPAN	13.44%	14.12%	-0.69%	8.97%	13.22%	-4.26%	-0.82%	1.01%	-0.11%	-1.71%
KOREA	3.36%	3.12%	0.24%	11.52%	18.28%	-6.76%	-0.04%	0.31%	0.11%	-0.46%
KUWAIT	0.00%	0.26%	-0.26%	--	6.16%	-6.16%	0.01%	0.01%	0.00%	0.00%

Total International Equity
Performance Attribution by Country (Net of Fees)

Period Ending: December 31, 2022

	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess USD Return	Active Return	Allocation Effect (Local)	Selection Effect (Local)	Currency Effect
LUXEMBOURG	0.07%	0.00%	0.07%	14.98%	2.94%	12.05%	0.01%	0.00%	0.01%	0.00%
MALAYSIA	0.00%	0.45%	-0.45%	--	14.93%	-14.93%	-0.03%	0.00%	0.00%	-0.03%
MEXICO	1.14%	0.65%	0.48%	24.16%	10.65%	13.51%	0.18%	-0.06%	0.25%	-0.01%
NETHERLANDS	6.27%	2.57%	3.69%	18.90%	21.12%	-2.23%	0.46%	0.22%	-0.06%	0.30%
NEW ZEALAND	0.14%	0.11%	0.03%	6.79%	24.74%	-17.94%	-0.01%	0.00%	0.00%	-0.01%
NORWAY	0.33%	0.49%	-0.16%	13.46%	16.87%	-3.41%	-0.01%	0.02%	0.01%	-0.04%
Other Countries	0.37%	0.00%	0.37%	28.53%	28.46%	0.07%	0.14%	0.00%	0.01%	0.13%
PERU	0.45%	0.07%	0.38%	19.19%	17.38%	1.81%	0.07%	0.04%	0.03%	0.00%
PHILIPPINES	0.00%	0.21%	-0.21%	--	21.61%	-21.61%	-0.03%	-0.02%	0.00%	-0.01%
POLAND	0.05%	0.15%	-0.10%	13.23%	48.87%	-35.64%	-0.06%	-0.03%	0.00%	-0.02%
PORTUGAL	0.24%	0.14%	0.09%	5.91%	17.28%	-11.37%	-0.01%	0.00%	0.01%	-0.01%
QATAR	0.00%	0.37%	-0.37%	--	-15.42%	15.42%	0.09%	0.09%	0.00%	0.00%
RUSSIA	0.04%	0.00%	0.04%	0.41%	14.42%	-14.00%	-0.01%	0.00%	-0.01%	0.00%
SAUDI ARABIA	0.00%	1.40%	-1.40%	--	-7.31%	7.31%	0.22%	0.22%	0.00%	0.00%
SINGAPORE	0.79%	0.99%	-0.20%	5.83%	10.49%	-4.66%	-0.01%	0.01%	-0.05%	0.03%
SOUTH AFRICA	0.08%	1.01%	-0.93%	9.71%	18.92%	-9.20%	-0.11%	-0.04%	0.01%	-0.07%
SPAIN	2.23%	1.48%	0.76%	19.60%	23.29%	-3.69%	0.03%	0.05%	-0.03%	0.01%
SWEDEN	1.21%	2.13%	-0.92%	7.39%	18.36%	-10.98%	-0.17%	-0.02%	0.00%	-0.15%
SWITZERLAND	6.98%	6.72%	0.26%	16.54%	10.17%	6.37%	0.61%	-0.12%	0.52%	0.21%
TAIWAN	3.28%	4.05%	-0.77%	-5.61%	9.74%	-15.35%	-0.40%	-0.17%	-0.01%	-0.22%
THAILAND	0.19%	0.62%	-0.43%	10.07%	16.43%	-6.36%	-0.04%	0.01%	0.02%	-0.06%
TURKEY	0.00%	0.11%	-0.11%	--	67.63%	-67.63%	-0.07%	-0.07%	0.00%	0.00%
UNITED ARAB EMIRATES	0.00%	0.41%	-0.41%	--	-1.44%	1.44%	0.04%	0.04%	0.00%	0.00%
UNITED KINGDOM	8.46%	9.71%	-1.25%	15.00%	17.50%	-2.51%	-0.23%	0.03%	0.00%	-0.26%
UNITED STATES	5.26%	0.00%	5.26%	11.28%	6.98%	4.30%	-0.49%	-0.99%	-0.31%	0.81%
	98.52%	100.00%	-1.48%	11.82%	14.42%	-2.59%	-2.59%	-1.15%	-0.52%	-0.92%

Total International Equity
Performance Attribution by Currency (Net of Fees)

Period Ending: December 31, 2022

Total International Equity vs. MSCI ACWI ex USA

Current Quarter

Currency Name	Portfolio Weight	Index Weight	Excess Weight	Currency Return	Portfolio Contrib.	Index Contrib.	Active Contrib.	Currency Effect
	0.37%	0.00%	0.37%	--	0.00%	6.45%	-6.45%	0.13%
Argentinian Nuevo Peso	0.30%	0.00%	0.30%	-16.82%	0.00%	6.45%	-6.45%	0.00%
Australian Dollar	3.46%	4.99%	-1.53%	5.47%	-0.70%	6.04%	-6.75%	-0.33%
Baht	0.19%	0.62%	-0.43%	8.91%	-1.00%	9.80%	-10.80%	-0.06%
Canadian Dollar	7.54%	8.25%	-0.71%	1.41%	1.52%	1.54%	-0.02%	-0.02%
Chilean Peso	0.00%	0.17%	-0.17%	12.44%	0.00%	12.38%	-12.38%	-0.02%
Colombian Peso	0.00%	0.04%	-0.04%	-5.26%	0.00%	-6.31%	6.31%	0.00%
Cruzeiro Real	2.28%	1.69%	0.60%	2.45%	1.39%	2.36%	-0.97%	-0.01%
Czech Koruna	0.00%	0.04%	-0.04%	10.83%	0.00%	10.67%	-10.67%	0.00%
Danish Krone	1.29%	1.65%	-0.37%	8.93%	9.83%	10.92%	-1.09%	0.00%
Egyptian Pound	0.00%	0.02%	-0.02%	-21.07%	0.00%	-34.32%	34.32%	0.01%
Emirati dirham	0.00%	0.41%	-0.41%	0.01%	0.00%	0.01%	-0.01%	0.00%
Euro	24.18%	19.20%	4.98%	8.94%	8.44%	10.10%	-1.66%	1.47%
Forint	0.00%	0.04%	-0.04%	15.10%	0.00%	17.57%	-17.57%	-0.01%
Hong Kong Dollar	3.14%	1.89%	1.24%	0.58%	0.01%	0.76%	-0.76%	-0.01%
Indian Rupee	3.17%	4.49%	-1.31%	-1.67%	-1.63%	-1.74%	0.11%	0.02%
Kuwaiti dinar	0.00%	0.26%	-0.26%	1.27%	0.00%	1.20%	-1.20%	0.00%
Mexican New Peso	1.14%	0.65%	0.48%	3.18%	0.98%	3.21%	-2.23%	-0.01%
New Sol	0.45%	0.07%	0.38%	4.30%	0.00%	0.00%	0.00%	0.00%
New Taiwan Dollar	3.28%	4.05%	-0.77%	3.30%	-1.44%	3.69%	-5.12%	-0.22%
New Zealand Dollar	0.14%	0.11%	0.03%	11.81%	2.28%	13.24%	-10.96%	-0.01%
New Zloty	0.05%	0.15%	-0.10%	12.60%	4.11%	17.17%	-13.06%	-0.02%
Norwegian Krone	0.33%	0.49%	-0.16%	10.62%	4.89%	10.86%	-5.97%	-0.04%
Philippines Peso	0.00%	0.21%	-0.21%	5.20%	0.00%	6.32%	-6.32%	-0.01%
Pound Sterling	8.46%	9.71%	-1.25%	7.76%	6.33%	8.84%	-2.50%	-0.26%
Qatari rial	0.00%	0.37%	-0.37%	0.00%	0.00%	0.01%	-0.01%	0.00%
Rand	0.08%	1.01%	-0.93%	5.63%	-1.97%	6.70%	-8.67%	-0.07%

Total International Equity

Performance Attribution by Currency (Net of Fees)

Period Ending: December 31, 2022

Currency Name	Portfolio Weight	Index Weight	Excess Weight	Currency Return	Portfolio Contrib.	Index Contrib.	Active Contrib.	Currency Effect
Ringgit (Malaysian Dollar)	0.00%	0.45%	-0.45%	5.27%	0.00%	6.62%	-6.62%	-0.03%
Rupiah	0.69%	0.65%	0.04%	-2.18%	-2.68%	-1.93%	-0.75%	0.00%
Russian Federation Rouble	0.04%	0.00%	0.04%	-16.27%	0.41%	6.45%	-6.04%	0.00%
Saudi Arabian Riyal	0.00%	1.40%	-1.40%	-0.03%	0.00%	-0.03%	0.03%	0.00%
Shekel	0.62%	0.53%	0.09%	0.81%	0.82%	0.85%	-0.03%	0.00%
Singapore Dollar	0.79%	0.99%	-0.20%	6.99%	6.72%	6.44%	0.28%	0.03%
South Korean Won	3.36%	3.12%	0.24%	13.14%	0.63%	14.69%	-14.06%	-0.46%
Swedish Krona	1.21%	2.13%	-0.92%	6.51%	0.67%	7.26%	-6.59%	-0.15%
Swiss Franc	6.98%	6.72%	0.26%	6.38%	7.01%	6.37%	0.63%	0.21%
Turkish Lira	0.00%	0.11%	-0.11%	-0.97%	0.00%	-1.69%	1.69%	0.00%
US Dollar	5.26%	0.00%	5.26%	0.00%	4.45%	6.45%	-2.00%	0.81%
Yen	13.44%	14.12%	-0.69%	9.70%	9.65%	10.03%	-0.38%	-1.71%
Yuan Renminbi	6.30%	9.18%	-2.88%	2.01%	-0.39%	1.03%	-1.42%	-0.12%
	98.52%	100.00%	-1.48%		4.82%	6.45%	-1.63%	-0.92%

Total International Equity
Performance Attribution by Region (Net of Fees)

Period Ending: December 31, 2022

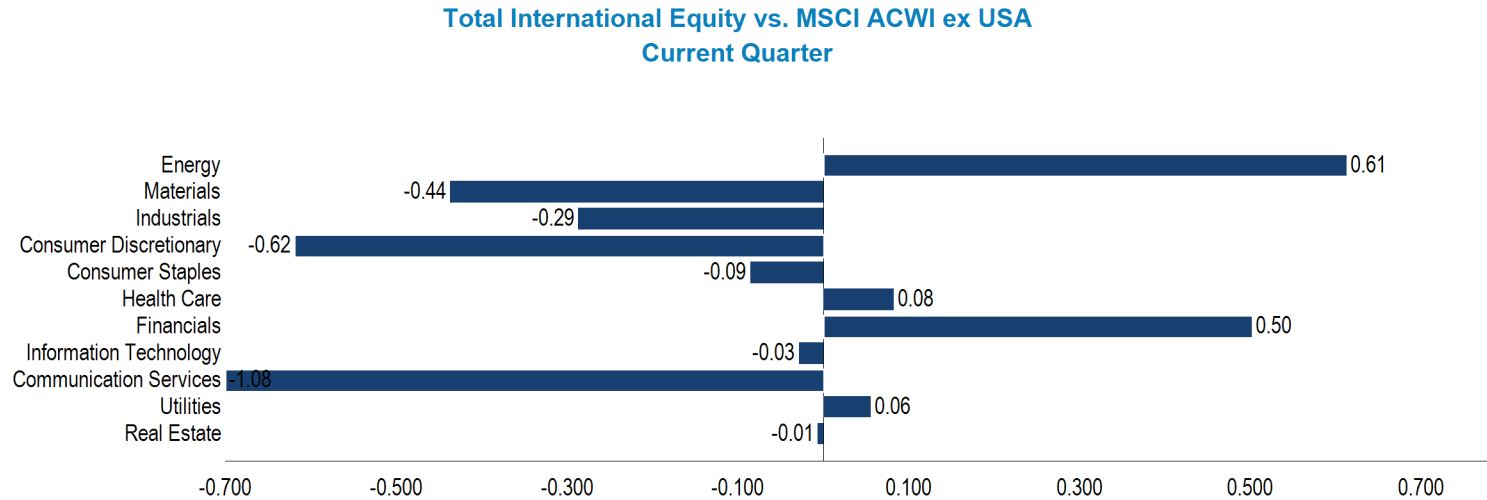
Total International Equity vs. MSCI ACWI ex USA
Current Quarter

Region	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess USD Return	Allocation Effect (Local)	Selection Effect (Local)	Active Contrib.	Passive Contrib.	Total Contrib.
Americas	16.96%	10.88%	6.08%	10.85%	6.99%	3.86%	-0.98%	1.12%	0.14%	-0.81%	-0.66%
Europe	42.54%	40.14%	2.39%	18.43%	19.62%	-1.19%	-0.06%	0.97%	0.91%	2.09%	3.00%
Asia/Pacific	37.96%	44.87%	-6.91%	4.24%	12.61%	-8.36%	-0.91%	-3.12%	-4.04%	-0.81%	-4.85%
Other	2.54%	4.11%	-1.56%	17.20%	3.04%	14.16%	0.16%	0.23%	0.39%	-0.47%	-0.08%
Total				11.82%	14.42%	-2.59%	-1.79%	-0.80%	-2.59%	0.00%	-2.59%

Region	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess USD Return	Allocation Effect (Local)	Selection Effect (Local)	Active Contrib.	Passive Contrib.	Total Contrib.
Americas	16.96%	10.88%	6.08%	10.85%	6.99%	3.86%	-0.98%	1.12%	0.14%	-0.81%	-0.66%
Europe	42.54%	40.14%	2.39%	18.43%	19.62%	-1.19%	-0.06%	0.97%	0.91%	2.09%	3.00%
Asia/Pacific	37.96%	44.87%	-6.91%	4.24%	12.61%	-8.36%	-0.91%	-3.12%	-4.04%	-0.81%	-4.85%
Other	2.54%	4.11%	-1.56%	17.20%	3.04%	14.16%	0.16%	0.23%	0.39%	-0.47%	-0.08%
Total				11.82%	14.42%	-2.59%	-1.79%	-0.80%	-2.59%	0.00%	-2.59%

Total International Equity Performance Attribution by Sector (Net of Fees)

Period Ending: December 31, 2022



GICS Sector	Portfolio Weight	Index Weight	Excess Weight	Portfolio USD Return	Index USD Return	Excess Return	Allocation Effect (Local)	Selection Effect (Local)	Active Contrib.	Passive Contrib.	Total Contrib.
Energy	7.65%	6.17%	1.48%	17.40%	13.96%	3.44%	0.08%	0.28%	0.36%	-0.03%	0.33%
Materials	8.63%	8.17%	0.46%	14.70%	16.85%	-2.14%	0.03%	-0.18%	-0.15%	0.20%	0.05%
Industrials	9.97%	12.06%	-2.09%	13.11%	17.54%	-4.43%	-0.11%	-0.52%	-0.63%	0.38%	-0.25%
Consumer Discretionary	11.74%	11.24%	0.50%	8.85%	14.69%	-5.84%	-0.19%	-0.70%	-0.89%	0.03%	-0.86%
Consumer Staples	8.99%	9.36%	-0.37%	8.23%	9.77%	-1.55%	0.03%	-0.20%	-0.16%	-0.43%	-0.60%
Health Care	8.80%	9.80%	-1.00%	12.01%	14.10%	-2.09%	-0.12%	-0.04%	-0.17%	-0.03%	-0.20%
Financials	19.91%	20.66%	-0.75%	19.57%	15.63%	3.94%	0.04%	0.96%	1.00%	0.25%	1.25%
Information Technology	10.93%	10.76%	0.17%	5.57%	13.64%	-8.07%	0.31%	-1.02%	-0.71%	-0.08%	-0.79%
Communication Services	7.08%	6.05%	1.02%	-3.60%	12.13%	-15.73%	-0.01%	-1.08%	-1.09%	-0.14%	-1.23%
Utilities	2.55%	3.36%	-0.81%	4.03%	12.95%	-8.92%	0.02%	-0.15%	-0.13%	-0.05%	-0.18%
Real Estate	1.73%	2.37%	-0.64%	-1.28%	10.56%	-11.83%	-0.08%	-0.06%	-0.14%	-0.09%	-0.23%
Unclassified	2.02%	0.00%	2.02%	12.46%	--	-4.30%	-0.11%	0.17%	0.06%	0.00%	0.06%
Total				11.77%	14.42%	-2.65%	-0.12%	-2.53%	-2.65%	0.00%	-2.65%

Total International Equity
Performance Attribution Summary (Net of Fees)

Period Ending: December 31, 2022

Portfolio: Total International Equity
Benchmark: MSCI ACWI ex USA

Portfolio Total Return 15.74%

	Equity Only
Portfolio	11.82%
Benchmark	<u>14.42%</u>
Return From Active Mgmt	-2.59%

Local Returns	
Portfolio	6.26%
Benchmark	<u>7.94%</u>
Active Equity Return	-1.68%

Country Selection	-1.15%
Stock Selection	-0.52%

Currency Contributions	
Portfolio	4.82%
Benchmark	<u>6.45%</u>
Active Currency Contributions	-1.63%

Chart uses return-based methodology.

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2022

Account	Fee Schedule	Market Value As of 12/31/2022	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
NT MSCI US Index	0.01% of Assets	\$838,643,528	\$83,864	0.01%
MSCI Factor Mix Index	0.05% of First 50.0 Mil, 0.04% of Next 50.0 Mil, 0.02% Thereafter	\$173,675,721	\$59,735	0.03%
T. Rowe Price Large Cap Growth	0.35% of Assets	\$139,291,917	\$487,522	0.35%
PIMCO StocksPLUS Small Fund	0.50% of First 150.0 Mil, 0.45% Thereafter	\$314,341,857	\$1,489,538	0.47%
NT MSCI World Ex-US Index	0.25% of Assets	\$395,774,194	\$989,435	0.25%
Artisan International Growth	0.30% of Assets	\$233,633,419	\$700,900	0.30%
PIMCO RAE International	0.35% of First 50.0 Mil, 0.30% of Next 50.0 Mil, 0.25% Thereafter	\$230,132,142	\$650,330	0.28%
Mondrian Emerging Markets	1.00% of First 25.0 Mil, 0.75% of Next 50.0 Mil, 0.60% Thereafter	\$147,051,041	\$1,057,306	0.72%
Baillie Gifford Emerging Markets	0.85% of Assets	\$145,213,013	\$1,234,311	0.85%
PGIM Strategic Credit	0.37% of First 100.0 Mil, 0.35% Thereafter	\$339,242,861	\$1,207,350	0.36%
HPS Institutional Credit	0.50% of Assets	\$208,354,337	\$1,041,772	0.50%
RBC Access Capital	0.30% of First 100.0 Mil, 0.20% Thereafter	\$51,789,096	\$155,367	0.30%

This fee analysis only reflects base fees for investment management, does not incorporate performance-based fees, and excludes fees paid to closed end real estate managers, private equity managers and GCM Better Futures Fund. Closed end real estate and private equity fees have other components which cannot be easily captured in this simplified format.

** Managers with incentive fee include: Ivy, Research Affiliates, Western Asset, Artisan, Brandywine, IFM and Invesco Commodities. Performance based fees are not included in the fee analysis. AJO has performance based fees.*

Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2022

Account	Fee Schedule	Market Value As of 12/31/2022	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Invesco Core Real Estate	0.90% of First 75.0 Mil, 0.80% Thereafter	\$214,882,520	\$1,794,060	0.83%
Harrison Street	0.75% of Assets	\$124,800,672	\$936,005	0.75%
IFM Infrastructure	0.77% of Assets	\$284,882,239	\$2,193,593	0.77%
Parametric Overlay	0.15% of First 25.0 Mil, 0.10% of Next 75.0 Mil, 0.04% Thereafter	\$23,829,630	\$35,744	0.15%
Investment Management Fee		\$3,865,538,189	\$14,116,834	0.37%

This fee analysis only reflects base fees for investment management, does not incorporate performance-based fees, and excludes fees paid to closed end real estate managers, private equity managers and GCM Better Futures Fund. Closed end real estate and private equity fees have other components which cannot be easily captured in this simplified format.

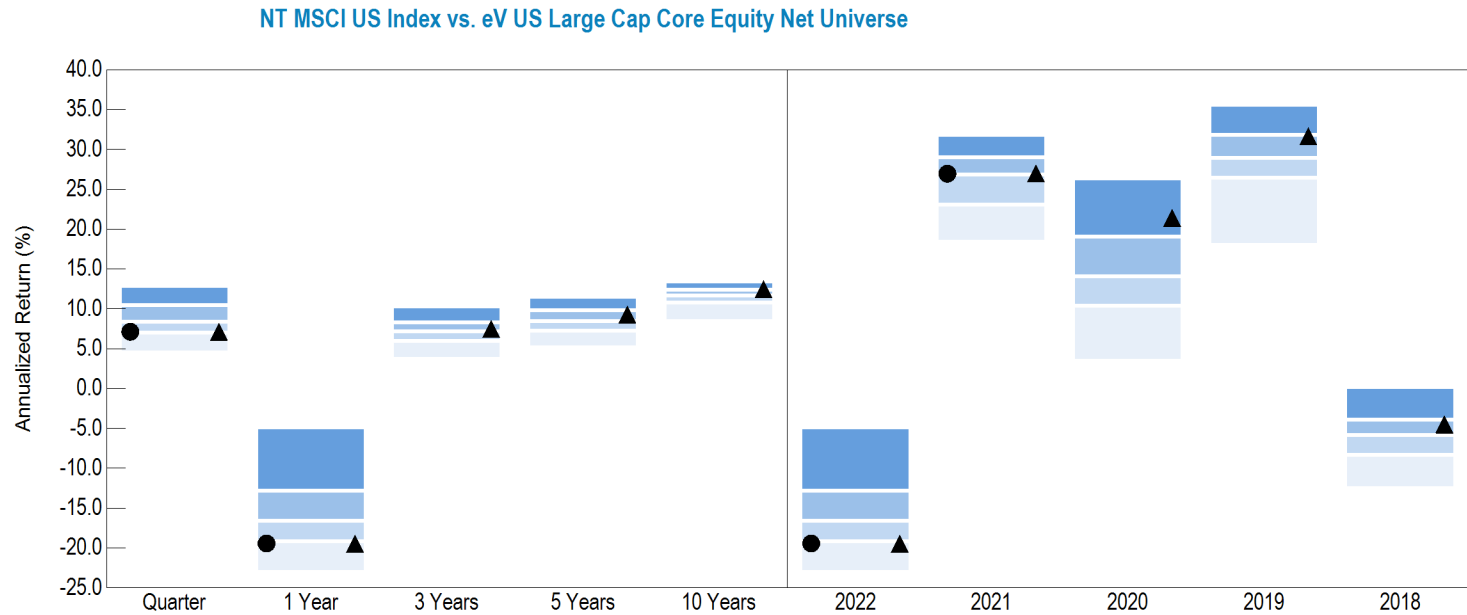
** Managers with incentive fee include: Ivy, Research Affiliates, Western Asset, Artisan, Brandywine, IFM , Invesco Commodities and TCW TALF Opportunities Fund LP. Performance based fees are not included in the fee analysis. AJO has performance based fees.*

Domestic Equity Managers

NT MSCI US Index

Manager Performance Comparisons (Net of Fees)

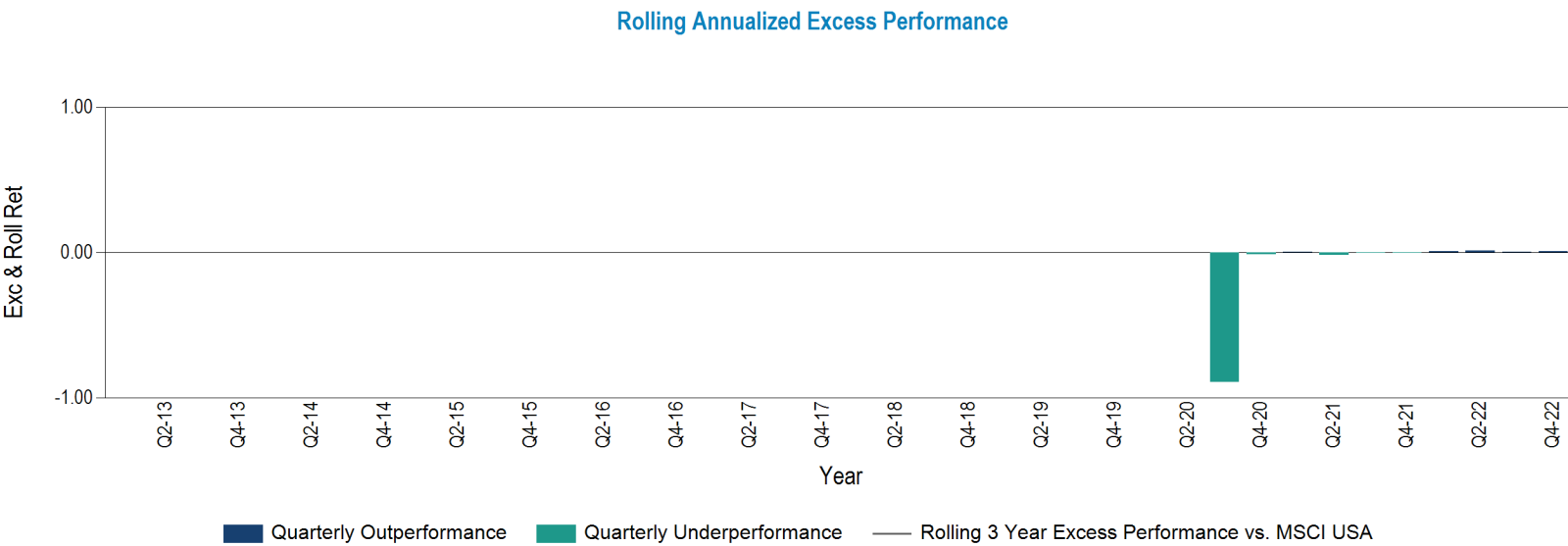
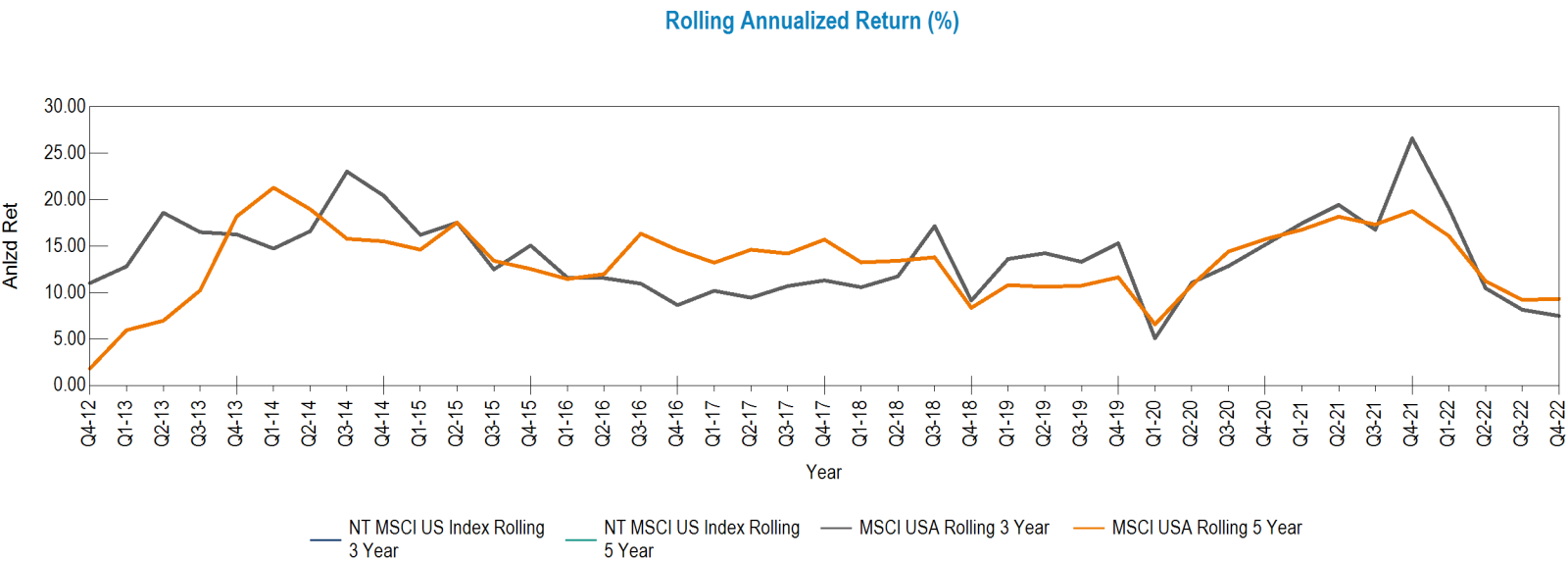
Period Ending: December 31, 2022



	Return (Rank)									
5th Percentile	12.8	-4.9	10.3	11.5	13.4	-4.9	31.8	26.4	35.5	0.1
25th Percentile	10.5	-12.8	8.3	9.9	12.4	-12.8	29.0	19.1	31.9	-3.8
Median	8.5	-16.5	7.2	8.5	11.7	-16.5	26.9	14.1	28.9	-5.8
75th Percentile	7.1	-19.1	6.0	7.3	10.9	-19.1	23.1	10.4	26.5	-8.3
95th Percentile	4.5	-23.0	3.8	5.2	8.5	-23.0	18.5	3.5	18.1	-12.5
# of Portfolios	284	282	274	262	203	282	217	216	203	189
● NT MSCI US Index	7.1 (75)	-19.4 (77)	-- (--)	-- (--)	-- (--)	-19.4 (77)	27.0 (48)	-- (--)	-- (--)	-- (--)
▲ MSCI USA	7.1 (75)	-19.5 (77)	7.5 (42)	9.3 (37)	12.5 (25)	-19.5 (77)	27.0 (47)	21.4 (17)	31.6 (28)	-4.5 (32)

NT MSCI US Index
Rolling Manager Performance (Net of Fees)

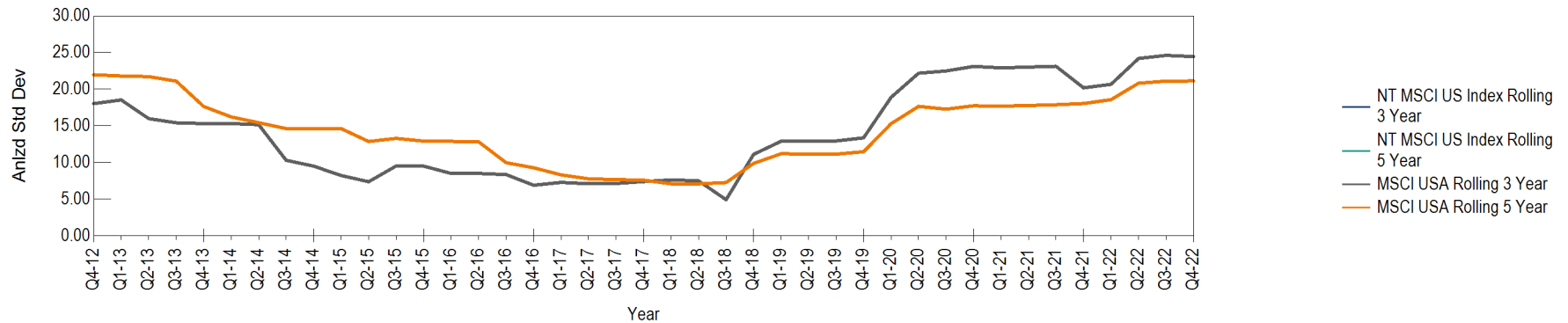
Period Ending: December 31, 2022



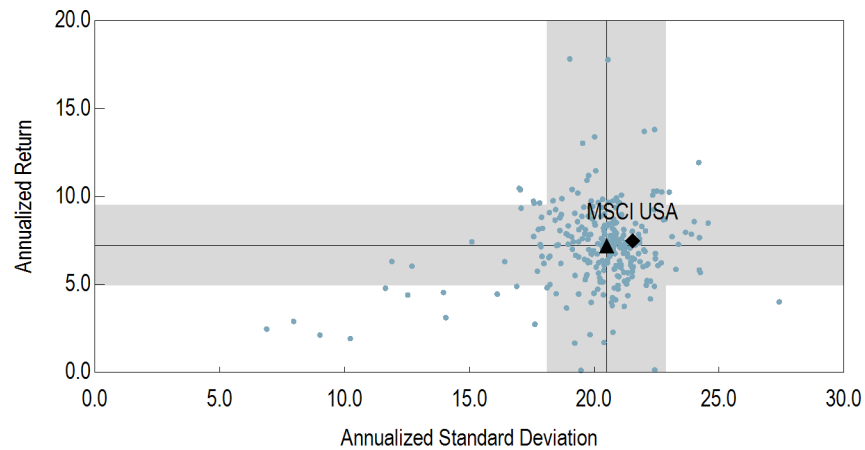
NT MSCI US Index Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

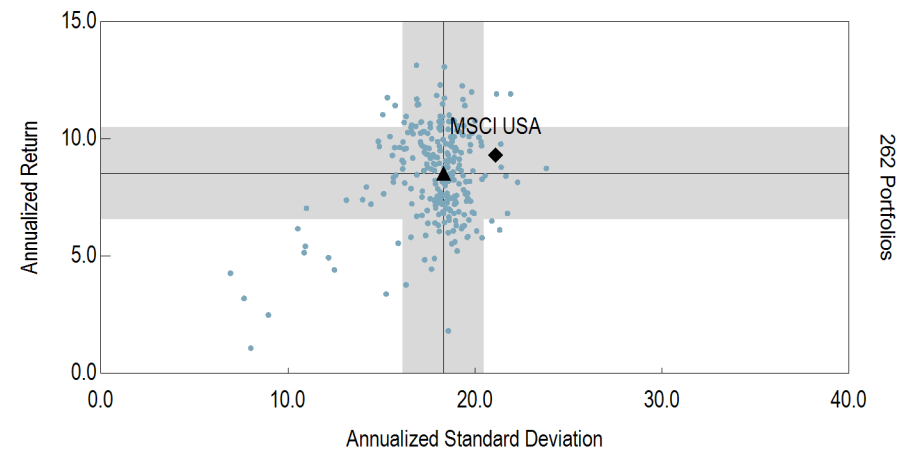
Rolling Annualized Standard Deviation



3 Years



5 Years



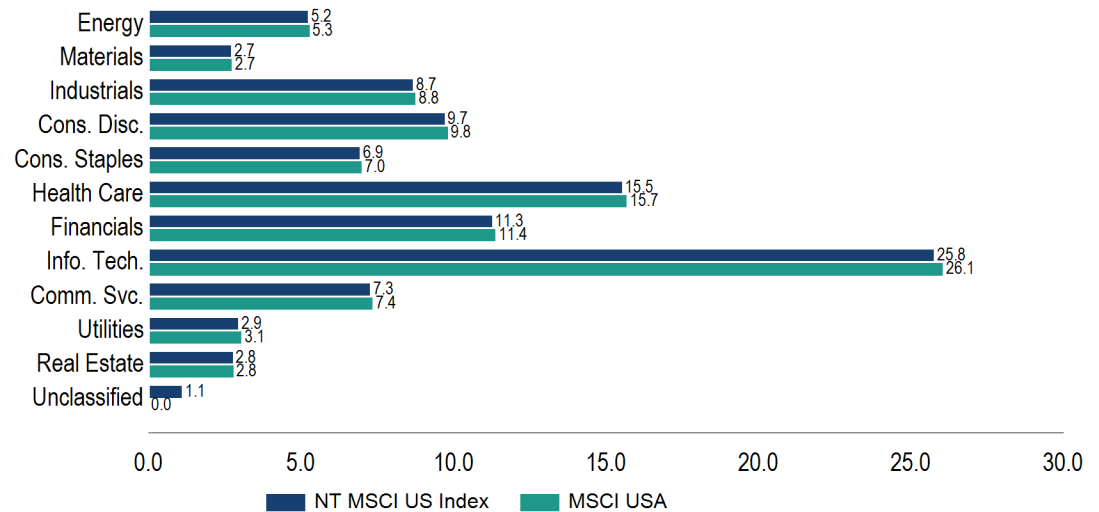
NT MSCI US Index Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	MSCI USA
Number of Holdings	628	624
Weighted Avg. Market Cap. (\$B)	398.01	398.30
Median Market Cap. (\$B)	24.06	24.06
Price To Earnings	19.21	19.21
Price To Book	3.92	3.92
Price To Sales	2.57	2.56
Return on Equity (%)	28.98	28.99
Yield (%)	1.74	1.74
Beta		1.00

Sector Allocation (%) vs MSCI USA



Largest Holdings

	End Weight	Return
APPLE INC	6.09	-5.83
MICROSOFT CORP	4.95	3.26
AMAZON.COM INC	2.24	-25.66
ALPHABET INC	1.54	-7.76
UNITEDHEALTH GROUP INC	1.44	5.30
ALPHABET INC	1.43	-7.72
JOHNSON & JOHNSON	1.35	8.83
EXXON MOBIL CORP	1.34	27.35
BERKSHIRE HATHAWAY INC	1.17	15.68
JPMORGAN CHASE & CO	1.15	29.49

Top Contributors

	End Weight	Return	Contribution
EXXON MOBIL CORP	1.34	27.35	0.37
JPMORGAN CHASE & CO	1.15	29.49	0.34
CHEVRON CORP	0.97	25.90	0.25
MERCK & CO INC	0.82	29.67	0.24
PROCTER & GAMBLE CO (THE)	1.05	20.91	0.22
NVIDIA CORPORATION	1.06	20.42	0.22
MASTERCARD INC	0.87	22.49	0.20
BERKSHIRE HATHAWAY INC	1.17	15.68	0.18
ABBVIE INC	0.83	21.60	0.18
BOEING CO	0.31	57.33	0.18

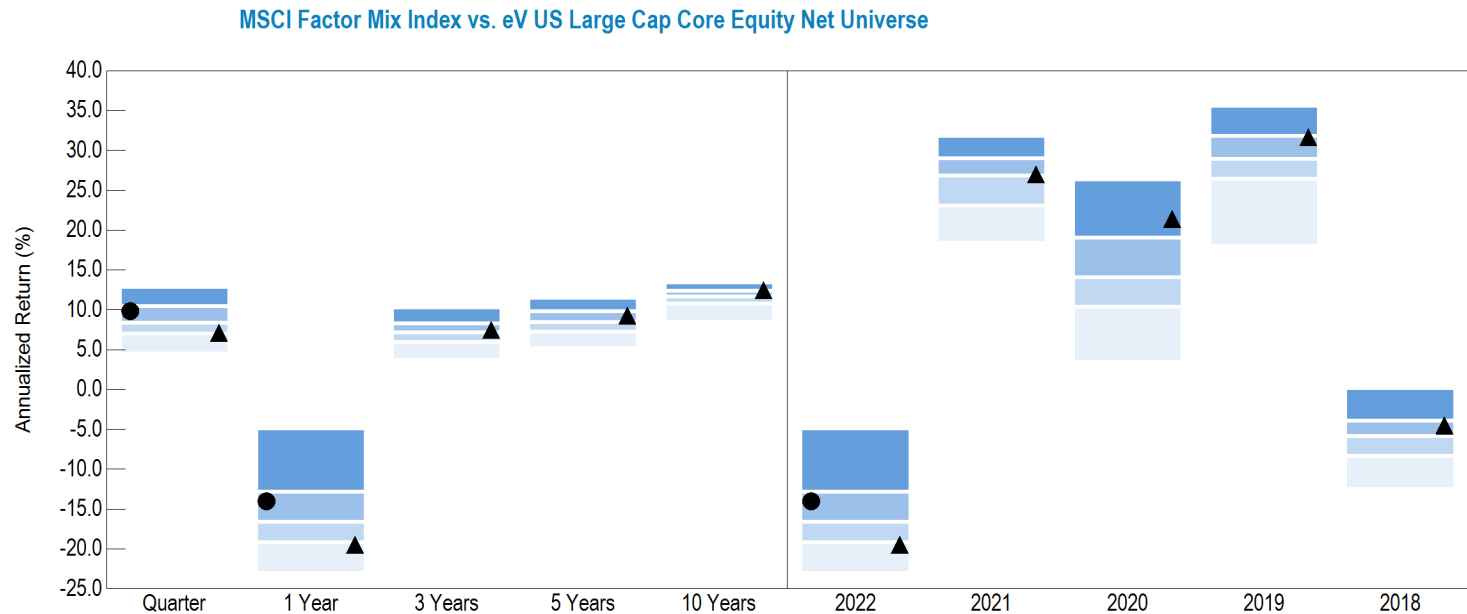
Bottom Contributors

	End Weight	Return	Contribution
AMAZON.COM INC	2.24	-25.66	-0.58
TESLA INC	0.96	-53.56	-0.51
APPLE INC	6.09	-5.83	-0.35
ALPHABET INC	1.54	-7.76	-0.12
ALPHABET INC	1.43	-7.72	-0.11
META PLATFORMS INC	0.80	-11.31	-0.09
PAYPAL HOLDINGS INC	0.23	-17.25	-0.04
WALT DISNEY CO (THE)	0.46	-7.90	-0.04
SALESFORCE INC	0.39	-7.82	-0.03
CROWDSTRIKE HOLDINGS INC	0.06	-36.11	-0.02

Unclassified sector allocation includes cash allocations.

MSCI Factor Mix Index Manager Performance Comparisons (Net of Fees)

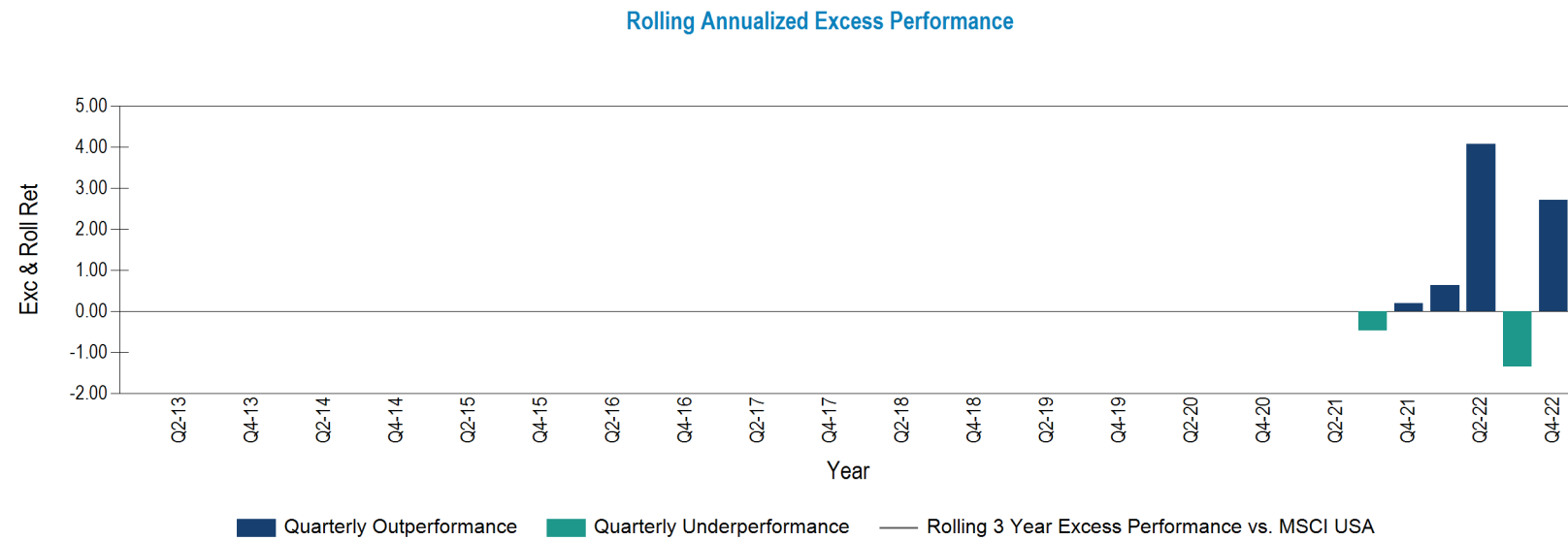
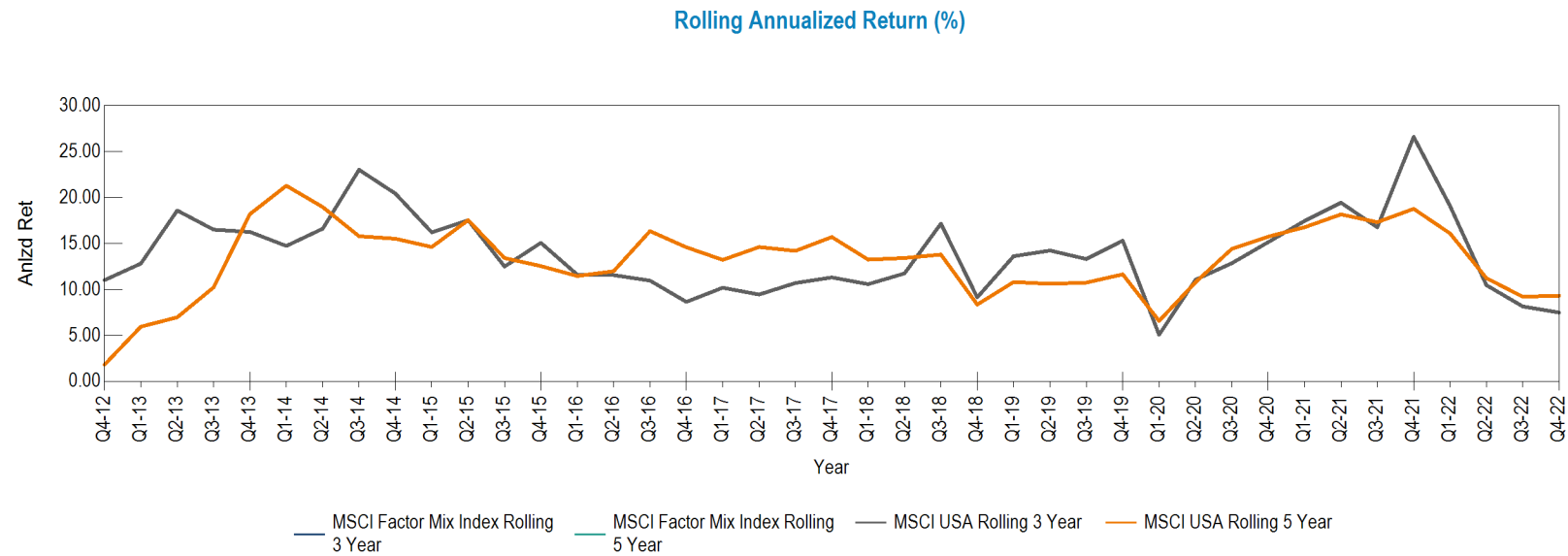
Period Ending: December 31, 2022



	Return (Rank)									
5th Percentile	12.8	-4.9	10.3	11.5	13.4	-4.9	31.8	26.4	35.5	0.1
25th Percentile	10.5	-12.8	8.3	9.9	12.4	-12.8	29.0	19.1	31.9	-3.8
Median	8.5	-16.5	7.2	8.5	11.7	-16.5	26.9	14.1	28.9	-5.8
75th Percentile	7.1	-19.1	6.0	7.3	10.9	-19.1	23.1	10.4	26.5	-8.3
95th Percentile	4.5	-23.0	3.8	5.2	8.5	-23.0	18.5	3.5	18.1	-12.5
# of Portfolios	284	282	274	262	203	282	217	216	203	189
● MSCI Factor Mix Index	9.8 (31)	-14.0 (34)	-- (--)	-- (--)	-- (--)	-14.0 (34)	-- (--)	-- (--)	-- (--)	-- (--)
▲ MSCI USA	7.1 (75)	-19.5 (77)	7.5 (42)	9.3 (37)	12.5 (25)	-19.5 (77)	27.0 (47)	21.4 (17)	31.6 (28)	-4.5 (32)

MSCI Factor Mix Index
Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022

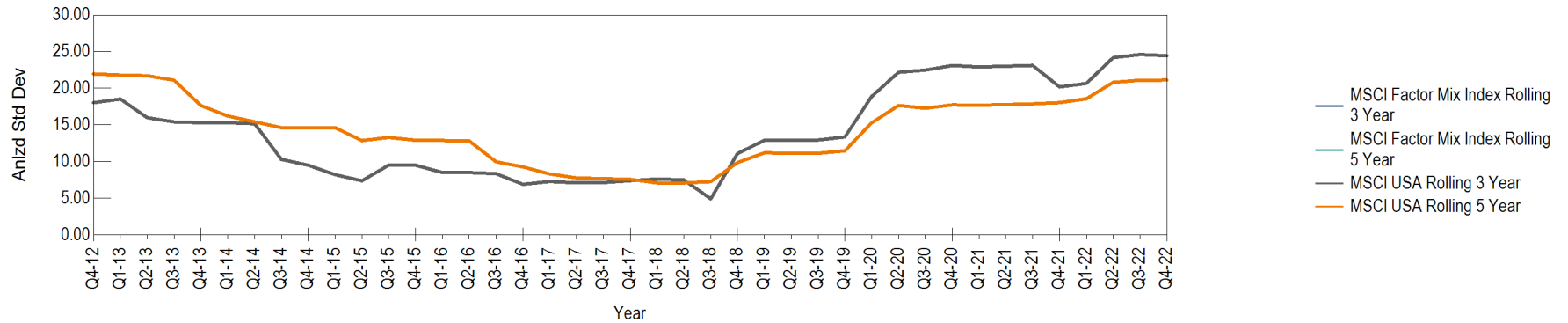


MSCI Factor Mix Index

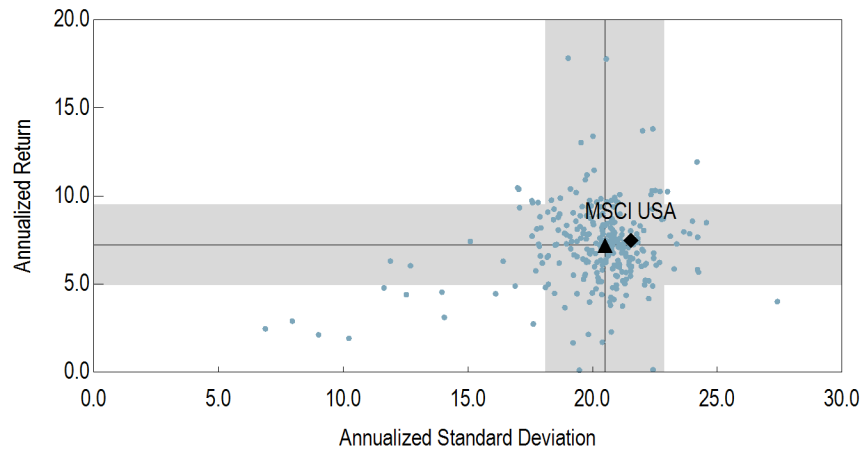
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

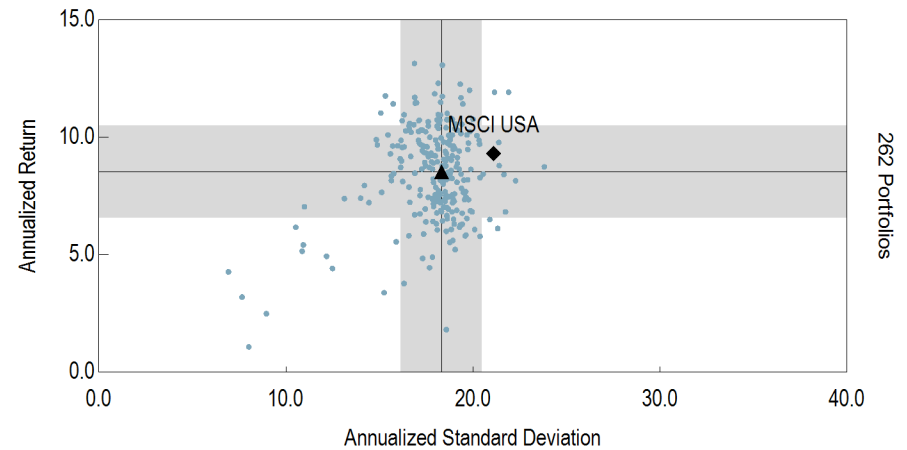
Rolling Annualized Standard Deviation



3 Years



5 Years



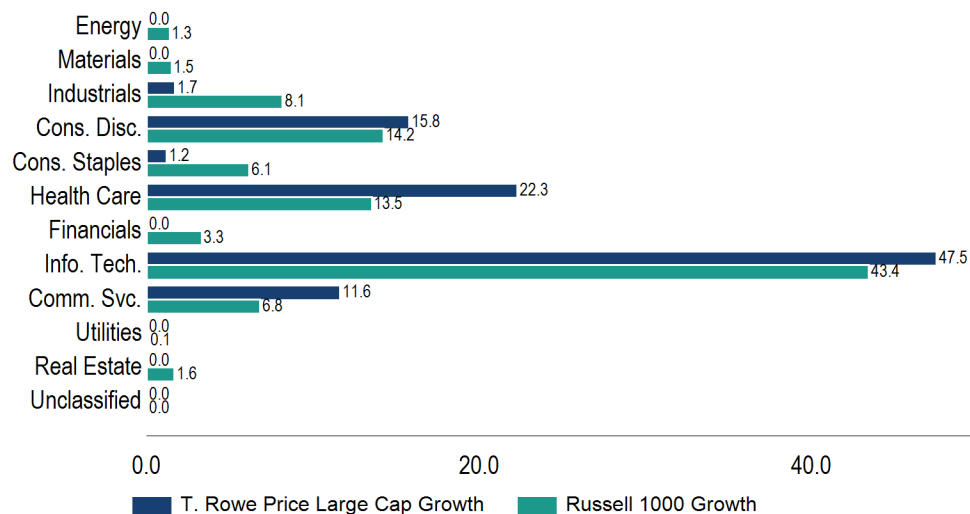
MSCI Factor Mix Index Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio
Number of Holdings	606
Weighted Avg. Market Cap. (\$B)	281.73
Median Market Cap. (\$B)	24.32
Price To Earnings	18.34
Price To Book	3.95
Price To Sales	2.29
Return on Equity (%)	30.84
Yield (%)	1.94
Beta	

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT CORP	12.34	3.26
APPLE INC	7.32	-5.83
ALPHABET INC	7.17	-7.76
AMAZON.COM INC	6.30	-25.66
UNITEDHEALTH GROUP INC	5.19	5.30
THE CIGNA GROUP	4.10	19.82
INTUIT INC.	3.69	0.68
FISERV INC.	3.30	8.01
MASTERCARD INC	2.87	22.49
VISA INC	2.58	17.22

Top Contributors

	End Weight	Return	Contribution
MERCK & CO INC	1.71	29.67	0.51
HOME DEPOT INC. (THE)	2.20	15.14	0.33
MASTERCARD INC	1.47	22.49	0.33
VISA INC	1.65	17.22	0.28
PFIZER INC	1.56	18.10	0.28
JPMORGAN CHASE & CO	0.91	29.49	0.27
CISCO SYSTEMS INC	1.33	20.18	0.27
NVIDIA CORPORATION	1.25	20.42	0.26
GILEAD SCIENCES INC	0.60	40.31	0.24
BROADCOM INC	0.90	26.98	0.24

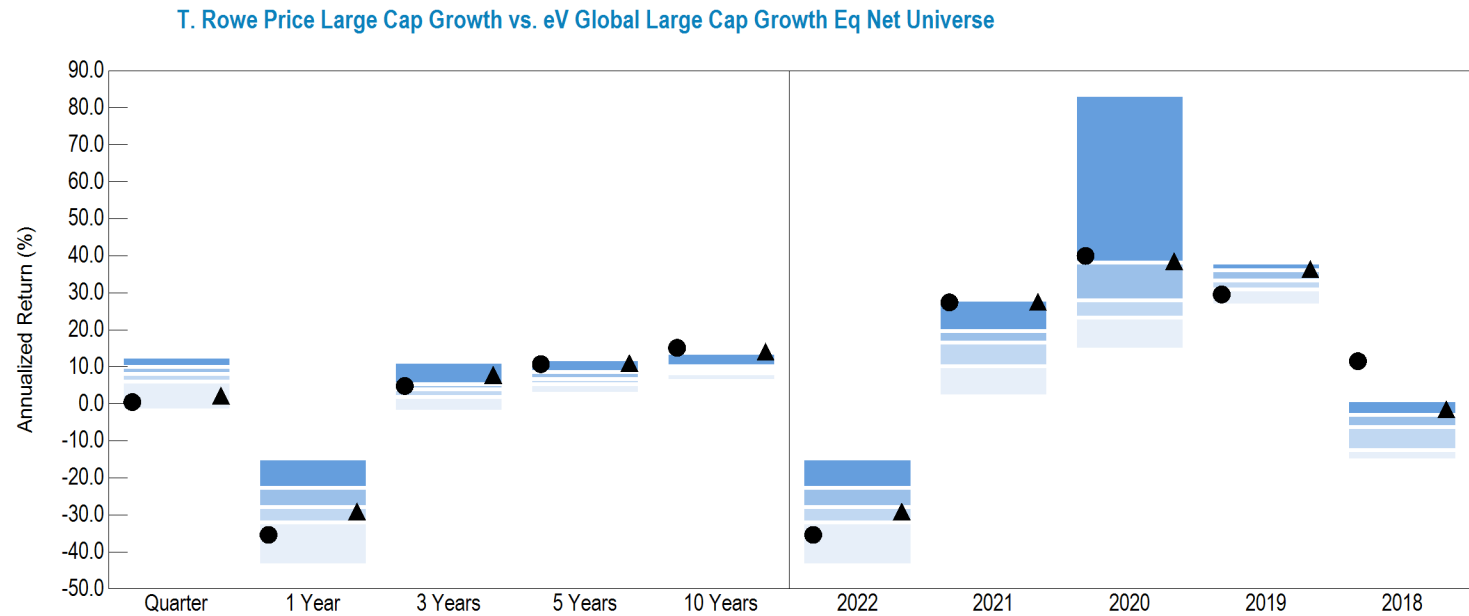
Bottom Contributors

	End Weight	Return	Contribution
META PLATFORMS INC	1.37	-11.31	-0.15
APPLE INC	2.54	-5.83	-0.15
AMAZON.COM INC	0.56	-25.66	-0.14
ALPHABET INC	1.39	-7.72	-0.11
ALPHABET INC	1.15	-7.76	-0.09
COSTCO WHOLESALE CORP	0.80	-3.16	-0.03
TESLA INC	0.05	-53.56	-0.02
REPUBLIC SERVICES INC.	0.51	-4.82	-0.02
CF INDUSTRIES HOLDINGS INC	0.22	-11.15	-0.02
BLACKSTONE INC	0.18	-10.51	-0.02

Unclassified sector allocation includes cash allocations.

T. Rowe Price Large Cap Growth
Manager Performance Comparisons (Net of Fees)

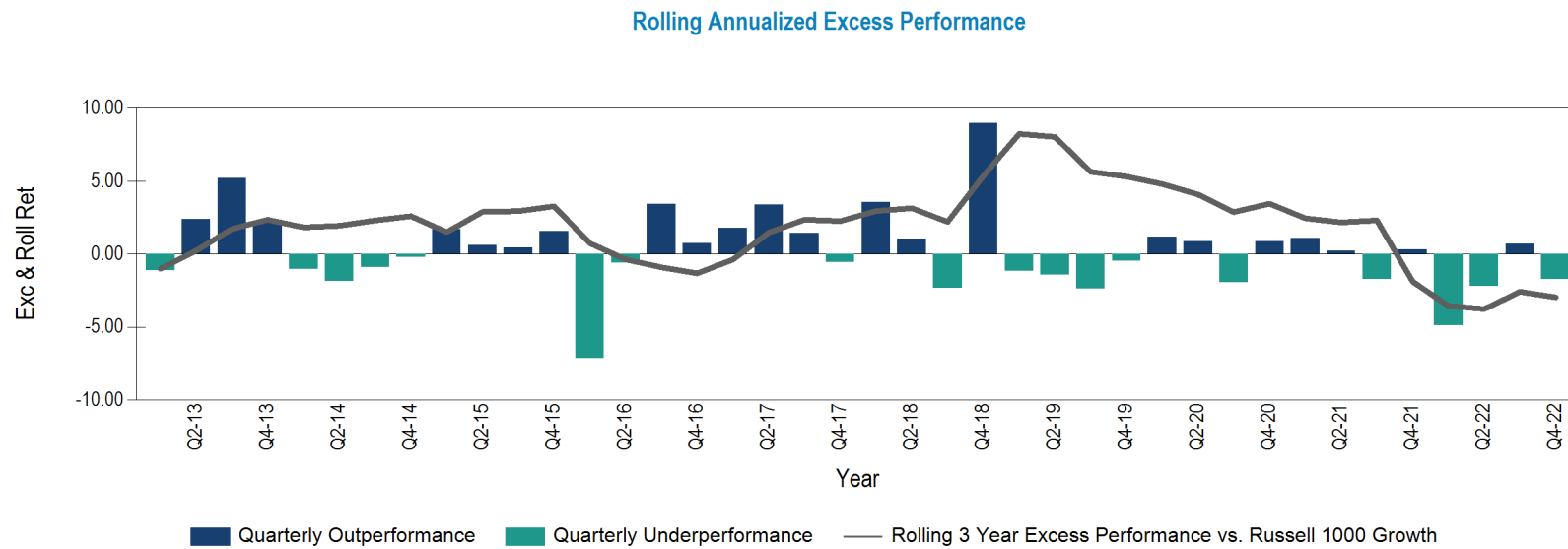
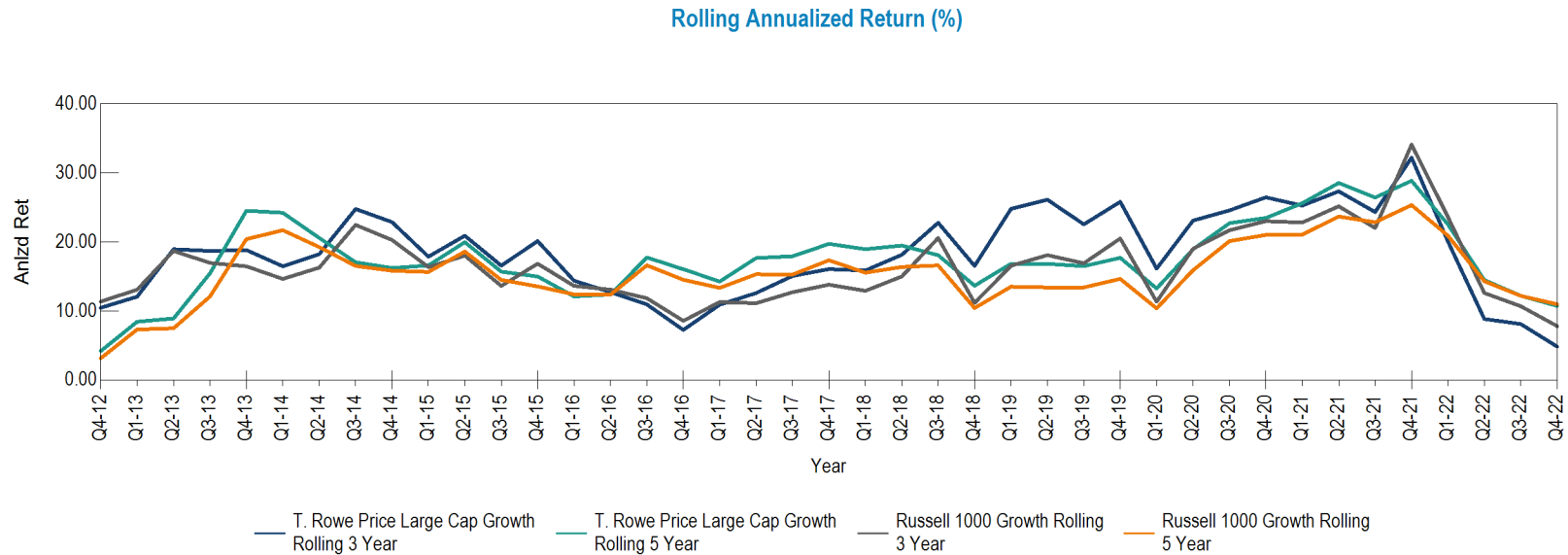
Period Ending: December 31, 2022



	Return (Rank)									
5th Percentile	12.6	-14.9	11.3	12.0	13.6	-14.9	28.0	83.4	38.1	1.0
25th Percentile	10.1	-22.7	5.5	8.6	10.3	-22.7	19.7	38.3	36.2	-2.8
Median	8.2	-27.8	3.9	6.8	9.4	-27.8	16.7	28.0	33.4	-6.3
75th Percentile	6.1	-31.9	1.8	5.4	8.3	-31.9	10.2	23.4	30.9	-12.4
95th Percentile	-1.7	-43.6	-2.1	2.8	6.3	-43.6	2.2	14.7	26.6	-15.1
# of Portfolios	70	70	66	54	31	70	48	46	34	31
● T. Rowe Price Large Cap Growth	0.5 (94)	-35.4 (91)	4.8 (36)	10.7 (9)	15.1 (4)	-35.4 (91)	27.4 (6)	40.0 (24)	29.5 (86)	11.5 (1)
▲ Russell 1000 Growth	2.2 (91)	-29.1 (53)	7.8 (14)	11.0 (9)	14.1 (5)	-29.1 (53)	27.6 (6)	38.5 (25)	36.4 (21)	-1.5 (18)

T. Rowe Price Large Cap Growth Rolling Manager Performance (Net of Fees)

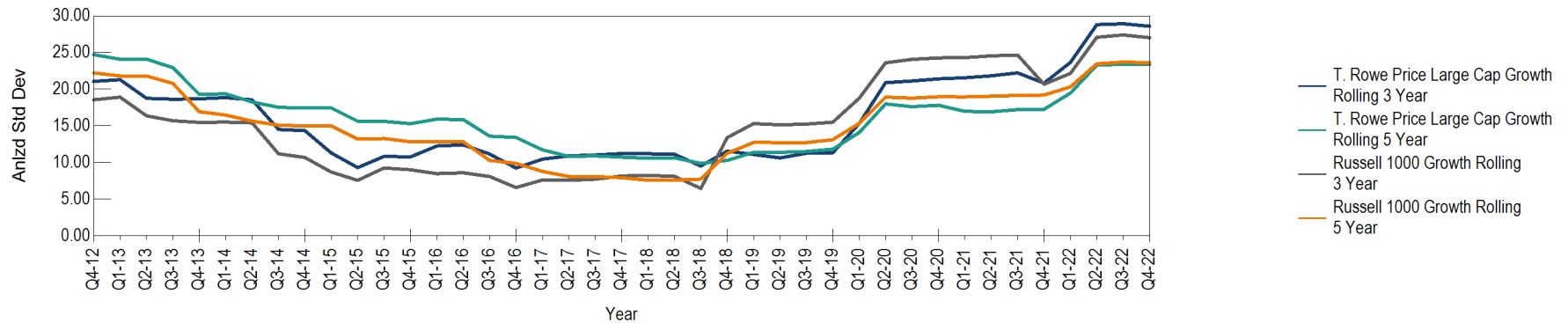
Period Ending: December 31, 2022



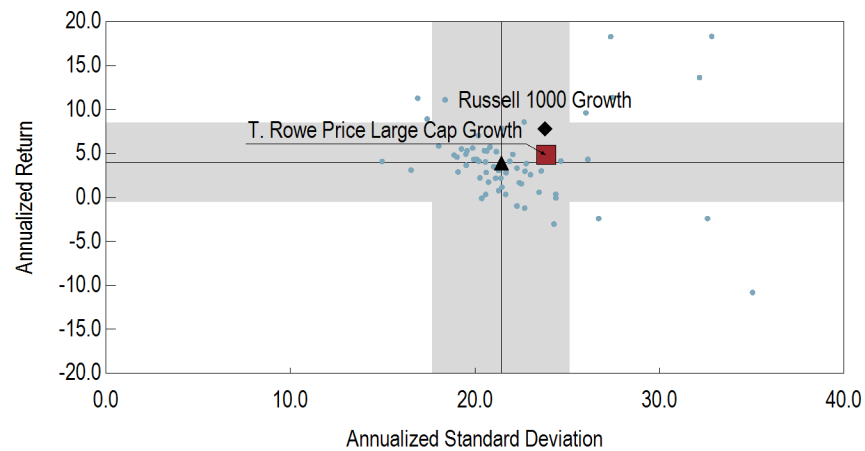
T. Rowe Price Large Cap Growth Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

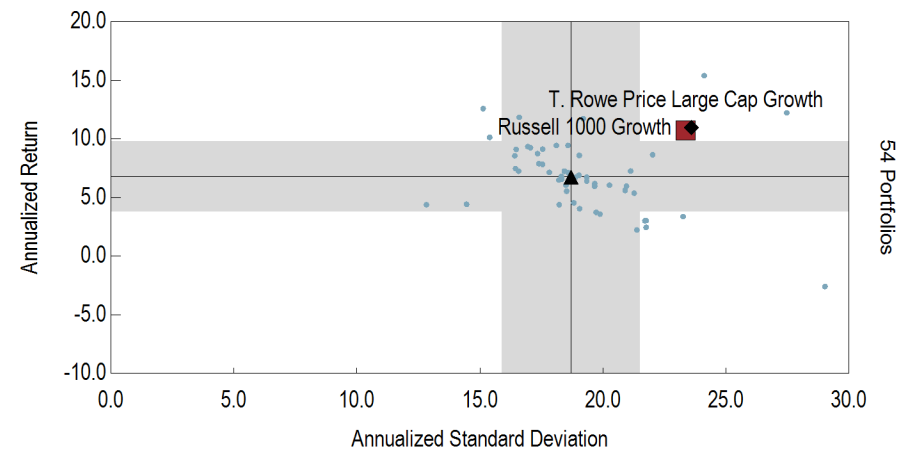
Rolling Annualized Standard Deviation



3 Years



5 Years



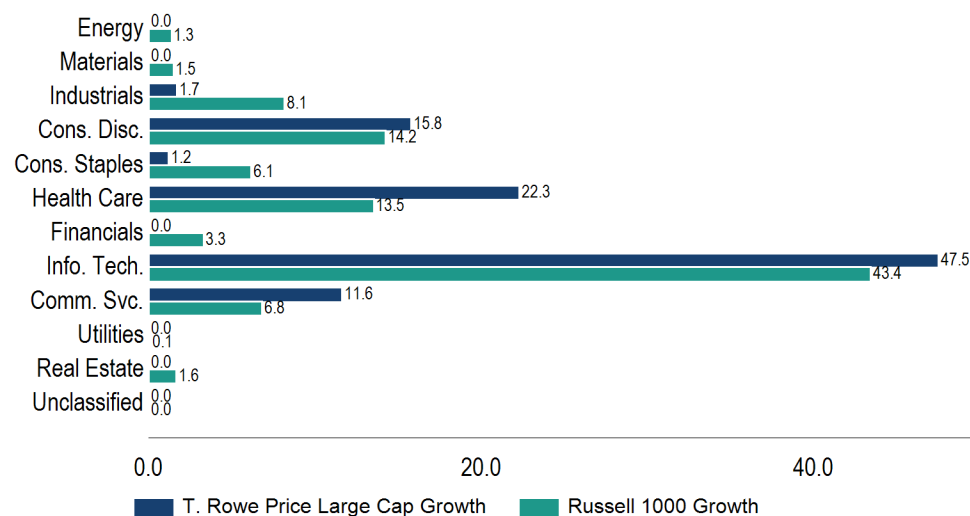
T. Rowe Price Large Cap Growth Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	54	512
Weighted Avg. Market Cap. (\$B)	614.34	626.16
Median Market Cap. (\$B)	64.51	15.92
Price To Earnings	30.52	24.70
Price To Book	6.13	8.59
Price To Sales	3.42	3.55
Return on Equity (%)	28.34	43.71
Yield (%)	0.60	1.12
Beta	1.05	1.00

Sector Allocation (%) vs Russell 1000 Growth



Largest Holdings

	End Weight	Return
MICROSOFT CORP	12.34	3.26
APPLE INC	7.32	-5.83
ALPHABET INC	7.17	-7.76
AMAZON.COM INC	6.30	-25.66
UNITEDHEALTH GROUP INC	5.19	5.30
THE CIGNA GROUP	4.10	19.82
INTUIT INC.	3.69	0.68
FISERV INC.	3.30	8.01
MASTERCARD INC	2.87	22.49
VISA INC	2.58	17.22

Top Contributors

	End Weight	Return	Contribution
INTUITIVE SURGICAL INC	2.42	41.57	1.01
ROSS STORES INC	2.42	38.10	0.92
THE CIGNA GROUP	4.10	19.82	0.81
ASML HOLDING NV	2.14	31.95	0.69
MASTERCARD INC	2.87	22.49	0.65
STRYKER CORP	2.50	21.08	0.53
VISA INC	2.58	17.22	0.44
NVIDIA CORPORATION	1.98	20.42	0.40
MICROSOFT CORP	12.34	3.26	0.40
NETFLIX INC	1.30	25.25	0.33

Bottom Contributors

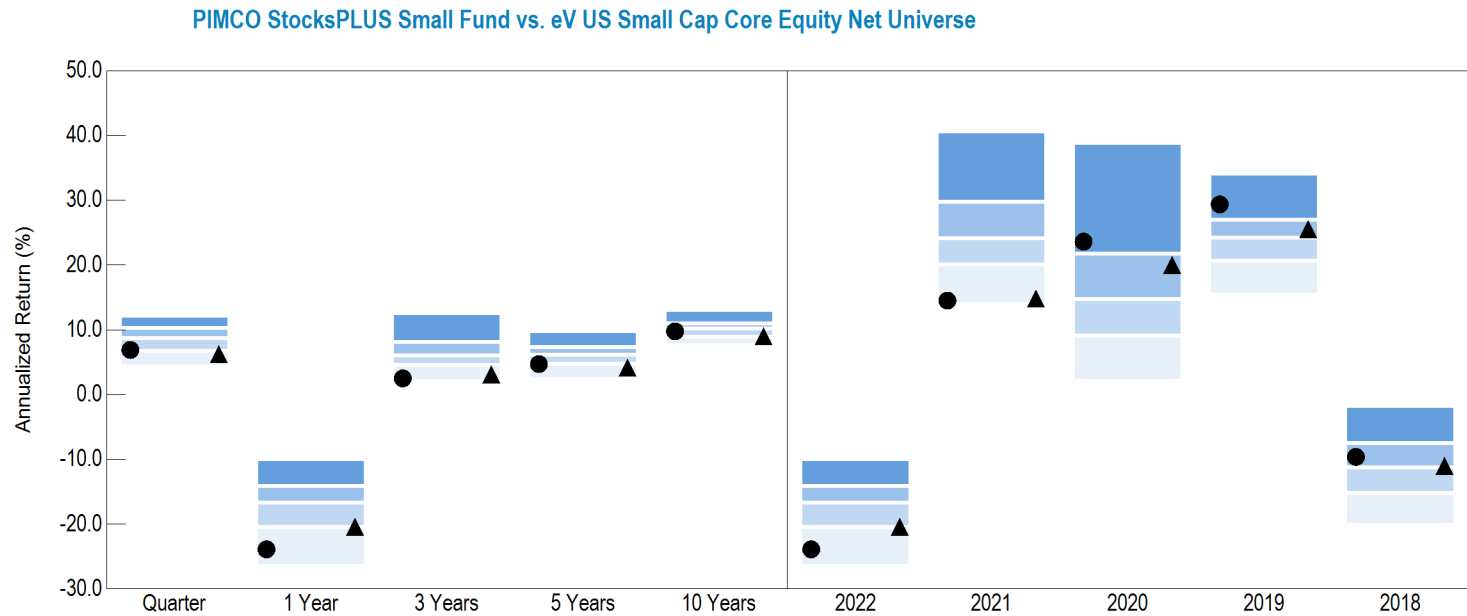
	End Weight	Return	Contribution
AMAZON.COM INC	6.30	-25.66	-1.62
RIVIAN AUTOMOTIVE INC	1.42	-44.00	-0.62
ALPHABET INC	7.17	-7.76	-0.56
APPLE INC	7.32	-5.83	-0.43
ATLISSIAN CORP	0.72	-38.90	-0.28
META PLATFORMS INC	1.25	-11.31	-0.14
SALESFORCE INC	1.45	-7.82	-0.11
GLOBAL PAYMENTS INC	1.16	-7.84	-0.09
TRADE DESK INC (THE)	0.31	-24.97	-0.08
CHIPOTLE MEXICAN GRILL INC	0.76	-7.67	-0.06

Unclassified sector allocation includes cash allocations.

PIMCO StocksPLUS Small Fund

Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

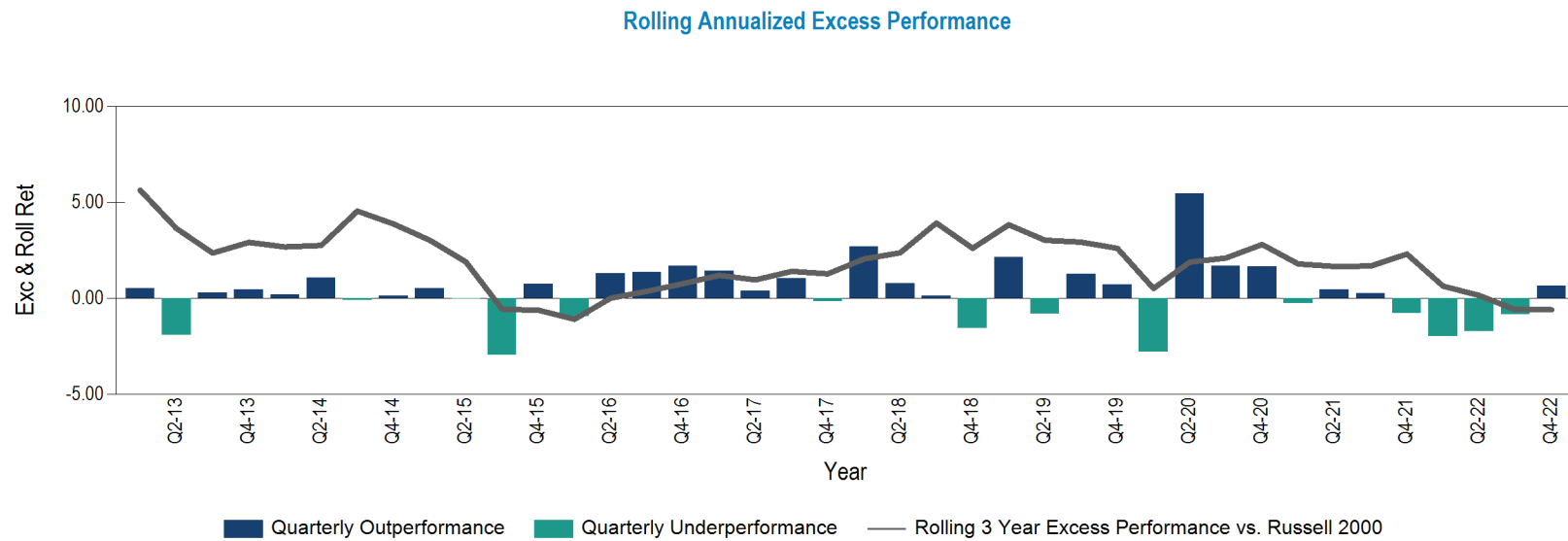
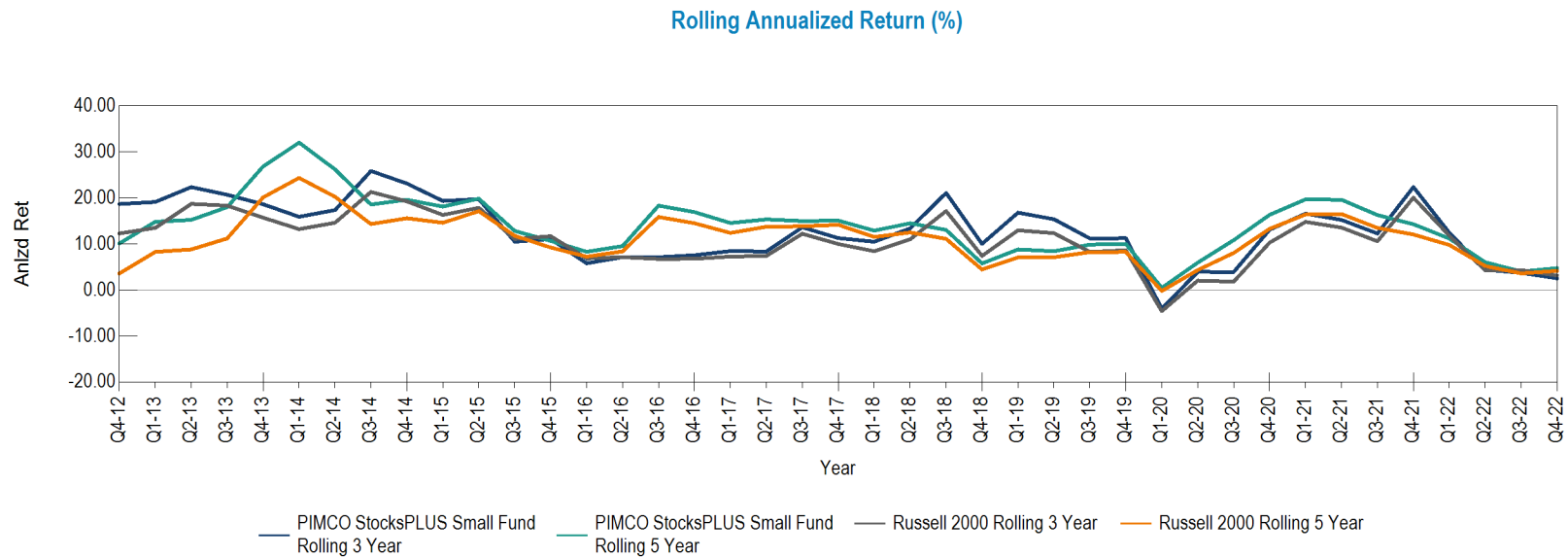


	Return (Rank)									
5th Percentile	12.1	-10.0	12.5	9.8	13.1	-10.0	40.6	38.8	34.1	-1.8
25th Percentile	10.3	-14.0	8.2	7.4	11.1	-14.0	29.8	21.8	27.0	-7.5
Median	8.8	-16.6	6.1	6.2	10.2	-16.6	24.1	14.8	24.3	-11.1
75th Percentile	6.8	-20.4	4.6	4.8	9.0	-20.4	20.1	9.1	20.7	-15.1
95th Percentile	4.4	-26.5	2.1	2.5	7.7	-26.5	14.0	2.1	15.5	-20.1
# of Portfolios	151	147	143	140	112	147	118	113	112	113
● PIMCO StocksPLUS Small Fund	6.9 (75)	-23.9 (91)	2.5 (95)	4.7 (77)	9.8 (65)	-23.9 (91)	14.5 (93)	23.6 (23)	29.3 (15)	-9.6 (37)
▲ Russell 2000	6.2 (85)	-20.4 (76)	3.1 (91)	4.1 (84)	9.0 (73)	-20.4 (76)	14.8 (92)	20.0 (30)	25.5 (41)	-11.0 (50)

PIMCO StocksPLUS Small Fund

Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022

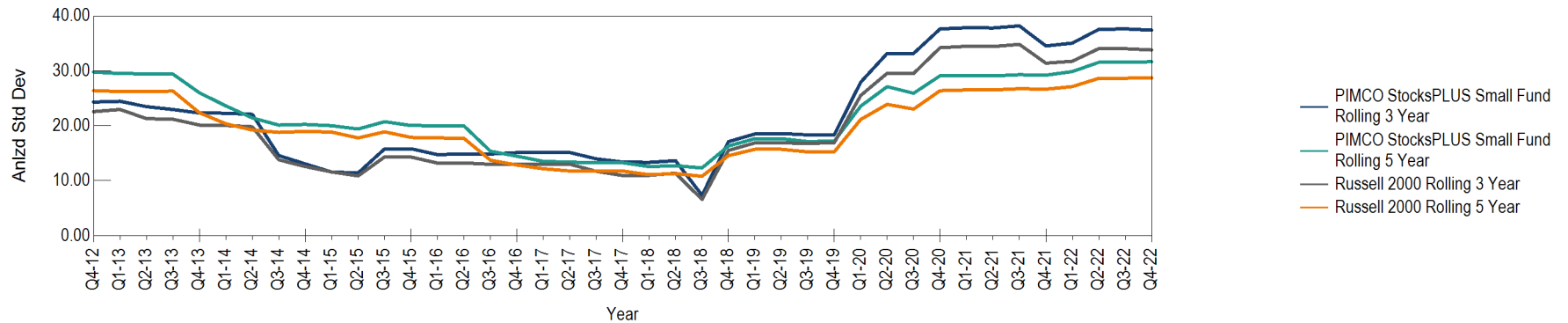


PIMCO StocksPLUS Small Fund

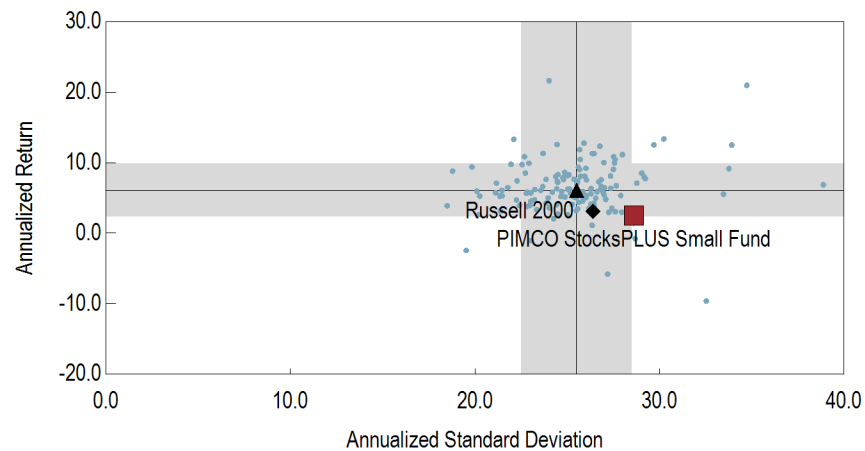
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

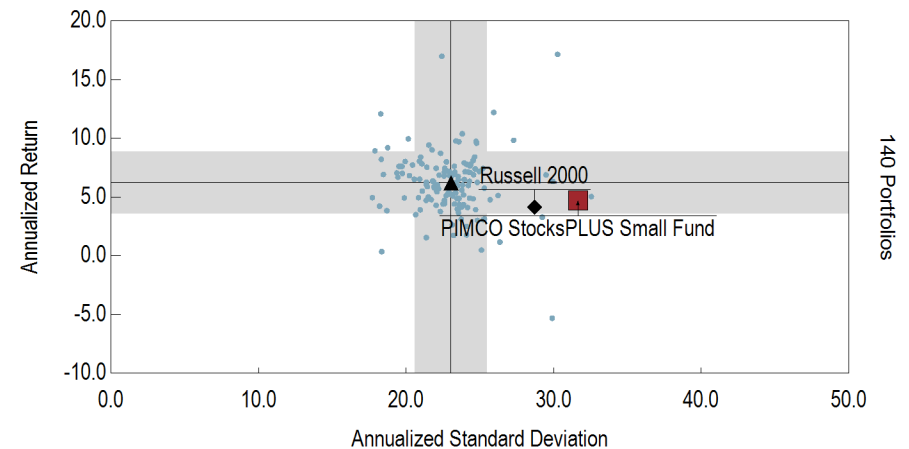
Rolling Annualized Standard Deviation



3 Years



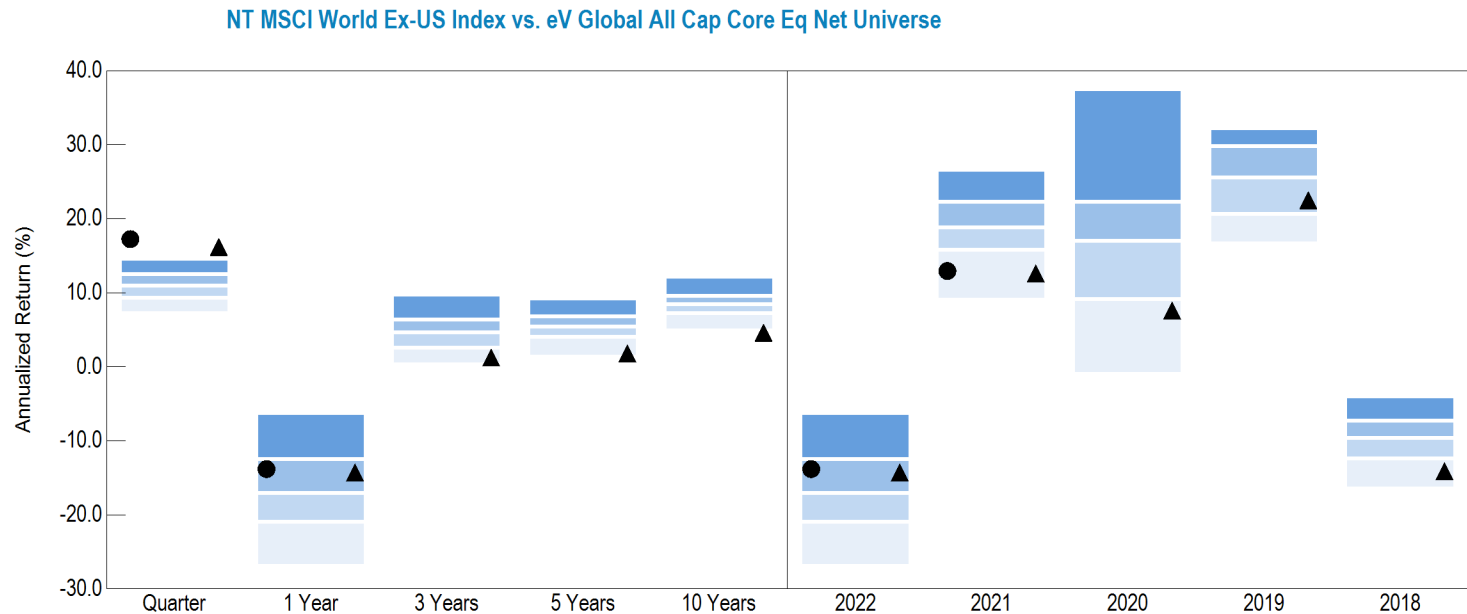
5 Years



International Equity Managers

NT MSCI World Ex-US Index Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

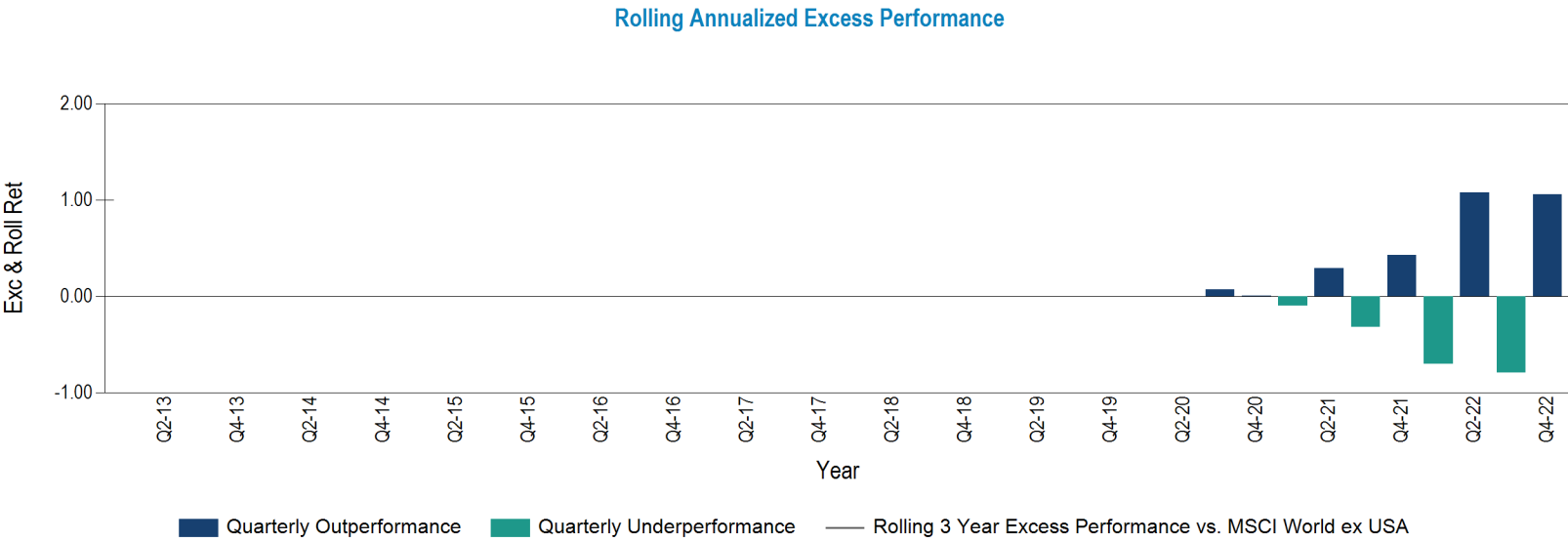
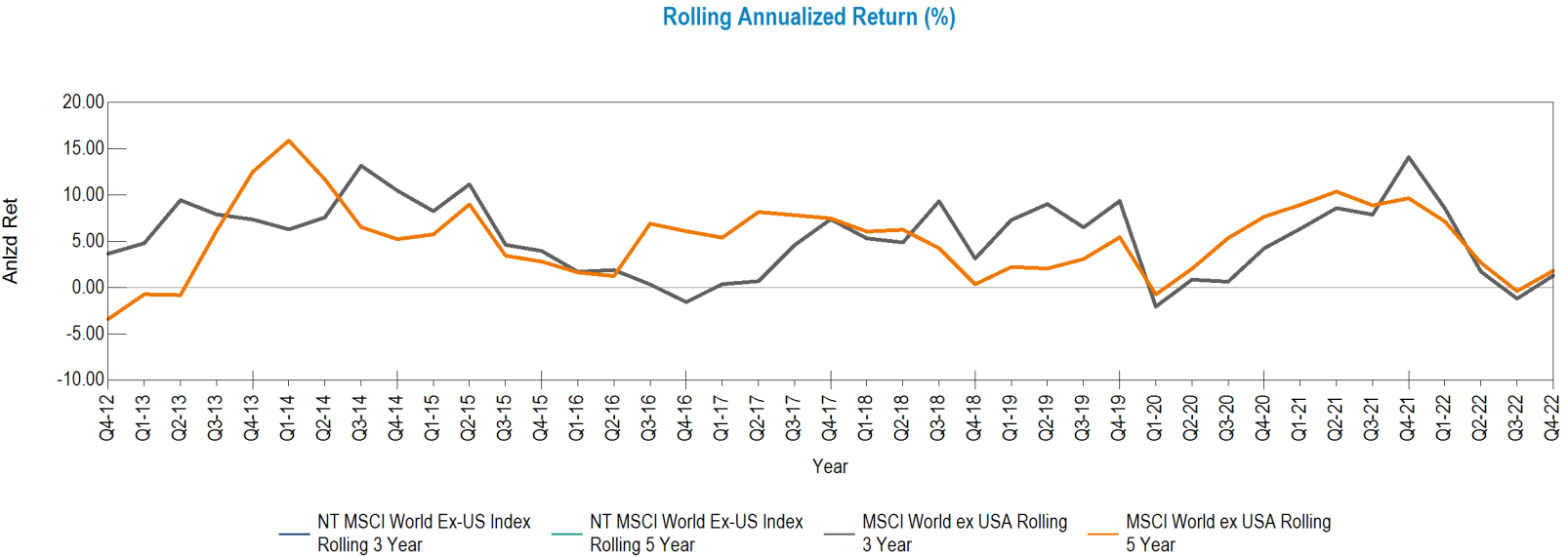


		Return (Rank)																			
5th Percentile		14.6	-6.3	9.7	9.2	12.1	-6.3	26.6	37.4	32.2	-4.0										
25th Percentile		12.6	-12.4	6.4	6.8	9.6	-12.4	22.3	22.4	29.8	-7.2										
Median		11.0	-17.0	4.7	5.5	8.5	-17.0	18.9	17.1	25.6	-9.6										
75th Percentile		9.4	-20.9	2.6	4.1	7.3	-20.9	15.9	9.2	20.7	-12.3										
95th Percentile		7.3	-26.9	0.4	1.4	5.0	-26.9	9.1	-0.9	16.7	-16.4										
# of Portfolios		170	168	148	130	86	168	104	93	83	73										
●	NT MSCI World Ex-US Index	17.2	(1)	-13.8	(31)	--	(--)	--	(--)	-13.8	(31)	12.9	(85)	--	(--)	--	(--)	--	(--)		
▲	MSCI World ex USA	16.2	(2)	-14.3	(33)	1.3	(93)	1.8	(95)	4.6	(98)	-14.3	(33)	12.6	(87)	7.6	(80)	22.5	(65)	-14.1	(91)

Returns prior to inception date are composite returns.

NT MSCI World Ex-US Index
Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022



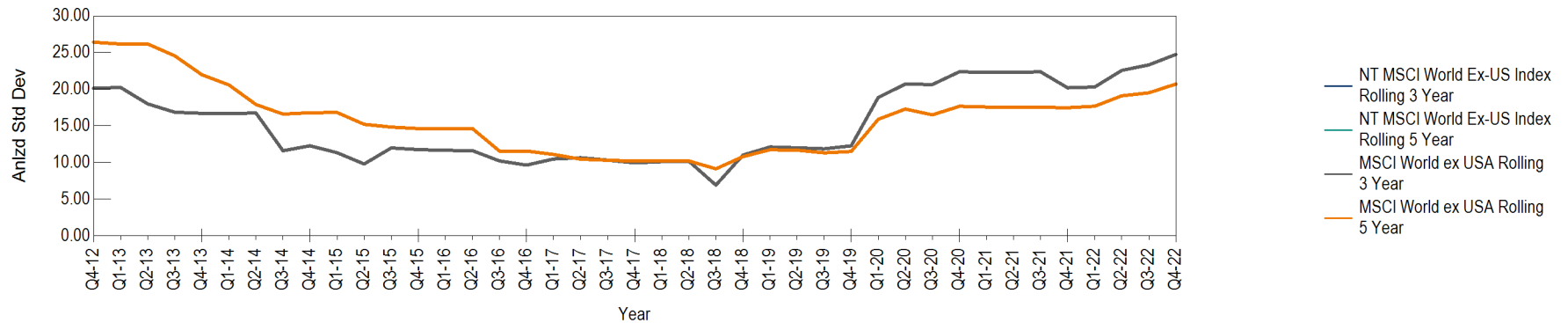
Returns prior to inception date are composite returns.

NT MSCI World Ex-US Index

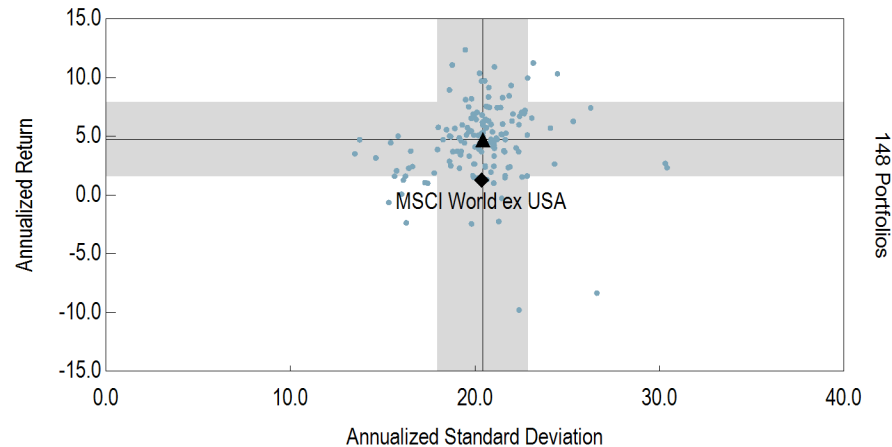
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

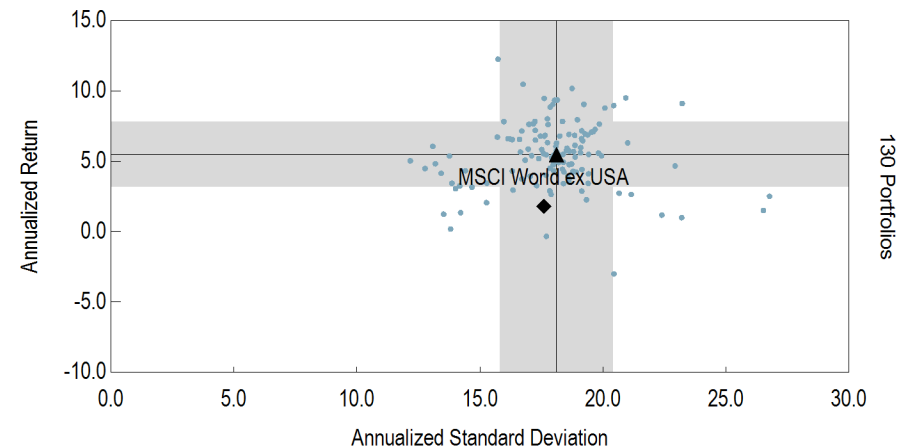
Rolling Annualized Standard Deviation



3 Years



5 Years



Returns prior to inception date are composite returns.

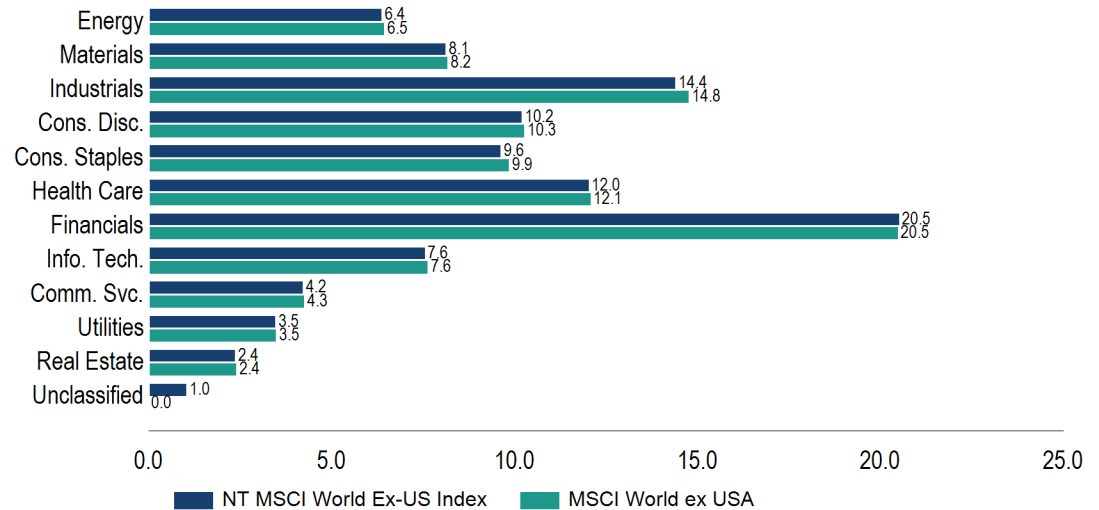
NT MSCI World Ex-US Index Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	976	884
Weighted Avg. Market Cap. (\$B)	75.87	75.12
Median Market Cap. (\$B)	11.28	11.96
Price To Earnings	13.53	13.45
Price To Book	2.38	2.34
Price To Sales	1.40	1.37
Return on Equity (%)	15.46	15.14
Yield (%)	3.38	3.43
Beta		1.00

Sector Allocation (%) vs MSCI World ex USA



Largest Holdings

	End Weight	Return
NESTLE SA, CHAM UND VEVEY	1.99	6.20
NOVO NORDISK 'B'	1.40	34.34
ROCHE HOLDING AG	1.39	-4.67
ASML HOLDING NV	1.35	27.02
ASTRAZENECA PLC	1.29	21.98
SHELL PLC	1.26	12.99
LVMH MOET HENNESSY LOUIS VUITTON SE	1.24	22.25
NOVARTIS AG	1.23	17.47
BHP GROUP LTD	0.97	24.97
TOTALENERGIES SE	0.96	34.71

Top Contributors

	End Weight	Return	Contribution
NOVO NORDISK 'B'	1.40	34.34	0.48
ASML HOLDING NV	1.35	27.02	0.37
TOTALENERGIES SE	0.96	34.71	0.33
ASTRAZENECA PLC	1.29	21.98	0.28
LVMH MOET HENNESSY LOUIS VUITTON SE	1.24	22.25	0.28
AIA GROUP LTD	0.82	33.52	0.27
MITSUBISHI UFJ FINANCIAL GROUP	0.50	49.71	0.25
BHP GROUP LTD	0.97	24.97	0.24
NOVARTIS AG	1.23	17.47	0.22
SAP SE	0.68	24.89	0.17

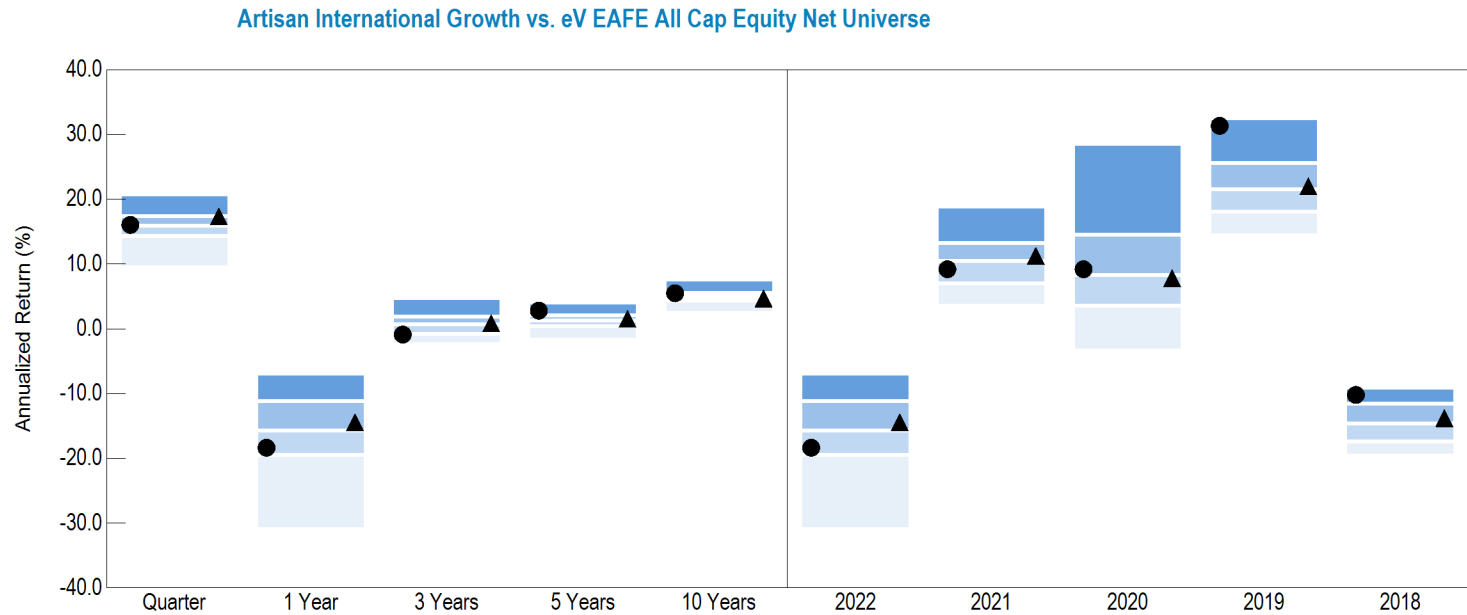
Bottom Contributors

	End Weight	Return	Contribution
ROCHE HOLDING AG	1.39	-4.67	-0.06
NUTRIEN LTD	0.24	-12.39	-0.03
CANADIAN IMPERIAL BANK OF COMMERCE	0.23	-6.67	-0.02
CREDIT SUISSE GROUP	0.07	-22.05	-0.01
BROOKFIELD CORP	0.27	-4.97	-0.01
NIDEC CORP	0.14	-7.70	-0.01
ALGONQUIN POWER & UTILITIES CORP	0.03	-39.07	-0.01
VODAFONE GROUP PUBLIC LIMITED COMPANY	0.17	-6.17	-0.01
OLYMPUS CORP	0.14	-7.12	-0.01
CAMECO CORP	0.06	-14.75	-0.01

Unclassified sector allocation includes cash allocations.

Artisan International Growth Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022



	Return (Rank)									
5th Percentile	20.7	-7.0	4.7	4.0	7.6	-7.0	18.8	28.5	32.5	-9.2
25th Percentile	17.4	-11.1	2.0	2.2	5.6	-11.1	13.3	14.6	25.6	-11.5
Median	15.9	-15.7	0.8	1.3	5.0	-15.7	10.5	8.4	21.6	-14.6
75th Percentile	14.4	-19.4	-0.8	0.5	4.4	-19.4	7.1	3.6	18.1	-17.4
95th Percentile	9.6	-30.8	-2.3	-1.6	2.5	-30.8	3.6	-3.3	14.5	-19.6
# of Portfolios	93	92	91	86	64	92	77	77	77	72
● Artisan International Growth	16.0 (49)	-18.4 (71)	-0.9 (76)	2.8 (16)	5.5 (31)	-18.4 (71)	9.2 (63)	9.2 (46)	31.3 (9)	-10.2 (13)
▲ MSCI EAFE	17.3 (27)	-14.5 (44)	0.9 (48)	1.5 (41)	4.7 (69)	-14.5 (44)	11.3 (46)	7.8 (56)	22.0 (48)	-13.8 (47)

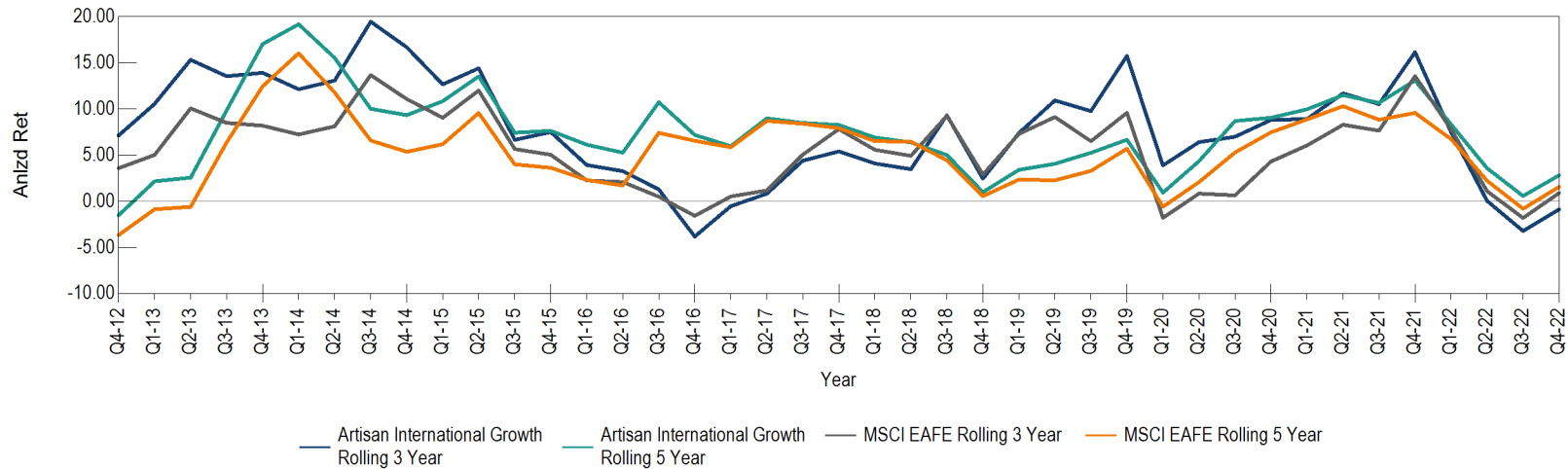
Returns prior to inception date are composite returns.

Artisan International Growth

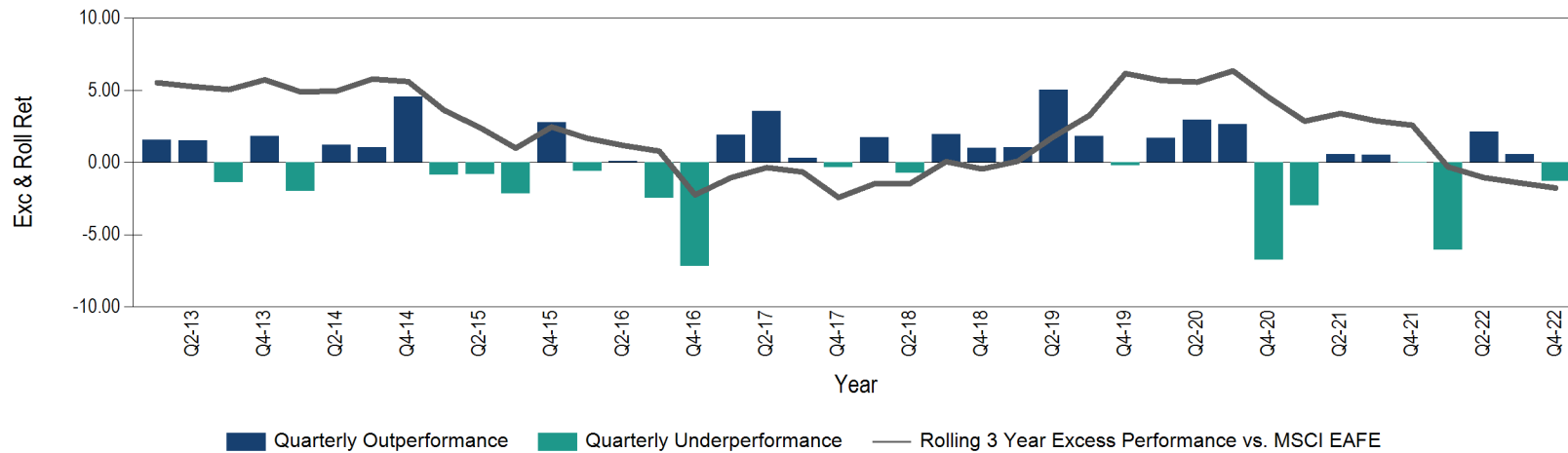
Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022

Rolling Annualized Return (%)



Rolling Annualized Excess Performance



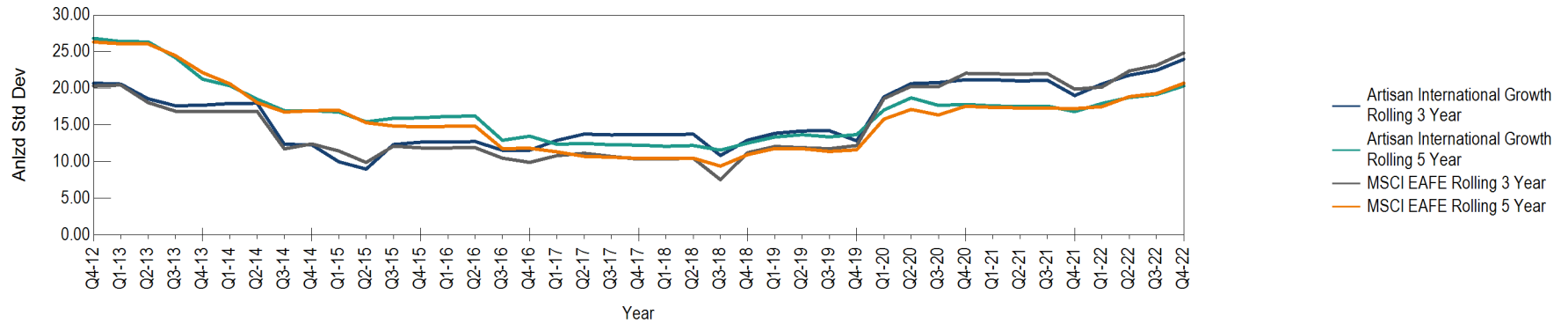
Returns prior to inception date are composite returns.

Artisan International Growth

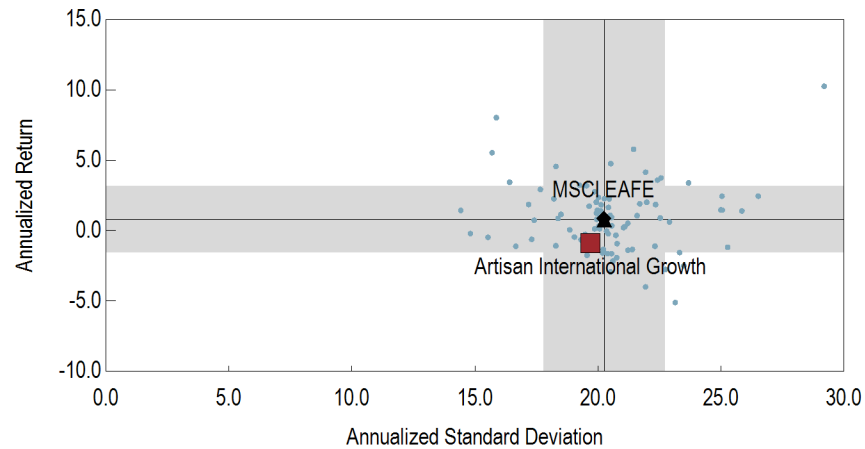
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

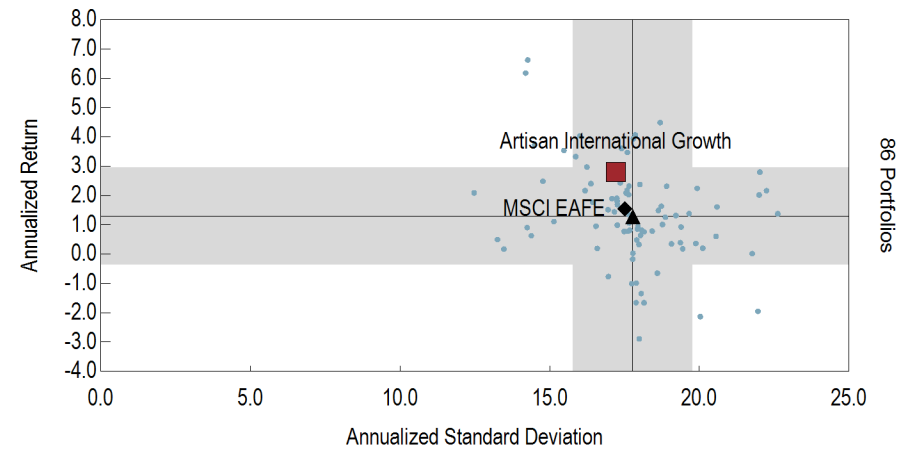
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Artisan International Growth	-0.9%	19.7%	-0.1
MSCI EAFE	0.9%	20.2%	0.0
eV EAFE All Cap Growth Net Median	-0.2%	20.2%	0.0

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Artisan International Growth	2.8%	17.2%	0.1
MSCI EAFE	1.5%	17.5%	0.0
eV EAFE All Cap Growth Net Median	2.0%	18.4%	0.0

Returns prior to inception date are composite returns.

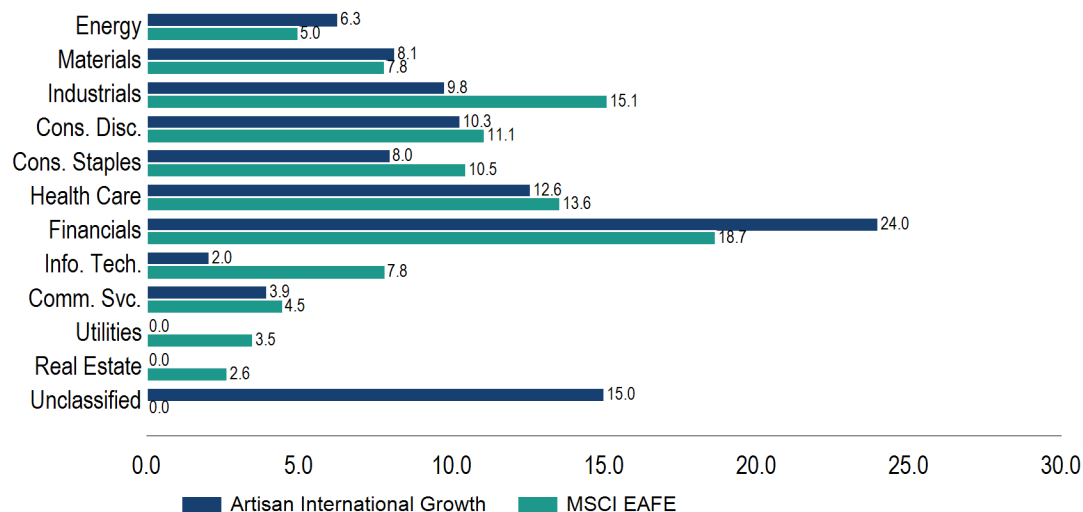
Artisan International Growth Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	MSCI EAFE
Number of Holdings	79	796
Weighted Avg. Market Cap. (\$B)	106.73	78.12
Median Market Cap. (\$B)	63.99	11.83
Price To Earnings	16.79	13.69
Price To Book	3.25	2.43
Price To Sales	2.15	1.32
Return on Equity (%)	12.79	15.16
Yield (%)	2.61	3.45
Beta	0.93	1.00

Sector Allocation (%) vs MSCI EAFE



Largest Holdings

	End Weight	Return
SCHLUMBERGER LTD	4.95	49.43
LINDE PLC	4.65	19.66
BNP PARIBAS	4.28	33.10
DEUTSCHE BOERSE AG	4.10	4.56
DEUTSCHE TELEKOM AG	3.94	16.14
L'AIR LIQUIDE SA	3.40	22.75
CANADIAN PACIFIC RAILWAY LTD	3.39	11.27
SHELL PLC	3.20	12.99
AON PLC	3.04	12.27
ARGEN-X SE	3.04	7.30

Top Contributors

	End Weight	Return	Contribution
SCHLUMBERGER LTD	4.95	49.43	2.45
BNP PARIBAS	4.28	33.10	1.42
ING GROEP NV	2.76	40.12	1.11
LINDE PLC	4.65	19.66	0.91
CIE FINANCIERE RICHEMONT AG, ZUG	2.43	34.98	0.85
L'AIR LIQUIDE SA	3.40	22.75	0.77
NOVO NORDISK 'B'	2.08	34.34	0.71
DEUTSCHE TELEKOM AG	3.94	16.14	0.64
AIRBUS SE	1.49	36.13	0.54
INTESA SANPAOLO SPA	1.39	37.60	0.52

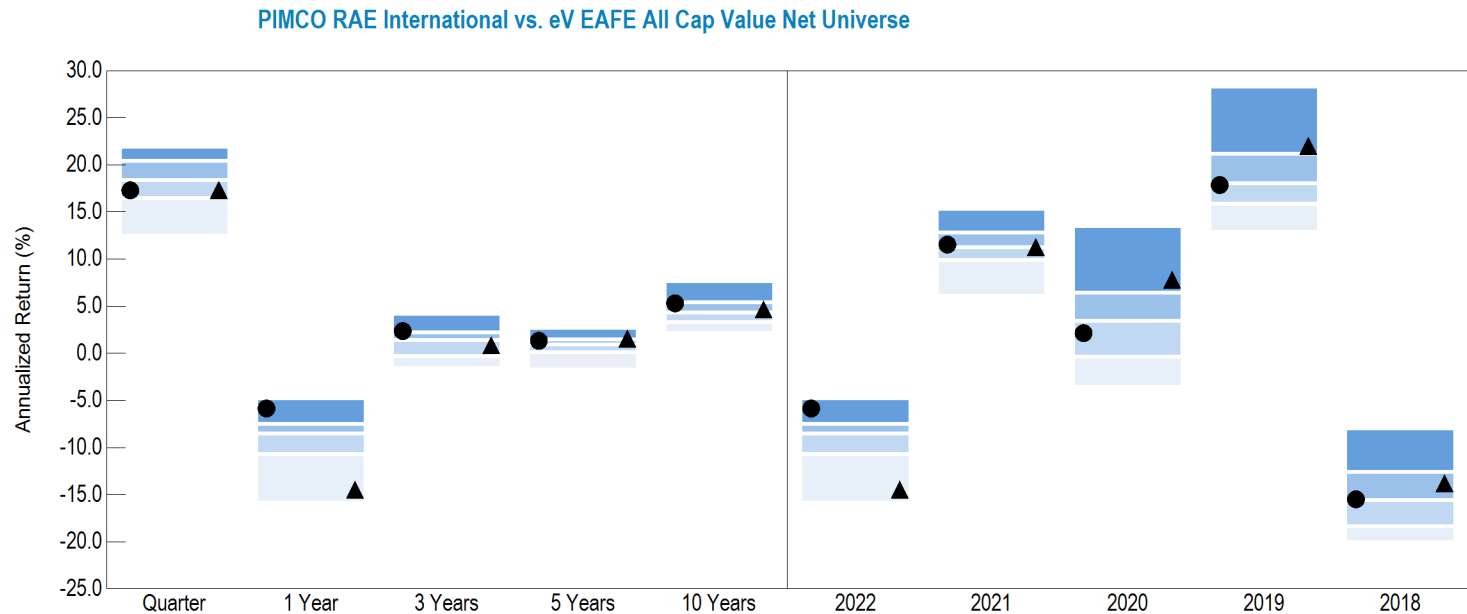
Bottom Contributors

	End Weight	Return	Contribution
AMAZON.COM INC	1.48	-25.66	-0.38
MINING AND METALLURGIAL CO	0.09	0.00	0.00
NORILSK NICKEL PJSC	0.04	3.02	0.00
ARGEN-X SE	0.04	3.02	0.00
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.09	10.60	0.01
ICON PLC	0.43	5.70	0.02
BARRY CALLEBAUT AG, ZUERICH	0.74	3.87	0.03
ADYEN ORD WI	0.42	7.87	0.03
ROYAL DUTCH SHELL PLC ADR	0.26	15.53	0.04
CAPGEMINI SE	1.56	2.70	0.04
KINAXIS INC	0.39	12.43	0.05

Unclassified sector allocation includes cash, derivatives and preferred stock allocations.

PIMCO RAE International Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

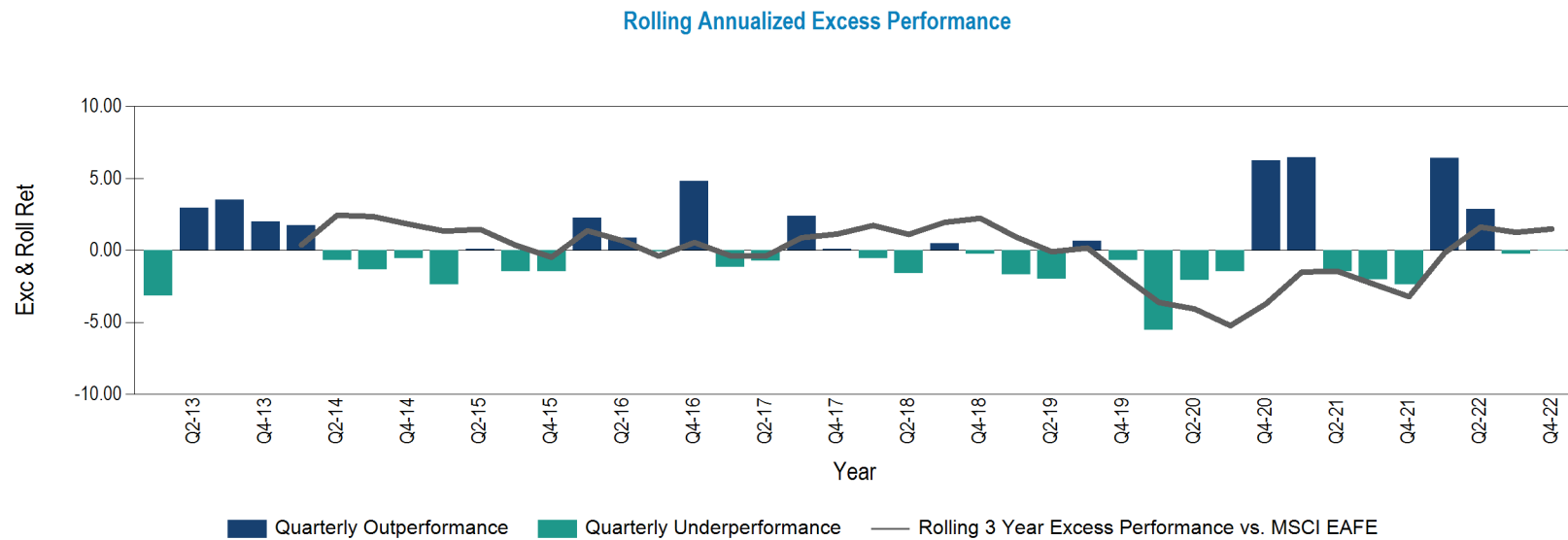
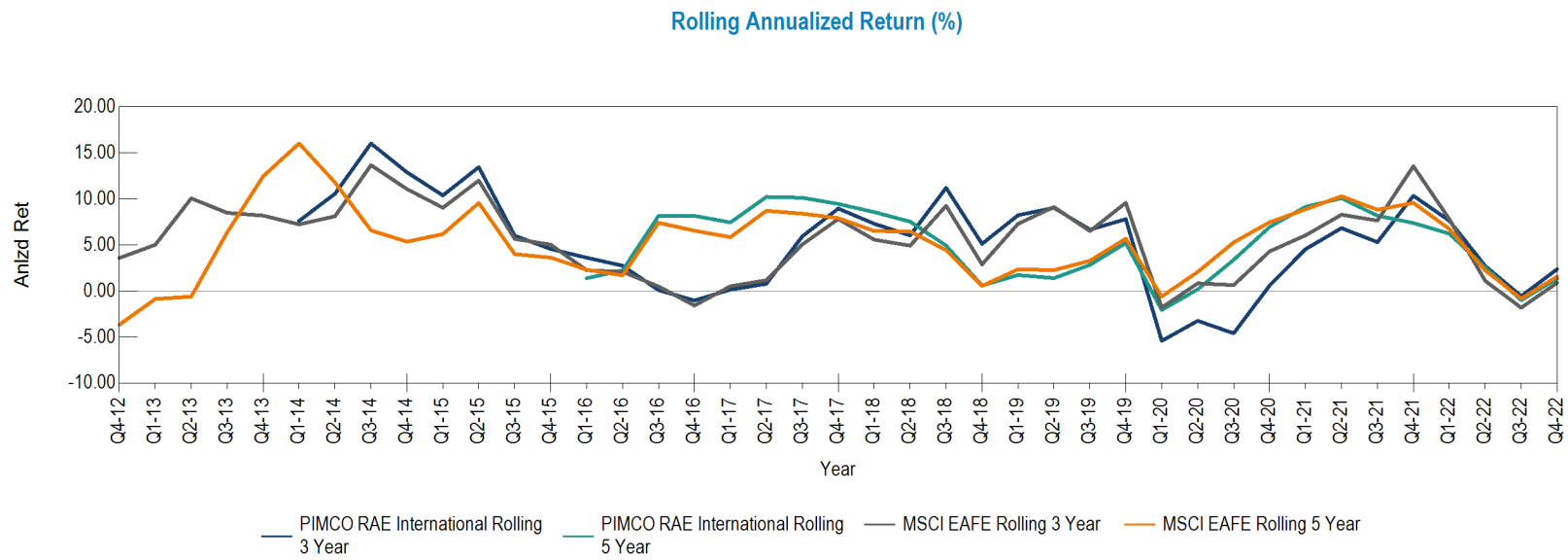


	Return (Rank)									
5th Percentile	21.9	-4.8	4.1	2.7	7.6	-4.8	15.3	13.5	28.3	-8.0
25th Percentile	20.5	-7.5	2.3	1.5	5.4	-7.5	12.9	6.5	21.2	-12.6
Median	18.5	-8.4	1.4	1.0	4.4	-8.4	11.3	3.5	18.1	-15.5
75th Percentile	16.5	-10.6	-0.3	0.2	3.3	-10.6	10.0	-0.3	15.9	-18.3
95th Percentile	12.5	-15.8	-1.6	-1.7	2.2	-15.8	6.1	-3.5	12.9	-20.0
# of Portfolios	21	21	21	19	17	21	22	23	22	21
● PIMCO RAE International	17.3 (70)	-5.9 (13)	2.4 (23)	1.3 (36)	5.3 (28)	-5.9 (13)	11.5 (44)	2.1 (63)	17.9 (56)	-15.5 (50)
▲ MSCI EAFE	17.3 (69)	-14.5 (86)	0.9 (56)	1.5 (24)	4.7 (48)	-14.5 (86)	11.3 (51)	7.8 (19)	22.0 (20)	-13.8 (46)

Returns prior to inception date are composite returns.

PIMCO RAE International Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022



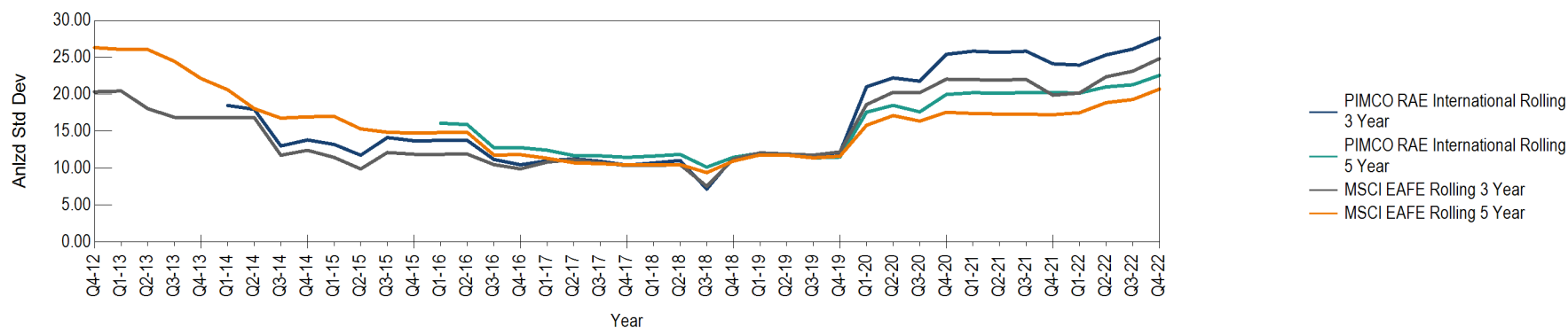
Returns prior to inception date are composite returns.

PIMCO RAE International

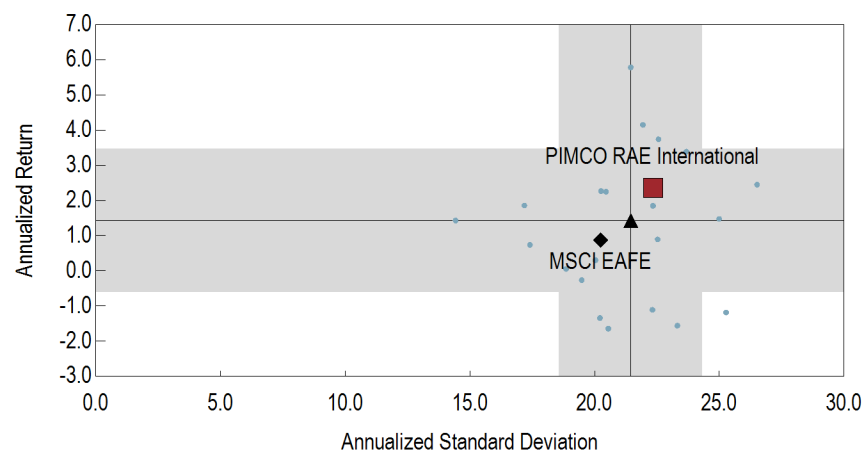
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

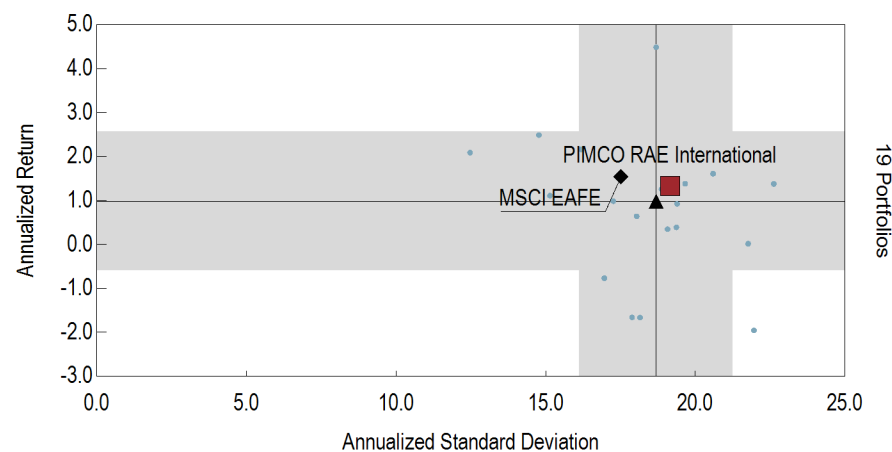
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO RAE International	2.4%	22.3%	0.1
MSCI EAFE	0.9%	20.2%	0.0
eV EAFE All Cap Value Net Median	1.4%	21.5%	0.0

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO RAE International	1.3%	19.2%	0.0
MSCI EAFE	1.5%	17.5%	0.0
eV EAFE All Cap Value Net Median	1.0%	18.7%	0.0

Returns prior to inception date are composite returns.

PIMCO RAE International

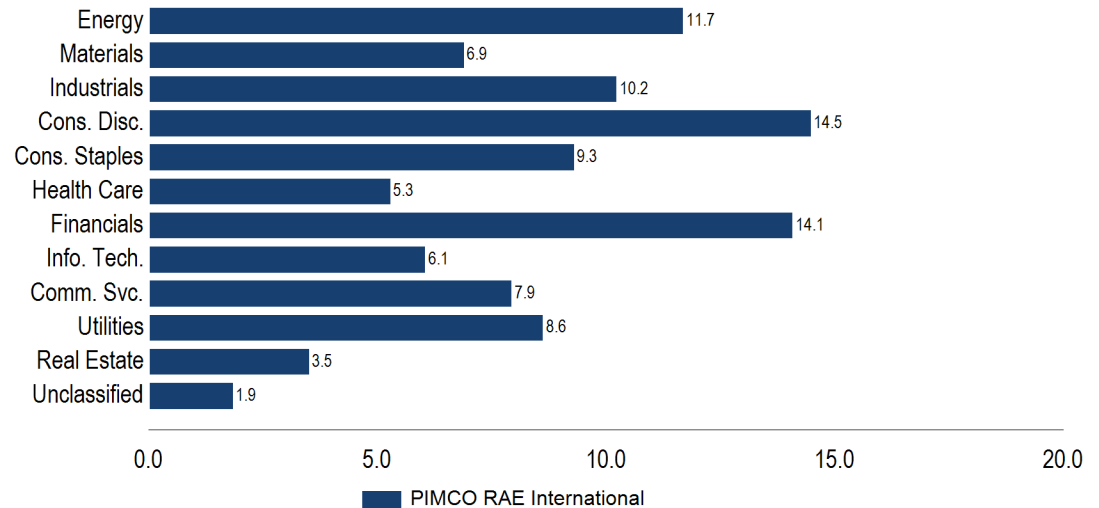
Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio
Number of Holdings	326
Weighted Avg. Market Cap. (\$B)	36.43
Median Market Cap. (\$B)	4.72
Price To Earnings	9.48
Price To Book	1.69
Price To Sales	0.51
Return on Equity (%)	10.86
Yield (%)	4.37
Beta	

Sector Allocation (%) vs



Largest Holdings

	End Weight	Return
JAPAN POST HOLDINGS CO LTD	3.75	27.11
KONINKLIJKE AHOLD DELHAIZE NV	3.72	11.93
ENI SPA	2.97	34.90
SHELL PLC	2.78	12.99
TELEFONICA SA	2.39	14.26
NIPPON TELEGRAPH & TELEPHONE CORP NTT	2.17	5.67
MAGNA INTERNATIONAL INC	2.01	18.61
CENTRICA PLC	1.86	49.48
PANASONIC HOLDINGS CORPORATION	1.55	20.10
REPSOL SA	1.47	37.11

Top Contributors

	End Weight	Return	Contribution
ENI SPA	2.97	34.90	1.04
JAPAN POST HOLDINGS CO LTD	3.75	27.11	1.02
CENTRICA PLC	1.86	49.48	0.92
REPSOL SA	1.47	37.11	0.54
MELCO RESORTS & ENTERTAINMENT LTD	0.67	73.45	0.49
KONINKLIJKE AHOLD DELHAIZE NV	3.72	11.93	0.44
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	1.44	29.79	0.43
RIO TINTO GROUP	1.23	31.50	0.39
MAGNA INTERNATIONAL INC	2.01	18.61	0.37
BANCO SANTANDER SA	1.23	30.24	0.37

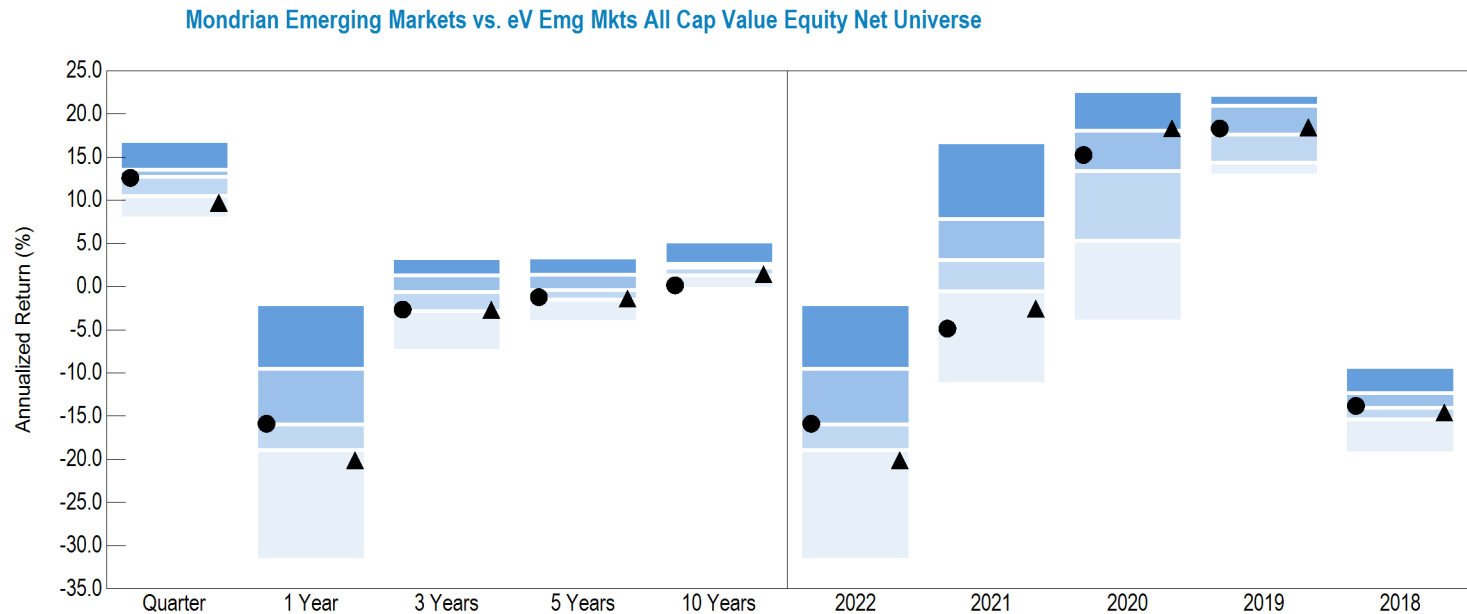
Bottom Contributors

	End Weight	Return	Contribution
KONINKLIJKE PHILIPS NV	0.57	-4.60	-0.03
DELEK GROUP LTD	0.09	-30.00	-0.03
WHARF (HOLDINGS) LIMITED	0.26	-8.13	-0.02
MEDIBANK PRIVATE LTD	0.20	-10.31	-0.02
JARDINE CYCLE & CARRIAGE LTD	0.13	-9.42	-0.01
HINO MOTORS LTD	0.16	-7.40	-0.01
BAUSCH HEALTH COS INC	0.10	-9.61	-0.01
BROTHER INDUSTRIES LTD	0.08	-11.60	-0.01
WH GROUP LTD	0.12	-7.66	-0.01
UNIPER SE	0.03	-27.78	-0.01

Unclassified sector allocation includes cash, derivatives and preferred stock allocations.

Mondrian Emerging Markets Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

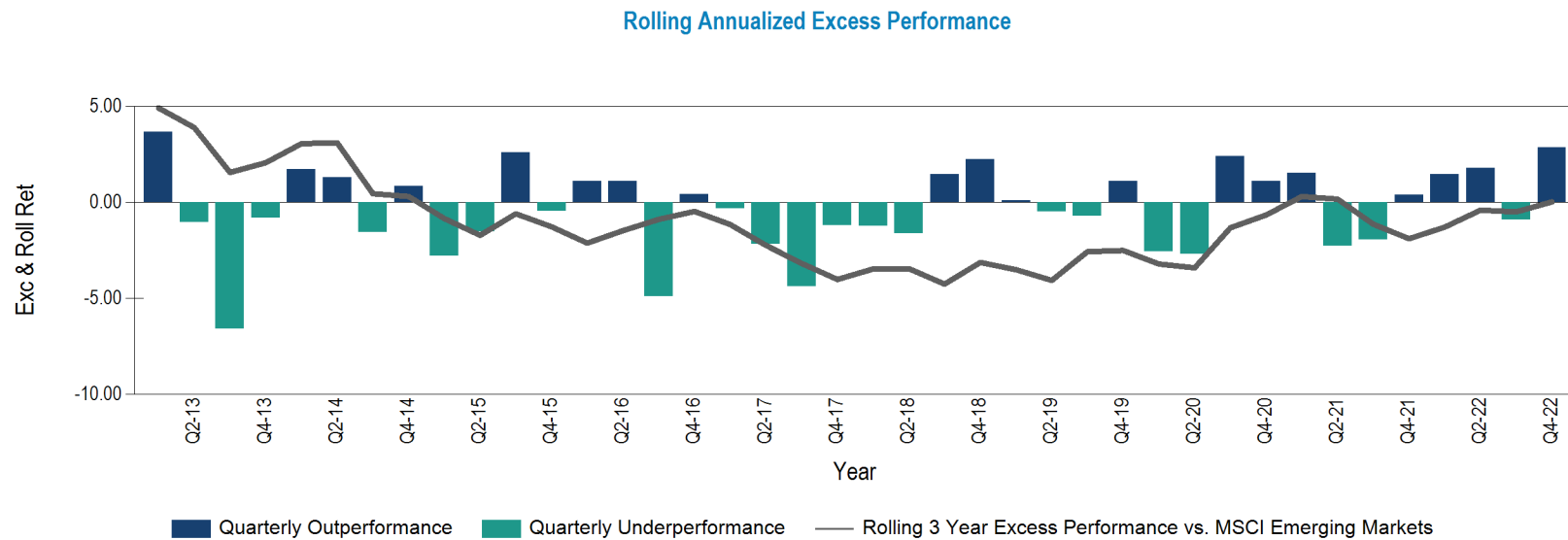
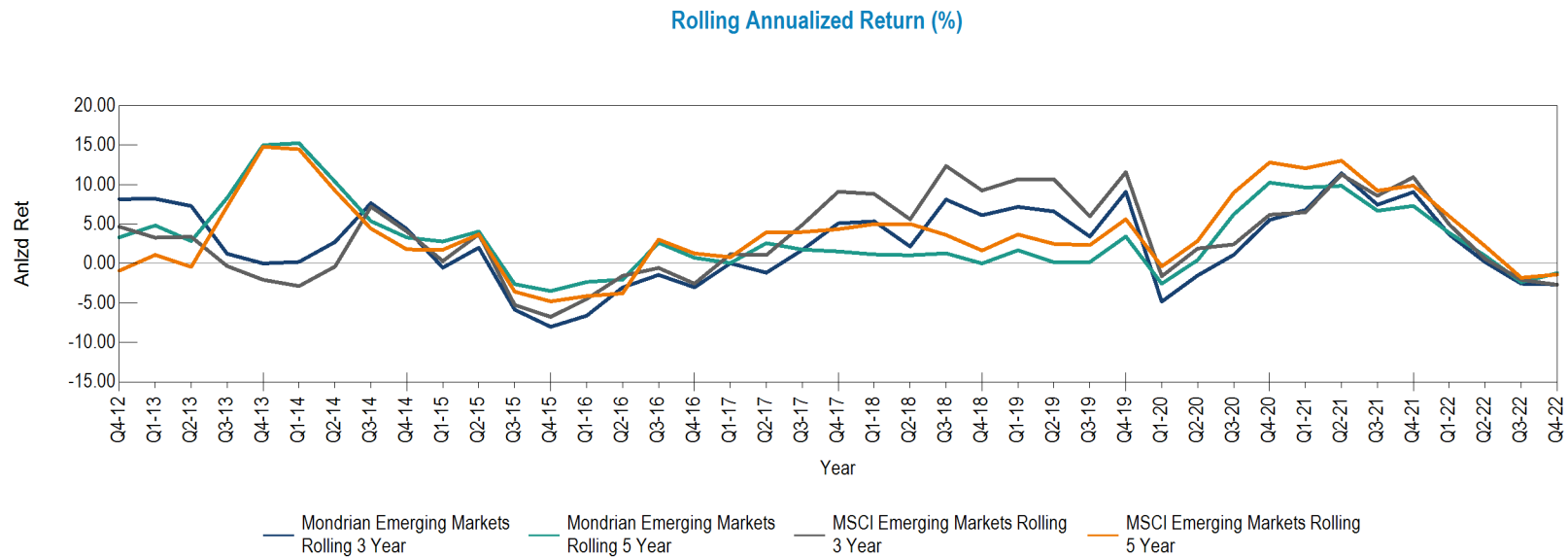


	Return (Rank)									
5th Percentile	16.8	-2.1	3.3	3.4	5.2	-2.1	16.7	22.6	22.2	-9.4
25th Percentile	13.5	-9.5	1.3	1.4	2.7	-9.5	7.8	18.1	21.0	-12.3
Median	12.7	-16.0	-0.6	-0.4	2.2	-16.0	3.1	13.4	17.7	-14.0
75th Percentile	10.5	-18.9	-2.8	-1.5	1.4	-18.9	-0.5	5.4	14.4	-15.3
95th Percentile	7.9	-31.7	-7.4	-4.1	-0.2	-31.7	-11.3	-4.0	12.9	-19.2
# of Portfolios	33	33	32	27	18	33	24	24	22	25
● Mondrian Emerging Markets	12.6 (56)	-15.9 (50)	-2.7 (71)	-1.2 (73)	0.1 (92)	-15.9 (50)	-4.9 (82)	15.2 (40)	18.3 (42)	-13.8 (48)
▲ MSCI Emerging Markets	9.7 (91)	-20.1 (81)	-2.7 (72)	-1.4 (74)	1.4 (70)	-20.1 (81)	-2.5 (78)	18.3 (21)	18.4 (42)	-14.6 (59)

Mondrian Emerging Markets

Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022

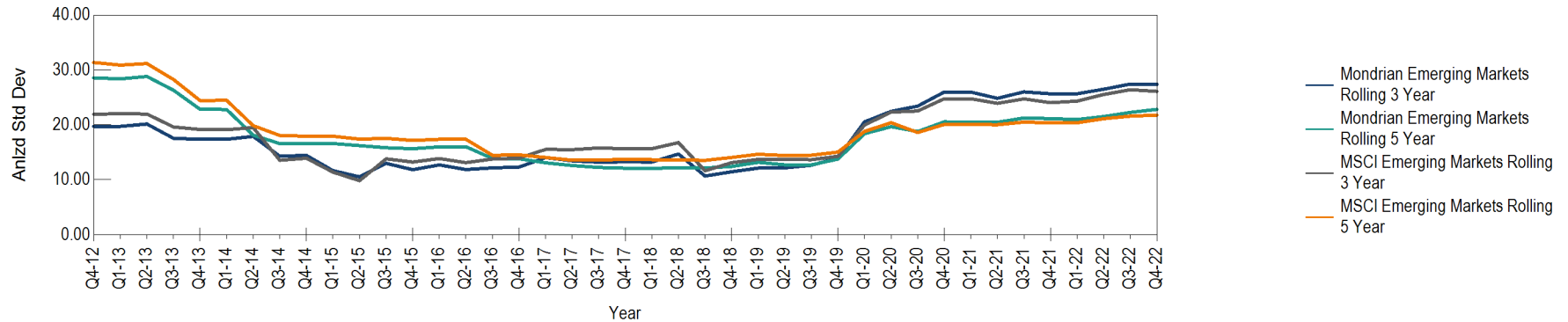


Mondrian Emerging Markets

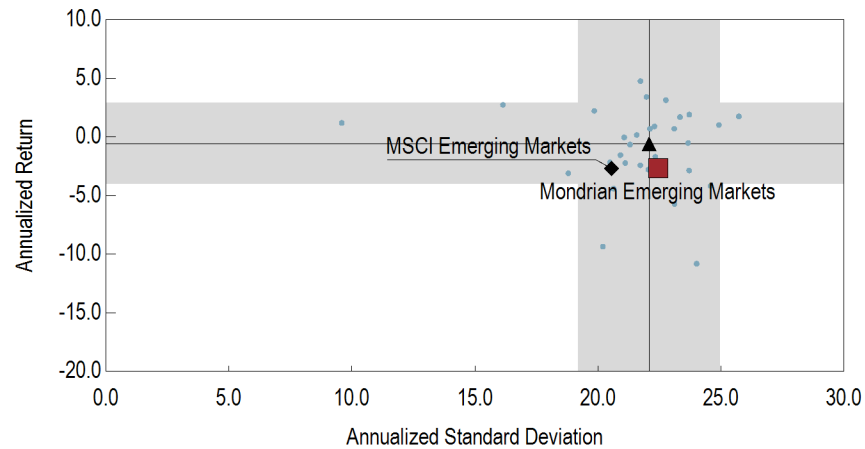
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

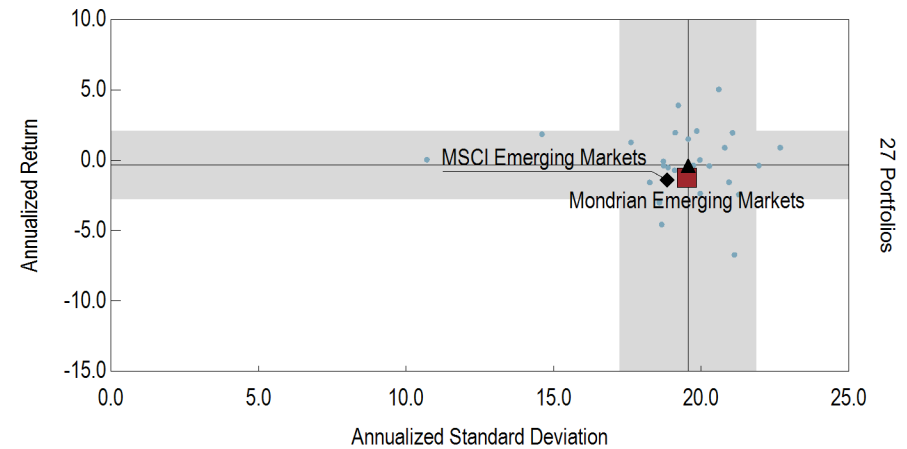
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian Emerging Markets	-2.7%	22.5%	-0.2
MSCI Emerging Markets	-2.7%	20.5%	-0.2
eV Emg Mkts All Cap Value Equity Net Median	-0.6%	22.1%	-0.1

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian Emerging Markets	-1.2%	19.5%	-0.1
MSCI Emerging Markets	-1.4%	18.8%	-0.1
eV Emg Mkts All Cap Value Equity Net Median	-0.4%	19.6%	-0.1

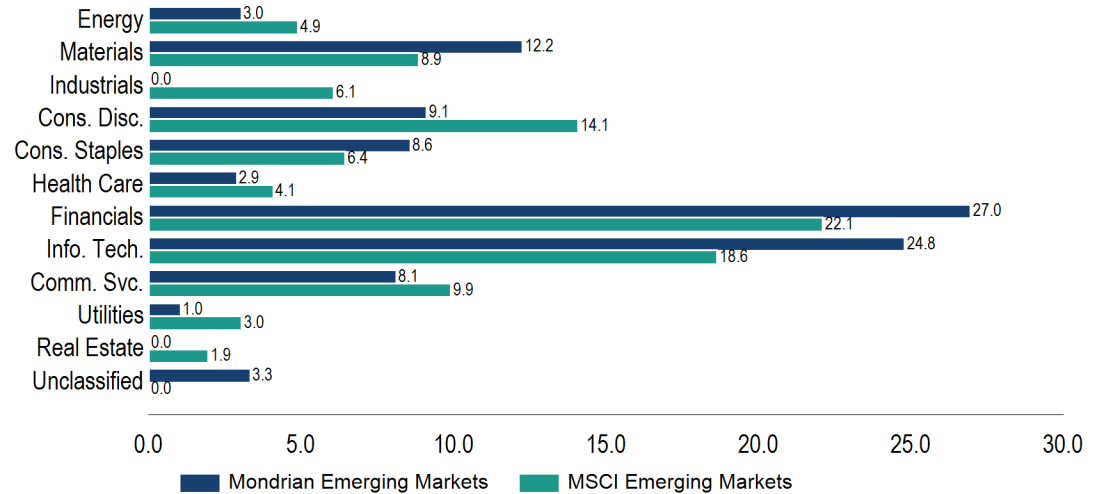
Mondrian Emerging Markets Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	59	1,375
Weighted Avg. Market Cap. (\$B)	104.93	95.69
Median Market Cap. (\$B)	32.54	6.46
Price To Earnings	10.25	11.40
Price To Book	2.08	2.60
Price To Sales	1.10	1.08
Return on Equity (%)	16.53	14.40
Yield (%)	4.30	3.39
Beta	1.04	1.00

Sector Allocation (%) vs MSCI Emerging Markets



Largest Holdings

	End Weight	Return
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.08	10.60
ALIBABA GROUP HOLDING LTD	4.79	11.39
PING AN INSURANCE GROUP	4.28	32.65
HOUSING DEVELOPMENT FINANCE CORP LTD	3.94	13.36
SAMSUNG ELECTRONICS CO LTD	3.61	18.92
PT BANK RAKYAT INDONESIA TBK	2.85	7.89
HON HAI PRECISION INDUSTRY CO LTD	2.64	1.35
CREDICORP LTD	2.51	10.47
UNILEVER PLC COMMON STOCK GBP.0311	2.49	14.01
TENCENT HOLDINGS LTD	2.40	26.22

Top Contributors

	End Weight	Return	Contribution
PING AN INSURANCE GROUP	4.28	32.65	1.40
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	7.08	10.60	0.75
SAMSUNG ELECTRONICS CO LTD	3.61	18.92	0.68
TENCENT HOLDINGS LTD	2.40	26.22	0.63
ZIJIN MINING GROUP CO LTD	1.56	39.23	0.61
VALE SA	2.07	27.84	0.58
AXIS BANK	2.22	25.22	0.56
ALIBABA GROUP HOLDING LTD	4.79	11.39	0.55
HOUSING DEVELOPMENT FINANCE CORP LTD	3.94	13.36	0.53
LG CHEM LTD	1.74	27.82	0.48

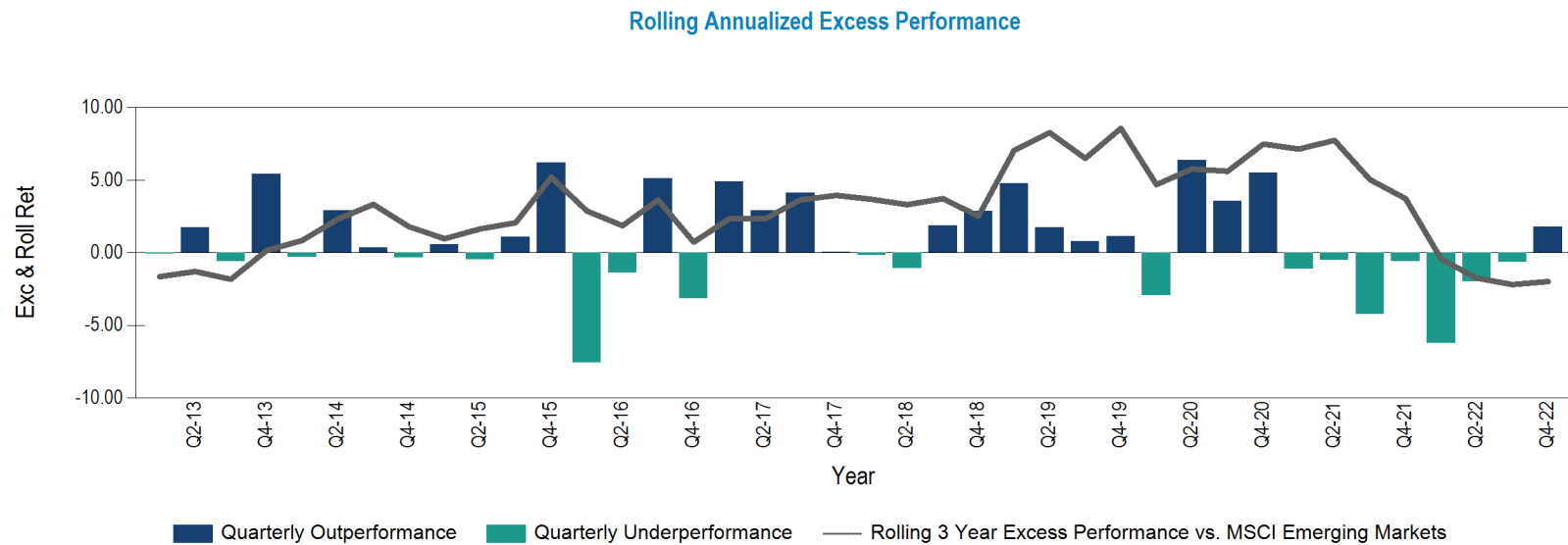
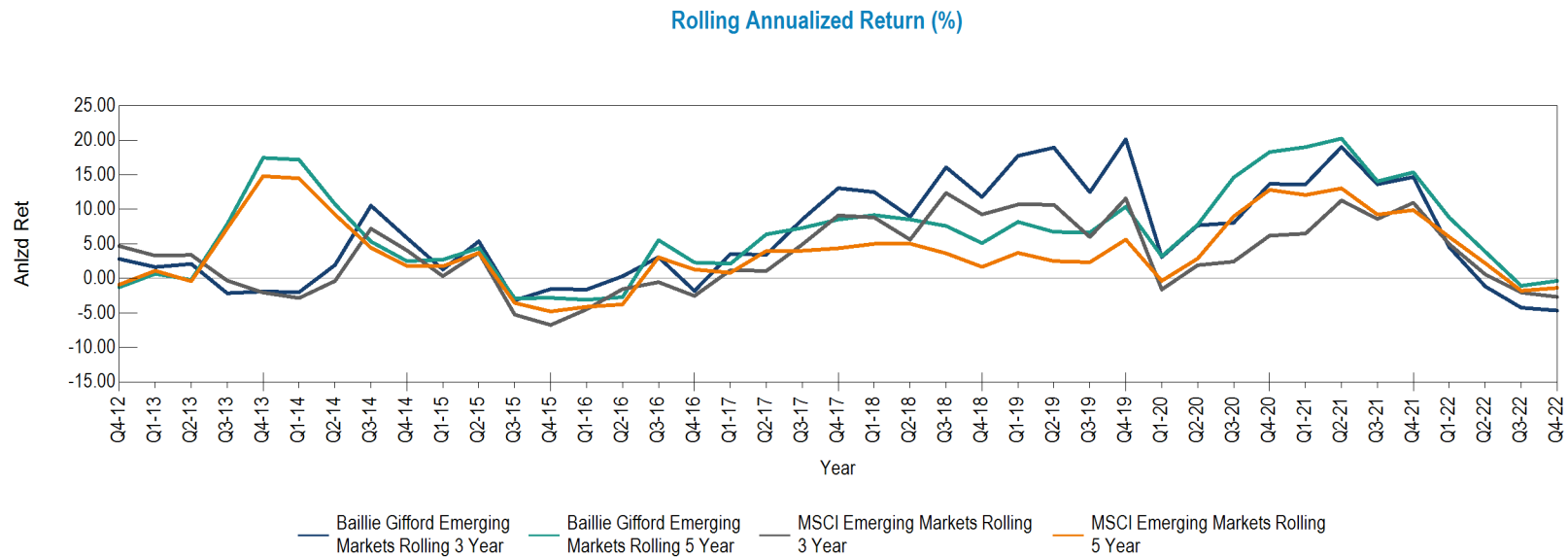
Bottom Contributors

	End Weight	Return	Contribution
WH GROUP LTD	1.69	-7.66	-0.13
LONGI GREEN ENERGY TECHNOLOGY CO LTD	1.28	-9.02	-0.12
BAIDU INC	2.10	-2.65	-0.06
ITAU UNIBANCO HOLDING SA	0.77	-6.84	-0.05
PETROLEO BRASILEIRO S.A.- PETROBRAS	1.79	-2.69	-0.05
NETEASE INC	1.59	-2.11	-0.03
ITAUSA INVESTIMENTOS ITAU PN	0.99	-2.19	-0.02
HYPERMARCAS ON	0.60	1.19	0.01
POWERGRID CORPORATION OF INDIA	1.03	1.36	0.01
CHINA MERCHANTS BANK CO LTD	0.10	20.40	0.02

Unclassified sector allocation includes currency allocations.

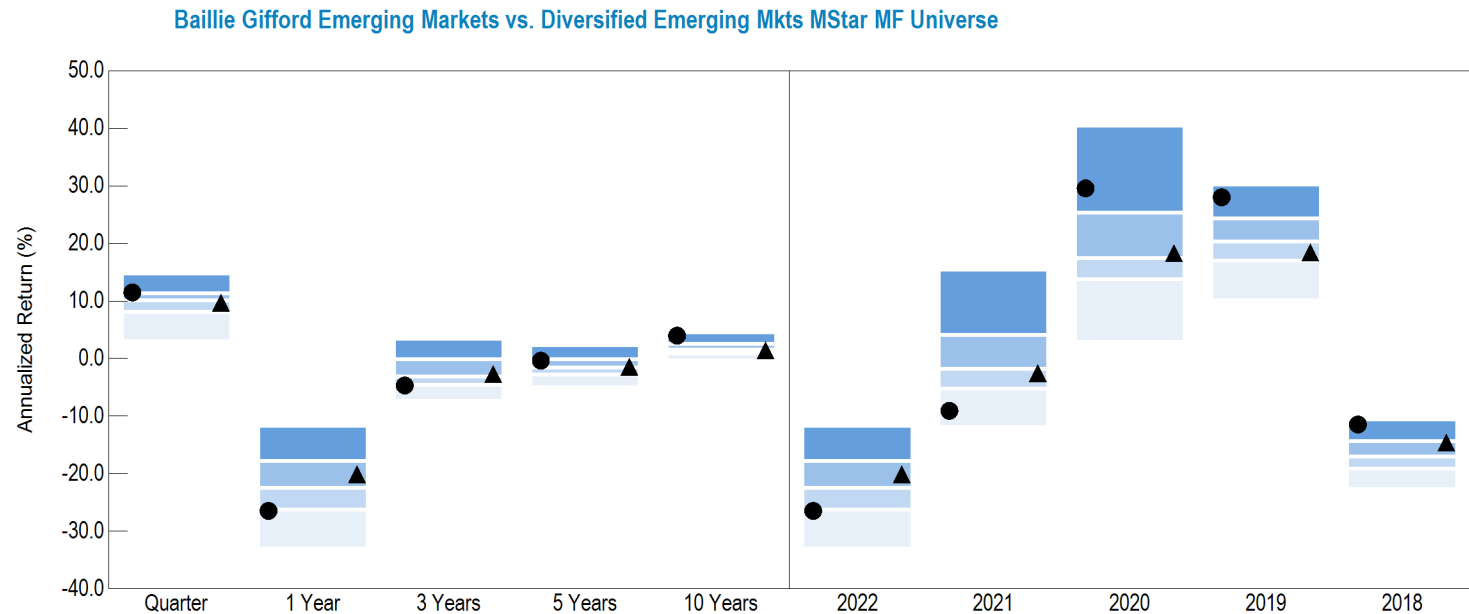
Baillie Gifford Emerging Markets Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022



Baillie Gifford Emerging Markets Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022



	Return (Rank)									
5th Percentile	14.8	-11.7	3.4	2.3	4.5	-11.7	15.3	40.4	30.2	-10.6
25th Percentile	11.4	-17.7	-0.1	0.0	2.6	-17.7	4.1	25.4	24.4	-14.3
Median	10.1	-22.4	-3.0	-1.5	1.6	-22.4	-1.7	17.5	20.4	-17.0
75th Percentile	8.2	-26.2	-4.5	-2.7	0.9	-26.2	-5.1	13.8	17.0	-19.1
95th Percentile	3.1	-33.0	-7.2	-4.9	-0.3	-33.0	-11.9	3.0	10.1	-22.6
# of Portfolios	238	230	209	192	142	230	225	224	231	227
● Baillie Gifford Emerging Markets	11.5 (24)	-26.5 (76)	-4.7 (77)	-0.4 (31)	4.0 (7)	-26.5 (76)	-9.1 (88)	29.6 (18)	28.0 (14)	-11.5 (8)
▲ MSCI Emerging Markets	9.7 (59)	-20.1 (36)	-2.7 (49)	-1.4 (47)	1.4 (55)	-20.1 (36)	-2.5 (58)	18.3 (45)	18.4 (64)	-14.6 (28)

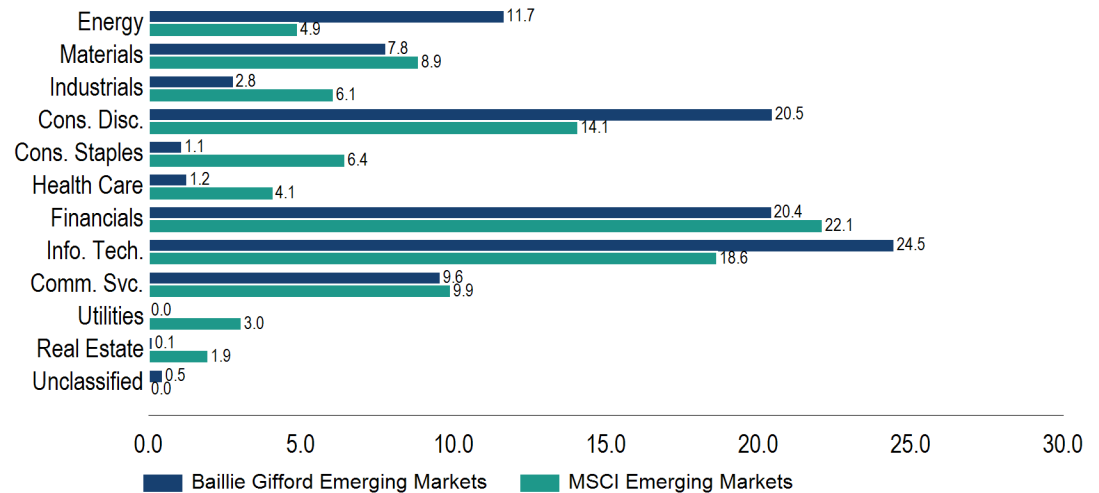
Baillie Gifford Emerging Markets Manager Portfolio Overview (Net of Fees)

Period Ending: December 31, 2022

Characteristics

	Portfolio	MSCI Emerging Markets
Number of Holdings	65	1,375
Weighted Avg. Market Cap. (\$B)	136.54	95.69
Median Market Cap. (\$B)	25.66	6.46
Price To Earnings	11.50	11.40
Price To Book	2.45	2.60
Price To Sales	1.28	1.08
Return on Equity (%)	16.24	14.40
Yield (%)	5.20	3.39
Beta	1.24	1.00

Sector Allocation (%) vs MSCI Emerging Markets



Largest Holdings

	End Weight	Return
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	8.87	10.60
TENCENT HOLDINGS LTD	6.47	26.22
SAMSUNG ELECTRONICS CO LTD	4.94	18.92
RELIANCE INDUSTRIES LTD	4.40	5.33
ALIBABA GROUP HOLDING LTD	4.01	11.39
PETROLEO BRASILEIRO S.A.-PETROBRAS	3.70	-2.69
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	3.25	6.21
HOUSING DEVELOPMENT FINANCE CORP LTD	3.20	13.36
PING AN INSURANCE GROUP	2.90	32.65
CHINA MERCHANTS BANK CO LTD	2.52	20.40

Top Contributors

	End Weight	Return	Contribution
TENCENT HOLDINGS LTD	6.47	26.22	1.70
VALEURA ENERGY INC	0.29	365.98	1.06
PING AN INSURANCE GROUP	2.90	32.65	0.95
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	8.87	10.60	0.94
SAMSUNG ELECTRONICS CO LTD	4.94	18.92	0.93
TENCENT MUSIC ENTERTAINMENT GROUP	0.65	103.94	0.68
CHINA MERCHANTS BANK CO LTD	2.52	20.40	0.51
BEIGENE LTD	0.70	66.69	0.47
ALIBABA GROUP HOLDING LTD	4.01	11.39	0.46
SAMSUNG SDI CO LTD	1.01	23.60	0.15

Bottom Contributors

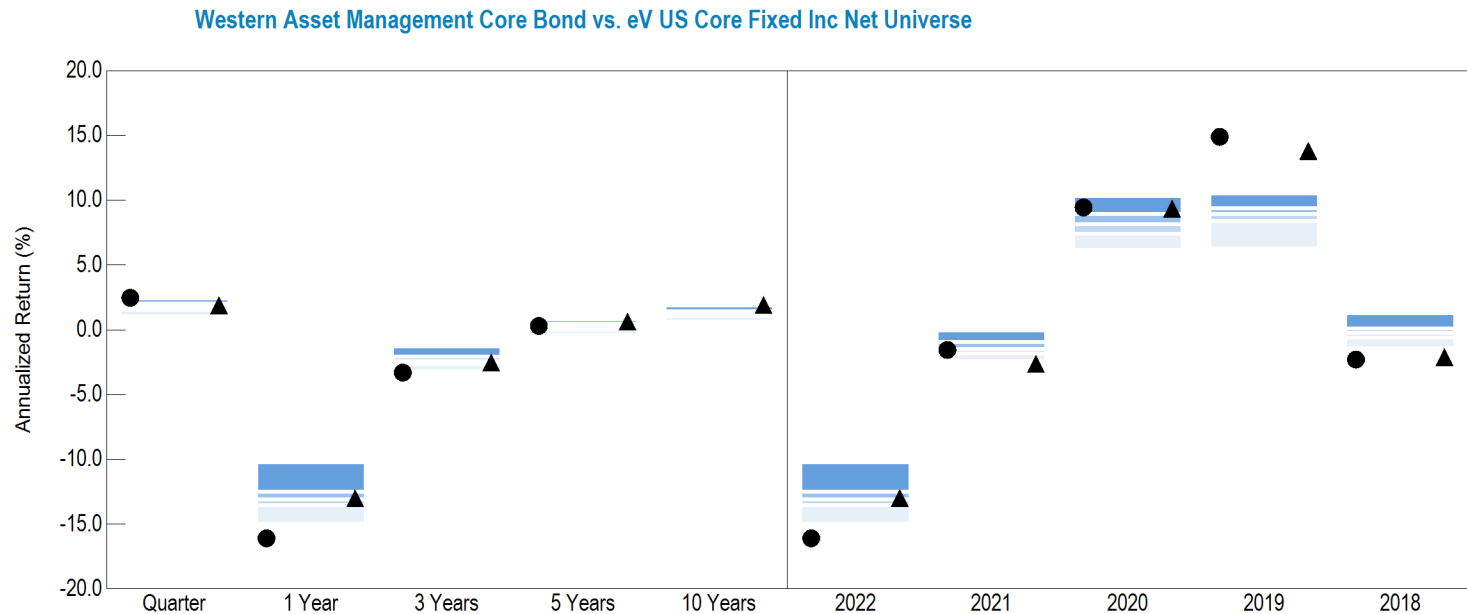
	End Weight	Return	Contribution
BANCO BRADESCO SA BRAD	1.35	-21.50	-0.29
BRILLIANCE CHINA AUTOMOTIVE HOLDINGS LTD	0.46	-39.73	-0.18
COUPANG LLC	1.10	-11.76	-0.13
PETROLEO BRASILEIRO S.A.- PETROBRAS	3.70	-2.69	-0.10
KE HOLDINGS INC HK02423	0.45	-14.17	-0.06
RAIZEN SA	0.61	-8.59	-0.05
LUFAX HOLDING LTD ADR	0.28	-17.58	-0.05
B3 S.A.-BRASIL BOLSA BALCAO	1.95	-2.12	-0.04
HYUNDAI MOTOR CO	1.66	-2.31	-0.04
PETROLEO BRASILEIRO S.A.- PETROBRAS	0.92	-3.70	-0.03

Unclassified sector allocation includes cash allocations.

Fixed Income Managers

Western Asset Management Core Bond Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

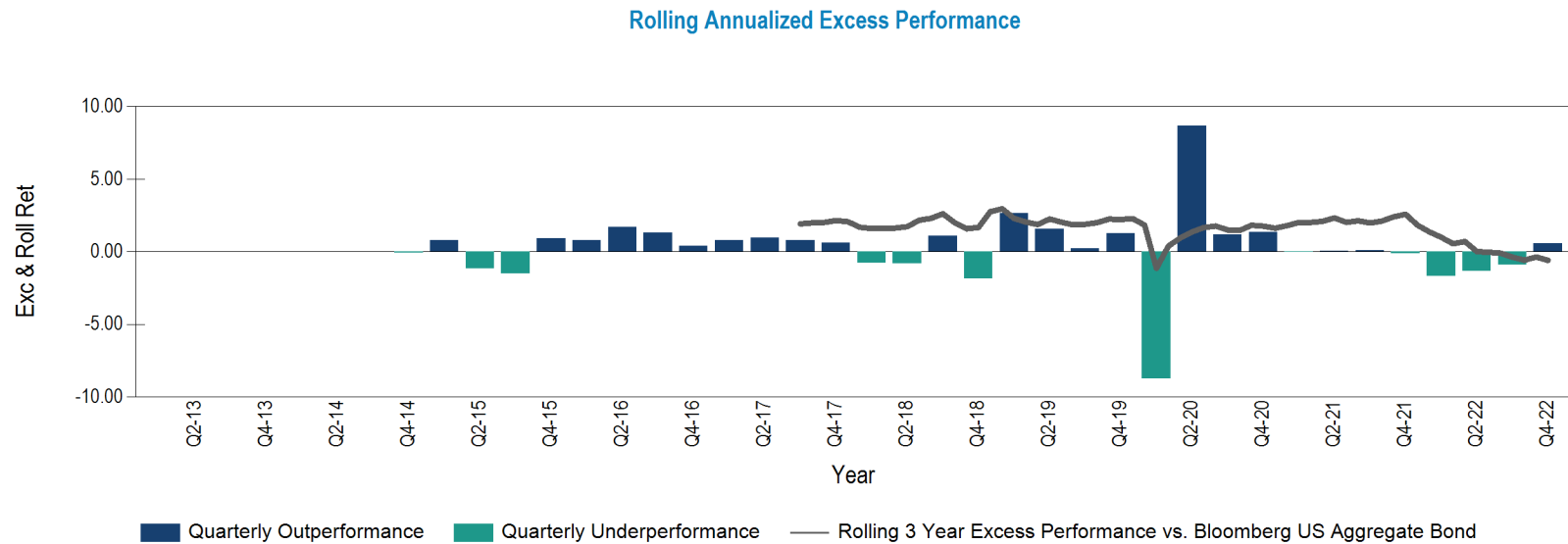
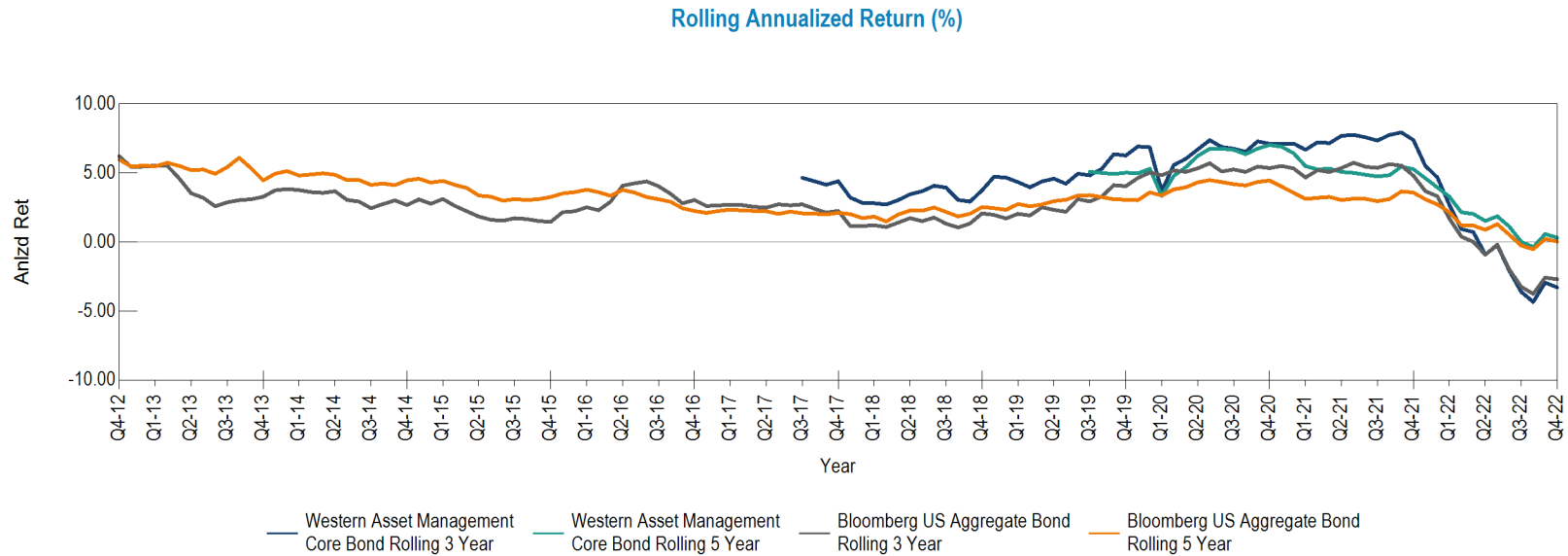


	Return (Rank)									
5th Percentile	2.4	-10.2	-1.3	0.8	1.8	-10.2	-0.1	10.3	10.5	1.3
25th Percentile	2.0	-12.5	-2.0	0.5	1.5	-12.5	-0.9	9.0	9.4	0.1
Median	1.8	-13.1	-2.4	0.2	1.2	-13.1	-1.5	8.2	9.0	-0.2
75th Percentile	1.6	-13.5	-2.7	0.0	1.0	-13.5	-1.8	7.4	8.4	-0.6
95th Percentile	1.1	-14.9	-3.2	-0.4	0.7	-14.9	-2.4	6.2	6.3	-1.4
# of Portfolios	184	178	171	167	157	178	149	149	146	150
● Western Asset Management Core Bond	2.5 (5)	-16.1 (98)	-3.3 (96)	0.3 (43)	-- (--)	-16.1 (98)	-1.6 (53)	9.4 (14)	14.9 (1)	-2.3 (99)
▲ Western Asset Management Benchmark	1.9 (42)	-13.0 (47)	-2.5 (65)	0.6 (15)	1.9 (4)	-13.0 (47)	-2.6 (99)	9.4 (16)	13.8 (1)	-2.1 (99)

Returns prior to inception date are composite returns.

Western Asset Management Core Bond Rolling Manager Performance (Net of Fees)

Period Ending: December 31, 2022

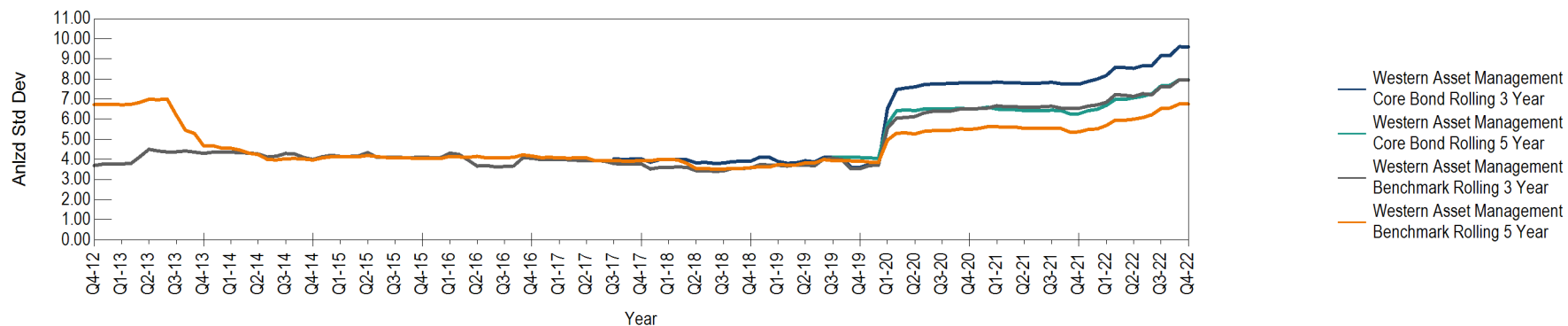


Returns prior to inception date are composite returns.

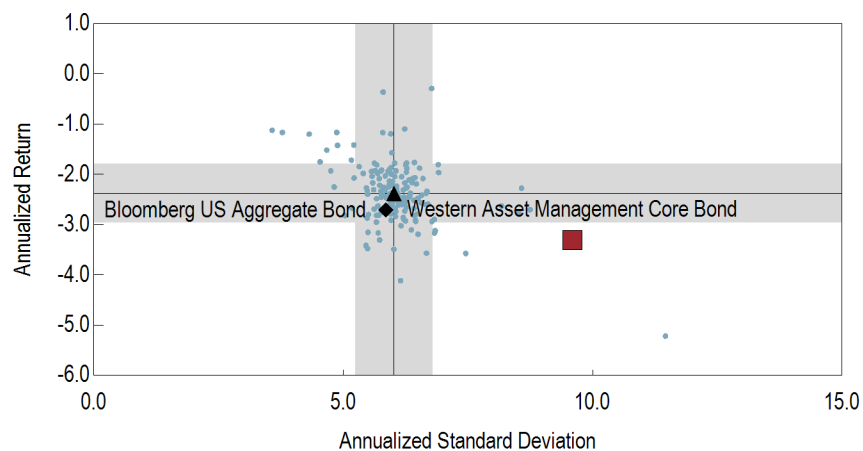
Western Asset Management Core Bond Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

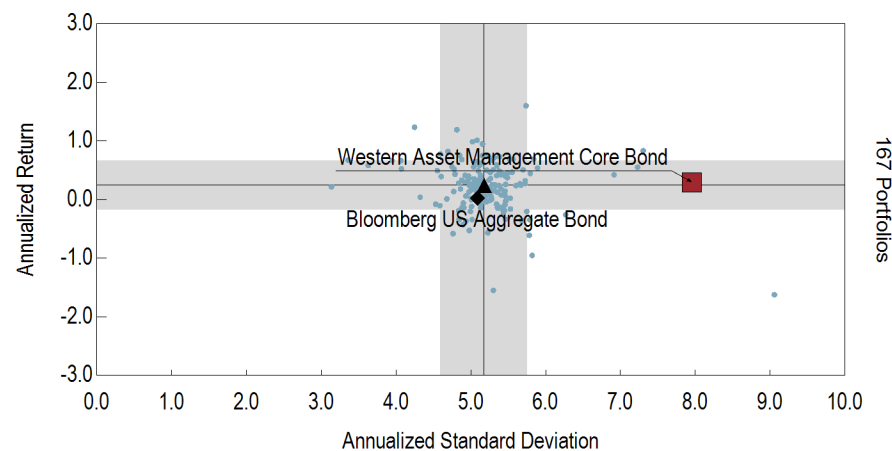
Rolling Annualized Standard Deviation



3 Years



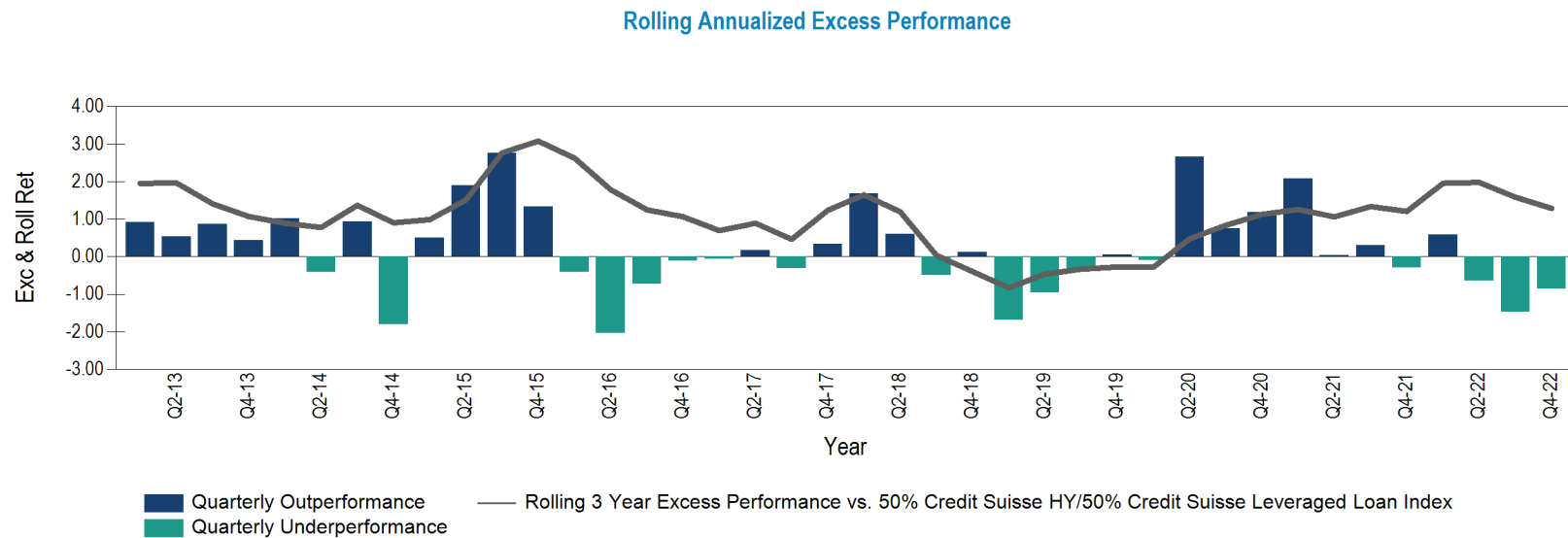
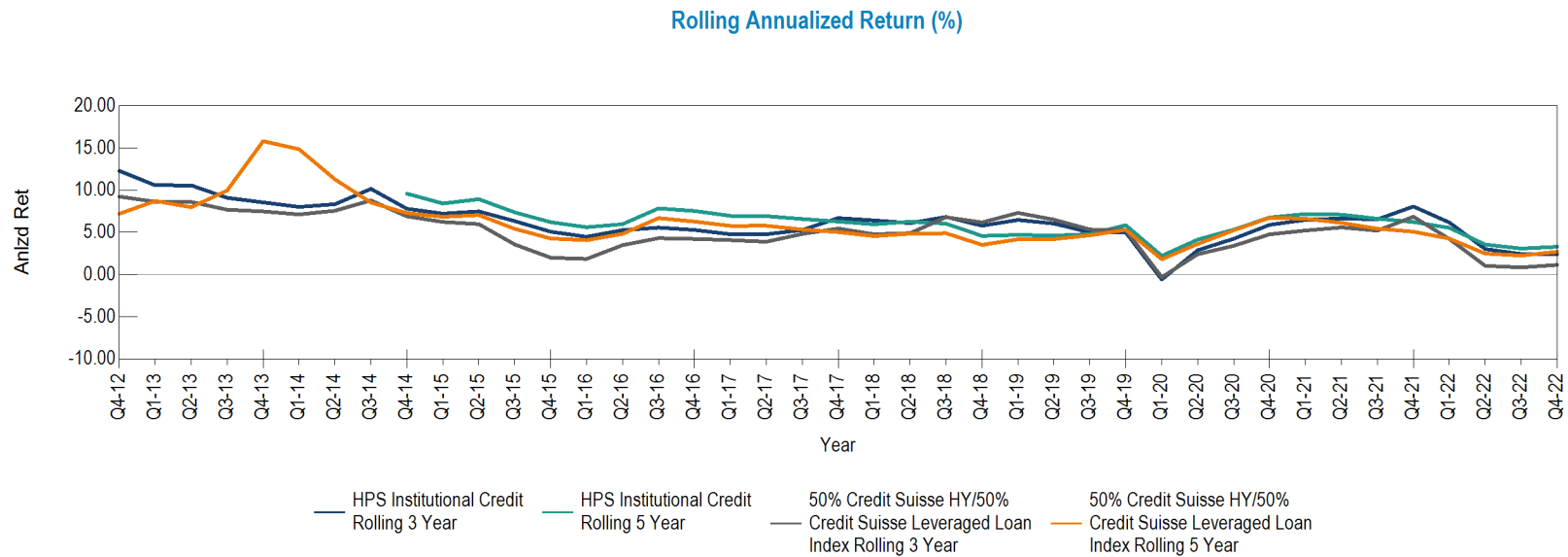
5 Years



Returns prior to inception date are composite returns.

HPS Institutional Credit Manager Performance Comparisons (Net of Fees)

Period Ending: December 31, 2022

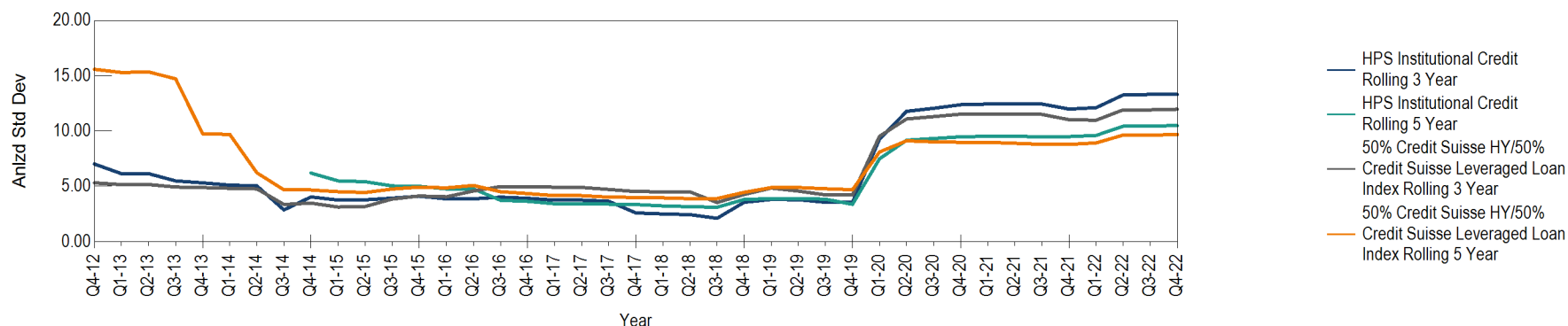


HPS Institutional Credit

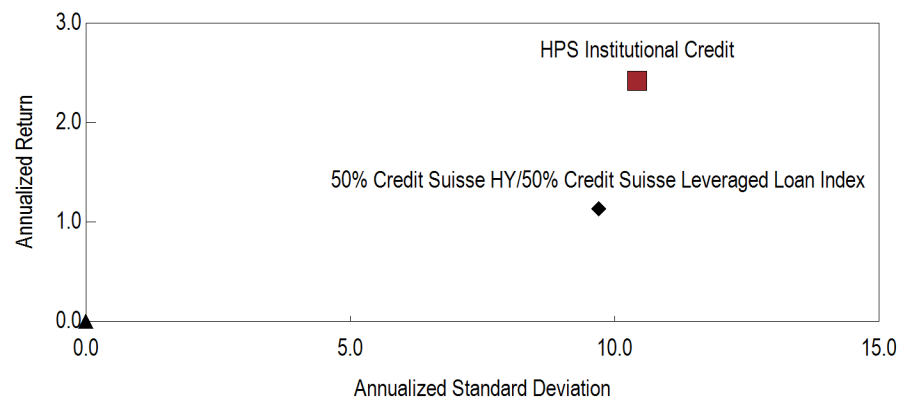
Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2022

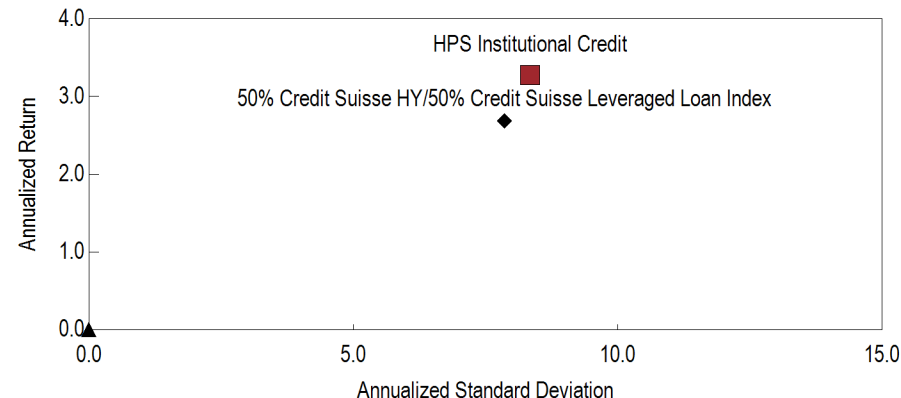
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO RAE International	2.4%	22.3%	0.1
MSCI EAFE	0.9%	20.2%	0.0
eV EAFE All Cap Value Net Median	1.4%	21.5%	0.0

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO RAE International	1.3%	19.2%	0.0
MSCI EAFE	1.5%	17.5%	0.0
eV EAFE All Cap Value Net Median	1.0%	18.7%	0.0

Returns prior to inception date are composite returns.

Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Fund Incepted	Data Source	Manager	Fund Incepted	Data Source
Benefits Payment Cash	N/A	Northern Trust	EQT European S. Situations Debt	2017	Aksia
Custodied	N/A	Northern Trust	Eaton Vance Ins. Sr Loan Plus	2017	Eaton Vance
County Cash	N/A	FCERA	PIMCO StocksPLUS Small Fund	4/31/2018	PIMCO
Warburg Pincus	1998	Hamilton Lane	Hamilton Lane Secondary Fund IV	2017	Hamilton Lane
TCW Shop III	1998	Aksia	TCG BDC II	2017	Aksia
Warburg Pincus VIII	2001	Hamilton Lane	AlpInvest FC Credit Fund, L.P.	2017	Aksia
Blackstone IV	2002	Hamilton Lane	CPC V, L.P.	2017	Aksia
Lonestar IV	2002	Aksia	Kelso Investment Associates X, L.P.	2018	Hamilton Lane
TCW Shop IV	2002	Aksia	Avista Capital Partners IV	2018	Hamilton Lane
Mondrian Emerging Markets	11/17/2005	Mondrian	Platinum Equity Small Cap Fund	2018	Hamilton Lane
Invesco Core Real Estate	10/1/2007	Invesco	T. Rowe Price Large Cap Growth	10/23/2018	Northern Trust
New Mountain III	2007	Hamilton Lane	Baillie Gifford Emerging Markets	12/10/2018	Baillie Gifford
Hamilton Lane VI	2007	Hamilton Lane	K4 Private Investors, L.P.	2018	Hamilton Lane
Warburg Pincus X	2007	Hamilton Lane	SK Capital Partners Fund V, L.P.	2018	Hamilton Lane
Landmark Equity Partners XIV	2008	Hamilton Lane	Thomas H. Lee Equity Fund VIII, L.P.	2019	Hamilton Lane
Colony Distressed Credit I	2009	Aksia	H.I.G. Growth Buyouts & Equity Fund III	2019	Hamilton Lane
TA Associates Realty 9	2009	Aksia	RBC Access Capital	10/10/2018	Northern Trust
Systematic Small/Mid Value	10/8/2010	TA Associates	Invesco US Value-Add Fund V	2/20/2019	Invesco
KKR Mezzanine Partners I	2010	Northern Trust	NT MSCI US Index	6/2/2020	Northern Trust
Angelo Gordon Cap. Recov. VII	2010	Aksia	NT MSCI World Ex-US Index Fund	5/28/2020	Northern Trust
Oaktree Opportunities Fund IX	2012	Aksia	JFL Equity Investors V, L.P.	2019	Hamilton Lane
Artisan International Growth	4/1/2013	Northern Trust	Insight Partners XI, L.P.	2019	Hamilton Lane
PIMCO Emerging Local Bond	7/31/2013	Northern Trust	HGGC Fund IV, L.P.	2019	Hamilton Lane
WAMCO Credit Index	10/1/2014	Northern Trust	Western Asset Management Core Bond	10/1/2014	Northern Trust
Loomis Sayles High Yield	10/1/2014	Northern Trust	STG VI, L.P.	2020	Hamilton Lane
Eaton Vance Senior Loan	10/1/2014	Eaton Vance	TCV XI, L.P.	2020	Hamilton Lane
Colony Distressed Credit III	2014	Aksia	Oak Hill Capital Partners V, L.P.	2020	Hamilton Lane
Brandywine Global Sovereign	1/31/2015	Northern Trust	MSCI Factor Mix Index	3/30/2021	Northern Trust
IFM Global Infrastructure	5/1/2015	IFM	Oaktree Real Estate Opportunities Fund VII	3/31/2021	Northern Trust
GSO European Senior Debt	2015	Aksia	Ares US Real Estate	6/22/2021	Northern Trust
CVI Credit Value Fund III	2015	Aksia	Harrison Street Core Realty	1/5/2022	Harrison Street
Warburg Pincus XII	2015	Hamilton Lane	PCCP Equity IX	1/14/2022	PCCP
Gerding Edlen Green Cities III	2016	Gerding Edlen	PIMCO RAE International	2/28/2022	Northern Trust
Hamilton Lane PE Fund IX	2016	Hamilton Lane	Gridiron Capital Fund V, L.P.	2022	Hamilton Lane
Kennedy Wilson Real Estate V	2016	Kennedy Wilson	Stripes VI, L.P.	2022	Hamilton Lane
TSSP Adjacent Opportunities	2016	Aksia	HPS Institutional Credit	6/29/2022	Northern Trust
OHA Strategic Credit Fund II, L.P.	2016	Aksia	PGIM Strategic Credit	7/6/2022	Northern Trust
Horsley Bridge XI GBO	2016	Hamilton Lane	High Sierra Credit Investors, L.P.	7/26/2022	Aksia
Horsley Bridge XI GBO	2016	Hamilton Lane	Invesco Real Estate VI	9/27/2022	Invesco
Parametric Overlay	2016	Northern Trust			

Policy & Custom Index Composition

Floating Policy Index (12/1/2022-12/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.15% Private Credit Neutralized, 0.00% Russell 2000, 0.85% BBgBarc US HY.
Floating Policy Index (11/1/2022-11/30/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.64% Private Credit Neutralized, 0.00% Russell 2000, 0.36% BBgBarc US HY.
Floating Policy Index (10/1/2022-10/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.77% Private Credit Neutralized, 0.00% Russell 2000, 0.23% BBgBarc US HY.
Floating Policy Index (9/1/2022-9/30/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.25% Private Credit Neutralized, 0.00% Russell 2000, 0.75% BBgBarc US HY.
Floating Policy Index (8/1/2022-8/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.13% Private Credit Neutralized, 0.00% Russell 2000, 0.87% BBgBarc US HY.
Floating Policy Index (7/1/2022-7/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 7.28% Private Credit Neutralized, 0.00% Russell 2000, 0.72% BBgBarc US HY.
Floating Policy Index (6/1/2022-6/30/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 6.91% Private Credit Neutralized, 0.00% Russell 2000, 1.09% BBgBarc US HY.
(5/1/2022-5/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 8.00% Private Equity Neutralized, 8.00% Private Credit Neutralized, 0% Russell 2000, 0% BBgBarc US HY.
(4/1/2022-4/30/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 7.48% Private Equity Neutralized, 7.65% Private Credit Neutralized, 0.52% Russell 2000, 0.35% BBgBarc US HY.
(3/1/2022-3/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 7.41% Private Equity Neutralized, 7.44% Private Credit Neutralized, 0.59% Russell 2000, 0.56% BBgBarc US HY.
(2/1/2022-2/28/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 7.37% Private Equity Neutralized, 7.44% Private Credit Neutralized, 0.63% Russell 2000, 0.56% BBgBarc US HY.
(1/1/2022-1/31/2022)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 6.80% Private Equity Neutralized, 7.28% Private Credit Neutralized, 1.20% Russell 2000, 0.72% BBgBarc US HY.
(12/1/2021-12/31/2021)	29% MSCI USA IMI, 21% MSCI ACWI ex-US, 11% Bloomberg US Aggregate, 1% Bloomberg US Securitized, 4% Bloomberg US HY, 4% S&P/LTSA Leveraged Loan Index, 2% JPM EMBI, 12% NCREIF ODCE Net, 6.83% Private Equity Neutralized, 7.21% Private Credit Neutralized, 1.17% Russell 2000, 0.79% BBgBarc US HY.
(11/1/2021-11/30/2021)	28% MSCI USA IMI, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.00% Russell 2000, 0.79% Bloomberg US Corp. High Yield, 6.00% Private Equity Neutralized, 7.21% Private Credit Neutralized, & 11% NCREIF ODCE Net.
(10/1/2021-10/31/2021)	28% MSCI USA IMI, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.00% Russell 2000, 0.75% Bloomberg US Corp. High Yield, 6.00% Private Equity Neutralized, 7.25% Private Credit Neutralized, & 11% NCREIF ODCE Net.
(9/1/2021-9/30/2021)	28% MSCI USA IMI, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.00% Russell 2000, 0.63% Bloomberg US Corp. High Yield, 6.00% Private Equity Neutralized, 7.37% Private Credit Neutralized, & 11% NCREIF ODCE Net.
(8/1/2021-8/31/2021)	28% MSCI USA IMI, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.00% Russell 2000, 0.81% Bloomberg US Corp. High Yield, 6.00% Private Equity Neutralized, 7.19% Private Credit Neutralized, & 11% NCREIF ODCE Net.
(7/1/2021-7/31/2021)	28% MSCI USA IMI, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.00% Russell 2000, 0.72% Bloomberg US Corp. High Yield, 6.00% Private Equity Neutralized, 7.28% Private Credit Neutralized, & 11% NCREIF ODCE Net.
BBgBarc Global Aggregate*	Prior to 3/31/2014 Bloomberg U.S. Aggregate Index and as of 4/1/2014 Bloomberg Global Aggregate Index.
Fixed Income Custom Benchmark 12/1/2021- Present)	50% Bloomberg U.S. Aggregate Index, 4.5% Bloomberg US Securitized Index, 18.2% Bloomberg High Yield, 18.2% S&P LSTA U.S. Leveraged Loan Index, 9.1% JP Morgan EMBI Global
Fixed Income Custom Benchmark (9/1/2020- 11/30/2021)	38.5% Bloomberg U.S. Aggregate Index, 3.8% Bloomberg US Securitized Index, 30.8% 50% Bloomberg High Yield/50% S&P LSTA U.S. Leveraged Loan Index, 15.4% FTSE WGBI TR, 11.5% JP Morgan GBI EM Global
(4/1/2014-9/1/2020)	100% Bloomberg Global Aggregate Index
Before 4/1/2014	100% Bloomberg U.S. Aggregate Index

**The term neutralized indicates that the benchmark performance was set equal to the asset class composite.

Other Disclosures

Total Fund Disclaimer

Period Ending: December 31, 2022

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvestorForce, eVestment Alliance and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.