

# Fresno County Employees' Retirement Association

Investment Performance Review

Period Ending: September 30, 2020



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SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

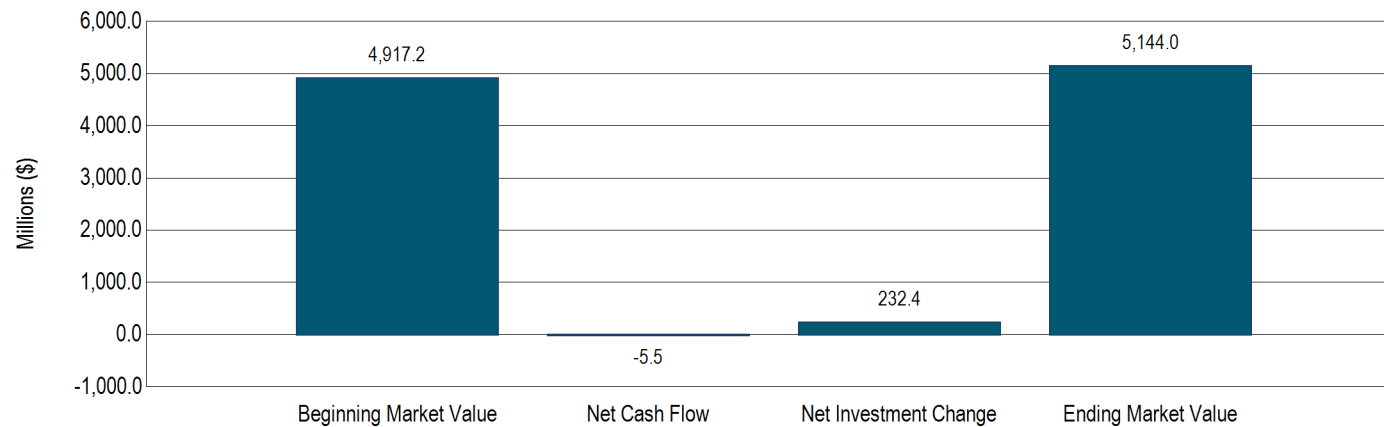
Total Fund  
Portfolio Reconciliation

Period Ending: September 30, 2020

Portfolio Reconciliation

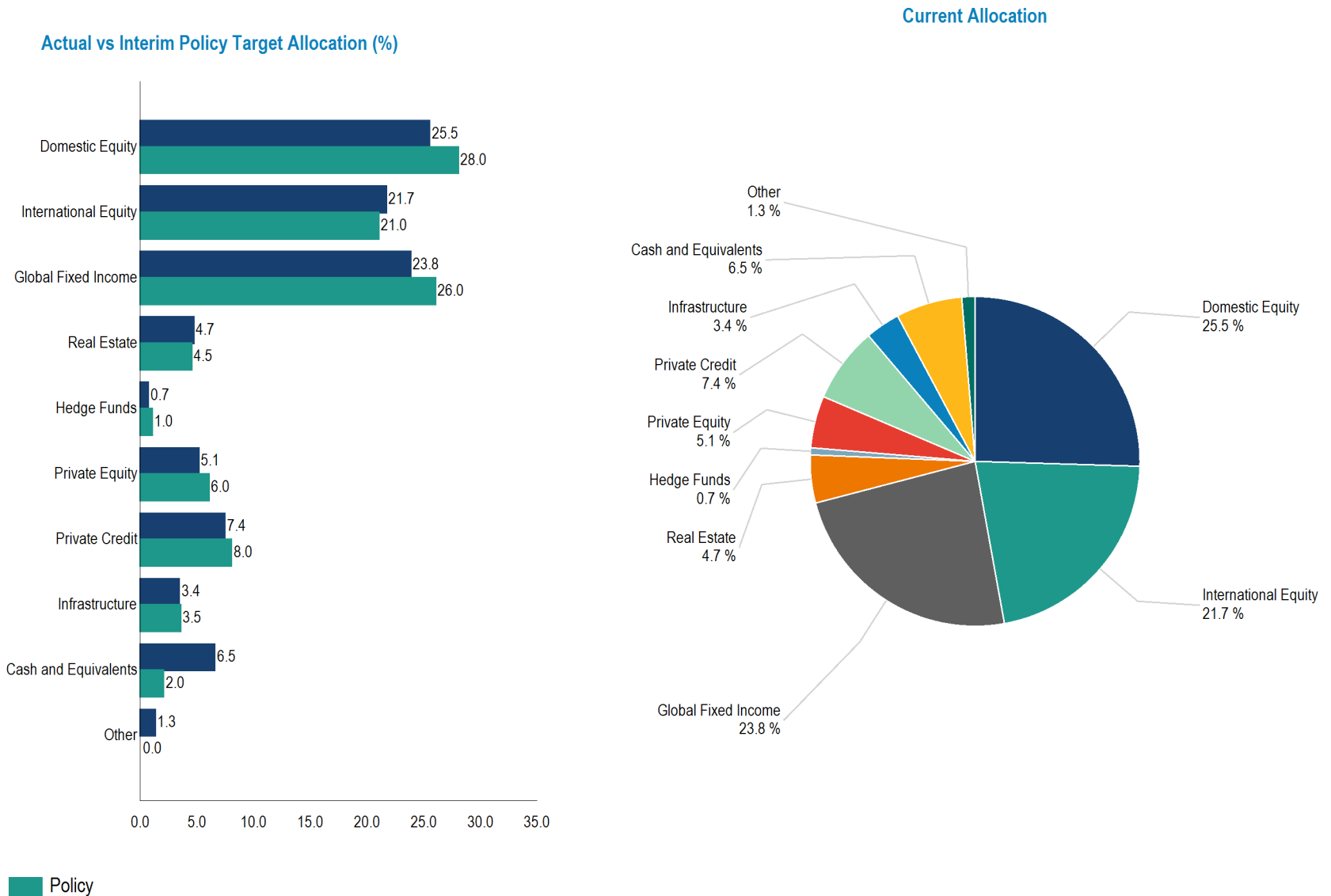
	Last Three Months	Year-To-Date
Beginning Market Value	\$4,917,186,209	\$5,184,706,726
Net Cash Flow	-\$5,514,570	-\$10,838,108
Net Investment Change	\$232,370,957	-\$29,826,022
Ending Market Value	\$5,144,042,596	\$5,144,042,596

Change in Market Value  
Last Three Months



# Total Fund Asset Allocation

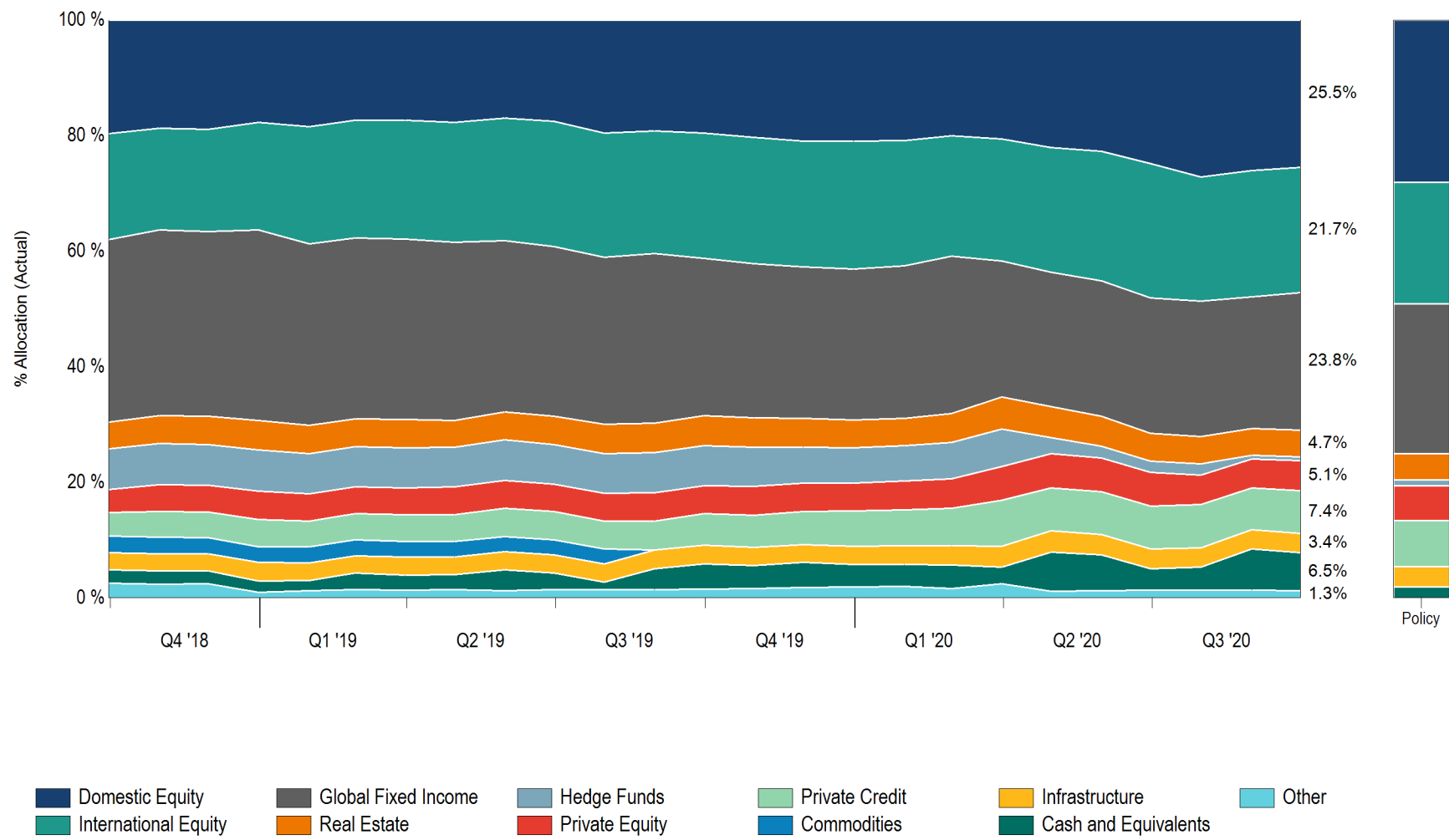
Period Ending: September 30, 2020



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: September 30, 2020





# Total Fund

## Executive Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015
<b>Total Fund</b>	<b>5,144,042,597</b>	<b>100.0</b>	<b>4.5</b>	<b>-0.4</b>	<b>5.7</b>	<b>5.0</b>	<b>6.9</b>	<b>6.8</b>	<b>6.1</b>	<b>16.4</b>	<b>-3.3</b>	<b>14.6</b>	<b>6.7</b>	<b>-2.5</b>
Interim Policy Index			4.5	2.2	7.3	5.5	7.1	6.8	5.6	14.4	-2.6	14.0	6.5	-1.7
InvMetrics Public DB > \$1B Net Rank			71	77	54	70	82	77	44	59	35	67	80	86
<b>Total Equity</b>	<b>2,424,966,820</b>	<b>47.1</b>	<b>8.0</b>	<b>-1.0</b>	<b>8.5</b>	<b>6.0</b>	<b>9.4</b>	<b>9.0</b>	<b>--</b>	<b>26.0</b>	<b>-9.5</b>	<b>24.2</b>	<b>6.1</b>	<b>-2.6</b>
MSCI ACWI IMI NR			8.1	0.5	9.6	6.5	10.0	8.5	6.5	26.4	-10.1	23.9	8.4	-2.2
<b>Total Domestic Equity</b>	<b>1,310,520,345</b>	<b>25.5</b>	<b>8.2</b>	<b>3.1</b>	<b>13.0</b>	<b>10.0</b>	<b>11.8</b>	<b>12.7</b>	<b>--</b>	<b>28.0</b>	<b>-5.1</b>	<b>20.2</b>	<b>8.9</b>	<b>1.5</b>
Russell 3000			9.2	5.4	15.0	11.6	13.7	13.5	9.1	31.0	-5.2	21.1	12.7	0.5
<b>Total International Equity</b>	<b>1,114,446,475</b>	<b>21.7</b>	<b>7.7</b>	<b>-5.0</b>	<b>4.1</b>	<b>2.4</b>	<b>7.0</b>	<b>4.9</b>	<b>--</b>	<b>24.2</b>	<b>-13.6</b>	<b>28.5</b>	<b>3.0</b>	<b>-7.5</b>
MSCI ACWI ex USA Gross			6.4	-5.1	3.4	1.6	6.7	4.5	4.6	22.1	-13.8	27.8	5.0	-5.3
<b>Total Fixed Income</b>	<b>1,224,633,572</b>	<b>23.8</b>	<b>3.5</b>	<b>2.2</b>	<b>5.0</b>	<b>3.5</b>	<b>4.7</b>	<b>3.9</b>	<b>--</b>	<b>11.0</b>	<b>-2.9</b>	<b>8.0</b>	<b>6.7</b>	<b>-4.5</b>
Fixed Income Custom Benchmark			2.6	5.6	6.1	4.1	3.9	2.6	3.8	6.8	-1.2	7.4	2.1	-3.2
<b>Total Real Estate</b>	<b>239,524,274</b>	<b>4.7</b>	<b>-0.3</b>	<b>-3.2</b>	<b>-0.9</b>	<b>4.6</b>	<b>5.9</b>	<b>8.5</b>	<b>--</b>	<b>6.4</b>	<b>9.2</b>	<b>6.8</b>	<b>8.5</b>	<b>13.9</b>
NCREIF ODCE Net			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9
<b>Total Infrastructure</b>	<b>174,493,435</b>	<b>3.4</b>	<b>1.9</b>	<b>-1.0</b>	<b>4.1</b>	<b>12.3</b>	<b>11.6</b>	<b>--</b>	<b>--</b>	<b>14.6</b>	<b>20.1</b>	<b>19.0</b>	<b>6.1</b>	<b>--</b>
NCREIF ODCE Net			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9
<b>Total Hedge Funds</b>	<b>34,407,568</b>	<b>0.7</b>	<b>1.5</b>	<b>-1.4</b>	<b>1.4</b>	<b>2.2</b>	<b>2.5</b>	<b>2.8</b>	<b>3.0</b>	<b>7.3</b>	<b>-0.7</b>	<b>4.6</b>	<b>3.0</b>	<b>0.0</b>
HFRI Fund of Funds Composite Index			4.3	2.6	5.7	2.9	3.1	2.9	2.6	8.4	-4.0	7.8	0.5	-0.3
<b>Total Private Equity 1 Qtr Lagged</b>	<b>263,735,513</b>	<b>5.1</b>	<b>-7.9</b>	<b>-0.1</b>	<b>3.4</b>	<b>8.9</b>	<b>9.8</b>	<b>11.0</b>	<b>10.5</b>	<b>4.7</b>	<b>19.6</b>	<b>13.9</b>	<b>10.7</b>	<b>3.8</b>
Russell 2000 1 Qtr Lagged			25.4	-4.3	-6.6	2.0	7.5	9.6	6.9	-8.9	15.2	13.7	21.3	-4.4
<b>Total Private Credit 1 Qtr Lagged</b>	<b>381,789,708</b>	<b>7.4</b>	<b>3.9</b>	<b>-0.7</b>	<b>4.6</b>	<b>4.8</b>	<b>5.5</b>	<b>6.5</b>	<b>10.7</b>	<b>5.3</b>	<b>7.6</b>	<b>8.1</b>	<b>7.4</b>	<b>-2.5</b>
BBgBarc US Corp. High Yield 1 Qtr Lagged			10.2	-1.3	0.0	3.3	5.8	6.0	6.8	6.4	3.0	7.0	17.1	-4.5
<b>Total Custodied Cash</b>	<b>113,005,627</b>	<b>2.2</b>	<b>0.1</b>	<b>0.4</b>	<b>1.1</b>	<b>1.8</b>	<b>1.3</b>	<b>0.8</b>	<b>--</b>	<b>3.0</b>	<b>1.9</b>	<b>0.1</b>	<b>0.8</b>	<b>0.0</b>
91 Day T-Bills			0.0	0.4	0.8	1.6	1.1	0.6	1.2	2.1	1.9	0.9	0.3	0.0
<b>Total County Cash</b>	<b>7,176,434</b>	<b>0.1</b>	<b>0.0</b>	<b>1.1</b>	<b>1.3</b>	<b>2.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.2</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
91 Day T-Bills			0.0	0.4	0.8	1.6	1.1	0.6	1.2	2.1	1.9	0.9	0.3	0.0

Policy Index (Floating policy weights updated as of 9/30/2020). See Data Sources and Methodology for monthly policy breakout: 28% MSCI USA, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.87% Russell 2000, 0.58% BBgBarc US Corp. High Yield, 5.13% Private Equity Neutralized, 7.42% Private Credit Neutralized, 1% HFRI FoF Composite, 8% NCREIF ODCE Net and 2% 91 Day T-Bills. 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.

Fixed Income Custom Benchmark 9/1/2020: 38.5% BgBarc U.S. Aggregate Index, 3.8% BBgBarc US Securitized Index, 30.8% 50% BBgBarc High Yield/50% S&P LSTA U.S. Leveraged Loan Index, 15.4% FTSE WGBI TR, 11.5% JP Morgan GBI EM Global.

# Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	2019	2018	2017	2016	2015
<b>Total Fund</b>	<b>5,144,042,597</b>	<b>100.0</b>	<b>4.5</b>	<b>-0.3</b>	<b>5.9</b>	<b>5.2</b>	<b>7.2</b>	<b>7.1</b>	<b>6.4</b>	<b>6.2</b>	<b>16.6</b>	<b>-3.1</b>	<b>14.9</b>	<b>7.2</b>	<b>-2.1</b>
<i>Interim Policy Index</i>			4.5	2.2	7.3	5.5	7.1	6.8	5.6	5.5	14.4	-2.6	14.0	6.5	-1.7
<b>Total Equity</b>	<b>2,424,966,820</b>	<b>47.1</b>	<b>8.1</b>	<b>-0.8</b>	<b>8.8</b>	<b>6.4</b>	<b>9.7</b>	<b>9.3</b>	<b>--</b>	<b>--</b>	<b>26.4</b>	<b>-9.3</b>	<b>24.5</b>	<b>6.4</b>	<b>-2.2</b>
<i>MSCI ACWI IMI NR</i>			8.1	0.5	9.6	6.5	10.0	8.5	6.5	5.3	26.4	-10.1	23.9	8.4	-2.2
<b>Total Domestic Equity</b>	<b>1,310,520,345</b>	<b>25.5</b>	<b>8.3</b>	<b>3.2</b>	<b>13.2</b>	<b>10.2</b>	<b>12.0</b>	<b>12.9</b>	<b>8.6</b>	<b>7.5</b>	<b>28.3</b>	<b>-4.9</b>	<b>20.3</b>	<b>9.1</b>	<b>1.8</b>
<i>Russell 3000</i>			9.2	5.4	15.0	11.6	13.7	13.5	9.1	6.6	31.0	-5.2	21.1	12.7	0.5
<b>Total International Equity</b>	<b>1,114,446,475</b>	<b>21.7</b>	<b>7.8</b>	<b>-4.7</b>	<b>4.5</b>	<b>2.8</b>	<b>7.5</b>	<b>5.4</b>	<b>5.6</b>	<b>4.8</b>	<b>24.8</b>	<b>-13.2</b>	<b>29.1</b>	<b>3.5</b>	<b>-7.1</b>
<i>MSCI ACWI ex USA Gross</i>			6.4	-5.1	3.4	1.6	6.7	4.5	4.6	4.6	22.1	-13.8	27.8	5.0	-5.3
<b>Total Fixed Income</b>	<b>1,224,633,572</b>	<b>23.8</b>	<b>3.6</b>	<b>2.5</b>	<b>5.4</b>	<b>3.8</b>	<b>5.1</b>	<b>4.2</b>	<b>5.3</b>	<b>5.4</b>	<b>11.4</b>	<b>-2.5</b>	<b>8.3</b>	<b>7.0</b>	<b>-4.2</b>
<i>Fixed Income Custom Benchmark</i>			2.6	5.6	6.1	4.1	3.9	2.6	3.8	4.5	6.8	-1.2	7.4	2.1	-3.2
<b>Total Real Estate</b>	<b>239,524,274</b>	<b>4.7</b>	<b>-0.3</b>	<b>-3.2</b>	<b>-0.9</b>	<b>4.6</b>	<b>6.2</b>	<b>9.0</b>	<b>7.6</b>	<b>8.9</b>	<b>6.4</b>	<b>9.2</b>	<b>6.8</b>	<b>9.9</b>	<b>14.8</b>
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	--	4.4	7.4	6.7	7.8	13.9
<b>Total Infrastructure</b>	<b>174,493,435</b>	<b>3.4</b>	<b>1.9</b>	<b>-1.0</b>	<b>4.1</b>	<b>12.3</b>	<b>11.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>14.6</b>	<b>20.1</b>	<b>19.0</b>	<b>7.2</b>	<b>--</b>
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	--	4.4	7.4	6.7	7.8	13.9
<b>Total Hedge Funds</b>	<b>34,407,568</b>	<b>0.7</b>	<b>1.5</b>	<b>-1.4</b>	<b>1.4</b>	<b>2.2</b>	<b>2.7</b>	<b>3.4</b>	<b>--</b>	<b>--</b>	<b>7.3</b>	<b>-0.7</b>	<b>4.6</b>	<b>3.8</b>	<b>0.9</b>
<i>HFRI Fund of Funds Composite Index</i>			4.3	2.6	5.7	2.9	3.1	2.9	2.6	3.3	8.4	-4.0	7.8	0.5	-0.3
<b>Total Private Equity 1 Qtr Lagged</b>	<b>263,735,513</b>	<b>5.1</b>	<b>-7.9</b>	<b>-0.1</b>	<b>3.4</b>	<b>8.9</b>	<b>10.0</b>	<b>11.2</b>	<b>10.6</b>	<b>--</b>	<b>4.7</b>	<b>19.6</b>	<b>13.9</b>	<b>11.8</b>	<b>3.9</b>
<i>Russell 2000 1 Qtr Lagged</i>			25.4	-4.3	-6.6	2.0	7.5	9.6	6.9	--	-8.9	15.2	13.7	21.3	-4.4
<b>Total Private Credit 1 Qtr Lagged</b>	<b>381,789,708</b>	<b>7.4</b>	<b>3.9</b>	<b>-0.7</b>	<b>4.6</b>	<b>4.8</b>	<b>5.8</b>	<b>6.8</b>	<b>10.9</b>	<b>--</b>	<b>5.3</b>	<b>7.6</b>	<b>8.1</b>	<b>8.7</b>	<b>-1.4</b>
<i>BBgBarc US Corp. High Yield 1 Qtr Lagged</i>			10.2	-1.3	0.0	3.3	5.8	6.0	6.8	7.0	6.4	3.0	7.0	17.1	-4.5
<b>Total Custodied Cash</b>	<b>113,005,627</b>	<b>2.2</b>	<b>0.1</b>	<b>0.4</b>	<b>1.1</b>	<b>1.8</b>	<b>1.3</b>	<b>0.8</b>	<b>1.6</b>	<b>1.8</b>	<b>3.0</b>	<b>1.9</b>	<b>0.1</b>	<b>0.8</b>	<b>0.0</b>
<i>91 Day T-Bills</i>			0.0	0.4	0.8	1.6	1.1	0.6	1.2	1.4	2.1	1.9	0.9	0.3	0.0
<b>Total County Cash</b>	<b>7,176,434</b>	<b>0.1</b>	<b>0.0</b>	<b>1.1</b>	<b>1.3</b>	<b>2.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>2.2</b>	<b>2.4</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>91 Day T-Bills</i>			0.0	0.4	0.8	1.6	1.1	0.6	1.2	1.4	2.1	1.9	0.9	0.3	0.0

Policy Index (Floating policy weights updated as of 9/30/2020). See Data Sources and Methodology for monthly policy breakout: 28% MSCI USA, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.87% Russell 2000, 0.58% BBgBarc US Corp. High Yield, 5.13% Private Equity Neutralized, 7.42% Private Credit Neutralized, 1% HFRI FoF Composite, 8% NCREIF ODCE Net and 2% 91 Day T-Bills. 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.

Fixed Income Custom Benchmark 9/1/2020: 38.5% BgBarc U.S. Aggregate Index, 3.8% BBgBarc US Securitized Index, 30.8% 50% BBgBarc High Yield/50% S&P LSTA U.S. Leveraged Loan Index, 15.4% FTSE WGBI TR, 11.5% JP Morgan GBI EM Global.

# Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
<b>Total Fund</b>	<b>5,144,042,597</b>	<b>100.0</b>	<b>4.5</b>	<b>-0.4</b>	<b>5.7</b>	<b>5.0</b>	<b>6.9</b>	<b>6.8</b>	<b>6.1</b>	<b>16.4</b>	<b>-3.3</b>	<b>14.6</b>	<b>6.7</b>	<b>-2.5</b>	<b>6.9</b>	<b>Jun-02</b>
<i>Interim Policy Index</i>			4.5	2.2	7.3	5.5	7.1	6.8	5.6	14.4	-2.6	14.0	6.5	-1.7	6.4	Jun-02
<b>Total Fund Ex Parametric</b>	<b>5,078,816,585</b>	<b>98.7</b>	<b>4.5</b>	<b>0.3</b>	<b>6.1</b>	<b>5.0</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>15.3</b>	<b>-2.8</b>	<b>13.9</b>	<b>--</b>	<b>--</b>	<b>6.8</b>	<b>Dec-16</b>
<i>Interim Policy Index</i>			4.5	2.2	7.3	5.5	7.1	6.8	5.6	14.4	-2.6	14.0	6.5	-1.7	7.2	Dec-16
<b>Total Equity</b>	<b>2,424,966,820</b>	<b>47.1</b>	<b>8.0</b>	<b>-1.0</b>	<b>8.5</b>	<b>6.0</b>	<b>9.4</b>	<b>9.0</b>	<b>--</b>	<b>26.0</b>	<b>-9.5</b>	<b>24.2</b>	<b>6.1</b>	<b>-2.6</b>	<b>--</b>	<b>--</b>
<i>MSCI ACWI IMI NR</i>			8.1	0.5	9.6	6.5	10.0	8.5	6.5	26.4	-10.1	23.9	8.4	-2.2	--	--
<b>Total Domestic Equity</b>	<b>1,310,520,345</b>	<b>25.5</b>	<b>8.2</b>	<b>3.1</b>	<b>13.0</b>	<b>10.0</b>	<b>11.8</b>	<b>12.7</b>	<b>--</b>	<b>28.0</b>	<b>-5.1</b>	<b>20.2</b>	<b>8.9</b>	<b>1.5</b>	<b>--</b>	<b>Mar-97</b>
<i>Russell 3000</i>			9.2	5.4	15.0	11.6	13.7	13.5	9.1	31.0	-5.2	21.1	12.7	0.5	8.7	Mar-97
NT MSCI US Index	875,965,402	17.0	8.8	--	--	--	--	--	--	--	--	--	--	--	11.2	Jun-20
<i>MSCI USA</i>			9.5	6.8	16.4	12.2	13.7	13.2	8.7	30.9	-5.0	21.2	10.9	0.7	12.0	Jun-20
T. Rowe Price Large Cap Growth	170,294,022	3.3	11.3	24.7	37.3	--	--	--	--	29.5	--	--	--	--	27.3	Oct-18
<i>Russell 1000 Growth</i>			13.2	24.3	37.5	21.7	20.1	17.3	12.0	36.4	-1.5	30.2	7.1	5.7	30.1	Oct-18
Aronson Johnson Ortiz	127,288	0.0	7.4	-11.5	-5.7	0.9	5.2	9.3	6.0	21.7	-11.4	16.7	9.5	-0.1	9.3	Dec-95
<i>Russell 1000 Value</i>			5.6	-11.6	-5.0	2.6	7.7	9.9	6.4	26.5	-8.3	13.7	17.3	-3.8	8.2	Dec-95
PIMCO StocksPLUS Small Fund	264,104,718	5.1	6.6	-7.1	2.8	--	--	--	--	29.3	--	--	--	--	2.7	Feb-18
<i>Russell 2000</i>			4.9	-8.7	0.4	1.8	8.0	9.9	7.0	25.5	-11.0	14.6	21.3	-4.4	1.3	Feb-18
<b>Total International Equity</b>	<b>1,114,446,475</b>	<b>21.7</b>	<b>7.7</b>	<b>-5.0</b>	<b>4.1</b>	<b>2.4</b>	<b>7.0</b>	<b>4.9</b>	<b>--</b>	<b>24.2</b>	<b>-13.6</b>	<b>28.5</b>	<b>3.0</b>	<b>-7.5</b>	<b>--</b>	<b>--</b>
<i>MSCI ACWI ex USA Gross</i>			6.4	-5.1	3.4	1.6	6.7	4.5	4.6	22.1	-13.8	27.8	5.0	-5.3	--	--
NT MSCI World Ex-US Index	291,194,617	5.7	5.0	--	--	--	--	--	--	--	--	--	--	--	13.8	May-20
<i>MSCI World ex USA</i>			4.9	-7.1	0.2	0.6	5.3	4.4	3.7	22.5	-14.1	24.2	2.7	-3.0	13.1	May-20
Artisan International Growth	192,044,948	3.7	7.4	-0.1	7.9	7.0	8.7	--	--	31.3	-10.2	31.5	-9.0	-2.2	6.8	Apr-13
<i>MSCI EAFE</i>			4.8	-7.1	0.5	0.6	5.3	4.6	3.7	22.0	-13.8	25.0	1.0	-0.8	4.2	Apr-13
Research Affiliates International Equity	162,133,961	3.2	3.3	-16.5	-10.2	-4.6	3.4	--	--	17.9	-15.5	25.7	9.3	-5.9	2.2	Apr-11
<i>MSCI EAFE</i>			4.8	-7.1	0.5	0.6	5.3	4.6	3.7	22.0	-13.8	25.0	1.0	-0.8	3.2	Apr-11
Mondrian International Small Cap	155,864,443	3.0	8.8	-7.4	3.0	1.6	7.0	6.4	--	25.1	-14.6	32.4	0.1	2.7	8.1	Nov-09
<i>S&amp;P Developed Ex-U.S. SmallCap</i>			10.3	-3.5	7.8	1.4	7.2	7.0	6.1	24.7	-18.4	32.4	3.8	5.9	7.5	Nov-09
Mondrian Emerging Markets	149,716,099	2.9	12.0	-4.6	7.7	1.1	6.2	1.7	--	18.3	-13.8	27.2	9.0	-16.3	5.1	Nov-05
<i>MSCI Emerging Markets</i>			9.6	-1.2	10.5	2.4	9.0	2.5	5.8	18.4	-14.6	37.3	11.2	-14.9	5.8	Nov-05
Baillie Gifford Emerging Markets	163,492,407	3.2	13.1	3.5	16.9	--	--	--	--	28.0	--	--	--	--	17.4	Dec-18
<i>MSCI Emerging Markets</i>			9.6	-1.2	10.5	2.4	9.0	2.5	5.8	18.4	-14.6	37.3	11.2	-14.9	9.4	Dec-18

Baillie Gifford Emerging Markets funded 12/10/2018. 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.

# Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
<b>Total Fixed Income</b>	<b>1,224,633,572</b>	<b>23.8</b>	<b>3.5</b>	<b>2.2</b>	<b>5.0</b>	<b>3.5</b>	<b>4.7</b>	<b>3.9</b>	<b>--</b>	<b>11.0</b>	<b>-2.9</b>	<b>8.0</b>	<b>6.7</b>	<b>-4.5</b>	<b>--</b>	
<i>Fixed Income Custom Benchmark</i>			2.6	5.6	6.1	4.1	3.9	2.6	3.8	6.8	-1.2	7.4	2.1	-3.2	--	
Western Asset Management Investment Grade Credit	201,967,705	3.9	1.8	7.2	8.8	6.7	6.7	--	--	14.9	-2.3	6.8	7.0	-0.5	5.7	Oct-14
<i>BBgBarc US Credit TR</i>			1.5	6.4	7.5	6.2	5.7	4.9	5.4	13.8	-2.1	6.2	5.6	-0.8	5.0	Oct-14
RBC Access Capital	58,779,626	1.1	0.4	3.8	4.5	--	--	--	--	6.4	--	--	--	--	6.8	Oct-18
<i>BBgBarc US Securitized Index</i>			0.2	3.9	4.6	3.8	3.1	3.1	4.1	6.4	1.0	2.5	1.8	1.5	6.8	Oct-18
Loomis Sayles High Yield	195,854,905	3.8	4.5	1.0	3.5	3.4	5.8	--	--	11.5	-2.3	7.1	14.4	-5.2	4.1	Oct-14
<i>BBgBarc US High Yield TR</i>			4.6	0.6	3.3	4.2	6.8	6.5	7.1	14.3	-2.1	7.5	17.1	-4.5	5.0	Oct-14
Eaton Vance Senior Loan Fund	189,013,636	3.7	3.2	-2.0	-0.3	2.3	3.6	--	--	7.5	0.7	4.0	9.9	-0.8	3.1	Oct-14
<i>S&amp;P/LSTA Leveraged Loan Index</i>			4.1	-0.7	1.1	3.1	4.0	4.3	4.4	8.6	0.4	4.1	10.2	-0.7	3.5	Oct-14
Eaton Vance Institutional Senior Loan Plus Fund	22,214,485	0.4	4.0	-2.3	0.1	2.7	--	--	--	11.3	-1.3	3.6	--	--	2.9	Jan-17
<i>S&amp;P/LSTA Leveraged Loan Index</i>			4.1	-0.7	1.1	3.1	4.0	4.3	4.4	8.6	0.4	4.1	10.2	-0.7	3.2	Jan-17
Western Asset Management Agency MBS	59,816,514	1.2	--	--	--	--	--	--	--	--	--	--	--	--	-0.3	Sep-20
<i>BBgBarc US GNMA TR</i>			-0.3	3.3	3.9	3.4	2.7	2.9	4.1	5.9	1.0	1.9	1.6	1.4	0.0	Sep-20
Western Asset Management Treasuries	39,916,155	0.8	--	--	--	--	--	--	--	--	--	--	--	--	-0.2	Sep-20
<i>BBgBarc US Treasury Bills</i>			0.0	0.7	1.2	1.7	1.2	0.7	1.3	2.3	1.9	0.8	0.4	0.1	0.0	Sep-20
TCW TALF Opportunities Fund LP	4,000,000	0.1	0.0	--	--	--	--	--	--	--	--	--	--	--	0.0	Jun-20
<i>BBgBarc US Aggregate TR</i>			0.6	6.8	7.0	5.2	4.2	3.6	4.5	8.7	0.0	3.5	2.6	0.6	1.3	Jun-20
Brandywine Global Sovereign	264,234,078	5.1	3.5	-1.2	2.8	0.6	3.4	--	--	8.7	-4.7	11.9	3.8	-9.8	1.1	Jan-15
<i>FTSE WGBI TR</i>			2.9	7.1	6.8	4.4	3.9	1.9	3.6	5.9	-0.8	7.5	1.6	-3.6	3.1	Jan-15
PIMCO Emerging Local Bond Ins	188,836,469	3.7	4.8	-2.8	3.4	1.9	5.9	--	--	17.1	-7.7	15.4	10.7	-16.3	0.6	Jul-13
<i>JP Morgan GBI EM Global Diversified TR USD</i>			0.6	-6.3	-1.4	0.2	4.8	0.5	4.5	13.5	-6.2	15.2	9.9	-14.9	0.0	Jul-13
<b>Total Real Estate</b>	<b>239,524,274</b>	<b>4.7</b>	<b>-0.3</b>	<b>-3.2</b>	<b>-0.9</b>	<b>4.6</b>	<b>5.9</b>	<b>8.5</b>	<b>--</b>	<b>6.4</b>	<b>9.2</b>	<b>6.8</b>	<b>8.5</b>	<b>13.9</b>	<b>--</b>	
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9	--	
Invesco Core Real Estate	172,766,466	3.4	-0.5	-3.7	-1.7	4.1	5.6	9.2	--	5.7	8.5	7.5	8.3	13.7	4.2	Oct-07
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9	4.1	Oct-07
FCERA Realty Group LLC	2,480,300	0.0														
<b>Closed End Real Estate 1 Qtr Lagged</b>	<b>64,277,508</b>	<b>1.2</b>	<b>0.2</b>	<b>-2.0</b>	<b>1.4</b>	<b>7.9</b>	<b>7.6</b>	<b>--</b>	<b>--</b>	<b>10.8</b>	<b>14.1</b>	<b>4.3</b>	<b>9.0</b>	<b>14.9</b>	<b>--</b>	
<i>NCREIF ODCE Net 1 Qtr Lagged</i>			-1.8	0.3	1.3	4.7	5.6	9.2	5.7	4.6	7.7	4.7	7.8	13.9	--	
<b>Total Infrastructure</b>	<b>174,493,435</b>	<b>3.4</b>	<b>1.9</b>	<b>-1.0</b>	<b>4.1</b>	<b>12.3</b>	<b>11.6</b>	<b>--</b>	<b>--</b>	<b>14.6</b>	<b>20.1</b>	<b>19.0</b>	<b>6.1</b>	<b>--</b>	<b>--</b>	
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9	--	

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. TCW TALF Opportunities Fund LP funded 6/12/2020.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015	Inception	Inception Date
IFM Infrastructure	174,493,435	3.4	1.9	-1.0	4.1	12.3	11.6	--	--	14.6	20.1	19.0	6.1	--	11.3	May-15
<i>NCREIF ODCE Net</i>			0.3	-0.7	0.5	4.3	5.7	9.3	5.7	4.4	7.4	6.7	7.8	13.9	6.6	May-15
Total Hedge Funds	34,407,568	0.7	1.5	-1.4	1.4	2.2	2.5	2.8	3.0	7.3	-0.7	4.6	3.0	0.0	--	
<i>HFRI Fund of Funds Composite Index</i>			4.3	2.6	5.7	2.9	3.1	2.9	2.6	8.4	-4.0	7.8	0.5	-0.3	--	
GCM Better Futures Fund	34,407,567	0.7	1.5	-5.1	-2.6	1.1	--	--	--	8.3	-0.2	2.8	--	--	2.1	Sep-16
<i>HFRI Fund of Funds Composite Index</i>			4.3	2.6	5.7	2.9	3.1	2.9	2.6	8.4	-4.0	7.8	0.5	-0.3	3.8	Sep-16
Total Private Equity 1 Qtr Lagged	263,735,513	5.1	-7.9	-0.1	3.4	8.9	9.8	11.0	10.5	4.7	19.6	13.9	10.7	3.8	--	
<i>Russell 2000 1 Qtr Lagged</i>			25.4	-4.3	-6.6	2.0	7.5	9.6	6.9	-8.9	15.2	13.7	21.3	-4.4	--	
Total Private Credit 1 Qtr Lagged	381,789,708	7.4	3.9	-0.7	4.6	4.8	5.5	6.5	10.7	5.3	7.6	8.1	7.4	-2.5	--	
<i>BBgBarc US Corp. High Yield 1 Qtr Lagged</i>			10.2	-1.3	0.0	3.3	5.8	6.0	6.8	6.4	3.0	7.0	17.1	-4.5	--	
Total Custodied Cash	113,005,627	2.2	0.1	0.4	1.1	1.8	1.3	0.8	--	3.0	1.9	0.1	0.8	0.0	--	
<i>91 Day T-Bills</i>			0.0	0.4	0.8	1.6	1.1	0.6	1.2	2.1	1.9	0.9	0.3	0.0	--	
Total County Cash	7,176,434	0.1	0.0	1.1	1.3	2.0	--	--	--	2.2	2.4	--	--	--	--	
<i>91 Day T-Bills</i>			0.0	0.4	0.8	1.6	1.1	0.6	1.2	2.1	1.9	0.9	0.3	0.0	--	
Total Parametric Overlay	65,226,012	1.3														

# Real Estate Closed End Funds (Net of Fees)

Period Ending: September 30, 2020

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 VI	2019	0.4%	\$30,000,000	\$19,134,259	\$2,226,454	\$19,399,373	-1.5%	14.9%	N/A	N/A	11.1%
Invesco Value-Add Fund V	2017	0.3%	\$30,000,000	\$14,812,186	\$1,893,498	\$14,838,498	-0.6%	0.7%	N/A	N/A	N/A
Kennedy Wilson Real Estate Fund V	2016	0.2%	\$30,000,000	\$28,113,444	\$27,351,451	\$11,286,888	-0.7%	8.8%	13.2%	N/A	13.4%
Gerding Edlen Green Cities III	2016	0.4%	\$20,000,000	\$19,311,784	\$2,323,638	\$18,752,749	3.3%	-12.3%	0.9%	N/A	6.0%
<hr/>											
Total		1.2%	\$ 110,000,000.00	\$ 81,371,673.26	\$ 33,795,040.79	\$ 64,277,507.68					

# Private Equity Non Marketable Securities Overview

Period Ending: September 30, 2020

Private Equity								
Fund	Vintage Year	Commitment	Unfunded	Paid-In Capital	Capital Distributed	NAV*	TVPI	Since Inception IRR
Legacy Portfolio								
Blackstone Capital Partners IV, L.P.	2003	\$20,000,000	\$597,726	\$22,648,846	\$52,986,528	\$464,737	2.40x	29.61%
Hamilton Lane Private Equity Fund IX L.P.	2016	\$100,000,000	\$19,566,059	\$80,433,941	\$24,375,039	\$76,253,730	1.30x	10.82%
Hamilton Lane Private Equity Fund VI, LP	2007	\$70,000,000	\$7,388,235	\$62,611,765	\$85,395,746	\$14,765,807	1.60x	8.93%
Horsley Bridge XI Growth Buyout L.P.	2016	\$30,000,000	\$10,318,347	\$19,681,653	\$525,613	\$22,767,910	1.20x	9.65%
Landmark Equity Partners XIV, L.P.	2009	\$30,000,000	\$872,369	\$29,129,792	\$33,611,924	\$4,459,439	1.30x	9.44%
New Mountain Partners III, L.P.	2007	\$15,000,000	\$1,028,824	\$15,363,060	\$21,202,901	\$11,437,262	2.10x	13.49%
Warburg Pincus Equity Partners, L.P.	1998	\$20,000,000	\$0	\$20,000,000	\$33,046,892	\$78,729	1.70x	10.26%
Warburg Pincus Private Equity VIII, L.P.	2001	\$25,000,000	\$0	\$26,100,000	\$58,286,084	\$98,293	2.20x	14.50%
Warburg Pincus Private Equity X, L.P.	2007	\$25,000,000	\$0	\$25,046,896	\$38,654,486	\$4,736,111	1.70x	9.17%
Warburg Pincus Private Equity XII, L.P.	2015	\$34,000,000	\$1,343,000	\$32,674,364	\$3,826,146	\$36,779,271	1.20x	9.90%
<b>Total Legacy Portfolio</b>		<b>\$369,000,000</b>	<b>\$41,114,560</b>	<b>\$333,690,317</b>	<b>\$351,911,359</b>	<b>\$171,841,289</b>	<b>1.60x</b>	<b>12.57%</b>
Hamilton Lane Portfolio								
Aurora Equity Partners VI, L.P.	2019	\$10,000,000	\$10,000,000	\$0	\$0	\$0	N/A	0
Avista Capital Partners IV, L.P.	2018	\$10,000,000	\$1,168,090	\$11,049,069	\$5,026,564	\$8,767,250	1.20x	22.15%
Avista Capital Partners V, L.P.	2019	\$10,000,000	\$10,000,000	\$0	\$0	\$2,602	N/A	0.00x
Bridgepoint Development Capital IV, L.P.	2020	\$9,861,690	\$9,861,690	\$0	\$0	\$0	N/A	0.00x
Cinven Seventh Fund	2019	\$8,573,162	\$7,654,997	\$918,165	\$0	\$862,112	0.90x	-0.06x
CVC Capital Partners VIII, L.P.	2020	\$10,252,034	\$10,252,034	\$0	\$0	\$0	N/A	0.00%
Gridiron Capital Fund IV, L.P.	2019	\$10,000,000	\$7,426,484	\$2,573,516	\$0	\$2,570,327	1.00x	(0.12%)
H.I.G. Growth Buyouts & Equity Fund III, L.P.	2019	\$10,000,000	\$9,495,215	\$504,785	\$0	\$273,507	0.50x	(55.29%)
Hamilton Lane Secondary Fund IV, L.P.	2017	\$75,000,000	\$22,109,981	\$64,388,323	\$18,920,662	\$56,777,008	1.20x	12.76%
HGGC Fund IV, L.P.	2019	\$10,000,000	\$8,451,159	\$1,548,841	\$0	\$1,448,207	0.90x	(6.50%)
Insight Partners XI, L.P.	2019	\$10,000,000	\$8,500,000	\$1,500,000	\$0	\$1,683,614	1.10x	12.24%
JFL Equity Investors V, L.P.	2019	\$10,000,000	\$10,000,000	\$0	\$0	-\$50,104	N/A	0.00%
K4 Private Investors, L.P.	2018	\$5,000,000	\$1,740,806	\$3,259,194	\$507	\$3,500,176	1.10x	0.06x
K5 Private Investors, L.P.	2020	\$10,000,000	\$10,000,000	\$0	\$0	\$0	N/A	0.00x
Kelso Investment Associates X, L.P.	2018	\$7,500,000	\$6,108,308	\$1,405,947	\$16,704	\$1,381,666	1.00x	(0.58%)
NewQuest Asia Fund IV, L.P.	2019	\$10,000,000	\$10,000,000	\$0	\$0	-\$231,212	N/A	0.00%
Platinum Equity Capital Partners V, L.P.	2019	\$10,000,000	\$8,783,102	\$1,216,898	\$0	\$1,172,829	1.00x	(4.81%)
Platinum Equity Small Cap Fund, L.P.	2018	\$7,500,000	\$4,884,174	\$2,663,391	\$47,565	\$1,445,019	N/A	-0.78x
SK Capital Partners Fund V, L.P.	2018	\$10,000,000	\$7,179,538	\$2,820,462	\$3,497	\$2,277,938	0.80x	(16.65%)
Sterling Group Partners V, L.P.	2020	\$10,000,000	\$10,000,000	\$0	\$0	\$0	N/A	0.00%
Thomas H. Lee Equity Fund VIII, L.P.	2019	\$7,500,000	\$4,685,398	\$3,282,008	\$570,835	\$3,880,678	1.40x	96.20%
TPG Partners VIII, L.P.	2019	\$10,000,000	\$9,014,022	\$985,978	\$0	\$675,759	0.70x	(54.77%)
Verdane Capital X AB	2019	\$7,139,732	\$5,670,530	\$1,469,202	\$0	\$2,052,757	1.40x	66.46%
ZMC III, L.P.	2019	\$6,764,374	\$5,558,214	\$1,206,160	\$0	\$1,110,862	0.90x	(16.33%)
<b>Total Hamilton Lane Portfolio</b>		<b>\$285,090,992</b>	<b>\$198,543,742</b>	<b>\$100,791,939</b>	<b>\$24,586,334</b>	<b>\$89,600,995</b>	<b>1.10x</b>	<b>11.68%</b>
<b>Total Private Equity</b>		<b>\$654,090,992</b>	<b>\$239,658,302</b>	<b>\$434,482,256</b>	<b>\$376,497,693</b>	<b>\$261,442,284</b>	<b>1.50x</b>	<b>12.54%</b>

\*NAV provided by Hamilton Lane as of 6/30/2020 adjusted for cash flows that occurred during Q2 2020.



# Private Credit Non Marketable Securities Overview

Period Ending: September 30, 2020

Private Credit								
Fund	Vintage Year	Commitment	Unfunded	Paid-In Capital	Capital Distributed	NAV	TVPI	Since Inception IRR
Legacy Portfolio								
EQT European Special Situations Debt	2017	\$40,000,000	\$18,277,031	\$30,063,852	\$3,210,020	\$26,256,659	0.98	-2.00%
OHA Strategic Credit Fund II	2016	\$40,000,000	\$20,000,000	\$20,000,000	\$0	\$19,671,189	0.98	-2.10%
TSSP Adjacent Opportunities Partners	2016	\$30,000,000	\$9,813,389	\$40,683,182	\$22,938,227	\$21,817,503	1.10	8.50%
GSO European Senior Debt	2015	\$30,000,000	\$4,515,652	\$30,964,231	\$28,725,527	\$15,482,996	1.43	4.00%
CVI Credit Value Fund III	2015	\$30,000,000	\$1,500,000	\$28,500,000	\$21,917,240	\$13,819,557	1.25	7.95%
Colony Distressed Credit III	2014	\$20,000,000	\$2,734,614	\$21,939,049	\$20,711,825	\$6,607,689	1.25	8.00%
Oaktree Opportunities IX	2012	\$15,000,000	\$0	\$15,000,000	\$7,602,626	\$9,094,099	1.11	2.10%
KKR Mezzanine Partners	2010	\$30,000,000	\$2,982,882	\$36,266,699	\$43,582,700	\$5,172,577	1.34	6.60%
Angelo Gordon VII	2010	\$30,000,000	\$0	\$30,000,000	\$36,463,492	\$352,820	1.23	4.94%
Colony Distressed Credit I	2009	\$40,000,000	\$0	\$42,267,927	\$64,307,755	-\$145,429	1.52	13.00%
Lone Star Fund IV	2002	\$20,000,000	\$954,801	\$19,045,199	\$44,404,793	\$63,188	2.33	30.71%
<b>Total Legacy Portfolio</b>		<b>\$325,000,000</b>	<b>\$60,778,369</b>	<b>\$314,730,139</b>	<b>\$293,864,204</b>	<b>\$118,192,848</b>	<b>1.32</b>	
Carlyle Portfolio								
TCG BDC II	2017	\$150,000,000	\$31,759,343	\$118,240,657	\$16,045,138	\$108,408,225	1.09	4.41%
CPC V	2017	\$150,000,000	\$31,712,430	\$148,397,340	\$30,109,769	\$125,685,665	1.07	5.45%
AlpInvest FC Credit Fund	2017	\$100,000,000	\$64,566,403	\$35,443,597	\$7,760,635	\$29,502,970	1.09	8.40%
<b>Total Carlyle Portfolio</b>		<b>\$400,000,000</b>	<b>\$128,038,176</b>	<b>\$302,081,594</b>	<b>\$53,915,542</b>	<b>\$263,596,860</b>	<b>1.08</b>	
<b>Total Private Credit</b>		<b>\$725,000,000</b>	<b>\$188,816,545</b>	<b>\$616,811,733</b>	<b>\$347,779,746</b>	<b>\$381,789,708</b>		

Data provided by Carlyle.



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

Period Ending: September 30, 2020

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	No Issues	✓	✓	✓	✓	✓	-	
Aronson Johnson Ortiz	Domestic Equity Large Cap Value	Terminate	✗	✗	✗	✗	✗	✗	Verus recommended termination based on ongoing underperformance and organizational concerns. See memo dated August 2020.
PIMCO StocksPLUS Small Fund	Domestic Equity Small Cap Core	No Issues	✓	✓	✓	✓	✓	-	
Artisan International Growth	International Equity	No Issues	✓	✓	✓	✓	✓	-	
Research Affiliates International Equity	International Equity	No Issues	✗	✗	✗	✗	✗	-	Verus remains comfortable with the product in spite of performance headwinds, which are driven by value factor underperformance. Please refer to October 2020 Underperforming Managers Memo.
Mondrian International Small Cap	International Equity Small Cap	No Issues	✗	✓	✓	✗	✓	-	Verus remains comfortable with the product in spite of performance headwinds, which are driven by value factor underperformance. Please refer to October 2020 Underperforming Managers Memo.
Mondrian Emerging Markets	Emerging Markets Equity	No Issues	✗	✗	✗	✗	✗	-	Verus remains comfortable with the product in spite of performance headwinds, which are driven by value factor underperformance. Please refer to October 2020 Underperforming Managers Memo.
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: September 30, 2020

Name	Allocation Group	Verus Outlook	#1	#2	#3	#4	#5	#6	Verus Manager Research Views
Western Asset Investment Grade Credit	Domestic Fixed Income	No Issues	✓	✓	✓	✓	✓	⚠	Western Asset Core Plus: Franklin announced in February 2020 their intention to acquire 100% of Legg Mason for \$4.5 billion at \$50 per share of common stock in an all-cash deal. Given the complexity and large-scale nature of this change, we will continue to monitor for developments relating to Franklin Templeton and the affiliates. We will place a provisional flag on Franklin and each of the affiliates at the firm level to signify that a change has occurred, although we do not have serious concerns with the announcement at this time.
RBC Access Capital	Domestic Fixed Income Mortgage	No Issues	✓	✓	✓	✓	✓	-	
Loomis Sayles High Yield	Domestic Fixed Income High Yield	No Issues	⚠	⚠	⚠	⚠	⚠	-	Verus remains comfortable with the product in spite of performance headwinds, which are driven by relatively higher quality positioning. Please refer to October 2020 Underperforming Managers Memo.
Eaton Vance Senior Loan Fund	Domestic Fixed Income Bank Loans	No Issues	✓	✓	✓	✓	✓	⚠	On October 8th, 2020, Morgan Stanley announced its intention to acquire Eaton Vance. The deal is set to close in 2Q 2021
Eaton Vance Institutional Senior Loan Plus Fund	Domestic Fixed Income Bank Loans	No Issues	-	⚠	-	-	-	⚠	On October 8th, 2020, Morgan Stanley announced its intention to acquire Eaton Vance. The deal is set to close in 2Q 2021
Brandywine Global Sovereign	Global Fixed Income	Watch	✓	⚠	⚠	⚠	⚠	⚠	Watch status for concerns around relative performance. Refer to memo in December 2020 meeting.
PIMCO Emerging Local Bond Ins	Emerging Markets Fixed Income	No Issues	✓	✓	✓	✓	✓	⚠	Verus views PIMCO's EMD team as robust and well-resourced but we retain a provisional watch rating to monitor for further turnover following the departure of senior team members Mike Gomez and Francesc Balcells.

## 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

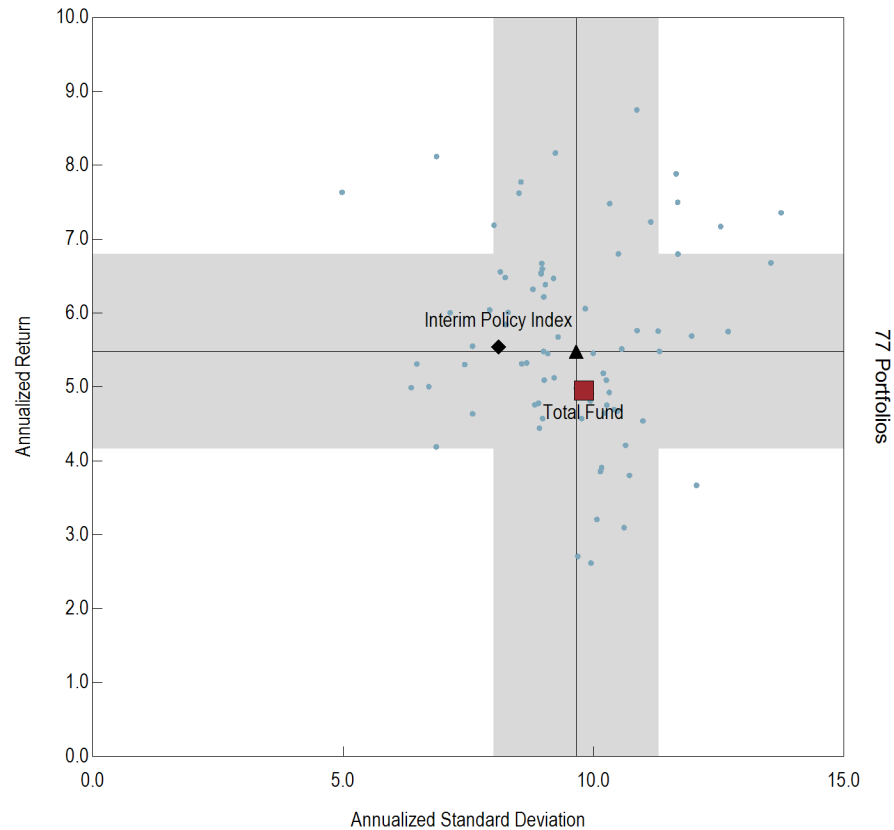
## Manager Review Rules

- 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: September 30, 2020

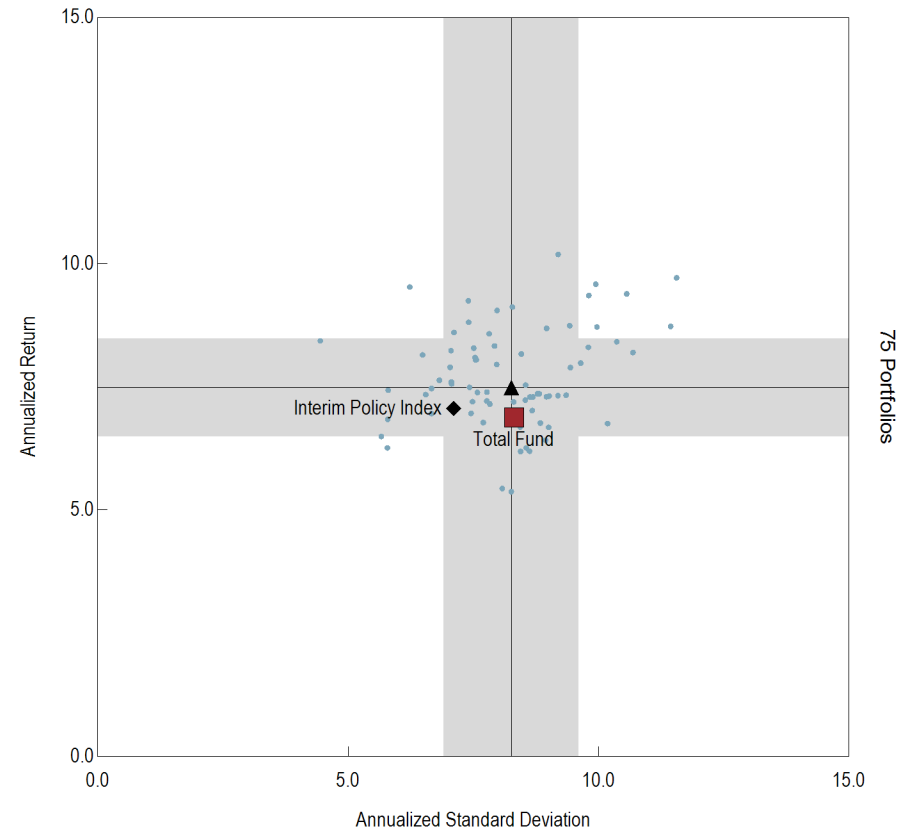
3 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	5.0%	9.8%	0.3
Interim Policy Index	5.5%	8.1%	0.5
InvMetrics Public DB > \$1B Net Median	5.5%	9.7%	0.4

5 Years

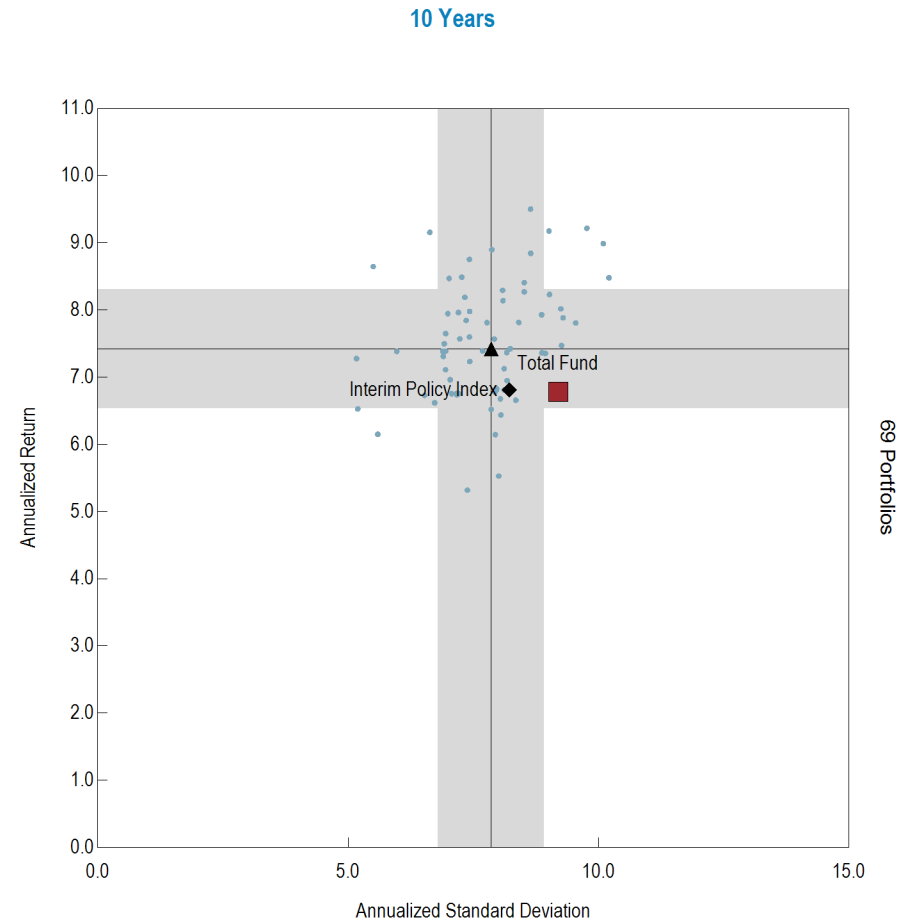
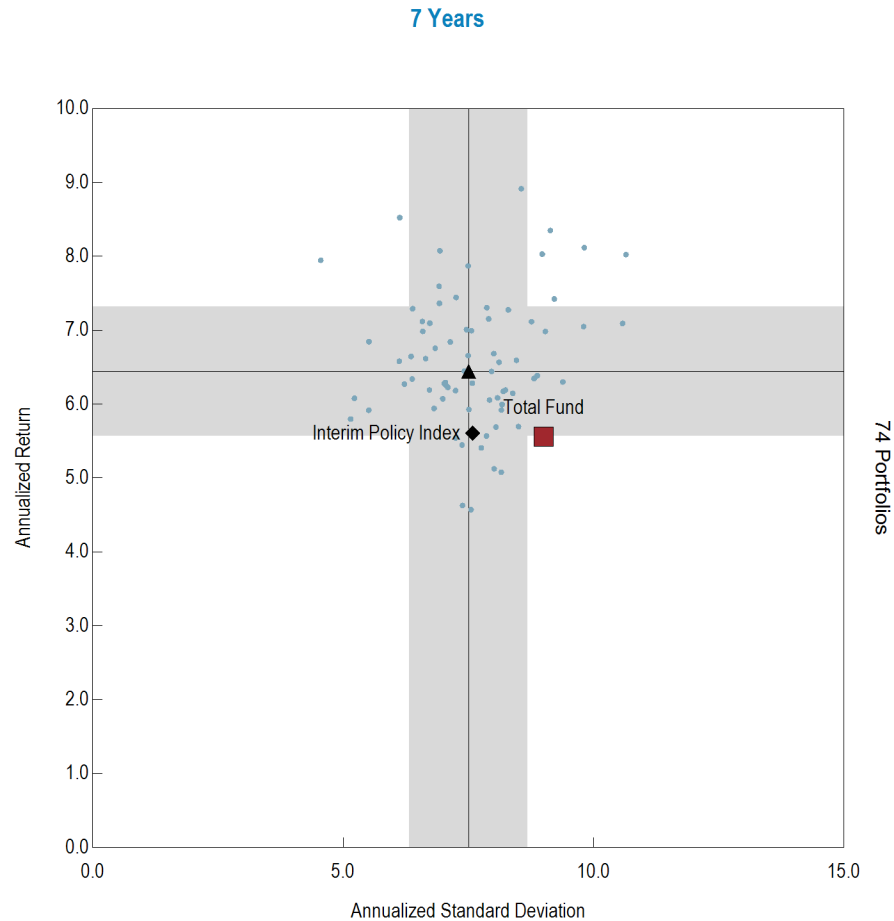


5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	6.9%	8.3%	0.7
Interim Policy Index	7.1%	7.1%	0.8
InvMetrics Public DB > \$1B Net Median	7.5%	8.3%	0.8

# Total Fund Risk Analysis (Net of Fees)

Period Ending: September 30, 2020



	7 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	5.6%	9.0%	0.5
Interim Policy Index	5.6%	7.6%	0.6
InvMetrics Public DB > \$1B Net Median	6.4%	7.5%	0.8

	10 Years		
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Total Fund	6.8%	9.2%	0.7
Interim Policy Index	6.8%	8.2%	0.8
InvMetrics Public DB > \$1B Net Median	7.4%	7.9%	0.9

# Total Fund Risk Analysis (Net of Fees)

Period Ending: September 30, 2020

## 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	9.80%	-1.68%	1.20	0.98	114.17%	122.68%	-0.28	2.13%	0.34	0.53
Total Equity	17.49%	-0.48%	1.01	0.99	99.21%	100.98%	-0.29	1.52%	0.25	0.41
Total Domestic Equity	18.88%	-1.85%	1.02	0.99	96.41%	102.70%	-0.90	1.79%	0.44	0.64
Total International Equity	16.79%	0.67%	1.03	0.99	105.17%	100.49%	0.36	1.96%	0.04	0.17
Total Domestic Fixed Income	6.11%	1.01%	0.69	0.15	93.76%	106.30%	-0.10	5.74%	0.49	0.53
Total Real Estate	3.34%	0.13%	1.06	0.71	90.76%	208.88%	0.21	1.81%	0.90	0.83
Total Infrastructure	7.23%	5.40%	1.62	0.35	230.51%	-38.47%	1.33	6.04%	1.47	4.08
Total Hedge Funds	5.83%	-0.20%	0.82	0.88	69.22%	72.49%	-0.30	2.32%	0.09	0.29
Total Alternative Illiquids	5.45%	7.75%	-0.06	0.04	8.71%	-15.90%	-0.37	20.22%	0.97	4.30

## 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	8.31%	-1.24%	1.15	0.97	110.18%	115.06%	-0.10	1.82%	0.69	0.86
Total Equity	14.92%	-0.70%	1.01	0.99	97.96%	101.28%	-0.47	1.29%	0.55	0.69
Total Domestic Equity	16.05%	-2.32%	1.03	0.99	95.84%	105.15%	-1.05	1.80%	0.66	0.83
Total International Equity	14.68%	0.24%	1.00	0.98	98.97%	98.47%	0.13	2.02%	0.40	0.59
Total Domestic Fixed Income	5.03%	2.02%	0.69	0.19	106.81%	85.78%	0.16	4.63%	0.75	0.71
Total Real Estate	3.42%	0.17%	1.00	0.76	94.64%	208.88%	0.12	1.69%	1.38	1.77
Total Infrastructure	7.10%	4.04%	1.32	0.31	191.60%	-38.47%	0.98	5.99%	1.47	4.09
Total Hedge Funds	4.95%	-0.07%	0.84	0.86	75.68%	79.33%	-0.27	2.06%	0.28	0.39
Total Alternative Illiquids	5.10%	8.44%	-0.04	0.01	11.11%	-15.66%	-0.52	16.85%	1.30	4.49

# Total Fund Risk Analysis (Net of Fees)

Period Ending: September 30, 2020

## 7 Years

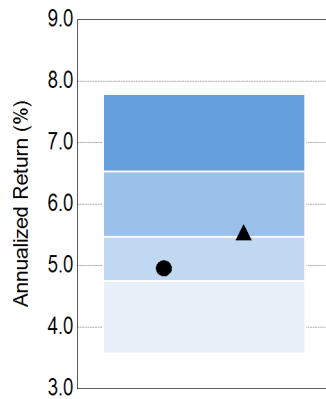
	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	9.01%	-1.01%	1.17	0.97	108.05%	114.04%	-0.02	1.95%	0.52	0.55
Total Equity	15.91%	-0.50%	1.02	0.99	98.51%	101.90%	-0.30	1.19%	0.40	0.43
Total Domestic Equity	16.38%	-1.90%	1.03	0.99	89.10%	102.48%	-0.85	1.82%	0.59	0.59
Total International Equity	16.16%	-0.04%	1.03	0.98	103.79%	101.82%	0.03	2.26%	0.18	0.25
Total Domestic Fixed Income	5.22%	2.17%	0.56	0.11	94.32%	38.42%	0.08	5.11%	0.68	1.01
Total Real Estate	3.23%	-1.87%	1.29	0.78	112.10%	259.28%	0.19	1.65%	2.20	1.32
Total Hedge Funds	5.52%	0.15%	0.83	0.90	87.38%	91.48%	-0.17	2.08%	0.34	0.44
Total Alternative Illiquids	5.53%	8.31%	-0.02	0.00	19.56%	-18.06%	-0.40	17.11%	1.30	3.65

## 10 Years

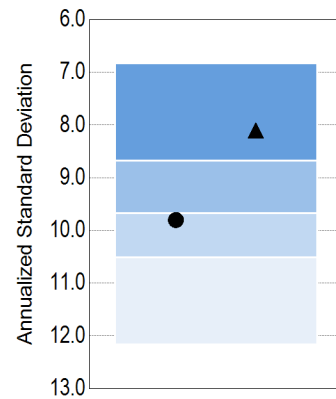
	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Total Fund	9.20%	-0.74%	1.10	0.97	106.75%	109.81%	-0.02	1.70%	0.67	0.72
Total Equity	15.96%	0.39%	1.02	0.99	105.86%	99.61%	0.42	1.32%	0.53	0.55
Total Domestic Equity	16.63%	-1.48%	1.05	0.99	97.01%	104.78%	-0.41	2.01%	0.73	0.76
Total International Equity	16.04%	0.41%	1.00	0.98	102.77%	98.83%	0.21	2.09%	0.27	0.33
Total Domestic Fixed Income	4.66%	2.42%	0.57	0.14	106.91%	49.64%	0.19	4.52%	0.83	1.12
Total Real Estate	3.13%	0.16%	0.90	0.47	93.04%	259.28%	-0.34	2.30%	2.52	1.84
Total Hedge Funds	4.77%	0.66%	0.72	0.80	76.72%	72.00%	-0.05	2.67%	0.45	0.50
Total Alternative Illiquids	5.56%	7.64%	0.06	0.03	16.89%	-2.55%	-0.48	15.82%	1.45	2.38

## Total Fund vs. InvestorForce Public DB &gt; \$1B Net Universe

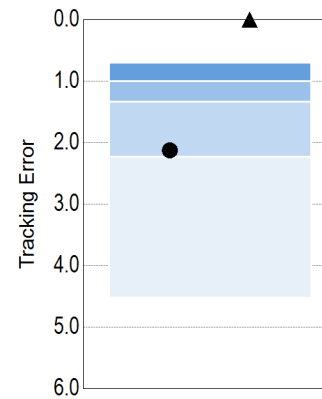
Annualized Return



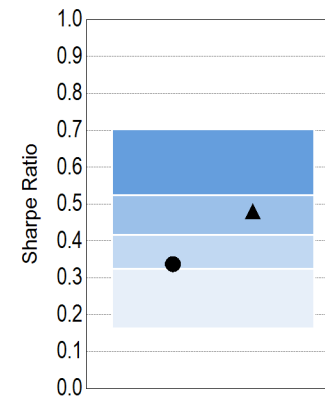
Annualized Standard Deviation



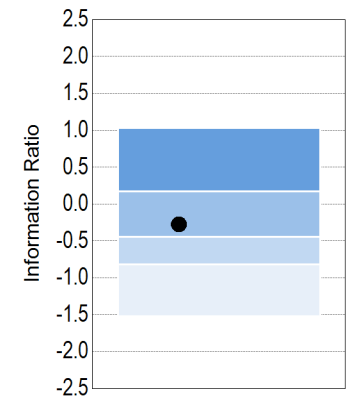
Tracking Error



Sharpe Ratio



Information Ratio



● Total Fund  
Value 5.0  
Rank 70  
▲ Interim Policy Index  
Value 5.5  
Rank 48

● Total Fund  
Value 9.8  
Rank 54  
▲ Interim Policy Index  
Value 8.1  
Rank 16

● Total Fund  
Value 2.1  
Rank 71  
▲ Interim Policy Index  
Value 0.0  
Rank 1

● Total Fund  
Value 0.3  
Rank 72  
▲ Interim Policy Index  
Value 0.5  
Rank 40

● Total Fund  
Value -0.3  
Rank 42  
▲ Interim Policy Index  
Value --  
Rank --

Universe  
5th %tile 7.8  
25th %tile 6.5  
Median 5.5  
75th %tile 4.8  
95th %tile 3.6

Universe  
5th %tile 6.8  
25th %tile 8.7  
Median 9.7  
75th %tile 10.5  
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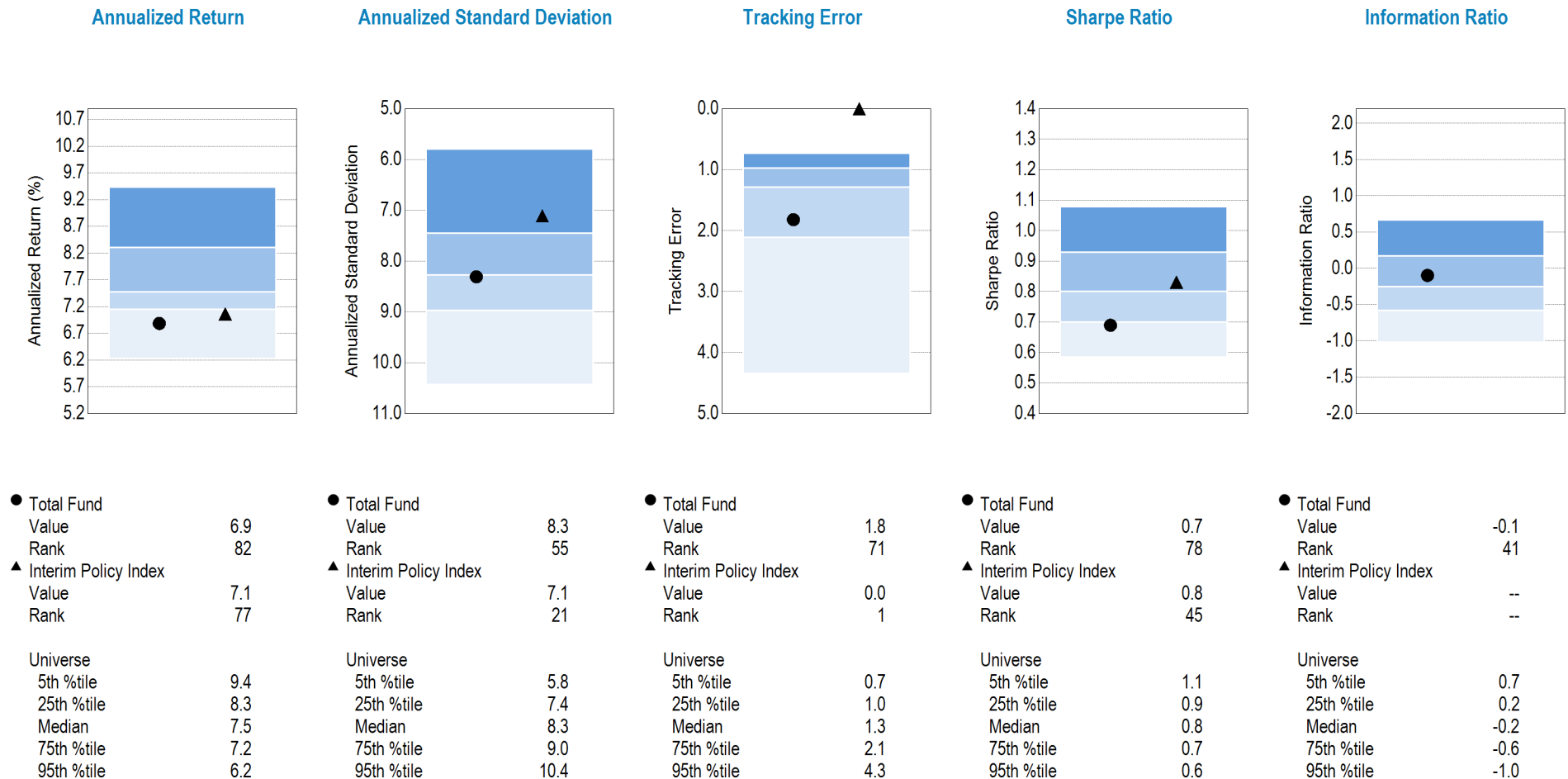
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5th %tile 0.7  
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Median 0.4  
75th %tile 0.3  
95th %tile 0.2

Universe  
5th %tile 1.0  
25th %tile 0.2  
Median -0.4  
75th %tile -0.8  
95th %tile -1.5

Total Fund  
Peer Universe Statistics - 5 Years (Net of Fees)

Period Ending: September 30, 2020

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

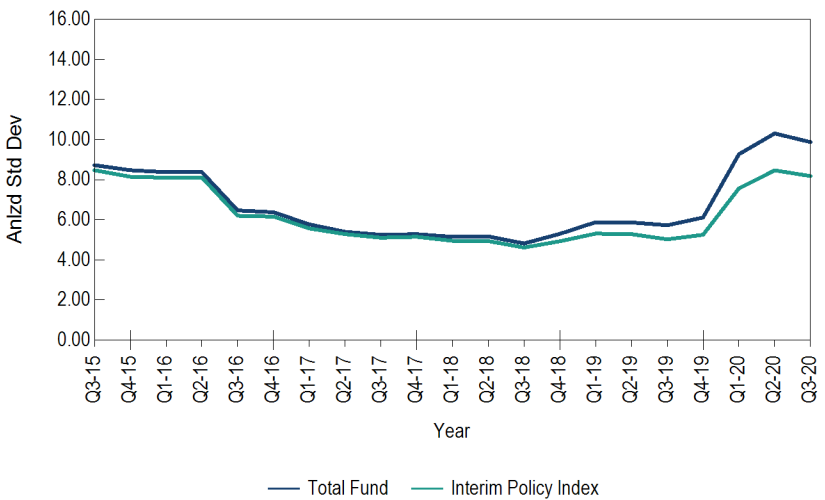




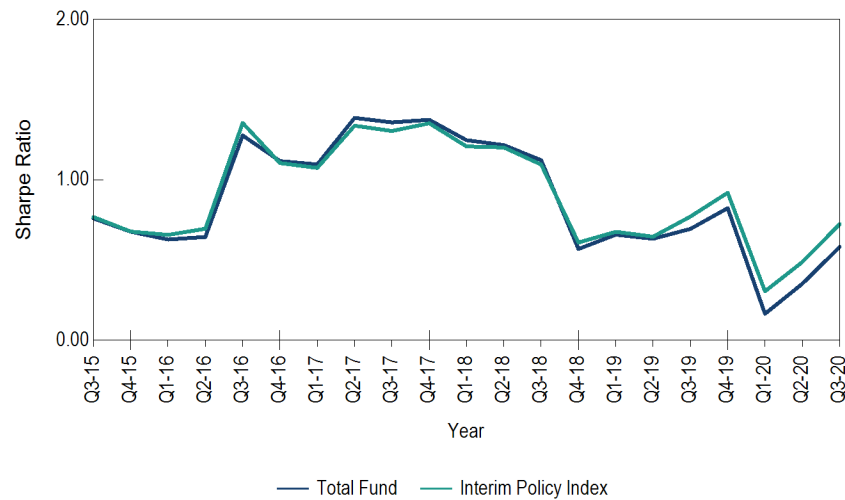
Total Fund  
Risk Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2020

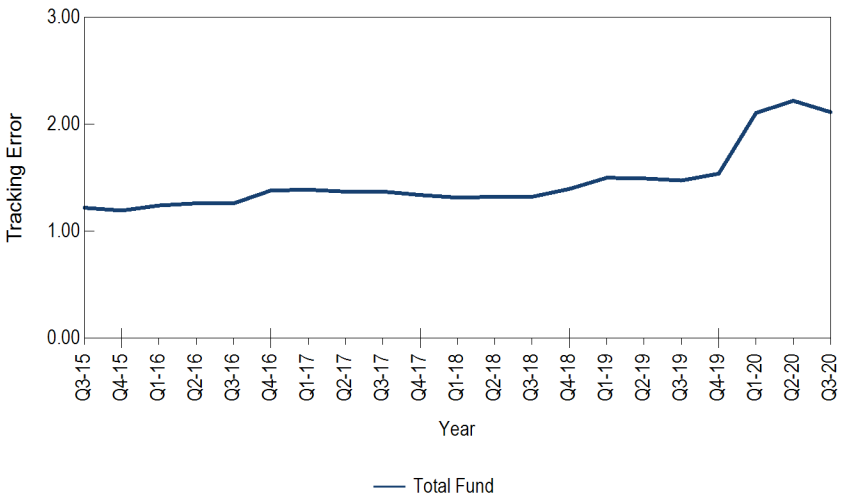
Rolling 5 Year Annualized Standard Deviation



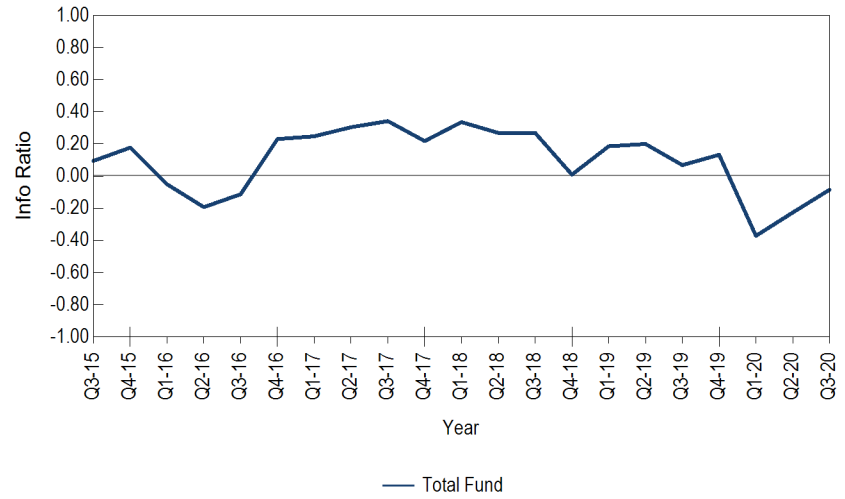
Rolling 5 Year Sharpe Ratio



Rolling 5 Year Tracking Error



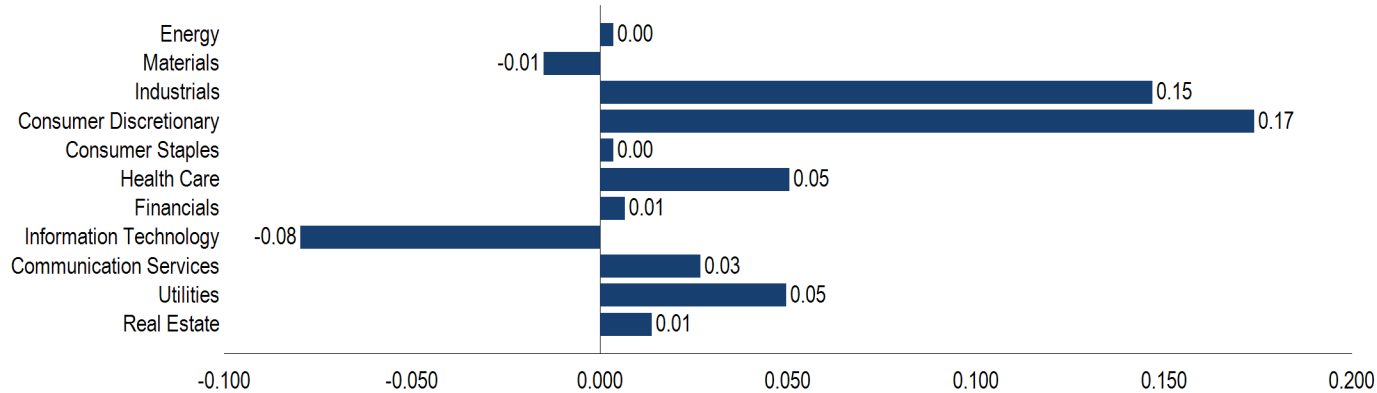
Rolling 5 Year Information Ratio



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

Period Ending: September 30, 2020

Total Domestic Equity vs. Russell 3000  
Current Quarter



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	2.44%	2.61%	-0.17%	-6.89%	-19.07%	12.18%	0.03%	-0.03%	0.00%	-0.74%	-0.74%
Materials	2.21%	2.70%	-0.49%	12.39%	11.97%	0.42%	0.00%	-0.01%	-0.01%	0.07%	0.06%
Industrials	7.33%	8.76%	-1.43%	11.04%	11.88%	-0.84%	0.02%	0.13%	0.15%	0.23%	0.38%
Consumer Discretionary	12.18%	11.31%	0.87%	17.53%	19.05%	-1.52%	0.06%	0.12%	0.17%	1.11%	1.29%
Consumer Staples	5.82%	6.27%	-0.44%	10.43%	10.16%	0.27%	0.00%	0.01%	0.00%	0.06%	0.06%
Health Care	14.53%	14.90%	-0.37%	7.76%	6.27%	1.49%	0.00%	0.05%	0.05%	-0.44%	-0.39%
Financials	9.62%	10.52%	-0.90%	7.67%	3.43%	4.24%	0.04%	-0.03%	0.01%	-0.61%	-0.60%
Information Technology	26.85%	26.57%	0.28%	9.62%	11.83%	-2.21%	0.04%	-0.12%	-0.08%	0.69%	0.61%
Communication Services	12.26%	9.81%	2.45%	11.29%	9.11%	2.18%	0.03%	-0.01%	0.03%	-0.01%	0.02%
Utilities	3.01%	2.96%	0.05%	7.33%	4.77%	2.55%	0.01%	0.04%	0.05%	-0.13%	-0.08%
Real Estate	2.59%	3.59%	-1.01%	3.19%	1.34%	1.85%	0.02%	-0.01%	0.01%	-0.28%	-0.27%
Unclassified	1.16%	0.00%	1.16%	6.63%	--	-3.60%	0.01%	0.00%	0.01%	0.00%	0.01%
<b>Total</b>				<b>9.62%</b>	<b>9.22%</b>	<b>0.39%</b>	<b>0.26%</b>	<b>0.13%</b>	<b>0.39%</b>	<b>0.00%</b>	<b>0.39%</b>

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.

Total Domestic Equity  
Performance Attribution Summary (Net of Fees)

Period Ending: September 30, 2020

Portfolio: Total Domestic Equity  
Benchmark: Russell 3000

Portfolio Total Return 8.25%

Equity Only

Portfolio 9.62%

Benchmark 9.22%

Return From Active Mgmt 0.39%

Local Returns

Portfolio 9.62%

Benchmark 9.22%

Active Equity Return 0.39%

Country Selection -0.03%

Stock Selection 0.42%

Currency Contributions

Portfolio 0.00%

Benchmark 0.00%

Active Currency Contributions 0.00%

Chart uses return-based methodology.

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

Period Ending: September 30, 2020

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	0.00%	0.04%	-0.04%	--	6.67%	-6.67%	0.00%	0.00%	0.00%	0.00%
AUSTRALIA	4.70%	4.37%	0.33%	-0.27%	2.56%	-2.82%	-0.04%	0.05%	-0.10%	0.02%
AUSTRIA	0.08%	0.11%	-0.03%	1.25%	-4.80%	6.05%	0.01%	0.00%	0.01%	0.00%
BELGIUM	0.83%	0.60%	0.23%	-0.59%	0.40%	-0.99%	-0.07%	-0.05%	-0.02%	0.00%
BRAZIL	0.58%	1.47%	-0.90%	16.65%	-2.88%	19.53%	0.18%	0.10%	0.01%	0.06%
CANADA	7.20%	6.49%	0.71%	9.36%	6.51%	2.85%	0.21%	0.07%	0.14%	-0.01%
CHILE	0.00%	0.17%	-0.17%	--	-3.97%	3.97%	0.01%	0.02%	0.00%	-0.01%
CHINA	3.66%	11.74%	-8.08%	26.48%	12.45%	14.04%	-0.28%	-0.67%	0.38%	0.01%
COLOMBIA	0.00%	0.05%	-0.05%	--	-1.04%	1.04%	0.00%	0.00%	0.00%	0.00%
CZECH REPUBLIC	0.00%	0.03%	-0.03%	--	-4.83%	4.83%	0.00%	0.00%	0.00%	0.00%
DENMARK	1.90%	1.52%	0.38%	12.64%	15.41%	-2.77%	0.04%	0.09%	-0.06%	0.01%
EGYPT	0.00%	0.03%	-0.03%	--	4.60%	-4.60%	0.00%	0.00%	0.00%	0.00%
FINLAND	0.32%	0.66%	-0.34%	8.12%	12.87%	-4.74%	-0.04%	-0.02%	-0.01%	-0.01%
FRANCE	7.55%	7.07%	0.48%	2.19%	2.86%	-0.68%	-0.13%	-0.05%	-0.10%	0.02%
GERMANY	8.18%	5.97%	2.21%	4.66%	4.77%	-0.12%	0.02%	-0.03%	-0.06%	0.11%
GREECE	0.00%	0.04%	-0.04%	--	3.33%	-3.33%	0.00%	0.00%	0.00%	0.00%
HONG KONG	6.88%	2.22%	4.66%	6.66%	1.52%	5.14%	0.31%	-0.08%	0.39%	0.00%
HUNGARY	0.00%	0.06%	-0.06%	--	-9.08%	9.08%	0.01%	0.01%	0.00%	0.00%
INDIA	1.93%	2.30%	-0.37%	32.34%	15.09%	17.24%	0.14%	-0.04%	0.23%	-0.05%
INDONESIA	0.22%	0.42%	-0.20%	2.43%	-5.69%	8.12%	0.04%	0.04%	-0.01%	0.01%
IRELAND	0.49%	0.42%	0.07%	-22.03%	14.44%	-36.47%	-0.12%	0.00%	-0.13%	0.01%
ISRAEL	0.59%	0.41%	0.18%	11.98%	-2.00%	13.98%	0.10%	-0.13%	0.22%	0.00%
ITALY	1.94%	1.48%	0.46%	1.88%	1.44%	0.45%	0.00%	-0.03%	0.01%	0.02%
JAPAN	16.04%	16.48%	-0.45%	4.63%	7.05%	-2.42%	-0.36%	0.04%	-0.38%	-0.02%
KOREA	1.69%	3.33%	-1.64%	9.39%	13.22%	-3.83%	-0.18%	-0.13%	0.04%	-0.10%
LUXEMBOURG	0.03%	0.00%	0.03%	3.25%	6.11%	-2.86%	0.00%	0.00%	0.00%	0.00%

Attribution analysis does not include

# Total International Equity

## Performance Attribution by Country (Net of Fees)

Period Ending: September 30, 2020

	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
MALAYSIA	0.00%	0.51%	-0.50%	-3.48%	3.95%	-7.44%	0.00%	0.01%	0.00%	-0.02%
MEXICO	0.31%	0.50%	-0.19%	3.35%	4.47%	-1.12%	0.00%	0.01%	0.00%	-0.01%
NETHERLANDS	2.82%	2.80%	0.02%	9.78%	5.89%	3.88%	0.14%	0.02%	0.14%	-0.02%
NEW ZEALAND	0.26%	0.21%	0.04%	11.39%	-0.86%	12.25%	0.02%	0.01%	0.02%	0.00%
NORWAY	0.51%	0.34%	0.17%	3.35%	8.43%	-5.08%	-0.02%	0.00%	-0.03%	0.00%
Other Countries	0.00%	0.00%	0.00%	16.14%	10.55%	5.59%	0.00%	0.00%	0.00%	0.00%
PAKISTAN	0.00%	0.01%	-0.01%	--	12.55%	-12.55%	0.00%	0.00%	0.00%	0.00%
PERU	0.15%	0.07%	0.08%	-4.86%	3.54%	-8.40%	-0.01%	0.00%	-0.01%	0.00%
PHILIPPINES	0.00%	0.24%	-0.24%	--	-2.69%	2.69%	0.01%	0.02%	0.00%	-0.01%
POLAND	0.00%	0.20%	-0.20%	--	-0.84%	0.84%	0.01%	0.01%	0.00%	-0.01%
PORTUGAL	0.27%	0.11%	0.16%	5.77%	-2.19%	7.96%	-0.01%	-0.05%	0.03%	0.00%
QATAR	0.00%	0.24%	-0.24%	--	7.45%	-7.45%	-0.01%	-0.01%	0.00%	0.00%
ROMANIA	0.03%	0.00%	0.03%	-3.31%	0.40%	-3.72%	0.00%	0.00%	0.00%	0.00%
RUSSIA	0.56%	0.90%	-0.35%	-2.23%	-5.15%	2.92%	0.05%	0.03%	-0.05%	0.07%
SAUDI ARABIA	0.00%	0.76%	-0.76%	--	9.46%	-9.46%	-0.04%	-0.04%	0.00%	0.00%
SINGAPORE	1.96%	0.72%	1.24%	1.33%	-1.04%	2.37%	0.03%	-0.02%	0.04%	0.02%
SOUTH AFRICA	0.00%	1.08%	-1.08%	--	4.10%	-4.10%	-0.01%	0.04%	0.00%	-0.04%
SPAIN	1.06%	1.56%	-0.50%	-8.20%	-3.87%	-4.33%	-0.06%	0.03%	-0.07%	-0.03%
SWEDEN	2.05%	1.98%	0.07%	10.03%	14.28%	-4.25%	-0.06%	-0.03%	-0.05%	0.02%
SWITZERLAND	6.51%	6.69%	-0.18%	3.56%	5.21%	-1.66%	-0.21%	-0.01%	-0.18%	-0.03%
TAIWAN	2.15%	3.52%	-1.37%	30.65%	16.78%	13.86%	0.08%	-0.11%	0.24%	-0.05%
THAILAND	0.00%	0.65%	-0.65%	--	-13.80%	13.80%	0.11%	0.10%	0.00%	0.01%
TURKEY	0.00%	0.13%	-0.13%	--	-15.80%	15.80%	0.02%	0.01%	0.00%	0.01%
UNITED ARAB EMIRATES	0.00%	0.15%	-0.15%	--	6.36%	-6.36%	0.00%	0.00%	0.00%	0.00%
UNITED KINGDOM	10.01%	9.14%	0.87%	4.31%	-0.46%	4.77%	0.48%	-0.02%	0.46%	0.05%
UNITED STATES	6.54%	0.00%	6.54%	9.09%	9.51%	-0.42%	0.23%	0.48%	-0.32%	0.07%
	<b>100.00%</b>	<b>100.00%</b>	<b>0.00%</b>	<b>6.72%</b>	<b>6.11%</b>	<b>0.61%</b>	<b>0.61%</b>	<b>-0.32%</b>	<b>0.81%</b>	<b>0.11%</b>

Attribution analysis does not include

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

Period Ending: September 30, 2020

## 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
	0.00%	0.00%	0.00%	--	0.00%	2.51%	-2.51%	0.00%
Argentinian Nuevo Peso	0.00%	0.04%	-0.04%	-7.51%	0.00%	0.00%	0.00%	0.00%
Australian Dollar	4.70%	4.37%	0.33%	4.10%	3.70%	3.78%	-0.08%	0.02%
Baht	0.00%	0.65%	-0.65%	-2.46%	0.00%	-1.98%	1.98%	0.01%
Canadian Dollar	7.20%	6.49%	0.71%	1.97%	2.09%	2.19%	-0.09%	-0.01%
Chilean Peso	0.00%	0.17%	-0.17%	4.16%	0.00%	4.04%	-4.04%	-0.01%
Colombian Peso	0.00%	0.05%	-0.05%	-2.99%	0.00%	-2.84%	2.84%	0.00%
Cruzeiro Real	0.58%	1.47%	-0.90%	-2.58%	5.89%	-2.45%	8.35%	0.06%
Czech Koruna	0.00%	0.03%	-0.03%	2.69%	0.00%	2.61%	-2.61%	0.00%
Danish Krone	1.90%	1.52%	0.38%	4.54%	4.86%	4.98%	-0.12%	0.01%
Egyptian Pound	0.00%	0.03%	-0.03%	2.41%	0.00%	2.48%	-2.48%	0.00%
Emirati dirham	0.00%	0.15%	-0.15%	0.00%	0.00%	0.00%	0.00%	0.00%
Euro	23.58%	20.83%	2.75%	4.41%	3.68%	3.63%	0.04%	0.10%
Forint	0.00%	0.06%	-0.06%	1.90%	0.00%	1.56%	-1.56%	0.00%
Hong Kong Dollar	6.88%	2.22%	4.66%	0.01%	0.01%	0.01%	0.00%	0.00%
Indian Rupee	1.93%	2.30%	-0.37%	2.34%	0.80%	3.06%	-2.27%	-0.05%
Mexican New Peso	0.31%	0.50%	-0.19%	4.67%	4.08%	4.50%	-0.41%	-0.01%
New Sol	0.15%	0.07%	0.08%	-1.71%	0.00%	0.00%	0.00%	0.00%
New Taiwan Dollar	2.15%	3.52%	-1.37%	1.87%	2.12%	1.90%	0.23%	-0.05%
New Zealand Dollar	0.26%	0.21%	0.04%	2.68%	2.62%	2.34%	0.29%	0.00%
New Zloty	0.00%	0.20%	-0.20%	2.31%	0.00%	2.29%	-2.29%	-0.01%
Norwegian Krone	0.51%	0.34%	0.17%	3.10%	3.12%	3.27%	-0.15%	0.00%
Pakistani Rupee	0.00%	0.01%	-0.01%	1.30%	0.00%	1.61%	-1.61%	0.00%
Philippines Peso	0.00%	0.24%	-0.24%	2.77%	0.00%	2.48%	-2.48%	-0.01%
Pound Sterling	10.01%	9.14%	0.87%	4.63%	3.96%	4.24%	-0.29%	0.05%
Qatari rial	0.00%	0.24%	-0.24%	0.00%	0.00%	-0.01%	0.01%	0.00%
Rand	0.00%	1.08%	-1.08%	4.17%	0.00%	4.03%	-4.03%	-0.04%

Attribution analysis does not include

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

Period Ending: September 30, 2020

Currency Name	Portfolio Weight	Index Weight	Excess Weight	Currency Return	Portfolio Contrib.	Index Contrib.	Active Contrib.	Currency Effect
Ringgit (Malaysian Dollar)	0.00%	0.51%	-0.50%	3.12%	1.10%	3.18%	-2.08%	-0.02%
Romanian New Leu	0.03%	0.00%	0.03%	3.67%	0.00%	2.51%	-2.51%	0.00%
Rupiah	0.22%	0.42%	-0.20%	-4.00%	-1.86%	-2.77%	0.91%	0.01%
Russian Federation Rouble	0.56%	0.90%	-0.35%	-8.18%	0.00%	-7.79%	7.79%	0.07%
Saudi Arabian Riyal	0.00%	0.76%	-0.76%	0.00%	0.00%	0.02%	-0.02%	0.00%
Shekel	0.59%	0.41%	0.18%	1.19%	0.54%	0.46%	0.08%	0.00%
Singapore Dollar	1.96%	0.72%	1.24%	2.19%	2.08%	2.09%	-0.01%	0.02%
South Korean Won	1.69%	3.33%	-1.64%	2.85%	0.60%	3.32%	-2.72%	-0.10%
Swedish Krona	2.05%	1.98%	0.07%	4.10%	4.06%	4.22%	-0.16%	0.02%
Swiss Franc	6.51%	6.69%	-0.18%	3.13%	3.25%	3.31%	-0.05%	-0.03%
Turkish Lira	0.00%	0.13%	-0.13%	-11.03%	0.00%	-10.59%	10.59%	0.01%
US Dollar	6.54%	0.00%	6.54%	0.00%	1.22%	2.51%	-1.29%	0.07%
Yen	16.04%	16.48%	-0.45%	2.23%	2.22%	2.32%	-0.10%	-0.02%
Yuan Renminbi	3.66%	11.74%	-8.08%	3.87%	2.47%	0.53%	1.94%	0.01%
	<b>100.00%</b>	<b>100.00%</b>	<b>0.00%</b>		<b>2.68%</b>	<b>2.51%</b>	<b>0.17%</b>	<b>0.11%</b>

Attribution analysis does not include

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

Period Ending: September 30, 2020

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	14.78%	8.79%	5.99%	8.74%	4.55%	4.19%	-0.18%	0.81%	0.63%	-0.14%	0.49%
Europe	45.14%	41.70%	3.45%	4.10%	3.74%	0.35%	-0.16%	0.19%	0.04%	-0.99%	-0.95%
Asia/Pacific	39.48%	46.71%	-7.23%	10.21%	8.65%	1.57%	-0.38%	0.26%	-0.11%	1.18%	1.07%
Other	0.59%	2.80%	-2.21%	11.96%	4.16%	7.81%	0.00%	0.06%	0.06%	-0.05%	0.00%
<b>Total</b>				<b>6.72%</b>	<b>6.11%</b>	<b>0.61%</b>	<b>-0.71%</b>	<b>1.32%</b>	<b>0.61%</b>	<b>0.00%</b>	<b>0.61%</b>

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	14.78%	8.79%	5.99%	8.74%	4.55%	4.19%	-0.18%	0.81%	0.63%	-0.14%	0.49%
Europe	45.14%	41.70%	3.45%	4.10%	3.74%	0.35%	-0.16%	0.19%	0.04%	-0.99%	-0.95%
Asia/Pacific	39.48%	46.71%	-7.23%	10.21%	8.65%	1.57%	-0.38%	0.26%	-0.11%	1.18%	1.07%
Other	0.59%	2.80%	-2.21%	11.96%	4.16%	7.81%	0.00%	0.06%	0.06%	-0.05%	0.00%
<b>Total</b>				<b>6.72%</b>	<b>6.11%</b>	<b>0.61%</b>	<b>-0.71%</b>	<b>1.32%</b>	<b>0.61%</b>	<b>0.00%</b>	<b>0.61%</b>

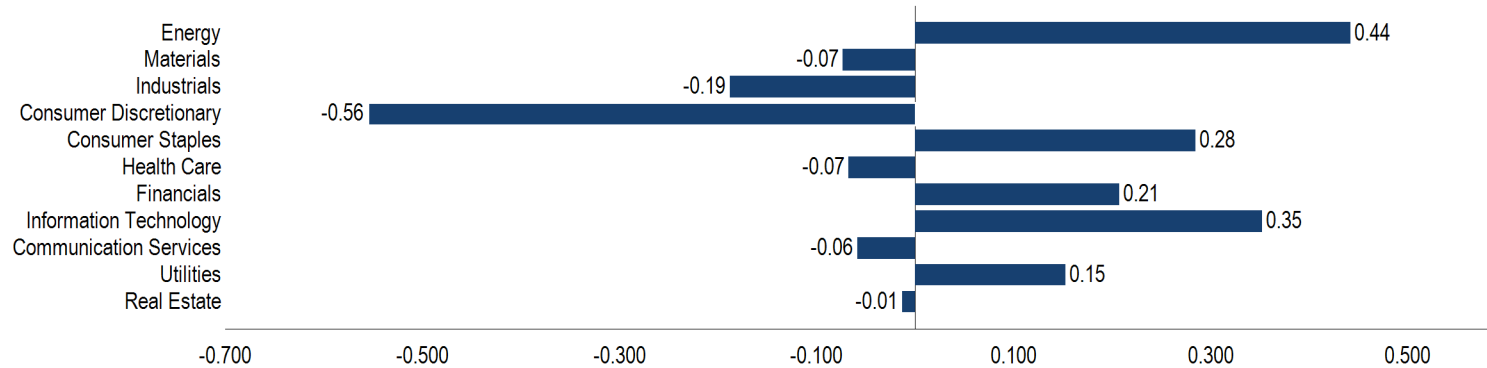
Attribution analysis does not include



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

Period Ending: September 30, 2020

Total International Equity vs. MSCI ACWI ex USA  
Current Quarter



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	3.62%	4.82%	-1.20%	-2.09%	-7.48%	5.39%	0.28%	0.16%	0.44%	-0.65%	-0.21%
Materials	8.74%	7.59%	1.15%	10.24%	10.87%	-0.63%	0.10%	-0.08%	0.01%	0.36%	0.37%
Industrials	13.19%	11.38%	1.80%	9.72%	9.45%	0.27%	-0.19%	0.12%	-0.07%	0.38%	0.31%
Consumer Discretionary	10.51%	12.58%	-2.06%	13.55%	16.52%	-2.97%	-0.28%	-0.34%	-0.62%	1.31%	0.69%
Consumer Staples	8.36%	9.93%	-1.57%	7.76%	4.61%	3.15%	0.02%	0.22%	0.24%	-0.15%	0.09%
Health Care	10.88%	10.66%	0.23%	2.67%	2.58%	0.08%	-0.04%	-0.07%	-0.12%	-0.38%	-0.49%
Financials	17.15%	18.18%	-1.03%	1.11%	-0.09%	1.20%	-0.06%	0.25%	0.19%	-1.13%	-0.94%
Information Technology	11.18%	11.01%	0.17%	15.71%	12.54%	3.17%	0.05%	0.24%	0.29%	0.71%	1.00%
Communication Services	5.83%	7.54%	-1.71%	1.98%	3.38%	-1.40%	0.02%	-0.12%	-0.09%	-0.21%	-0.30%
Utilities	5.13%	3.51%	1.62%	5.71%	1.97%	3.74%	-0.02%	0.23%	0.21%	-0.15%	0.07%
Real Estate	3.58%	2.80%	0.78%	5.02%	2.11%	2.91%	0.00%	0.05%	0.05%	-0.11%	-0.07%
Unclassified	1.83%	0.00%	1.83%	6.59%	--	0.00%	0.05%	0.03%	0.07%	0.00%	0.07%
<b>Total</b>				<b>6.72%</b>	<b>6.11%</b>	<b>0.61%</b>	<b>-0.07%</b>	<b>0.68%</b>	<b>0.61%</b>	<b>0.00%</b>	<b>0.61%</b>

Attribution analysis does not include

Total International Equity  
Performance Attribution Summary (Net of Fees)

Period Ending: September 30, 2020

Portfolio: Total International Equity  
Benchmark: MSCI ACWI ex USA

Portfolio Total Return 7.73%

	Equity Only
Portfolio	6.72%
Benchmark	<u>6.11%</u>
Return From Active Mgmt	0.61%

Local Returns	
Portfolio	4.11%
Benchmark	<u>3.58%</u>
Active Equity Return	0.52%

Country Selection	-0.32%
Stock Selection	0.81%

Currency Contributions	
Portfolio	2.68%
Benchmark	<u>2.51%</u>
Active Currency Contributions	0.17%

Chart uses return-based methodology.

# Total Fund Manager Rankings Page

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015
<b>Total Fund</b>	<b>5,144,042,597</b>	<b>100.0</b>	<b>4.5</b>	<b>-0.4</b>	<b>5.7</b>	<b>5.0</b>	<b>6.9</b>	<b>6.8</b>	<b>6.1</b>	<b>16.4</b>	<b>-3.3</b>	<b>14.6</b>	<b>6.7</b>	<b>-2.5</b>
Interim Policy Index			4.5	2.2	7.3	5.5	7.1	6.8	5.6	14.4	-2.6	14.0	6.5	-1.7
InvMetrics Public DB > \$1B Net Rank			71	77	54	70	82	77	44	59	35	67	80	86
NT MSCI US Index	875,965,402	17.0	8.8	--	--	--	--	--	--	--	--	--	--	--
MSCI USA			9.5	6.8	16.4	12.2	13.7	13.2	8.7	30.9	-5.0	21.2	10.9	0.7
eV US Large Cap Core Equity Net Rank			35	--	--	--	--	--	--	--	--	--	--	--
T. Rowe Price Large Cap Growth	170,294,022	3.3	11.3	24.7	37.3	--	--	--	--	29.5	--	--	--	--
Russell 1000 Growth			13.2	24.3	37.5	21.7	20.1	17.3	12.0	36.4	-1.5	30.2	7.1	5.7
eV US Large Cap Growth Equity Net Rank			49	32	30	--	--	--	--	82	--	--	--	--
Aronson Johnson Ortiz	127,288	0.0	7.4	-11.5	-5.7	0.9	5.2	9.3	6.0	21.7	-11.4	16.7	9.5	-0.1
Russell 1000 Value			5.6	-11.6	-5.0	2.6	7.7	9.9	6.4	26.5	-8.3	13.7	17.3	-3.8
eV US Large Cap Value Equity Net Rank			17	59	65	74	87	60	76	89	72	50	83	16
PIMCO StocksPLUS Small Fund	264,104,718	5.1	6.6	-7.1	2.8	--	--	--	--	29.3	--	--	--	--
Russell 2000			4.9	-8.7	0.4	1.8	8.0	9.9	7.0	25.5	-11.0	14.6	21.3	-4.4
eV US Small Cap Core Equity Net Rank			24	36	30	--	--	--	--	15	--	--	--	--
NT MSCI World Ex-US Index	291,194,617	5.7	5.0	--	--	--	--	--	--	--	--	--	--	--
MSCI World ex USA			4.9	-7.1	0.2	0.6	5.3	4.4	3.7	22.5	-14.1	24.2	2.7	-3.0
eV Global All Cap Core Eq Net Rank			86	--	--	--	--	--	--	--	--	--	--	--
Artisan International Growth	192,044,948	3.7	7.4	-0.1	7.9	7.0	8.7	--	--	31.3	-10.2	31.5	-9.0	-2.2
MSCI EAFE			4.8	-7.1	0.5	0.6	5.3	4.6	3.7	22.0	-13.8	25.0	1.0	-0.8
eV EAFE All Cap Growth Net Rank			96	98	98	65	62	--	--	32	7	45	97	85
Research Affiliates International Equity	162,133,961	3.2	3.3	-16.5	-10.2	-4.6	3.4	--	--	17.9	-15.5	25.7	9.3	-5.9
MSCI EAFE			4.8	-7.1	0.5	0.6	5.3	4.6	3.7	22.0	-13.8	25.0	1.0	-0.8
eV EAFE All Cap Value Net Rank			41	68	80	71	31	--	--	56	50	28	1	96
Mondrian International Small Cap	155,864,443	3.0	8.8	-7.4	3.0	1.6	7.0	6.4	--	25.1	-14.6	32.4	0.1	2.7
S&P Developed Ex-U.S. SmallCap			10.3	-3.5	7.8	1.4	7.2	7.0	6.1	24.7	-18.4	32.4	3.8	5.9
eV EAFE Small Cap Value Net Rank			38	14	18	8	42	45	--	32	22	66	88	95
Mondrian Emerging Markets	149,716,099	2.9	12.0	-4.6	7.7	1.1	6.2	1.7	--	18.3	-13.8	27.2	9.0	-16.3
MSCI Emerging Markets			9.6	-1.2	10.5	2.4	9.0	2.5	5.8	18.4	-14.6	37.3	11.2	-14.9
eV Emg Mkts All Cap Value Equity Net Rank			1	30	24	36	66	12	--	42	48	93	81	49
Baillie Gifford Emerging Markets	163,492,407	3.2	13.1	3.5	16.9	--	--	--	--	28.0	--	--	--	--
MSCI Emerging Markets			9.6	-1.2	10.5	2.4	9.0	2.5	5.8	18.4	-14.6	37.3	11.2	-14.9
Diversified Emerging Mkts MStar MF Rank			14	29	25	--	--	--	--	14	--	--	--	--

Total Fund  
Manager Rankings Page

Period Ending: September 30, 2020

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	2019	2018	2017	2016	2015
Western Asset Management Investment Grade Credit	201,967,705	3.9	1.8	7.2	8.8	6.7	6.7	--	--	14.9	-2.3	6.8	7.0	-0.5
BBgBarc US Credit TR			1.5	6.4	7.5	6.2	5.7	4.9	5.4	13.8	-2.1	6.2	5.6	-0.8
eV US Corporate Fixed Inc Net Rank			56	32	28	31	16	--	--	31	34	39	40	40
RBC Access Capital	58,779,626	1.1	0.4	3.8	4.5	--	--	--	--	6.4	--	--	--	--
BBgBarc US Securitized Index			0.2	3.9	4.6	3.8	3.1	3.1	4.1	6.4	1.0	2.5	1.8	1.5
eV US Securitized Fixed Inc Net Rank			78	25	23	--	--	--	--	54	--	--	--	--
Loomis Sayles High Yield	195,854,905	3.8	4.5	1.0	3.5	3.4	5.8	--	--	11.5	-2.3	7.1	14.4	-5.2
BBgBarc US High Yield TR			4.6	0.6	3.3	4.2	6.8	6.5	7.1	14.3	-2.1	7.5	17.1	-4.5
eV US High Yield Fixed Inc Net Rank			53	31	23	62	55	--	--	72	52	47	42	79
Eaton Vance Senior Loan Fund	189,013,636	3.7	3.2	-2.0	-0.3	2.3	3.6	--	--	7.5	0.7	4.0	9.9	-0.8
S&P/LSTA Leveraged Loan Index			4.1	-0.7	1.1	3.1	4.0	4.3	4.4	8.6	0.4	4.1	10.2	-0.7
eV US Float-Rate Bank Loan Fixed Inc Net Rank			76	64	58	61	41	--	--	80	16	40	33	85
Eaton Vance Institutional Senior Loan Plus Fund	22,214,485	0.4	4.0	-2.3	0.1	2.7	--	--	--	11.3	-1.3	3.6	--	--
S&P/LSTA Leveraged Loan Index			4.1	-0.7	1.1	3.1	4.0	4.3	4.4	8.6	0.4	4.1	10.2	-0.7
eV US Float-Rate Bank Loan Fixed Inc Net Rank			20	71	50	36	--	--	--	2	97	64	--	--
Western Asset Management Agency MBS	59,816,514	1.2	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc US GNMA TR			-0.3	3.3	3.9	3.4	2.7	2.9	4.1	5.9	1.0	1.9	1.6	1.4
eV US Corporate Fixed Inc Net Rank			--	--	--	--	--	--	--	--	--	--	--	--
Western Asset Management Treasuries	39,916,155	0.8	--	--	--	--	--	--	--	--	--	--	--	--
BBgBarc US Treasury Bills			0.0	0.7	1.2	1.7	1.2	0.7	1.3	2.3	1.9	0.8	0.4	0.1
eV US Government Fixed Inc Net Rank			--	--	--	--	--	--	--	--	--	--	--	--
TCW TALF Opportunities Fund LP	4,000,000	0.1	0.0	--	--	--	--	--	--	--	--	--	--	--
BBgBarc US Aggregate TR			0.6	6.8	7.0	5.2	4.2	3.6	4.5	8.7	0.0	3.5	2.6	0.6
eV US High Yield Fixed Inc Net Rank			99	--	--	--	--	--	--	--	--	--	--	--

# Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2020

Account	Fee Schedule	Market Value As of 9/30/2020	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
NT MSCI US Index	0.01% of Assets	\$875,965,402	\$87,597	0.01%
T. Rowe Price Large Cap Growth	0.35% of Assets	\$170,294,022	\$596,029	0.35%
Aronson Johnson Ortiz	0.30% of First 250.0 Mil, 0.20% of Next 250.0 Mil, 0.15% of Next 500.0 Mil, 0.13% Thereafter	\$127,288	\$382	0.30%
PIMCO StocksPLUS Small Fund	0.50% of First 150.0 Mil, 0.45% Thereafter	\$264,104,718	\$1,263,471	0.48%
NT MSCI World Ex-US Index	0.25% of Assets	\$291,194,617	\$727,987	0.25%
Artisan International Growth	0.30% of Assets	\$192,044,948	\$576,135	0.30%
Research Affiliates International Equity	0.12% of Assets	\$162,133,961	\$194,561	0.12%
Mondrian International Small Cap	0.85% of First 25.0 Mil, 0.65% of Next 50.0 Mil, 0.63% of Next 50.0 Mil, 0.60% Thereafter	\$155,864,443	\$1,035,187	0.66%
Mondrian Emerging Markets	1.00% of First 25.0 Mil, 0.75% of Next 50.0 Mil, 0.60% Thereafter	\$149,716,099	\$1,073,297	0.72%
Baillie Gifford Emerging Markets	0.85% of Assets	\$163,492,407	\$1,389,685	0.85%
Western Asset Management Investment Grade Credit	0.30% of First 100.0 Mil, 0.15% Thereafter	\$201,967,705	\$452,952	0.22%
RBC Access Capital	0.30% of First 100.0 Mil, 0.20% Thereafter	\$58,779,626	\$176,339	0.30%
Loomis Sayles High Yield	0.50% of Assets	\$195,854,905	\$979,275	0.50%

*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, 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: September 30, 2020

Account	Fee Schedule	Market Value As of 9/30/2020	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Eaton Vance Senior Loan Fund	0.55% of First 50.0 Mil, 0.50% of Next 50.0 Mil, 0.40% Thereafter	\$189,013,636	\$881,055	0.47%
Eaton Vance Institutional Senior Loan Plus Fund	0.40% of Assets	\$22,214,485	\$88,858	0.40%
Western Asset Management Agency MBS	0.30% of First 100.0 Mil, 0.15% Thereafter	\$59,816,514	\$179,450	0.30%
Western Asset Management Treasuries	0.30% of First 100.0 Mil, 0.15% Thereafter	\$39,916,155	\$119,748	0.30%
TCW TALF Opportunities Fund LP	0.50% of Assets	\$4,000,000	\$20,000	0.50%
Brandywine Global Sovereign	0.36% of Assets	\$264,234,078	\$951,243	0.36%
PIMCO Emerging Local Bond Ins	0.50% of First 100.0 Mil, 0.45% Thereafter	\$188,836,469	\$899,764	0.48%
Invesco Core Real Estate	0.90% of First 75.0 Mil, 0.80% Thereafter	\$172,766,466	\$1,457,132	0.84%
IFM Infrastructure	0.97% of Assets	\$174,493,435	\$1,692,586	0.97%
Parametric Overlay	0.15% of First 25.0 Mil, 0.10% of Next 75.0 Mil, 0.04% Thereafter	\$65,226,012	\$77,726	0.12%
<b>Investment Management Fee</b>		<b>\$4,062,057,390</b>	<b>\$14,920,456</b>	<b>0.37%</b>

*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.*

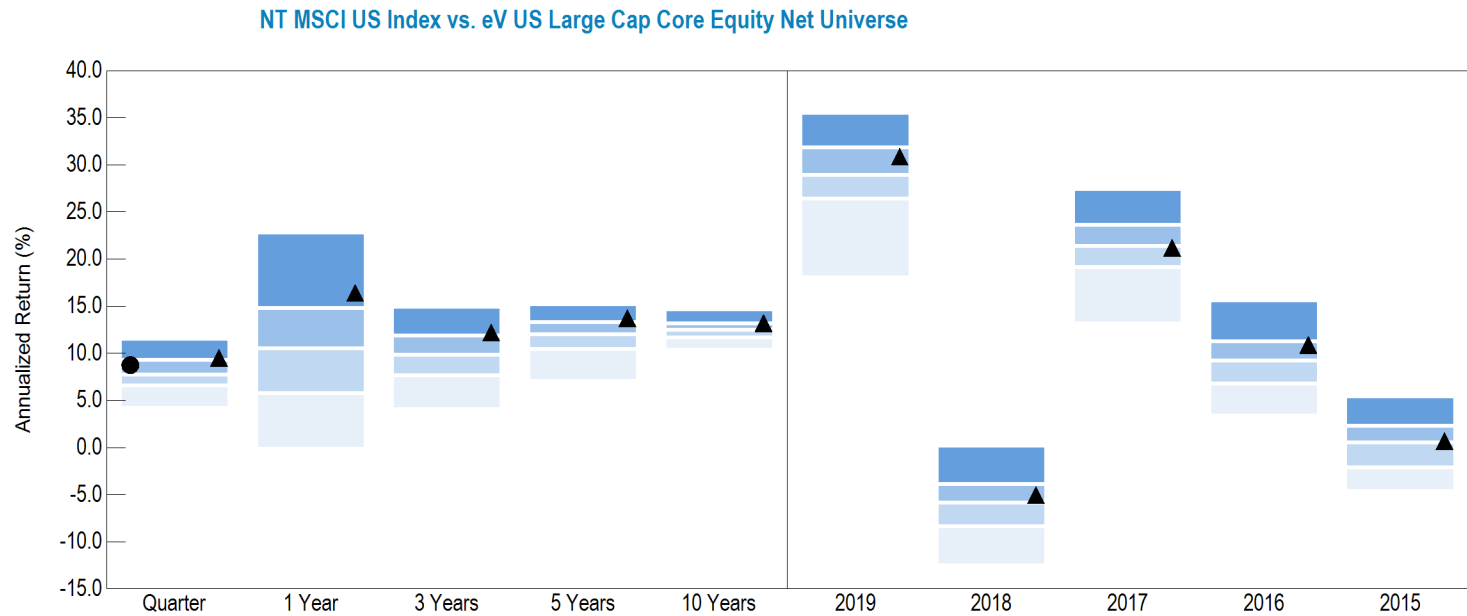
*\* Managers with incentive fee include: Ivy, Research Affiliates, Western Asset, Artisan, Brandywine, and Invesco Commodities TCW TALF Opportunities Fund LP. Performance based fees are not included in the fee analysis. AJO has performance based fees.*

## Domestic Equity Managers

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# NT MSCI US Index Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

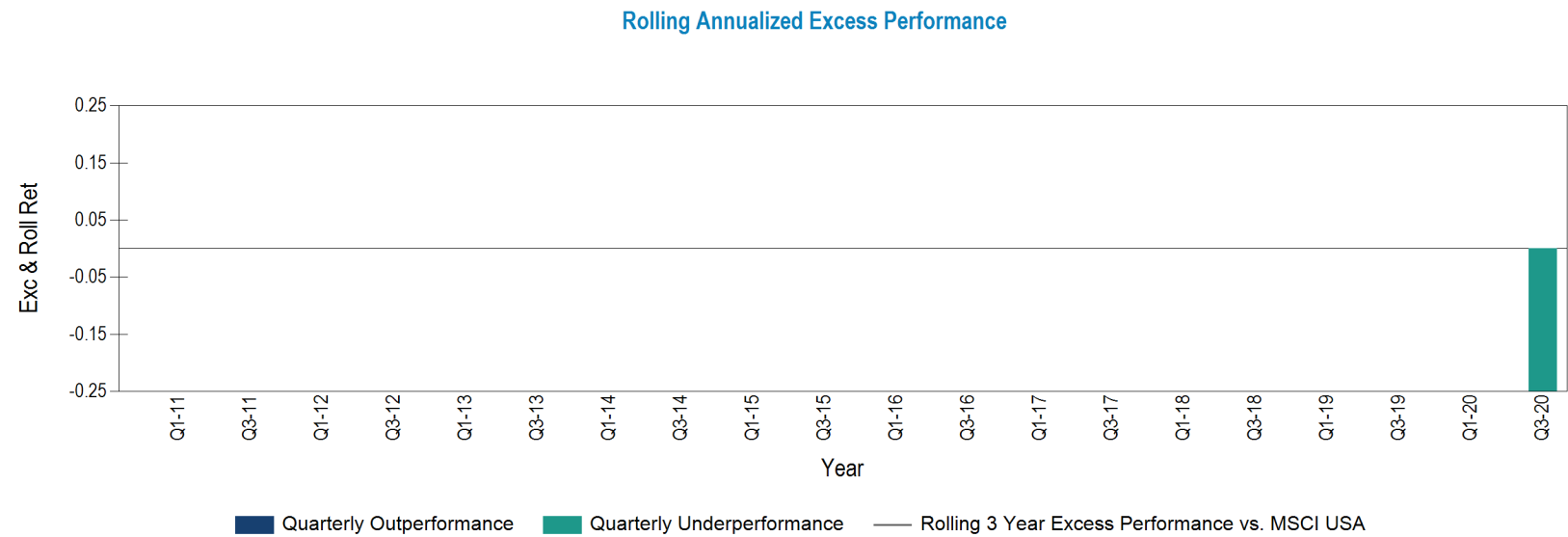
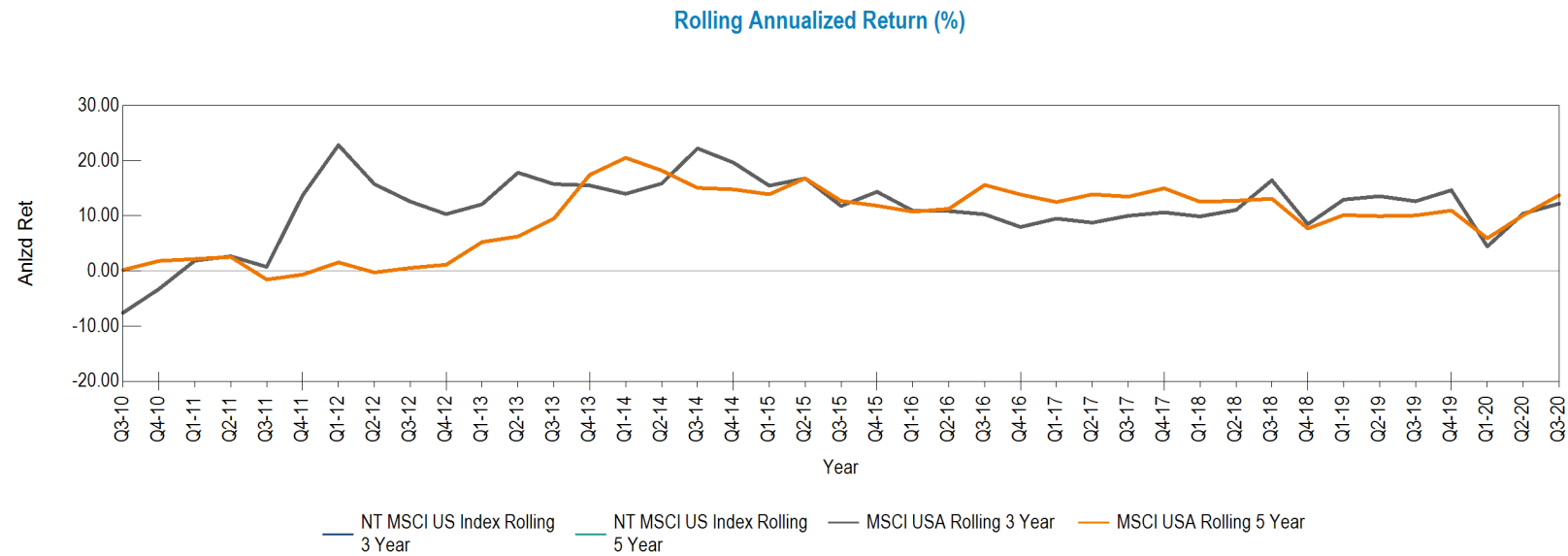


	Return (Rank)									
5th Percentile	11.5	22.8	14.9	15.2	14.7	35.5	0.1	27.4	15.6	5.4
25th Percentile	9.4	14.8	11.9	13.3	13.2	31.9	-3.8	23.7	11.3	2.4
Median	7.8	10.5	9.9	12.0	12.5	28.9	-5.8	21.4	9.3	0.6
75th Percentile	6.6	5.8	7.7	10.5	11.7	26.5	-8.3	19.2	6.9	-2.0
95th Percentile	4.3	-0.1	4.1	7.1	10.5	18.1	-12.5	13.2	3.4	-4.6
# of Portfolios	216	214	205	186	133	203	189	188	177	142
● NT MSCI US Index	8.8 (35)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ MSCI USA	9.5 (22)	16.4 (20)	12.2 (22)	13.7 (18)	13.2 (27)	30.9 (33)	-5.0 (40)	21.2 (54)	10.9 (27)	0.7 (50)



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

Period Ending: September 30, 2020

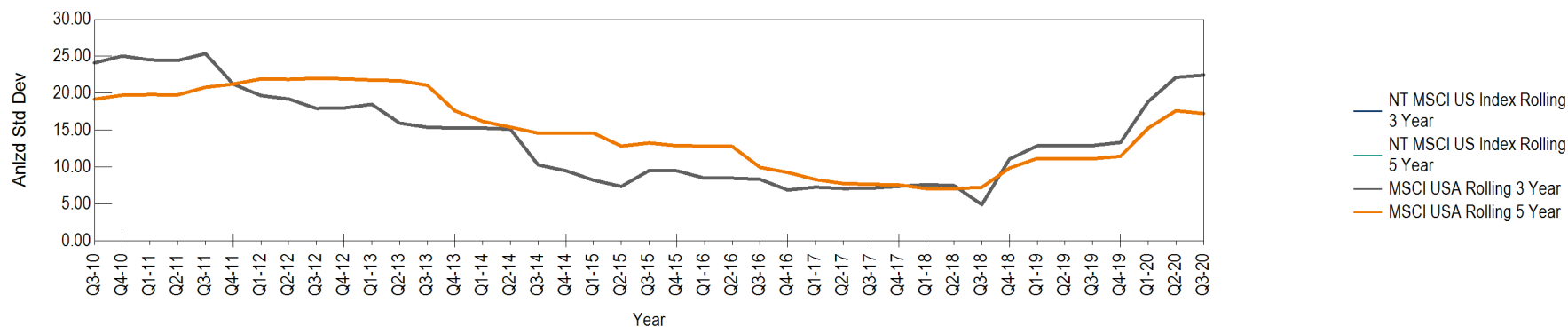


# NT MSCI US Index

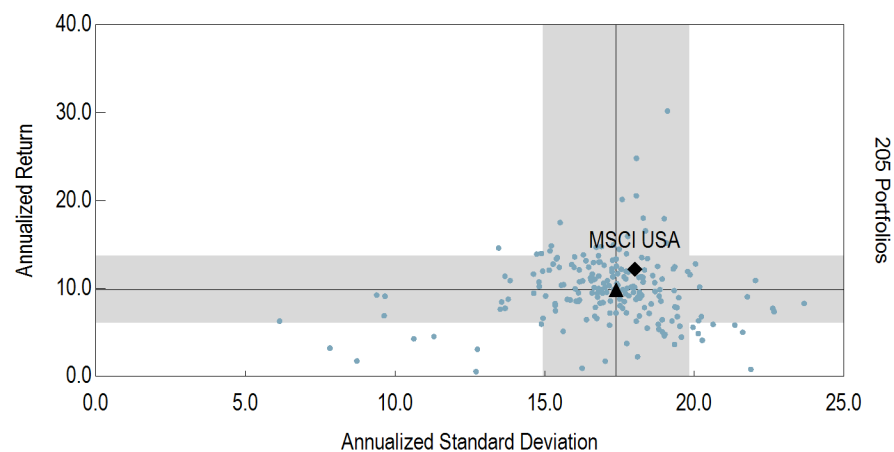
## Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

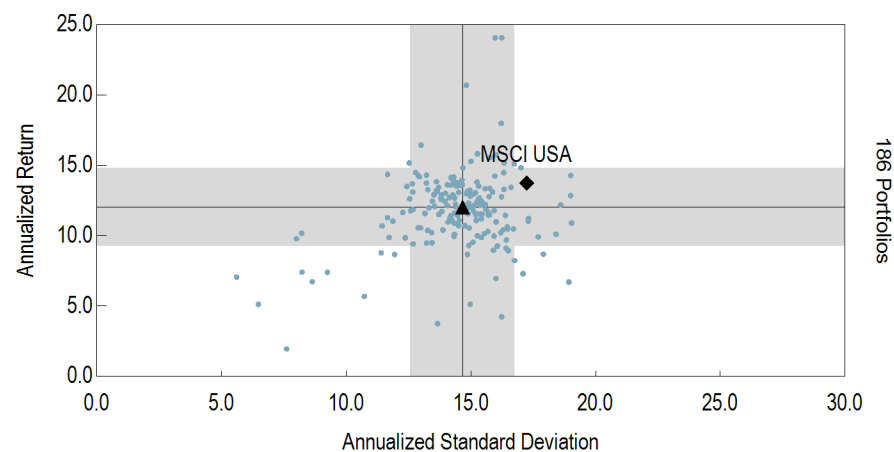
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
NT MSCI US Index	--	--	--
MSCI USA	12.2%	18.0%	0.6
eV US Large Cap Core Equity Net Median	9.9%	17.4%	0.5

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
NT MSCI US Index	--	--	--
MSCI USA	13.7%	17.2%	0.7
eV US Large Cap Core Equity Net Median	12.0%	14.7%	0.7

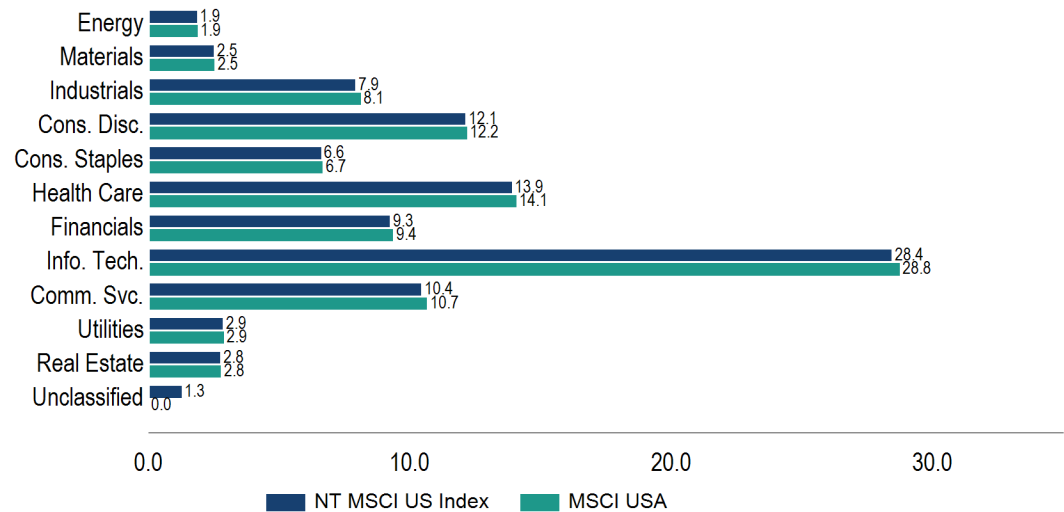
# NT MSCI US Index Manager Portfolio Overview (Net of Fees)

Period Ending: September 30, 2020

## Characteristics

	Portfolio	MSCI USA
Number of Holdings	620	619
Weighted Avg. Market Cap. (\$B)	419.05	423.19
Median Market Cap. (\$B)	19.73	19.92
Price To Earnings	24.65	24.63
Price To Book	4.61	4.60
Price To Sales	2.54	2.54
Return on Equity (%)	4.04	4.03
Yield (%)	1.61	1.63
Beta		1.00

## Sector Allocation (%) vs MSCI USA



## Largest Holdings

	End Weight	Return
APPLE INC	6.62	27.22
MICROSOFT CORP	5.00	3.60
AMAZON.COM INC	4.40	14.13
FACEBOOK INC	2.08	15.34
ALPHABET INC	1.47	3.96
ALPHABET INC	1.45	3.35
JOHNSON & JOHNSON	1.29	6.57
PROSHARES ULTRA SEMICONDUCTORS	1.27	25.81
PROCTER & GAMBLE CO (THE)	1.14	16.97
VISA INC	1.11	3.68

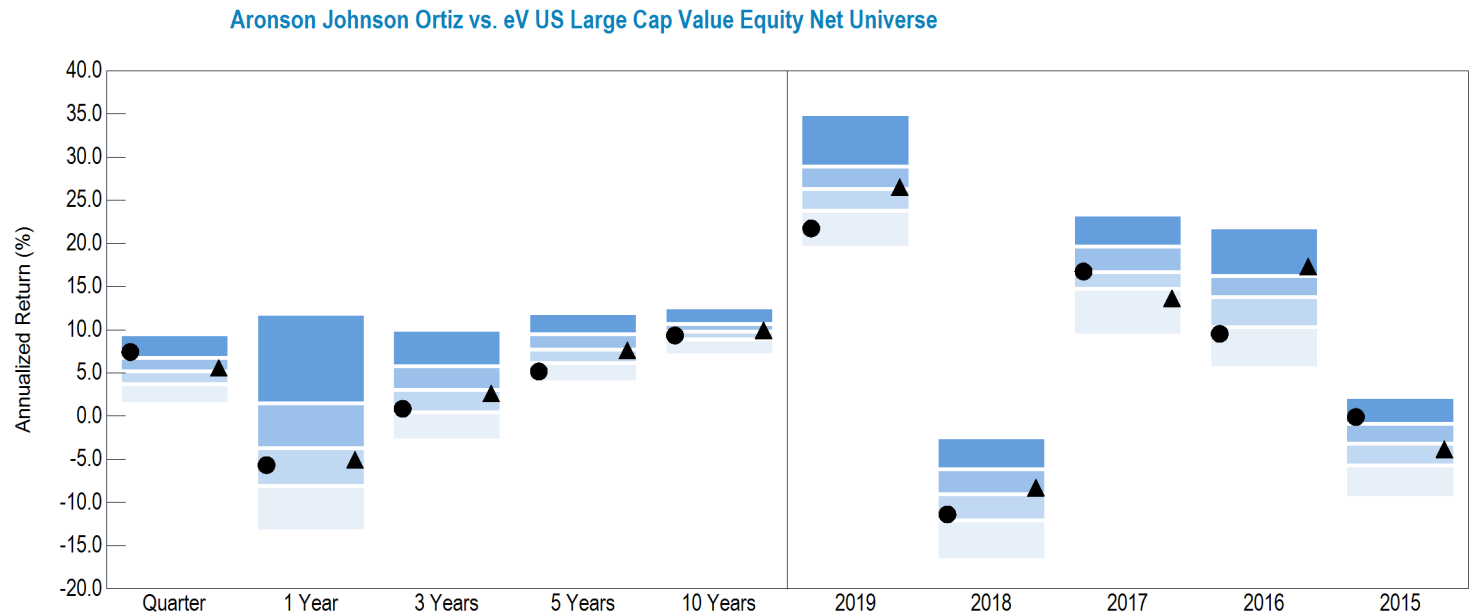
## Top Contributors

	End Weight	Return	Contribution
APPLE INC	6.62	27.22	1.80
TESLA INC	1.05	98.65	1.04
AMAZON.COM INC	4.40	14.13	0.62
NVIDIA CORPORATION	1.10	42.50	0.47
PROSHARES ULTRA SEMICONDUCTORS	1.27	25.81	0.33
FACEBOOK INC	2.08	15.34	0.32
SALESFORCE.COM INC	0.75	34.16	0.25
ZOOM VIDEO COMMUNICATIONS INC	0.25	85.42	0.21
UNITED PARCEL SERVICE INC	0.39	50.83	0.20
PROCTER & GAMBLE CO (THE)	1.14	16.97	0.19

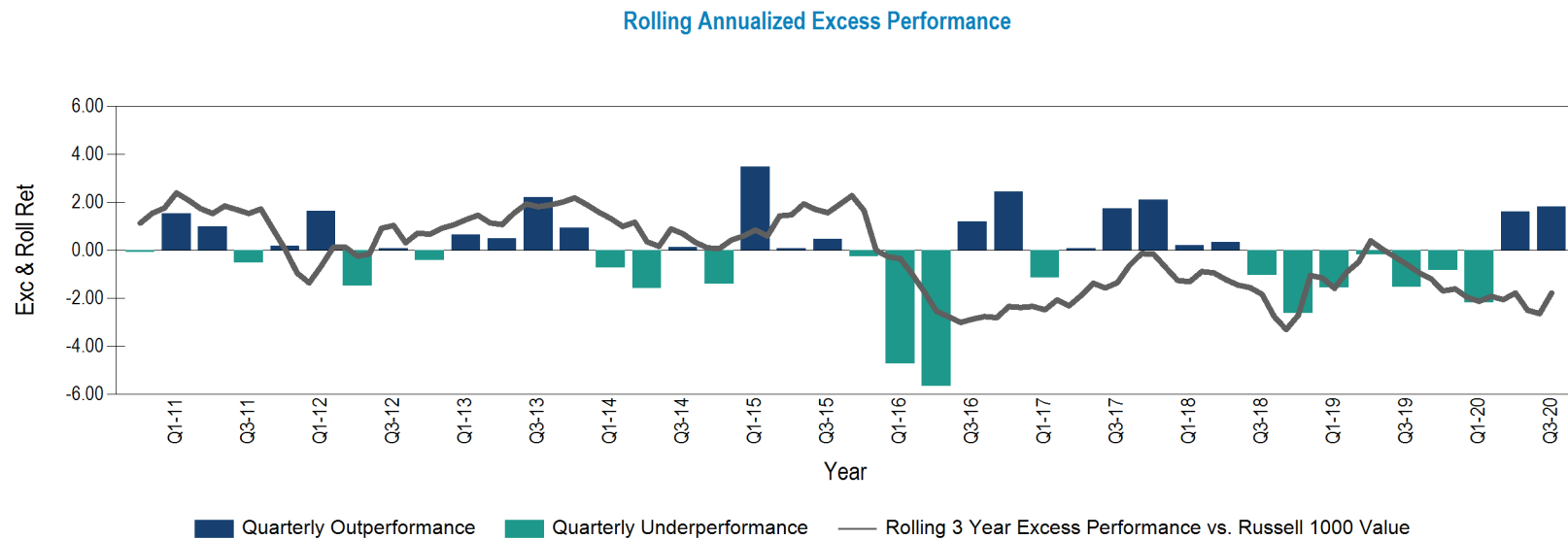
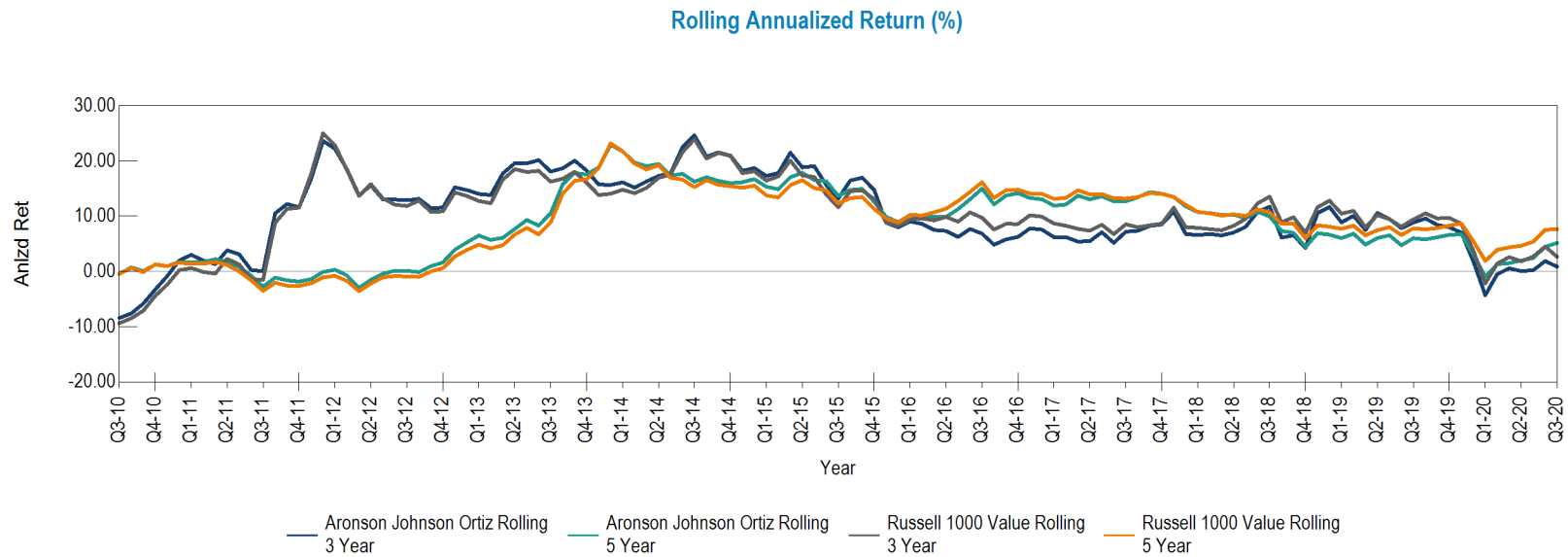
## Bottom Contributors

	End Weight	Return	Contribution
EXXON MOBIL CORP	0.48	-21.72	-0.10
INTEL CORP	0.72	-12.87	-0.09
CISCO SYSTEMS INC	0.55	-14.88	-0.08
CHEVRON CORP	0.44	-18.12	-0.08
ABBVIE INC	0.51	-9.72	-0.05
GILEAD SCIENCES INC	0.26	-17.03	-0.04
CITIGROUP INC	0.30	-14.78	-0.04
ELI LILLY AND CO	0.42	-9.40	-0.04
BOEING CO	0.29	-9.84	-0.03
AT&T INC	0.67	-4.03	-0.03

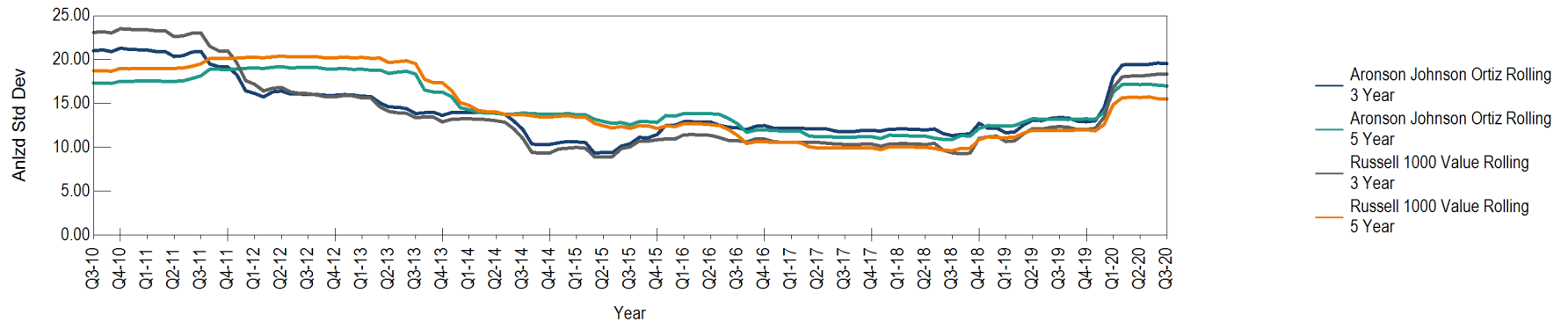
Unclassified sector allocation includes cash allocations.



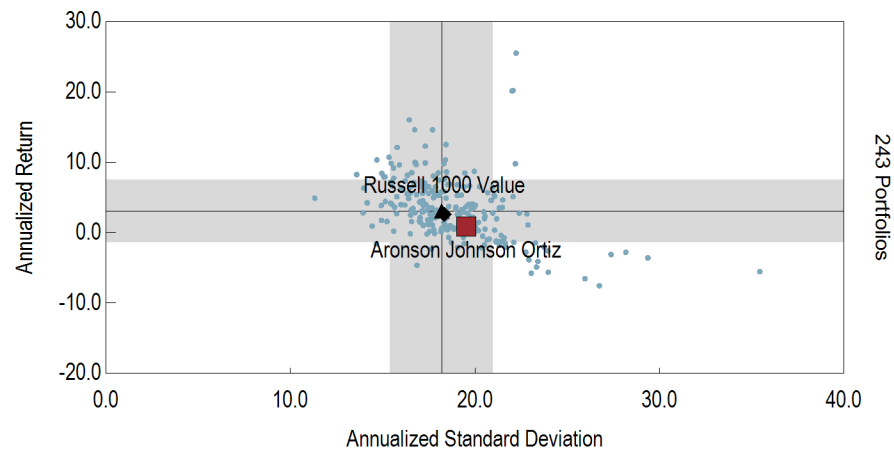
	Return (Rank)									
5th Percentile	9.4	11.8	10.0	11.9	12.5	34.9	-2.5	23.3	21.8	2.2
25th Percentile	6.8	1.5	5.8	9.5	10.7	28.9	-6.1	19.7	16.3	-0.8
Median	5.2	-3.7	3.1	7.7	9.8	26.3	-9.0	16.7	13.8	-3.1
75th Percentile	3.7	-8.0	0.5	6.2	8.9	23.8	-12.0	14.8	10.4	-5.7
95th Percentile	1.4	-13.3	-2.8	4.0	7.1	19.5	-16.7	9.4	5.6	-9.4
# of Portfolios	248	246	243	233	186	249	239	231	225	195
● Aronson Johnson Ortiz	7.4 (17)	-5.7 (65)	0.9 (74)	5.2 (87)	9.3 (60)	21.7 (89)	-11.4 (72)	16.7 (50)	9.5 (83)	-0.1 (16)
▲ Russell 1000 Value	5.6 (42)	-5.0 (61)	2.6 (56)	7.7 (52)	9.9 (45)	26.5 (49)	-8.3 (43)	13.7 (86)	17.3 (19)	-3.8 (59)



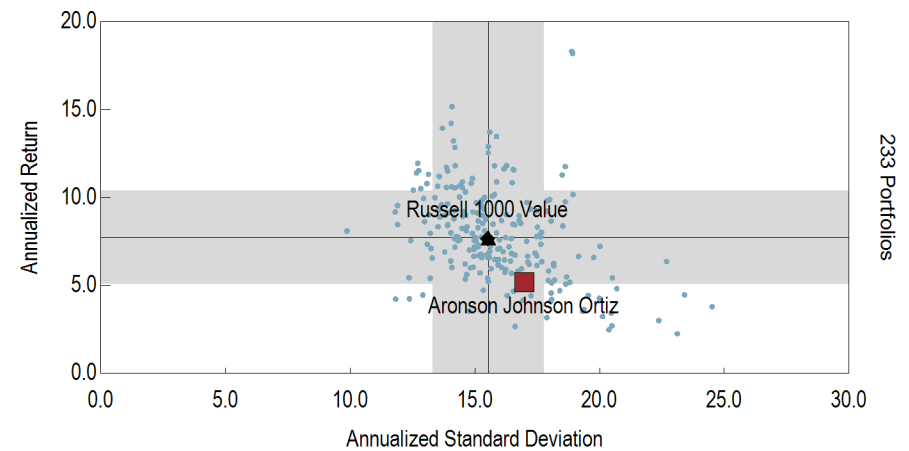
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Aronson Johnson Ortiz	0.9%	19.5%	0.0
Russell 1000 Value	2.6%	18.3%	0.1
eV US Large Cap Value Equity Net Median	3.1%	18.2%	0.1

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Aronson Johnson Ortiz	5.2%	17.0%	0.2
Russell 1000 Value	7.7%	15.5%	0.4
eV US Large Cap Value Equity Net Median	7.7%	15.5%	0.4

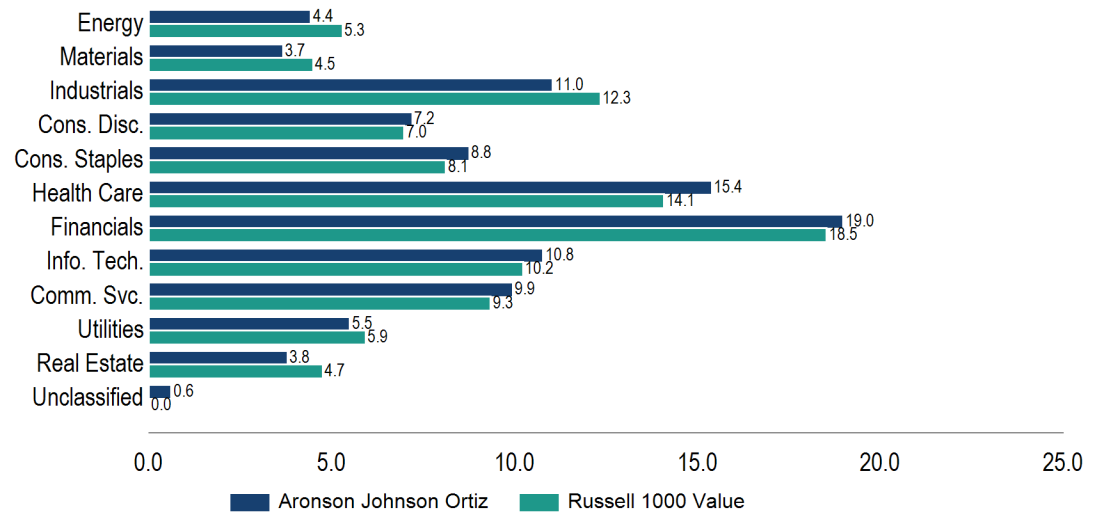
# Aronson Johnson Ortiz Manager Portfolio Overview (Net of Fees)

Period Ending: September 30, 2020

## Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	1	850
Weighted Avg. Market Cap. (\$B)		115.36
Median Market Cap. (\$B)		9.09
Price To Earnings		18.71
Price To Book		2.63
Price To Sales		1.66
Return on Equity (%)		1.65
Yield (%)		2.46
Beta	1.08	1.00

## Sector Allocation (%) vs Russell 1000 Value



## Largest Holdings

End Weight Return

	End Weight	Return
PFIZER INC	1.75	13.33
VERIZON COMMUNICATIONS INC	1.96	9.14
AES CORP (THE)	0.64	26.16
ALLY FINANCIAL INC	0.59	27.60
OWENS CORNING	0.61	23.91
EXPEDITORS INTERNATIONAL OF WASHINGTON INC.	0.75	19.04
TAKE-TWO INTERACTIVE SOFTWARE INC	0.66	18.38
PHILIP MORRIS INTERNATIONAL INC	1.39	8.74
JOHNSON CONTROLS INTERNATIONAL PLC	0.59	20.42
MASCO CORP	0.96	10.10

## Top Contributors

Avg Wgt	Return	Contribution
1.75	13.33	0.23
1.96	9.14	0.18
0.64	26.16	0.17
0.59	27.60	0.16
0.61	23.91	0.14
0.75	19.04	0.14
0.66	18.38	0.12
1.39	8.74	0.12
0.59	20.42	0.12
0.96	10.10	0.10

## Bottom Contributors

Avg Wgt	Return	Contribution
1.80	-12.87	-0.23
0.73	-26.86	-0.20
1.32	-14.78	-0.20
0.51	-28.50	-0.14
0.60	-21.03	-0.13
0.98	-10.39	-0.10
0.82	-9.11	-0.07
0.21	-31.59	-0.07
0.66	-8.85	-0.06
0.51	-10.07	-0.05

Unclassified sector allocation includes cash allocations.

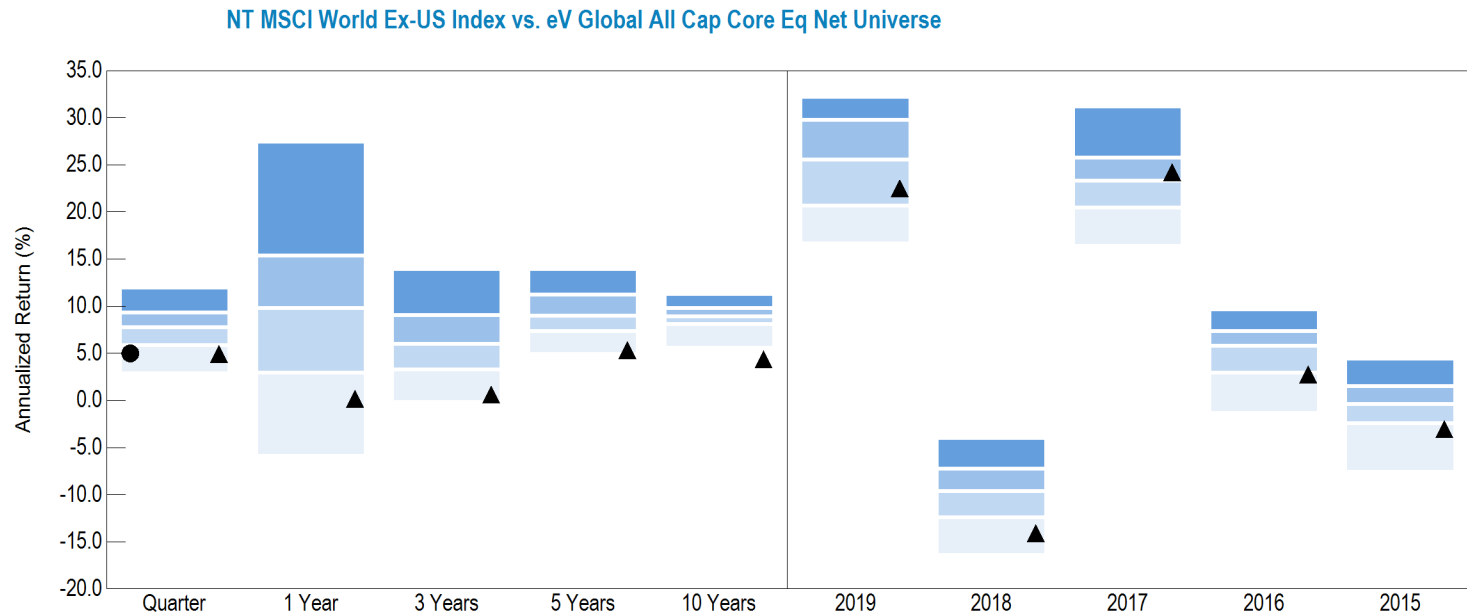
## International Equity Managers

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

Period Ending: September 30, 2020

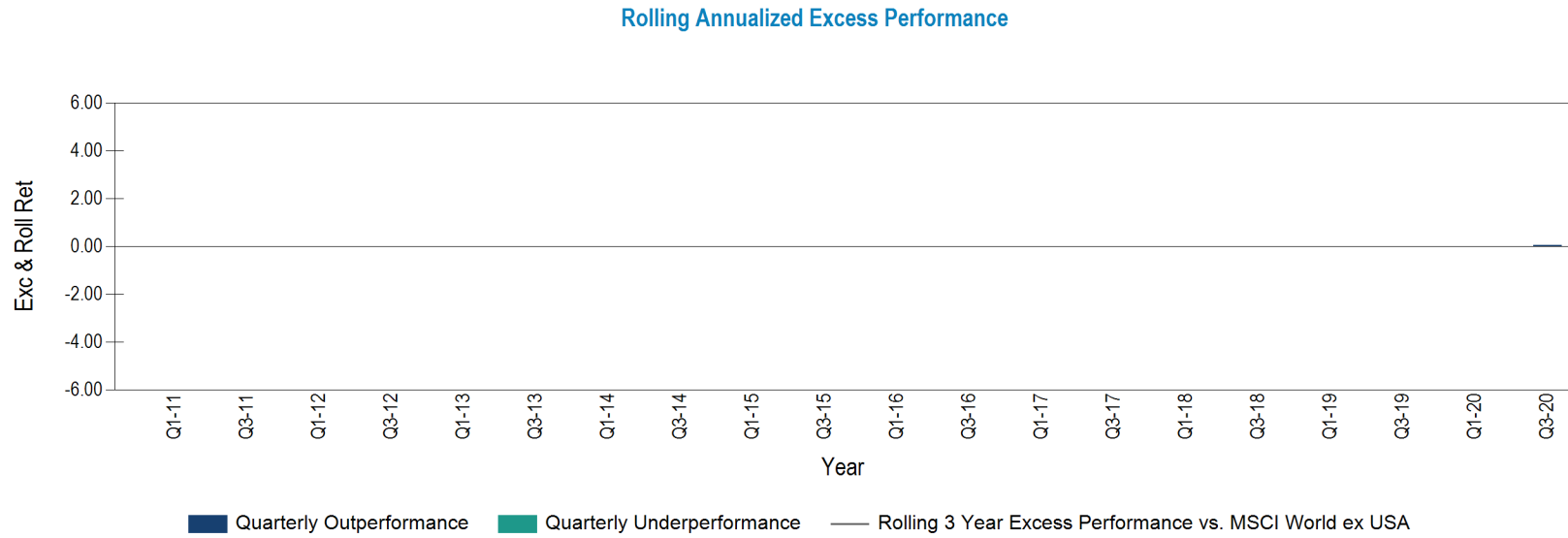
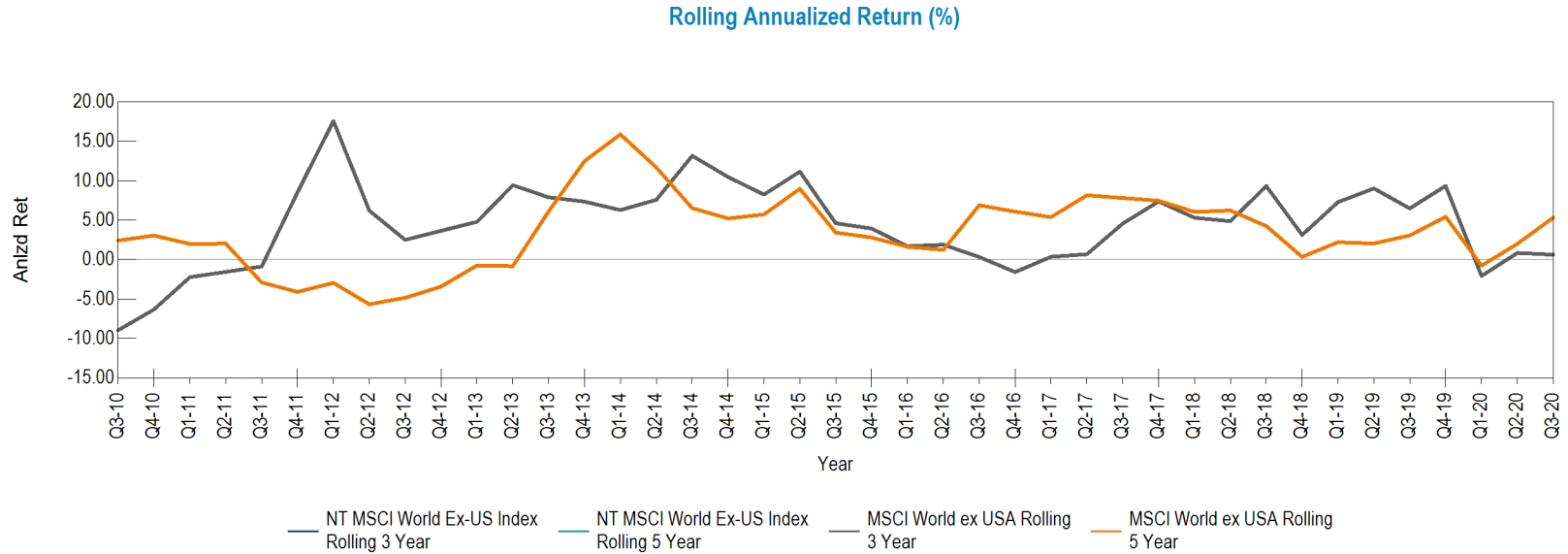


	Return (Rank)																			
5th Percentile	11.9	27.4	13.9	13.9	11.3	32.2	-4.0	31.2	9.6	4.4										
25th Percentile	9.4	15.4	9.1	11.3	9.8	29.8	-7.2	25.8	7.4	1.6										
Median	7.8	9.8	6.1	9.0	9.0	25.6	-9.6	23.3	5.8	-0.4										
75th Percentile	5.9	3.0	3.3	7.4	8.1	20.7	-12.3	20.5	3.0	-2.4										
95th Percentile	2.9	-5.8	-0.1	4.9	5.6	16.7	-16.4	16.4	-1.3	-7.6										
# of Portfolios	95	94	88	75	45	83	73	66	59	48										
● NT MSCI World Ex-US Index	5.0 (86)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)										
▲ MSCI World ex USA	4.9 (87)	0.2 (81)	0.6 (94)	5.3 (92)	4.4 (98)	22.5 (65)	-14.1 (91)	24.2 (46)	2.7 (78)	-3.0 (81)										

Returns prior to inception date are composite returns.

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

Period Ending: September 30, 2020

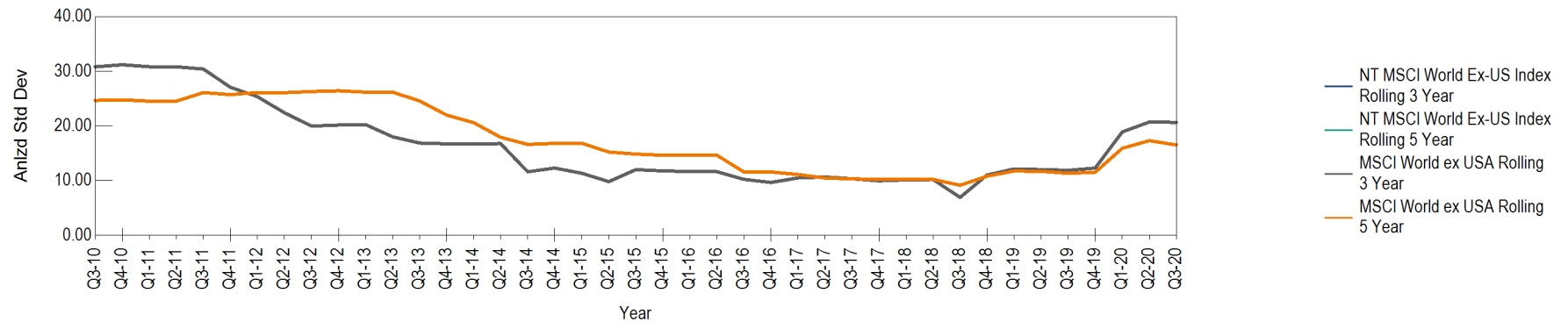


Returns prior to inception date are composite returns.

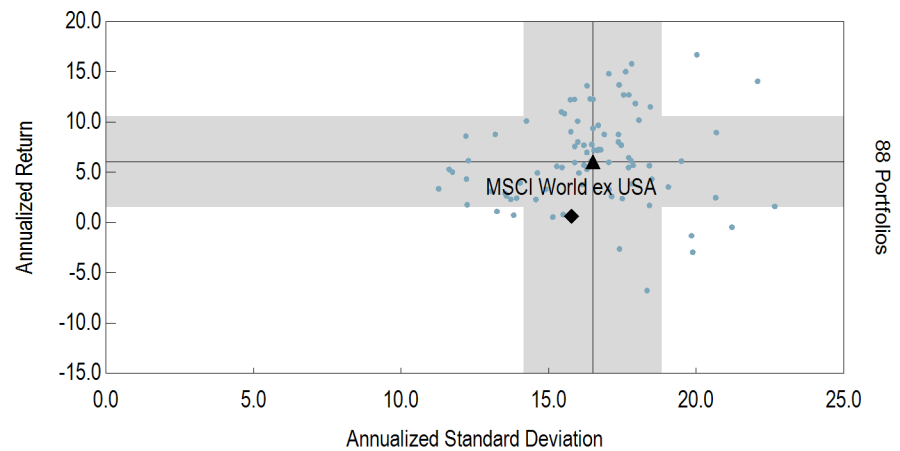
# NT MSCI World Ex-US Index Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

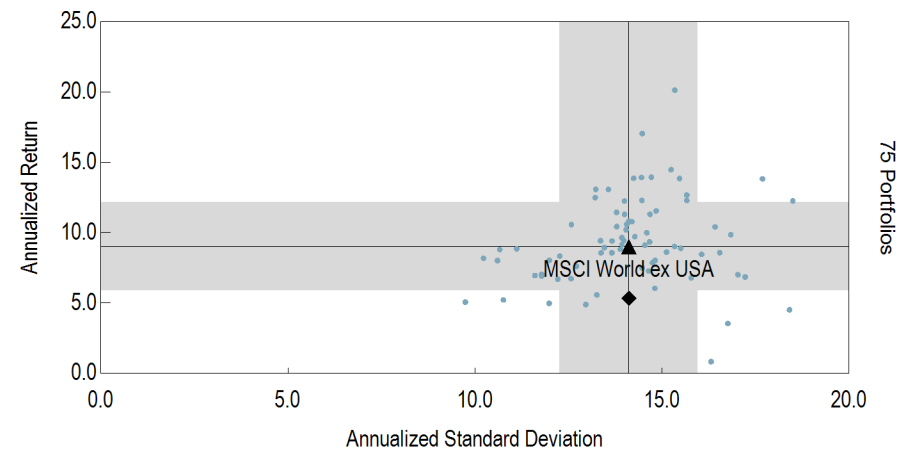
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
NT MSCI World Ex-US Index	--	--	--
MSCI World ex USA	0.6%	15.8%	-0.1
eV Global All Cap Core Eq Net Median	6.1%	16.5%	0.3

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
MSCI EAFE	5.3%	14.0%	0.3
eV EAFE All Cap Growth Net Median	10.4%	15.2%	0.6

Returns prior to inception date are composite returns.

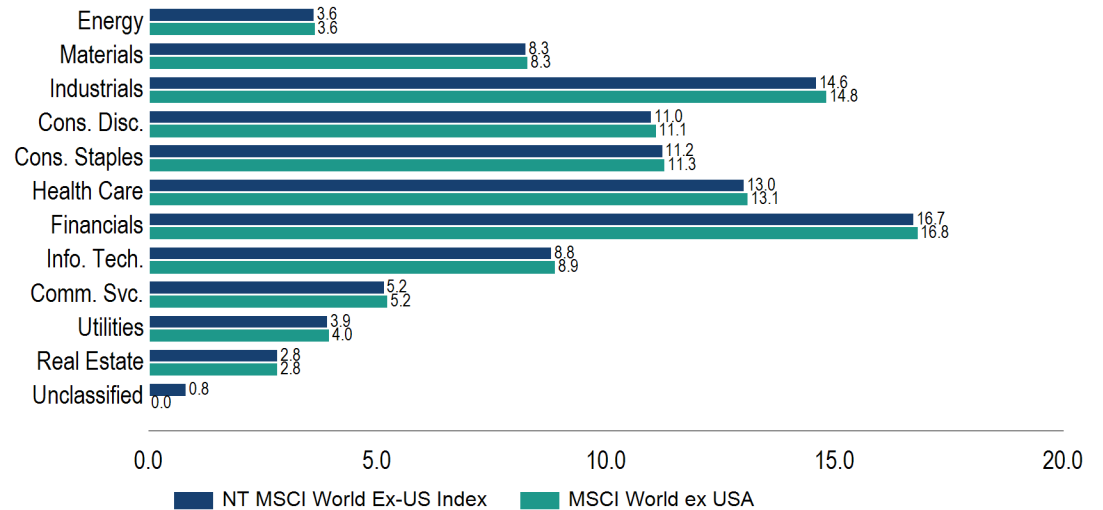
# NT MSCI World Ex-US Index Manager Portfolio Overview (Net of Fees)

Period Ending: September 30, 2020

## Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	1,024	988
Weighted Avg. Market Cap. (\$B)	62.70	62.97
Median Market Cap. (\$B)	9.75	10.24
Price To Earnings	19.12	19.04
Price To Book	2.83	2.79
Price To Sales	1.15	1.14
Return on Equity (%)	10.93	10.61
Yield (%)	2.73	2.76
Beta		1.00

## Sector Allocation (%) vs MSCI World ex USA



## Largest Holdings

	End Weight	Return
NESTLE SA, CHAM UND VEEVEY	2.34	7.78
ROCHE HOLDING AG	1.60	-0.91
NOVARTIS AG	1.29	0.10
SAP SE	1.07	11.42
ASML HOLDING NV	1.03	0.44
ASTRAZENECA PLC	0.93	5.74
TOYOTA MOTOR CORP	0.93	5.07
LVMH MOET HENNESSY LOUIS VUITTON SE	0.85	7.40
NOVO NORDISK 'B'	0.80	7.77
AIA GROUP LTD	0.78	5.43

## Top Contributors

	End Weight	Return	Contribution
NESTLE SA, CHAM UND VEEVEY	2.34	7.78	0.18
SOFTBANK GROUP CORP	0.63	21.32	0.14
PROSHARES ULTRA SEMICONDUCTORS	0.49	25.81	0.13
VESTAS WIND SYSTEMS A/S	0.21	59.39	0.12
SAP SE	1.07	11.42	0.12
DAIMLER AG	0.32	36.20	0.12
NINTENDO CO LTD	0.42	27.53	0.11
NTT DOCOMO INC	0.28	40.46	0.11
NIDEC CORP	0.27	39.68	0.11
CANADIAN NATIONAL RAILWAY CO	0.50	21.06	0.10

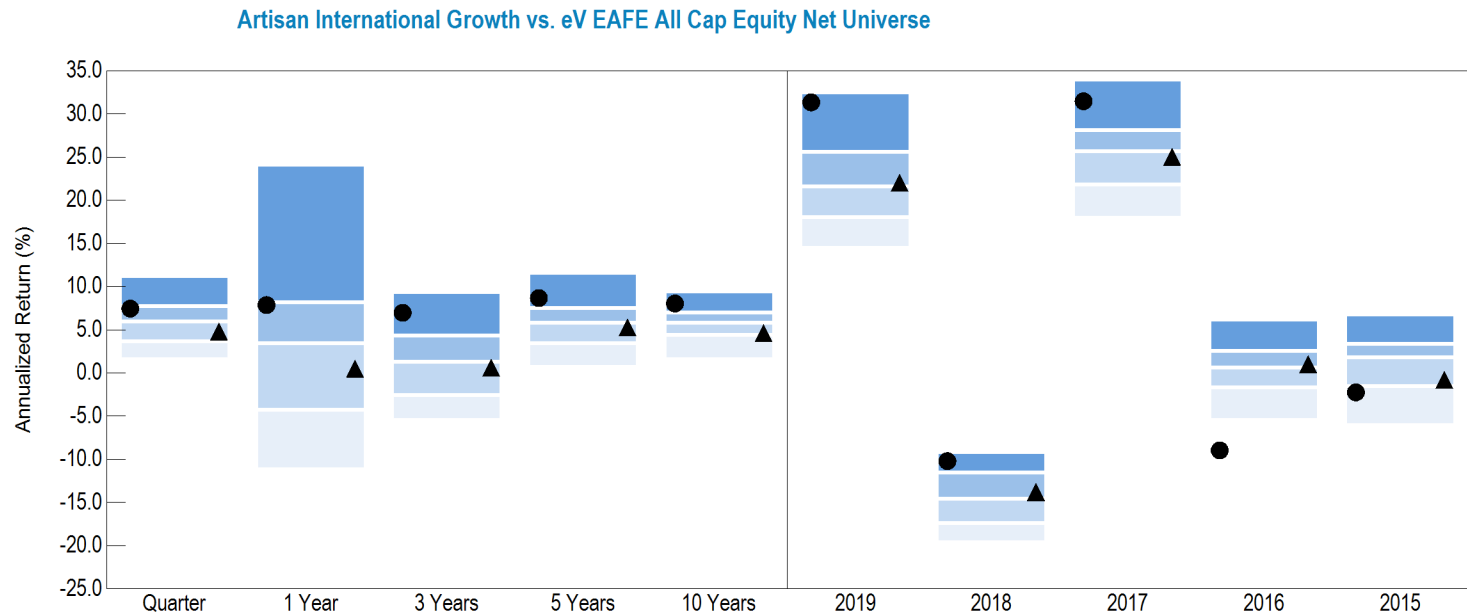
## Bottom Contributors

	End Weight	Return	Contribution
HSBC HOLDINGS PLC	0.52	-17.67	-0.09
BP PLC	0.38	-22.42	-0.09
ROYAL DUTCH SHELL PLC	0.34	-21.11	-0.07
ROYAL DUTCH SHELL PLC	0.29	-18.93	-0.06
BANCO SANTANDER SA	0.20	-23.25	-0.05
TOTAL SE	0.57	-8.22	-0.05
VODAFONE GROUP PLC	0.23	-16.78	-0.04
GLAXOSMITHKLINE PLC	0.62	-6.22	-0.04
KDDI CORP	0.27	-14.17	-0.04
SUNCOR ENERGY INC.	0.12	-26.74	-0.03

Unclassified sector allocation includes cash allocations.

# Artisan International Growth Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020



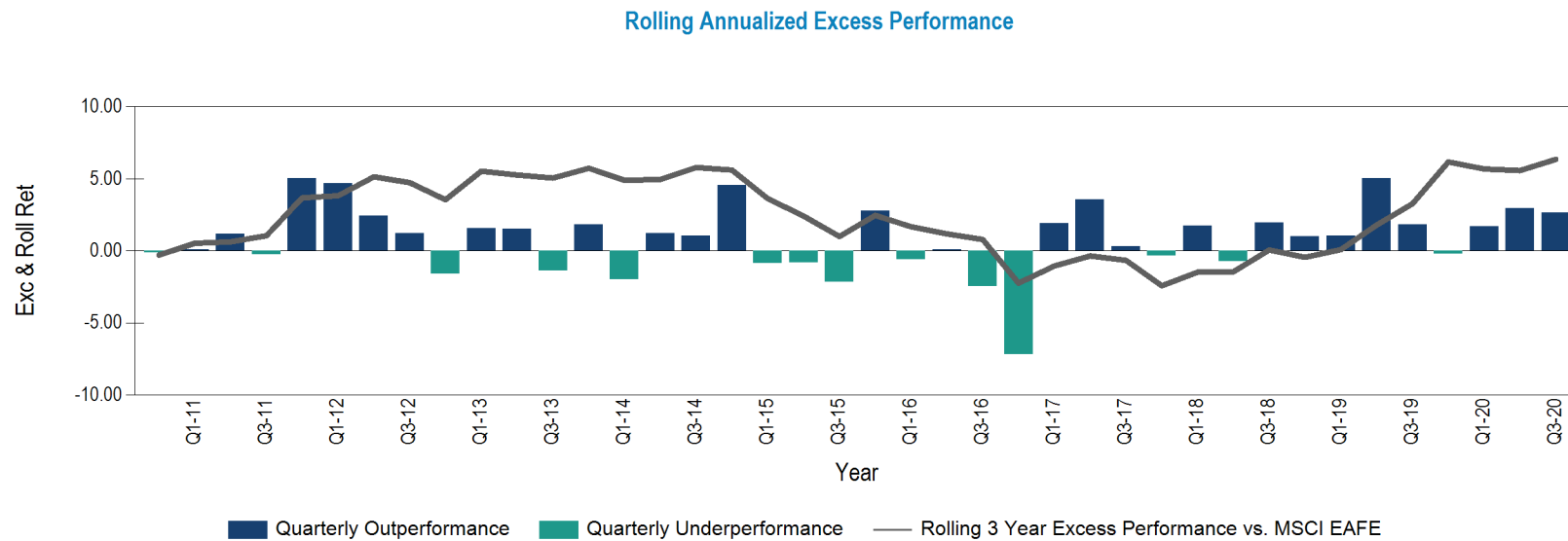
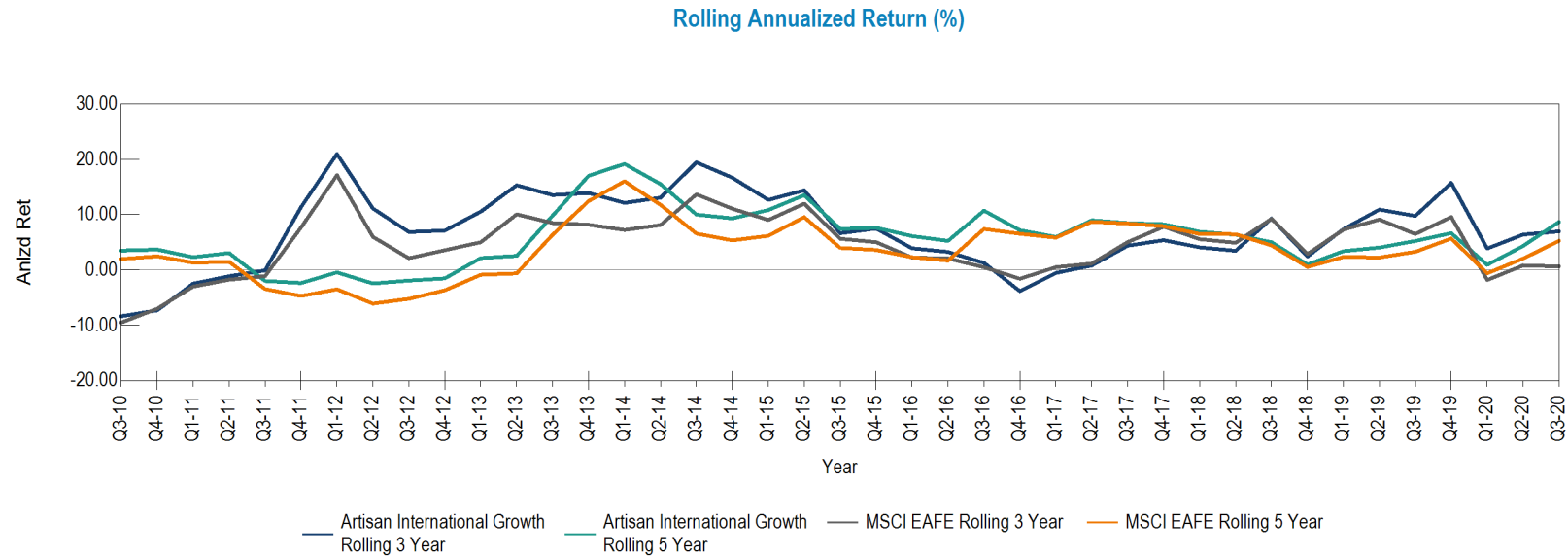
	Return (Rank)									
5th Percentile	11.2	24.1	9.4	11.6	9.4	32.5	-9.2	33.9	6.2	6.8
25th Percentile	7.8	8.2	4.4	7.5	7.1	25.6	-11.5	28.1	2.6	3.4
Median	6.0	3.5	1.3	5.9	5.9	21.6	-14.6	25.7	0.6	1.8
75th Percentile	3.7	-4.2	-2.6	3.5	4.4	18.1	-17.4	21.8	-1.7	-1.5
95th Percentile	1.6	-11.1	-5.4	0.8	1.6	14.5	-19.6	18.0	-5.4	-6.0
# of Portfolios	76	76	74	67	48	77	72	70	64	58
● Artisan International Growth	7.4 (31)	7.9 (26)	7.0 (16)	8.7 (19)	8.0 (16)	31.3 (9)	-10.2 (13)	31.5 (13)	-9.0 (99)	-2.2 (80)
▲ MSCI EAFE	4.8 (66)	0.5 (65)	0.6 (58)	5.3 (55)	4.6 (74)	22.0 (48)	-13.8 (47)	25.0 (59)	1.0 (46)	-0.8 (71)

Returns prior to inception date are composite returns.

# Artisan International Growth

## Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020



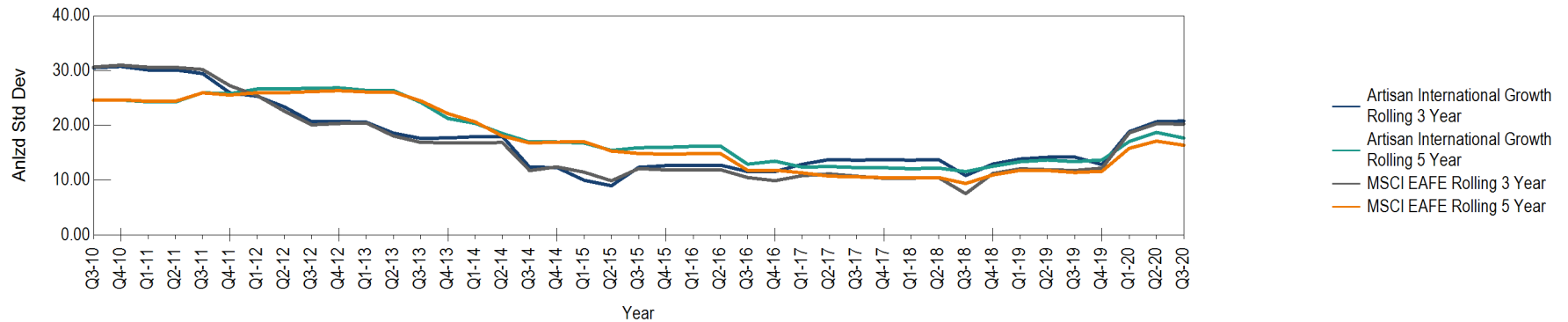
Returns prior to inception date are composite returns.

# Artisan International Growth

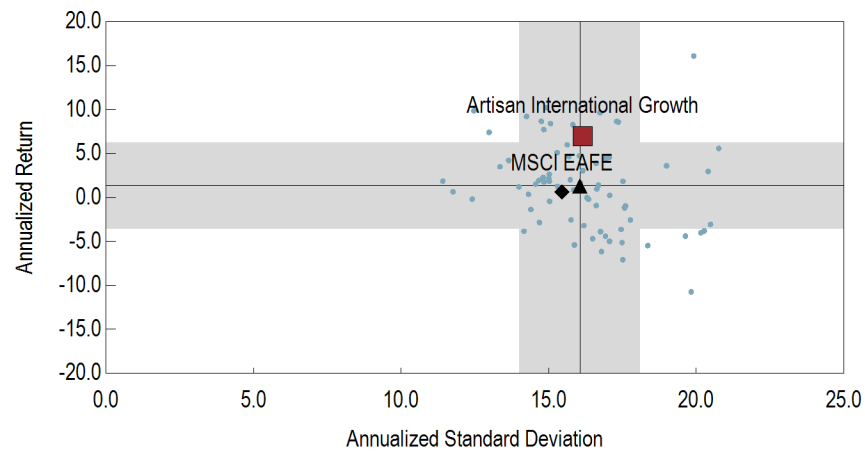
## Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

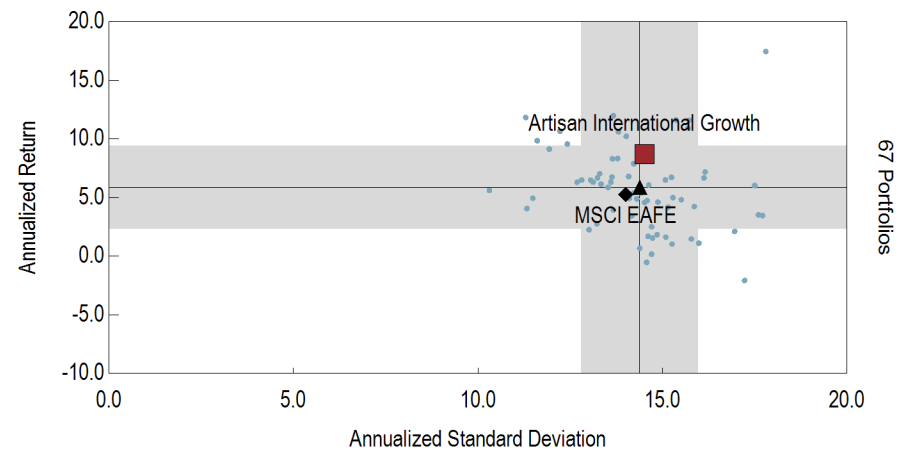
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Artisan International Growth	7.0%	16.1%	0.3
MSCI EAFE	0.6%	15.4%	-0.1
eV EAFE All Cap Growth Net Median	8.3%	16.3%	0.4

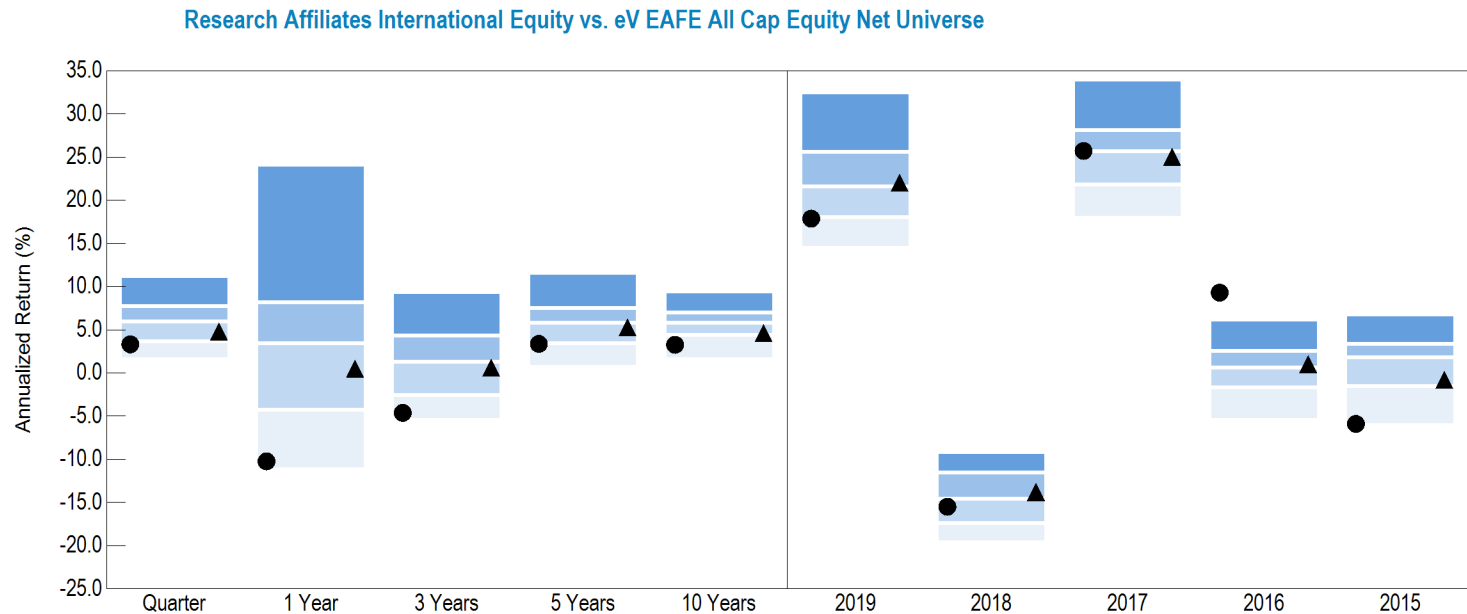
5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Artisan International Growth	8.7%	14.5%	0.5
MSCI EAFE	5.3%	14.0%	0.3
eV EAFE All Cap Growth Net Median	10.4%	15.2%	0.6

Returns prior to inception date are composite returns.

# Research Affiliates International Equity Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020



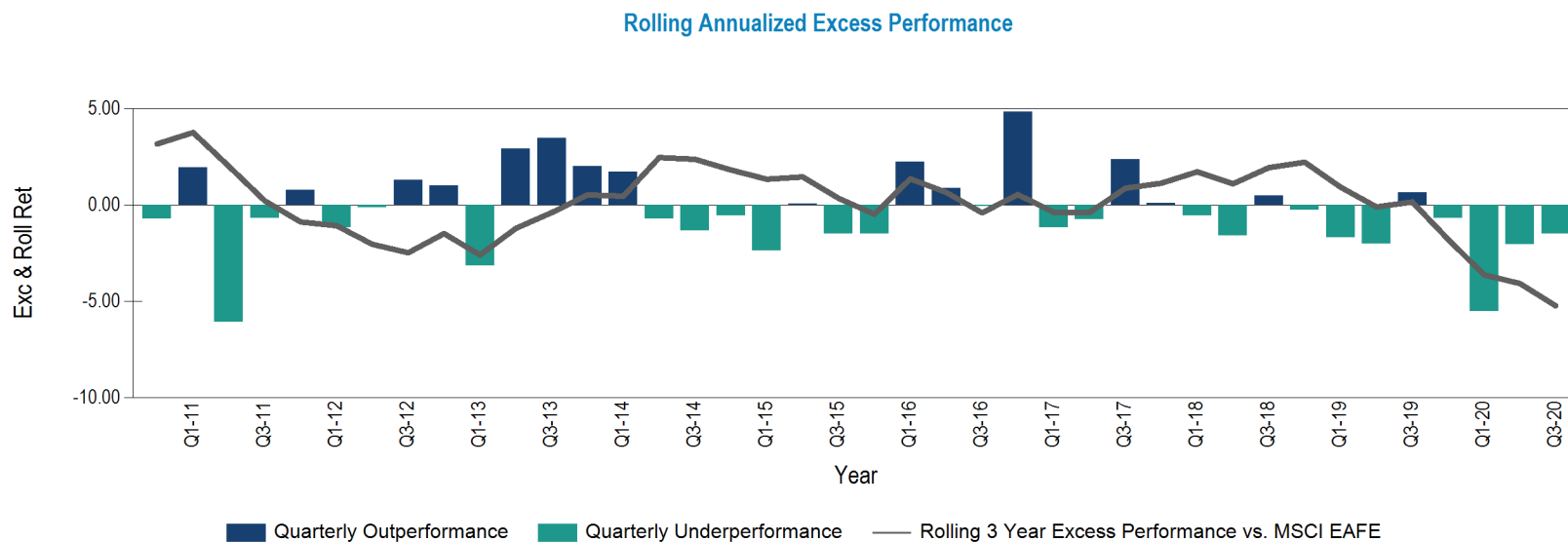
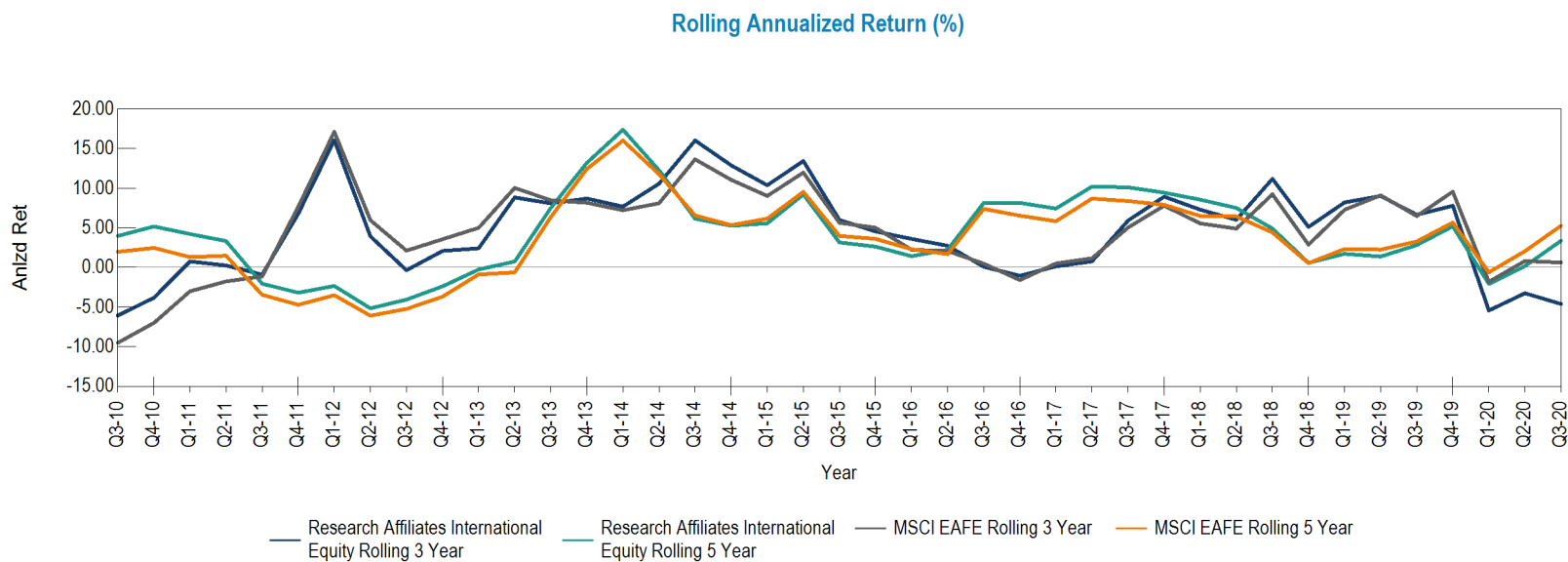
	Return (Rank)									
5th Percentile	11.2	24.1	9.4	11.6	9.4	32.5	-9.2	33.9	6.2	6.8
25th Percentile	7.8	8.2	4.4	7.5	7.1	25.6	-11.5	28.1	2.6	3.4
Median	6.0	3.5	1.3	5.9	5.9	21.6	-14.6	25.7	0.6	1.8
75th Percentile	3.7	-4.2	-2.6	3.5	4.4	18.1	-17.4	21.8	-1.7	-1.5
95th Percentile	1.6	-11.1	-5.4	0.8	1.6	14.5	-19.6	18.0	-5.4	-6.0
# of Portfolios	76	76	74	67	48	77	72	70	64	58
● Research Affiliates International Equity	3.3 (80)	-10.2 (94)	-4.6 (91)	3.4 (78)	3.3 (87)	17.9 (79)	-15.5 (57)	25.7 (51)	9.3 (1)	-5.9 (95)
▲ MSCI EAFE	4.8 (66)	0.5 (65)	0.6 (58)	5.3 (55)	4.6 (74)	22.0 (48)	-13.8 (47)	25.0 (59)	1.0 (46)	-0.8 (71)

Returns prior to inception date are composite returns.



# Research Affiliates International Equity Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020

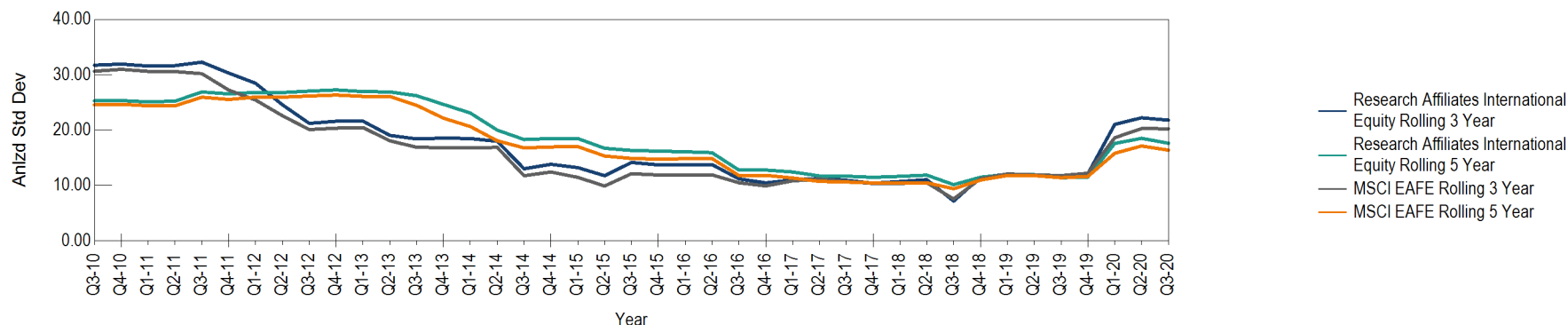


Returns prior to inception date are composite returns.

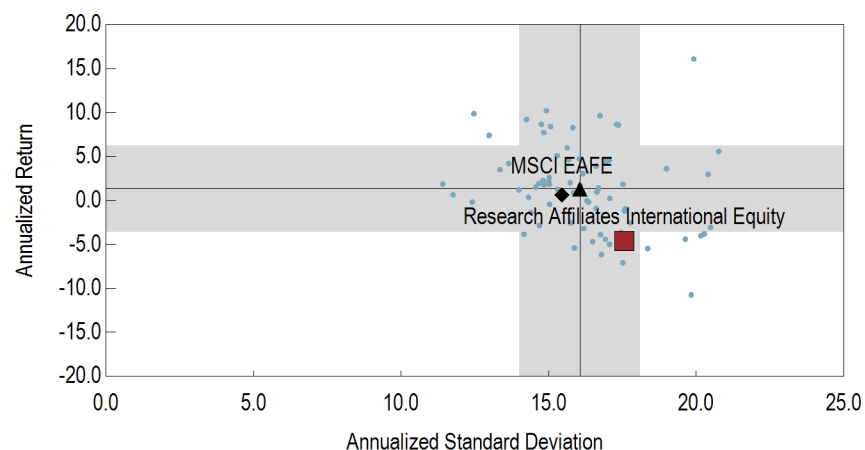
# Research Affiliates International Equity Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

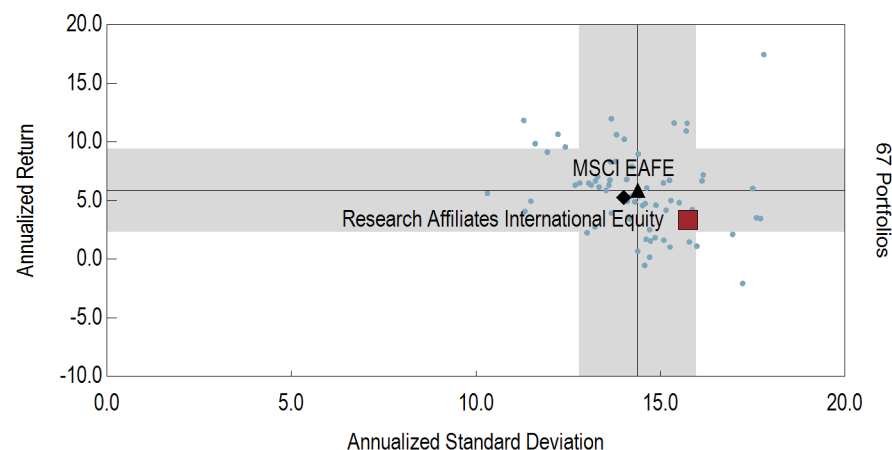
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Research Affiliates International Equity	-4.6%	17.6%	-0.4
MSCI EAFE	0.6%	15.4%	-0.1
eV EAFE All Cap Equity Net Median	1.3%	16.1%	0.0

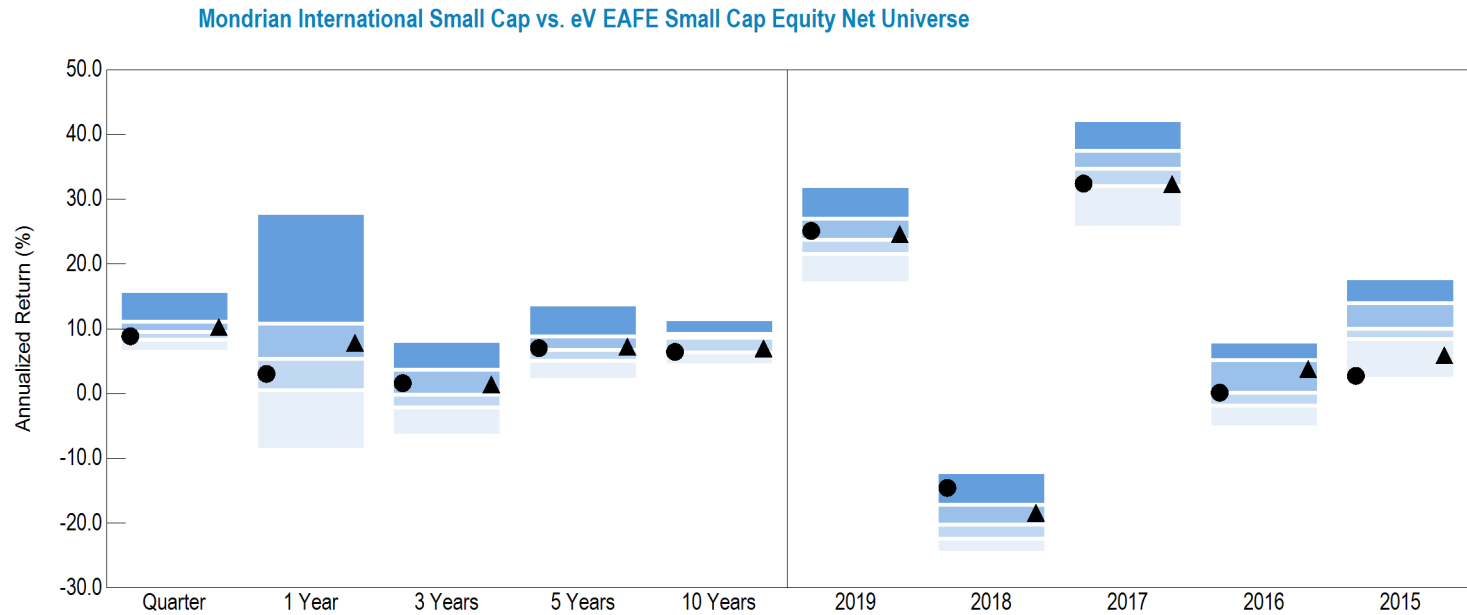
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
Research Affiliates International Equity	3.4%	15.7%	0.1
MSCI EAFE	5.3%	14.0%	0.3
eV EAFE All Cap Equity Net Median	5.9%	14.4%	0.3

Returns prior to inception date are composite returns.

# Mondrian International Small Cap Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

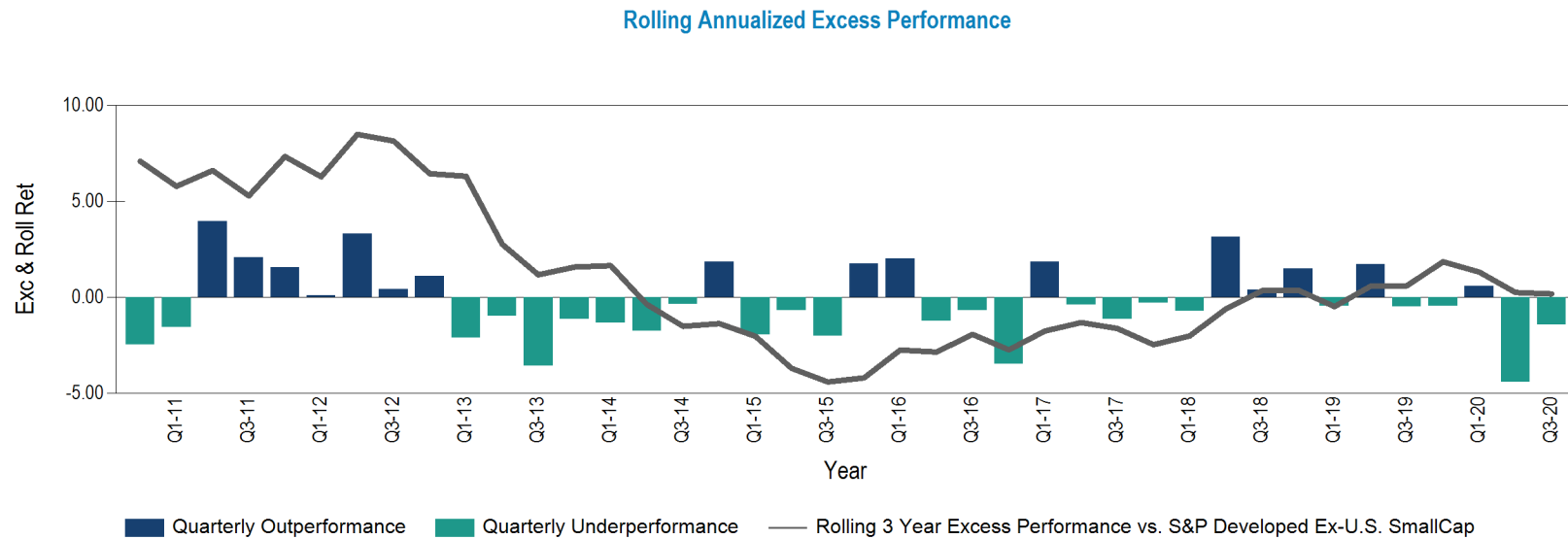
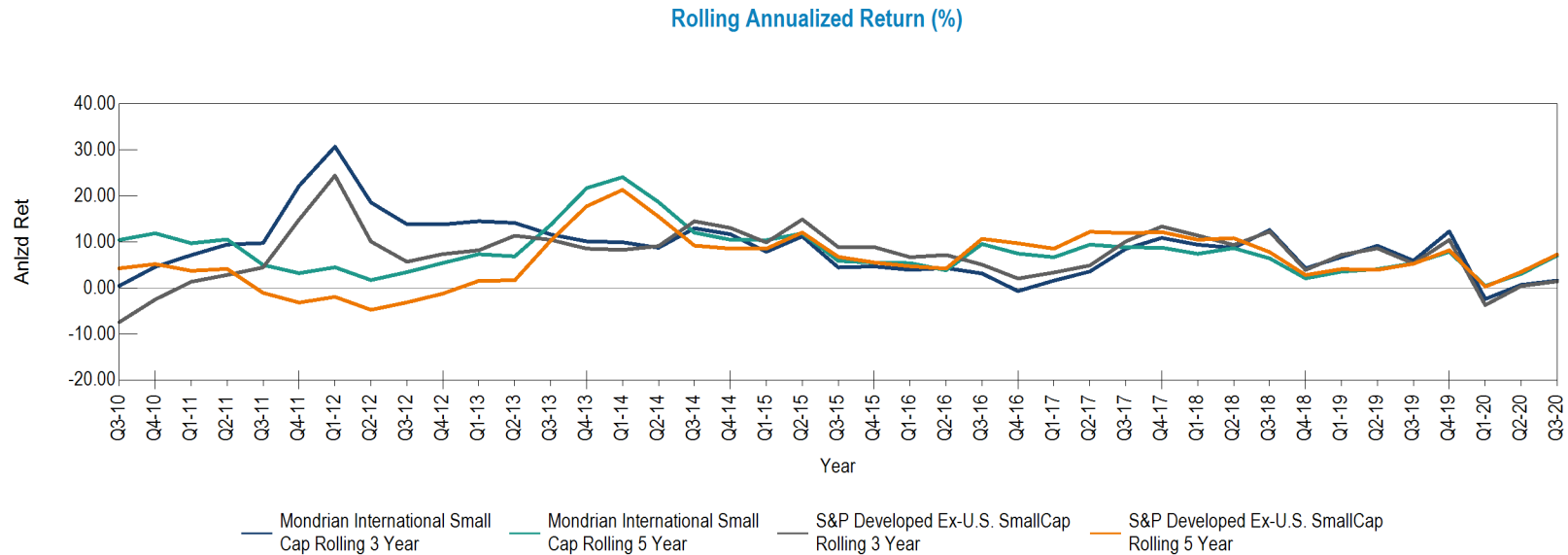


	Return (Rank)									
5th Percentile	15.8	27.9	8.0	13.7	11.4	32.0	-12.1	42.2	7.9	17.8
25th Percentile	11.1	10.8	3.7	8.9	9.2	27.1	-17.1	37.6	5.2	14.0
Median	9.6	5.4	-0.1	6.8	8.7	23.8	-20.2	34.8	0.1	10.1
75th Percentile	8.3	0.5	-2.1	5.2	6.4	21.7	-22.3	32.1	-1.8	8.5
95th Percentile	6.4	-8.6	-6.4	2.2	4.4	17.1	-24.6	25.7	-5.2	2.3
# of Portfolios	64	63	57	50	28	58	57	52	41	31
● Mondrian International Small Cap	8.8 (69)	3.0 (68)	1.6 (39)	7.0 (48)	6.4 (75)	25.1 (40)	-14.6 (11)	32.4 (74)	0.1 (50)	2.7 (94)
▲ S&P Developed Ex-U.S. SmallCap	10.3 (37)	7.8 (44)	1.4 (40)	7.2 (41)	7.0 (60)	24.7 (43)	-18.4 (29)	32.4 (74)	3.8 (29)	5.9 (84)

Returns prior to inception date are composite returns.

# Mondrian International Small Cap Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020

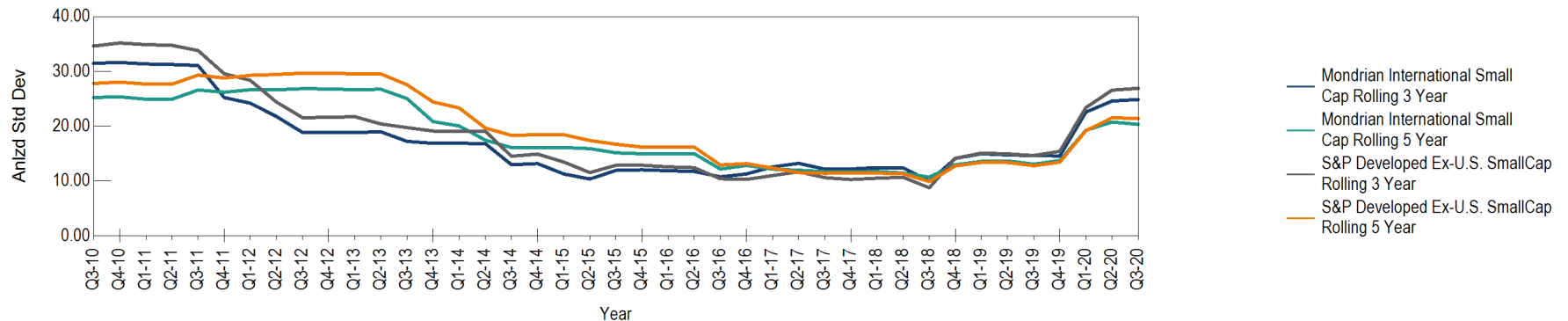


Returns prior to inception date are composite returns.

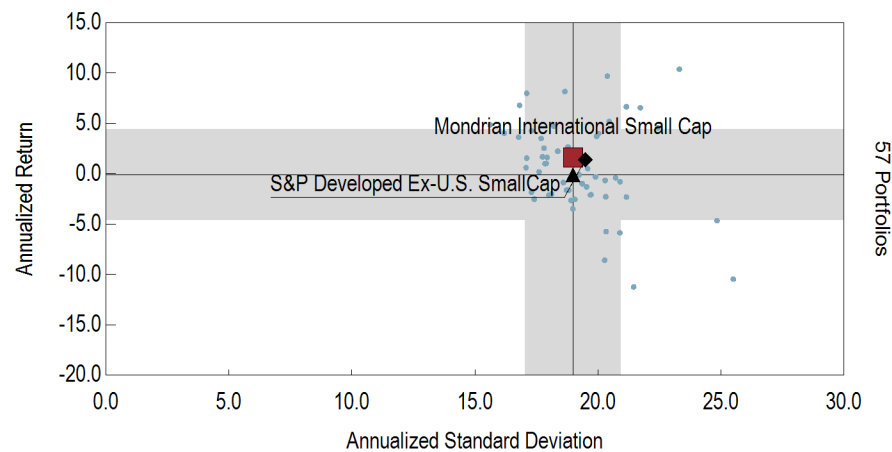
# Mondrian International Small Cap Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

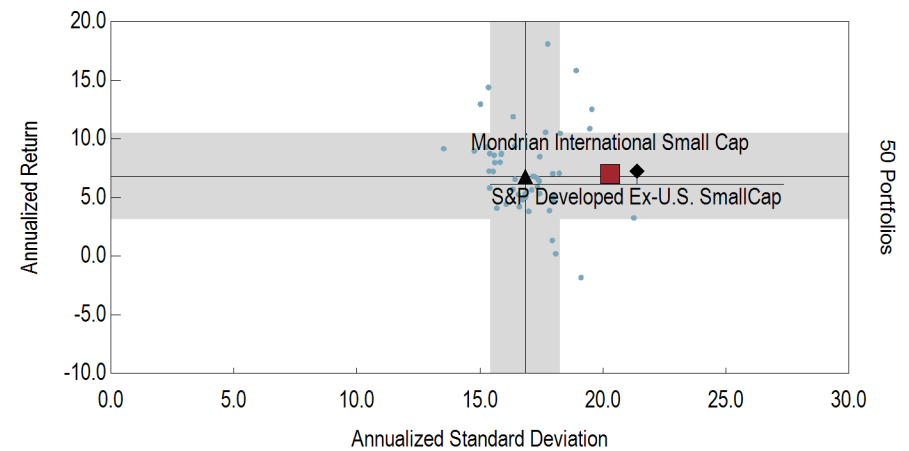
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian International Small Cap	1.6%	19.0%	0.0
S&P Developed Ex-U.S. SmallCap	1.4%	19.5%	0.0
eV EAFE Small Cap Equity Net Median	-0.1%	19.0%	-0.1

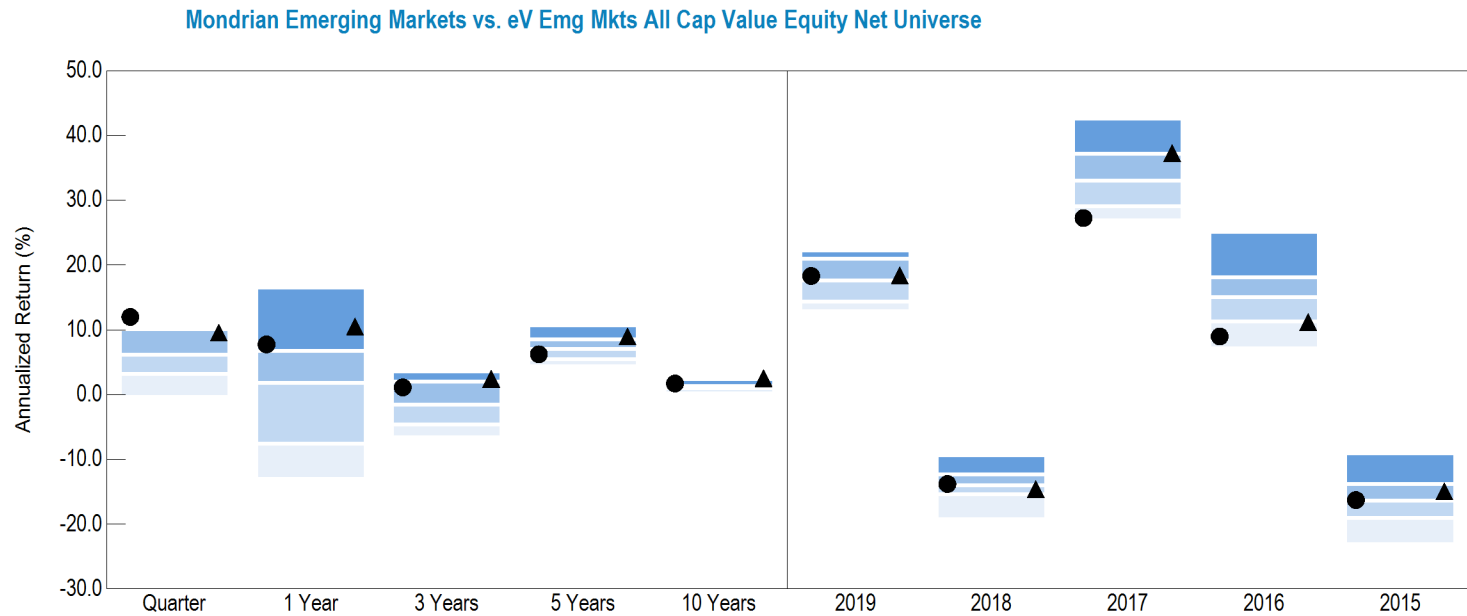
5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian International Small Cap	7.0%	20.3%	0.3
S&P Developed Ex-U.S. SmallCap	7.2%	21.4%	0.3
eV EAFE Small Cap Equity Net Median	6.8%	16.8%	0.3

Returns prior to inception date are composite returns.

# Mondrian Emerging Markets Manager Performance Comparisons (Net of Fees)

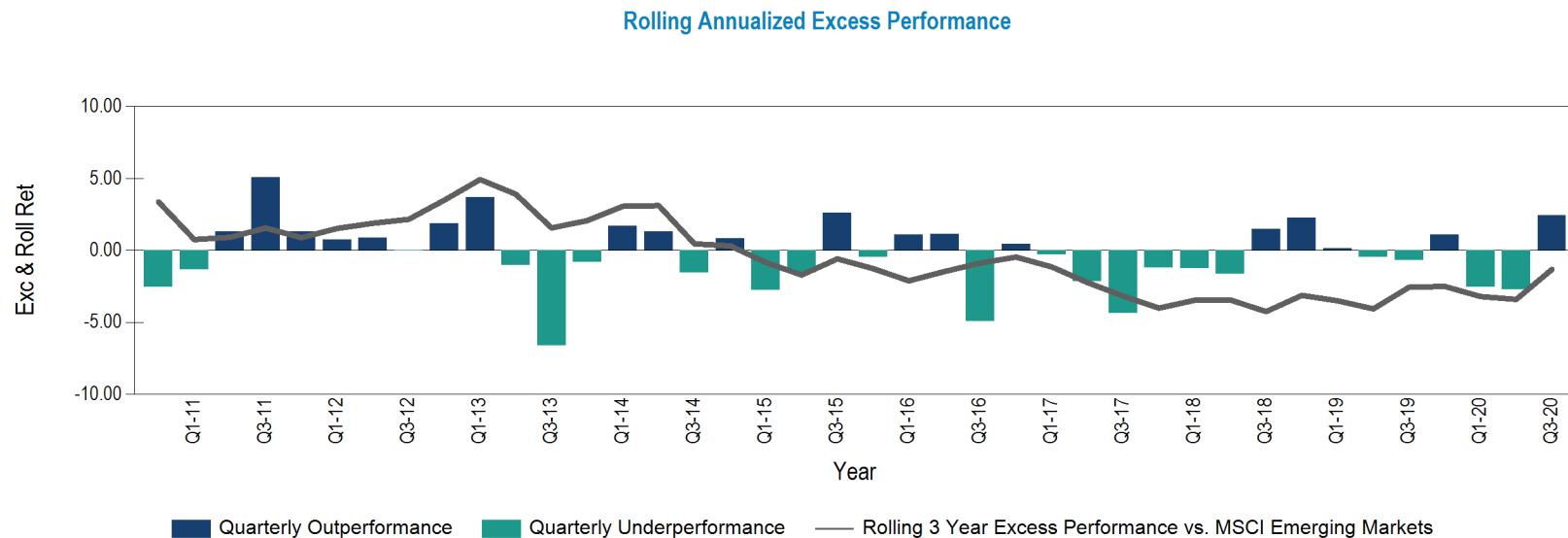
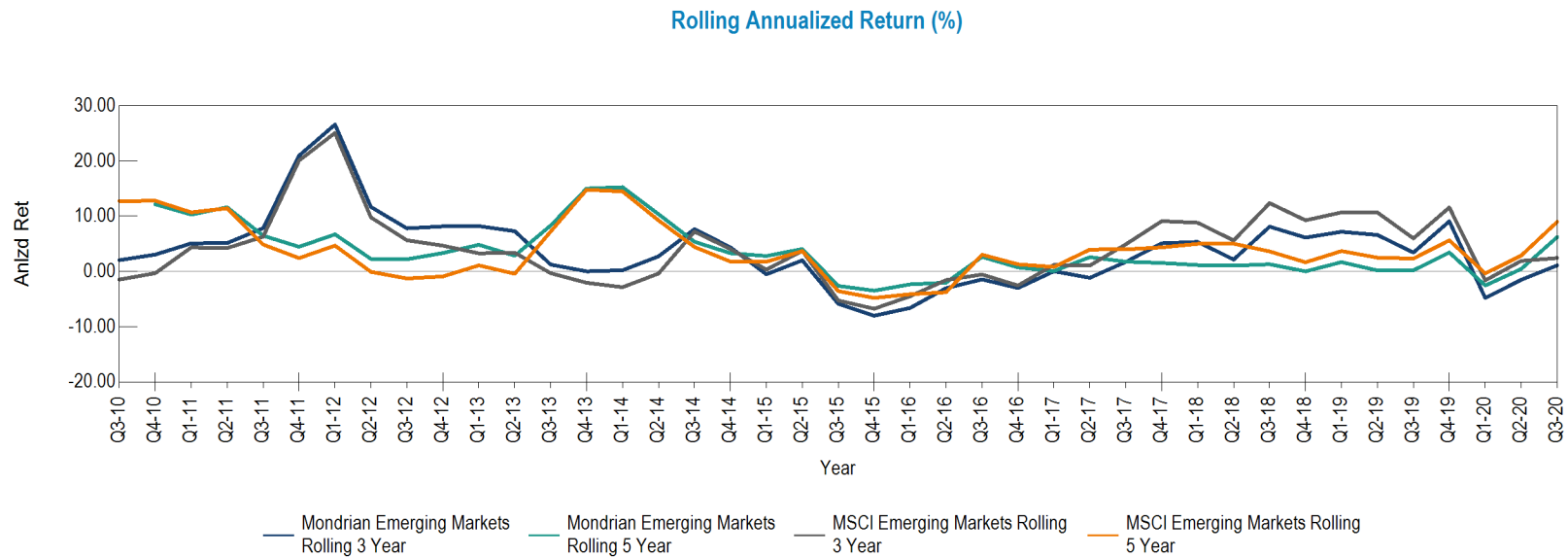
Period Ending: September 30, 2020



	Return (Rank)									
5th Percentile	10.6	16.5	3.5	10.7	2.3	22.2	-9.4	42.6	25.1	-9.1
25th Percentile	10.2	6.8	2.1	8.6	1.4	21.0	-12.3	37.2	18.2	-13.8
Median	6.2	1.8	-1.5	7.1	1.0	17.7	-14.0	33.1	15.1	-16.4
75th Percentile	3.3	-7.5	-4.5	5.5	0.2	14.4	-15.3	29.1	11.4	-19.0
95th Percentile	-0.3	-13.0	-6.5	4.4	-0.2	12.9	-19.2	26.9	7.2	-23.1
# of Portfolios	23	23	20	18	8	22	25	22	22	20
● Mondrian Emerging Markets	12.0 (1)	7.7 (24)	1.1 (36)	6.2 (66)	1.7 (12)	18.3 (42)	-13.8 (48)	27.2 (93)	9.0 (81)	-16.3 (49)
▲ MSCI Emerging Markets	9.6 (33)	10.5 (15)	2.4 (22)	9.0 (16)	2.5 (4)	18.4 (42)	-14.6 (59)	37.3 (20)	11.2 (76)	-14.9 (32)

# Mondrian Emerging Markets Rolling Manager Performance (Net of Fees)

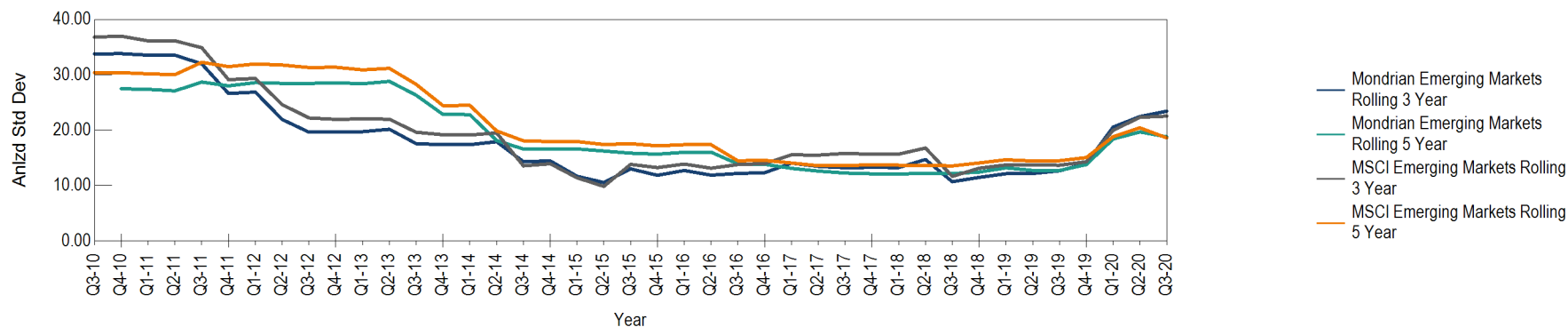
Period Ending: September 30, 2020



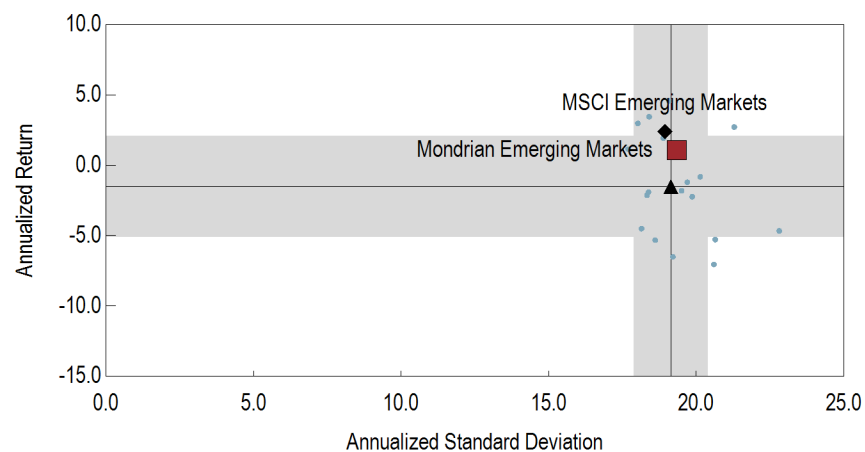
# Mondrian Emerging Markets Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

Rolling Annualized Standard Deviation



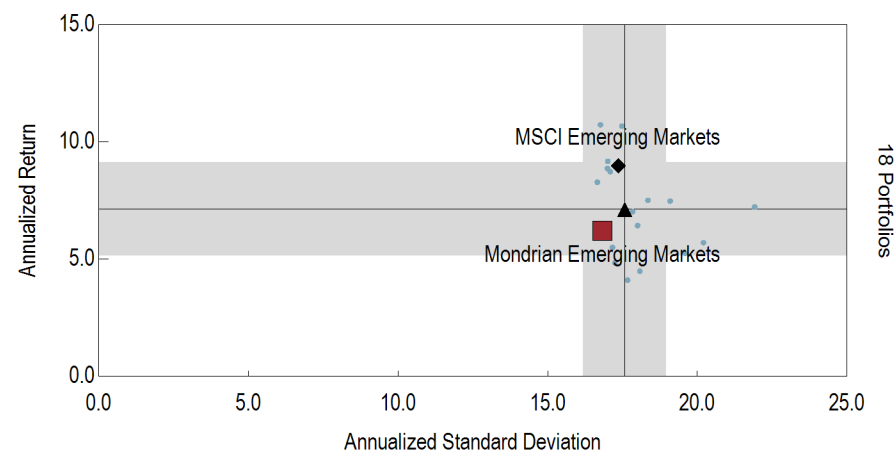
3 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian Emerging Markets	1.1%	19.3%	0.0
MSCI Emerging Markets	2.4%	18.9%	0.0
eV Emg Mkts All Cap Value Equity Net Median	-1.5%	19.1%	-0.2

5 Years



5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Mondrian Emerging Markets	6.2%	16.8%	0.3
MSCI Emerging Markets	9.0%	17.4%	0.5
eV Emg Mkts All Cap Value Equity Net Median	7.1%	17.6%	0.3

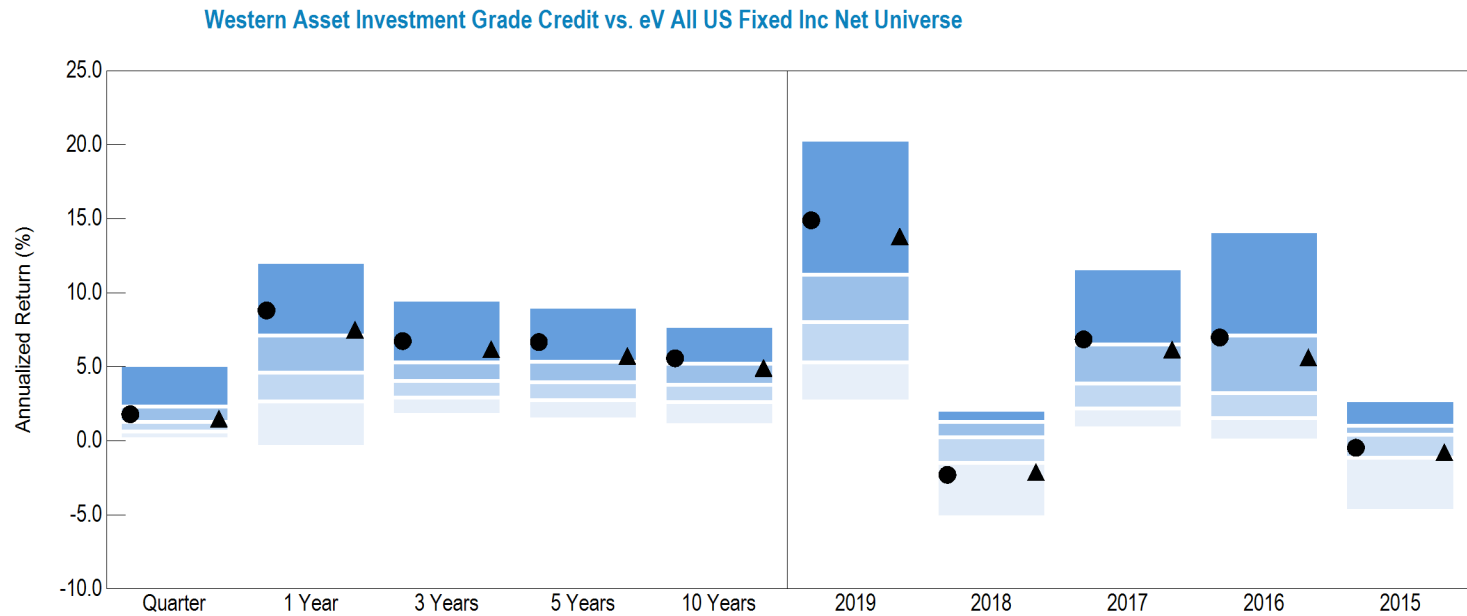


## Fixed Income Managers

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Western Asset Investment Grade Credit  
 Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

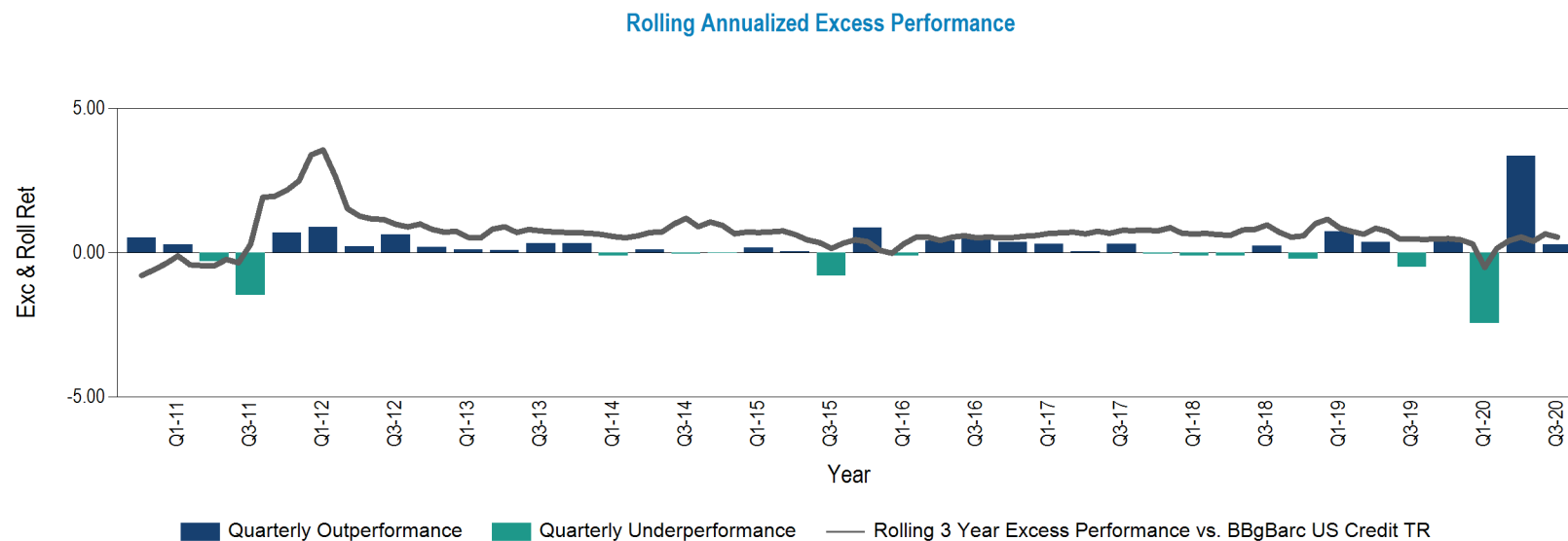
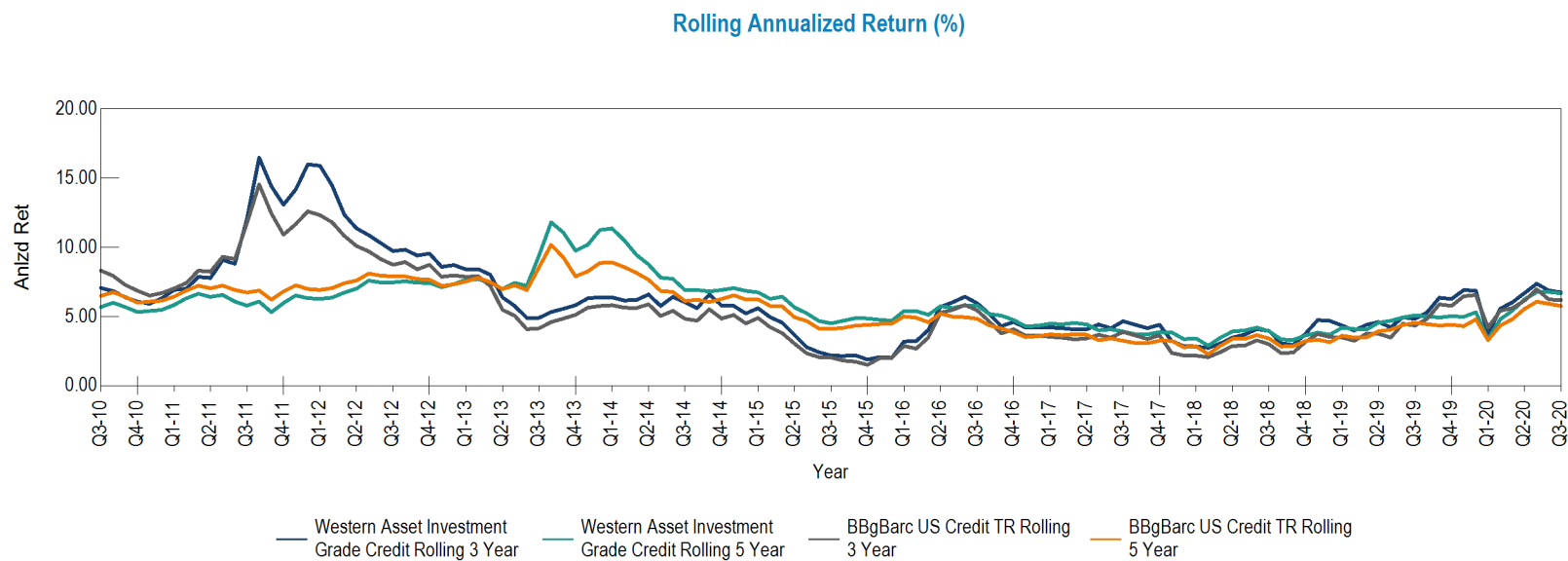


	Return (Rank)									
5th Percentile	5.1	12.1	9.5	9.0	7.7	20.3	2.1	11.6	14.1	2.7
25th Percentile	2.3	7.1	5.3	5.3	5.2	11.2	1.3	6.5	7.1	1.0
Median	1.3	4.6	4.1	4.0	3.8	8.1	0.3	3.9	3.3	0.4
75th Percentile	0.7	2.7	2.9	2.8	2.6	5.3	-1.5	2.2	1.6	-1.1
95th Percentile	0.1	-0.4	1.8	1.5	1.1	2.7	-5.2	0.9	0.0	-4.7
# of Portfolios	1,286	1,273	1,230	1,153	922	1,248	1,173	1,135	1,033	827
● Western Asset Investment Grade Credit	1.8 (36)	8.8 (13)	6.7 (11)	6.7 (11)	5.6 (21)	14.9 (14)	-2.3 (81)	6.8 (23)	7.0 (26)	-0.5 (70)
▲ BBgBarc US Credit TR	1.5 (45)	7.5 (22)	6.2 (14)	5.7 (21)	4.9 (30)	13.8 (19)	-2.1 (79)	6.2 (28)	5.6 (33)	-0.8 (74)

Returns prior to inception date are composite returns.

# Western Asset Investment Grade Credit Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020

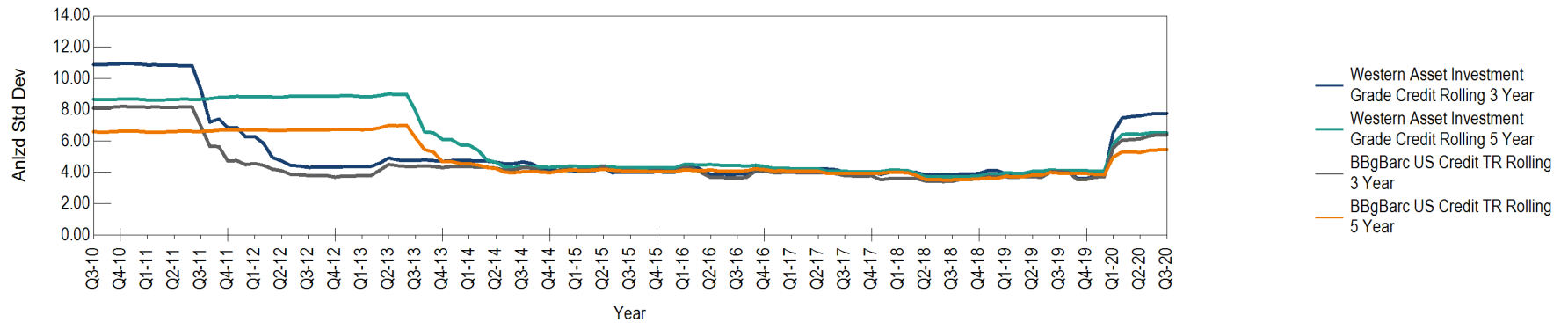


Returns prior to inception date are composite returns.

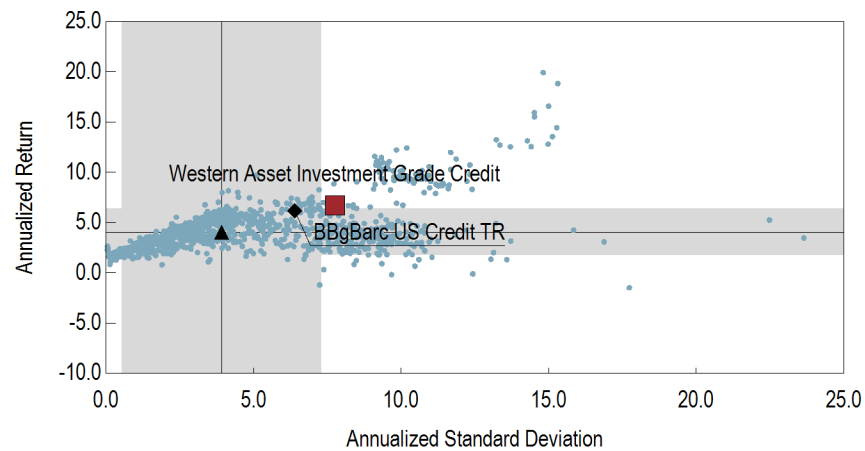
# Western Asset Investment Grade Credit Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

Rolling Annualized Standard Deviation



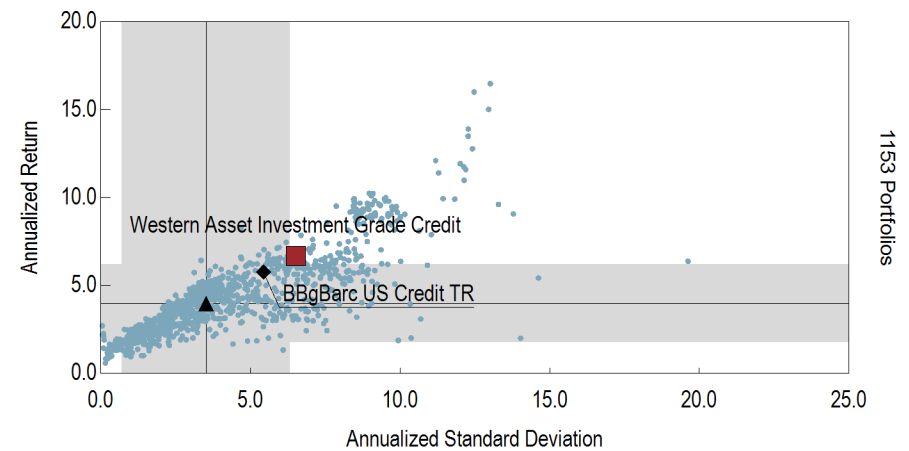
3 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Western Asset Investment Grade Credit	6.7%	7.8%	0.7
BBGBarc US Credit TR	6.2%	6.4%	0.7
eV All US Fixed Inc Net Median	4.1%	3.9%	0.7

5 Years



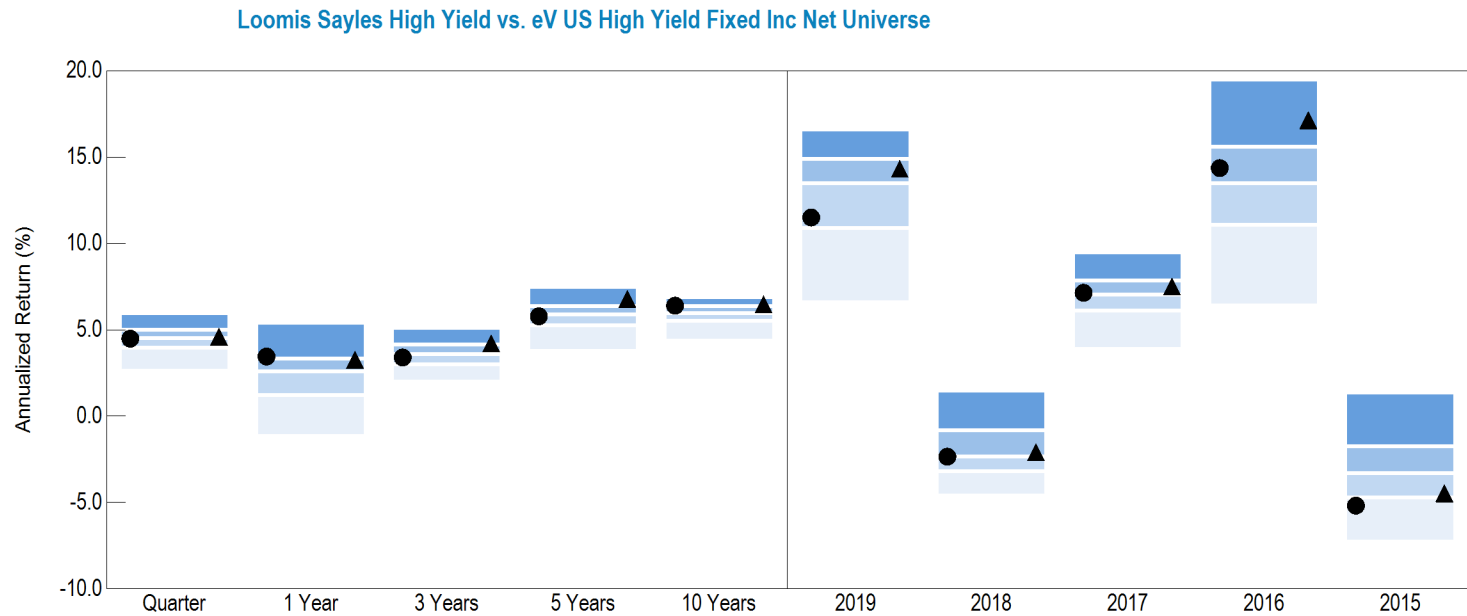
5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Western Asset Investment Grade Credit	6.7%	6.5%	0.8
BBGBarc US Credit TR	5.7%	5.4%	0.8
eV All US Fixed Inc Net Median	4.0%	3.5%	0.8

Returns prior to inception date are composite returns.

Loomis Sayles High Yield  
Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

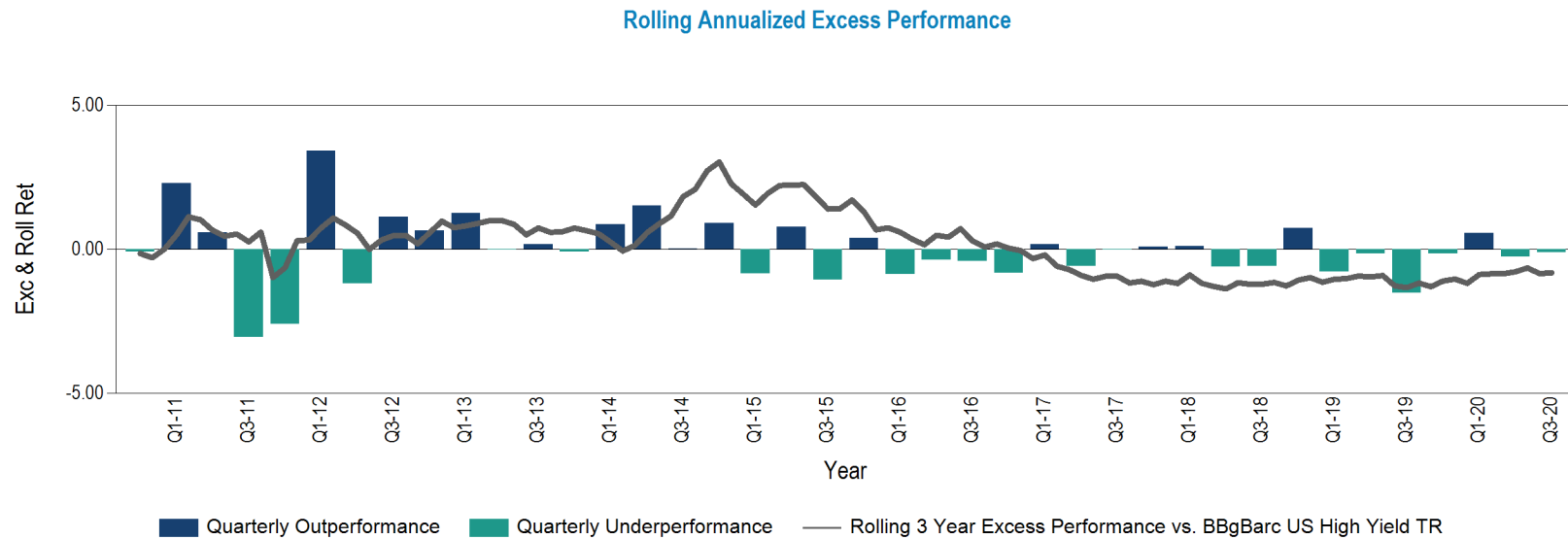
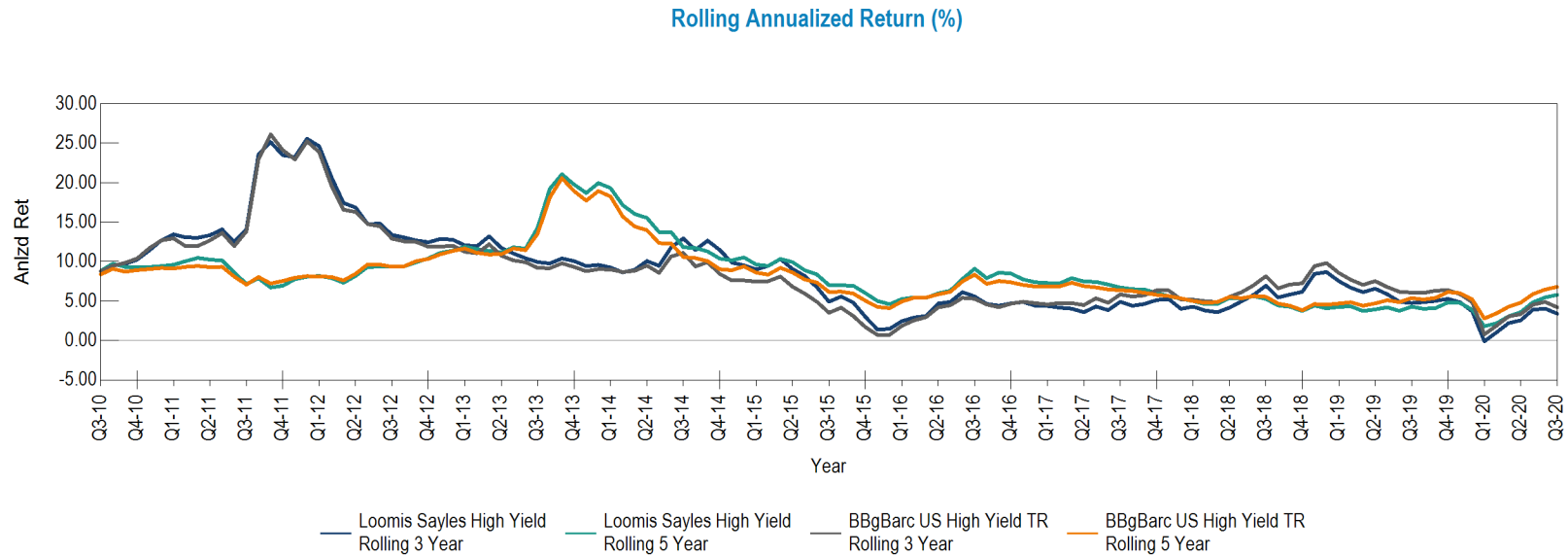


	Return (Rank)									
5th Percentile	6.0	5.4	5.1	7.5	6.9	16.6	1.4	9.5	19.5	1.4
25th Percentile	5.0	3.3	4.2	6.4	6.4	14.9	-0.8	7.9	15.6	-1.7
Median	4.5	2.6	3.6	5.9	6.0	13.5	-2.3	7.1	13.5	-3.3
75th Percentile	4.0	1.3	3.0	5.3	5.6	10.9	-3.2	6.1	11.1	-4.7
95th Percentile	2.7	-1.1	2.0	3.8	4.4	6.6	-4.6	3.9	6.4	-7.2
# of Portfolios	144	142	139	128	89	144	136	129	114	88
● Loomis Sayles High Yield	4.5 (53)	3.5 (23)	3.4 (62)	5.8 (55)	6.4 (24)	11.5 (72)	-2.3 (52)	7.1 (47)	14.4 (42)	-5.2 (79)
▲ BBgBarc US High Yield TR	4.6 (48)	3.3 (29)	4.2 (24)	6.8 (14)	6.5 (19)	14.3 (37)	-2.1 (46)	7.5 (39)	17.1 (12)	-4.5 (73)

Returns prior to inception date are composite returns.

# Loomis Sayles High Yield Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020

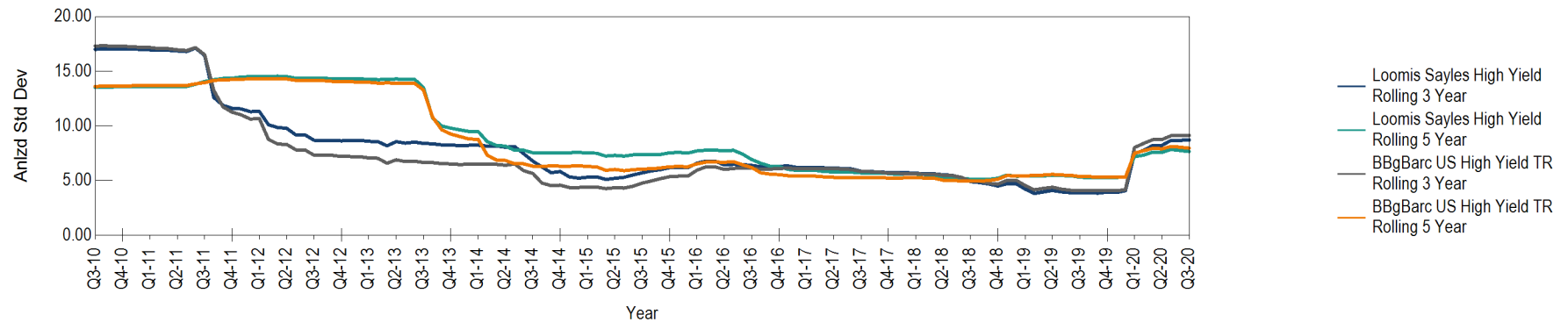


Returns prior to inception date are composite returns.

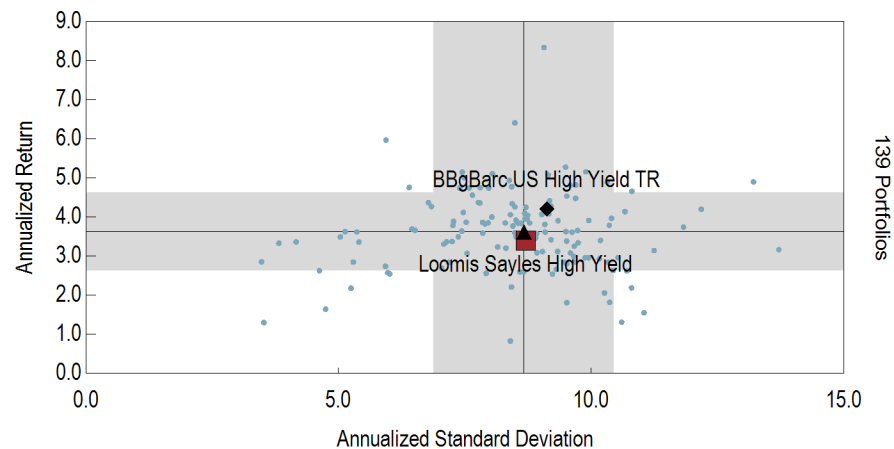
# Loomis Sayles High Yield Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

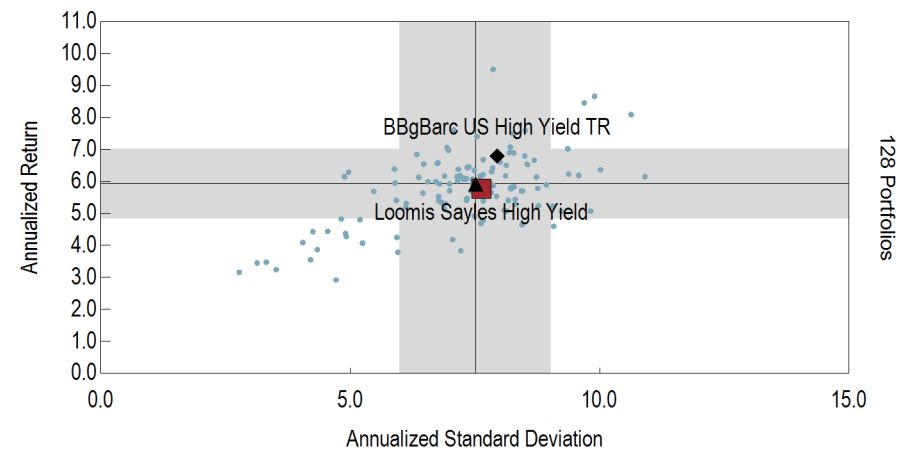
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Loomis Sayles High Yield	3.4%	8.7%	0.2
BBGBarc US High Yield TR	4.2%	9.1%	0.3
eV US High Yield Fixed Inc Net Median	3.6%	8.7%	0.2

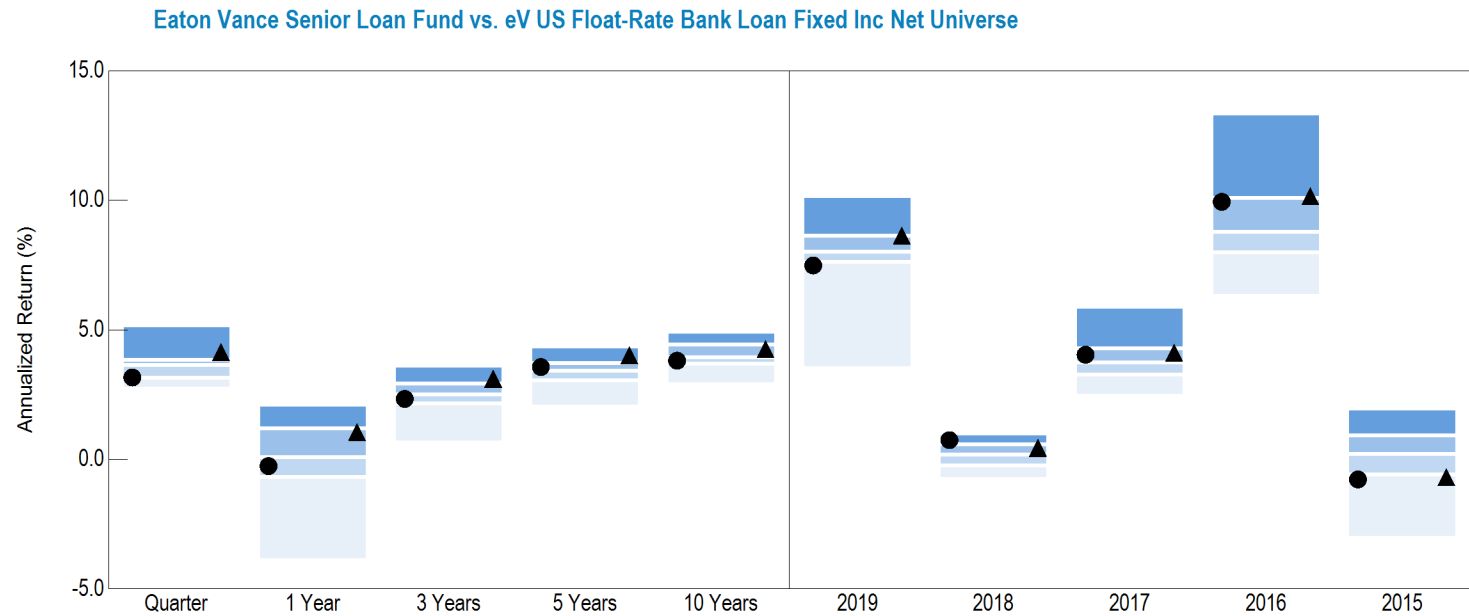
5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Loomis Sayles High Yield	5.8%	7.6%	0.6
BBGBarc US High Yield TR	6.8%	7.9%	0.7
eV US High Yield Fixed Inc Net Median	5.9%	7.5%	0.7

Returns prior to inception date are composite returns.

Eaton Vance Senior Loan Fund  
 Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020



	Return (Rank)									
5th Percentile	5.2	2.1	3.6	4.3	4.9	10.1	1.0	5.9	13.3	2.0
25th Percentile	3.9	1.2	2.9	3.7	4.4	8.7	0.6	4.3	10.1	0.9
Median	3.6	0.1	2.5	3.4	3.9	8.0	0.2	3.8	8.8	0.2
75th Percentile	3.2	-0.7	2.2	3.1	3.7	7.6	-0.2	3.3	8.0	-0.6
95th Percentile	2.7	-3.9	0.7	2.1	2.9	3.5	-0.8	2.5	6.3	-3.0
# of Portfolios	55	55	53	49	33	50	47	48	45	30
● Eaton Vance Senior Loan Fund	3.2 (76)	-0.3 (58)	2.3 (61)	3.6 (41)	3.8 (68)	7.5 (80)	0.7 (16)	4.0 (40)	9.9 (33)	-0.8 (85)
▲ S&P/LSTA Leveraged Loan Index	4.1 (18)	1.1 (31)	3.1 (21)	4.0 (16)	4.3 (31)	8.6 (26)	0.4 (36)	4.1 (35)	10.2 (25)	-0.7 (81)

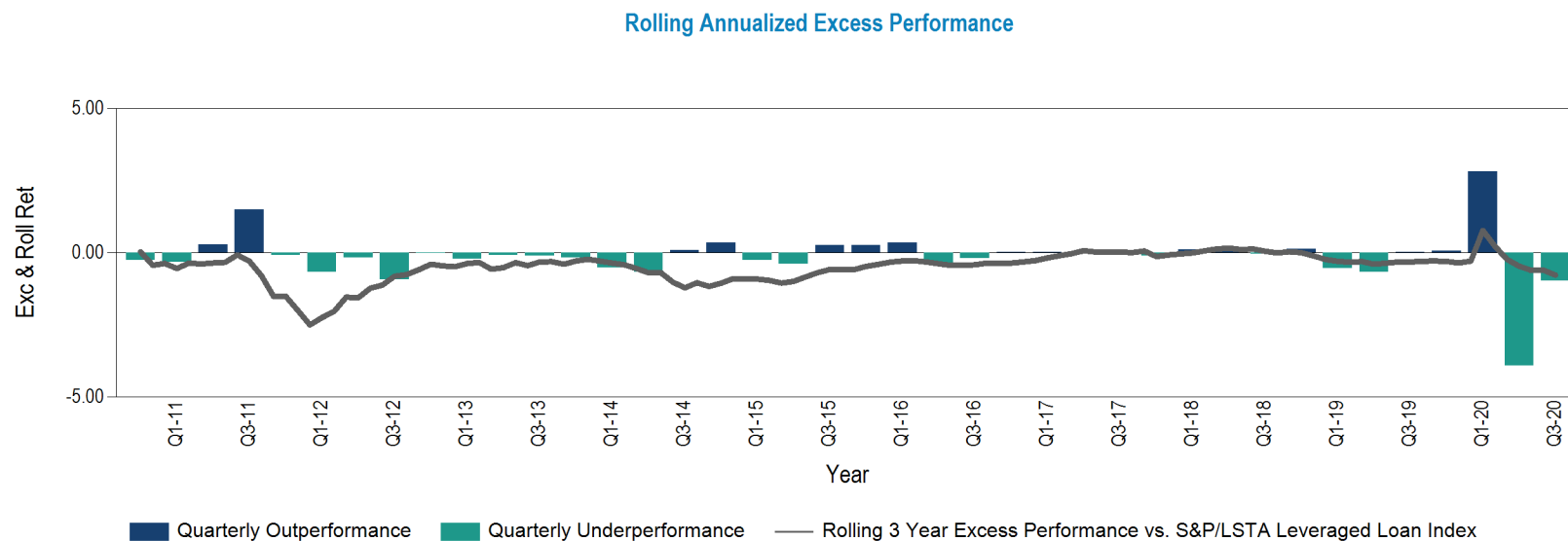
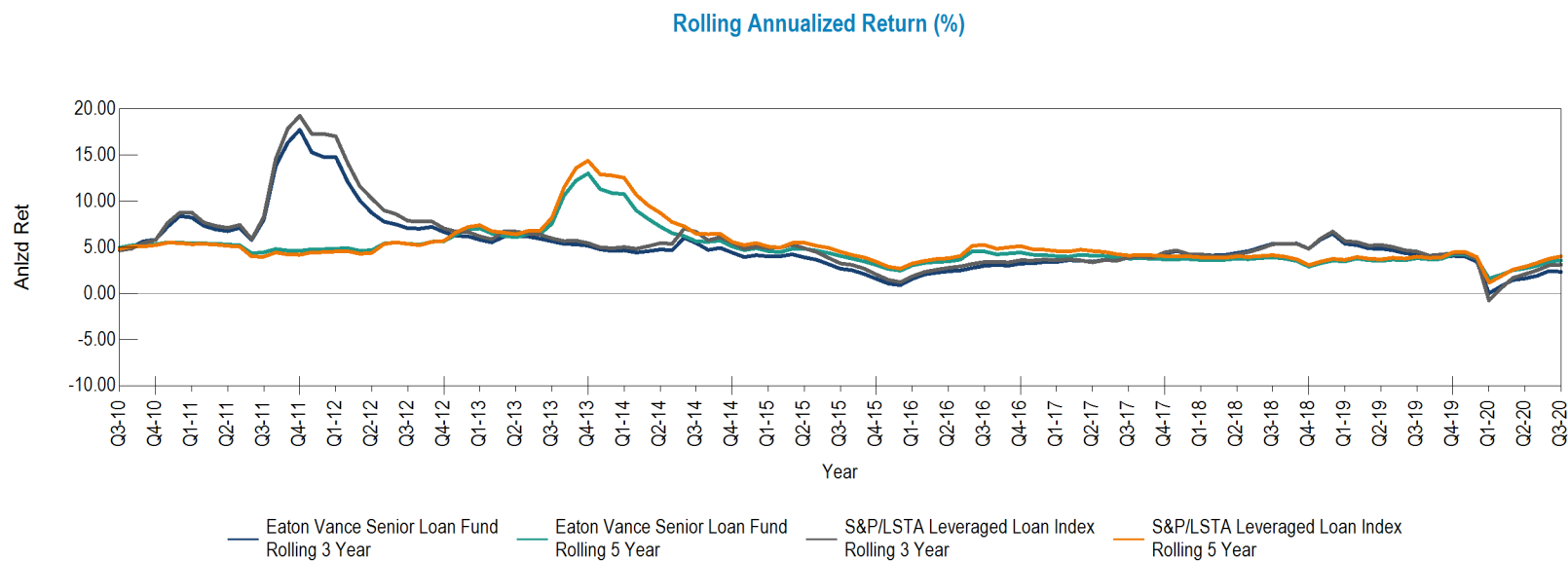
Returns prior to inception date are composite returns.



# Eaton Vance Senior Loan Fund

## Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020



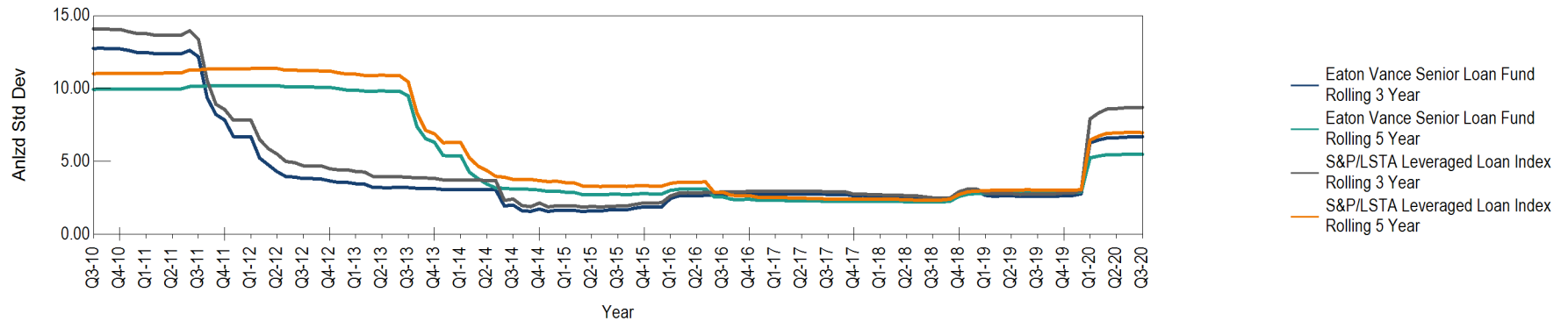
Returns prior to inception date are composite returns.

# Eaton Vance Senior Loan Fund

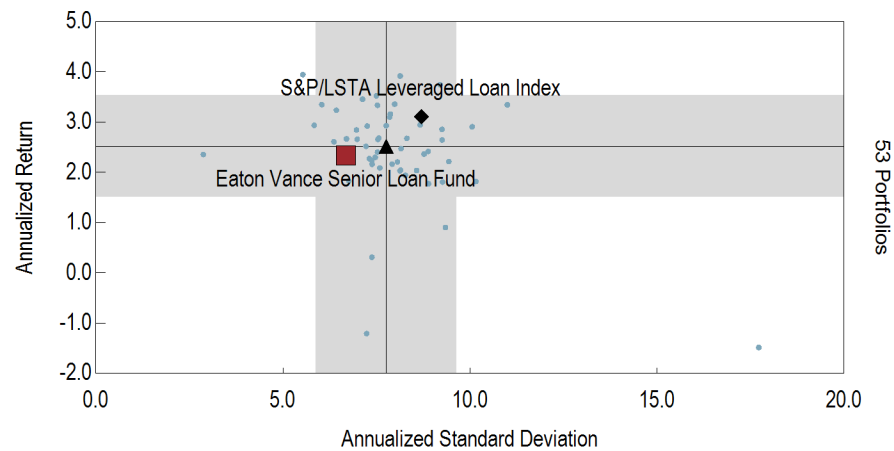
## Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

Rolling Annualized Standard Deviation



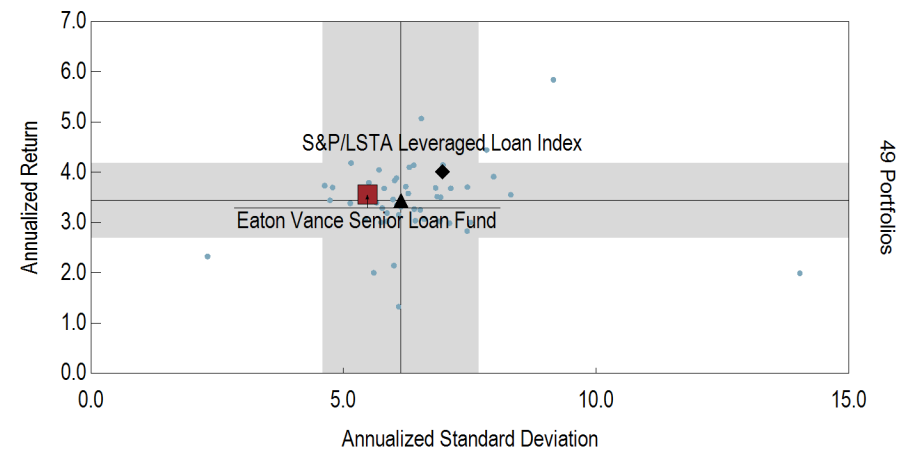
3 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Eaton Vance Senior Loan Fund	2.3%	6.7%	0.1
S&P/LSTA Leveraged Loan Index	3.1%	8.7%	0.2
eV US Float-Rate Bank Loan Fixed Inc Net Median	2.5%	7.8%	0.1

5 Years



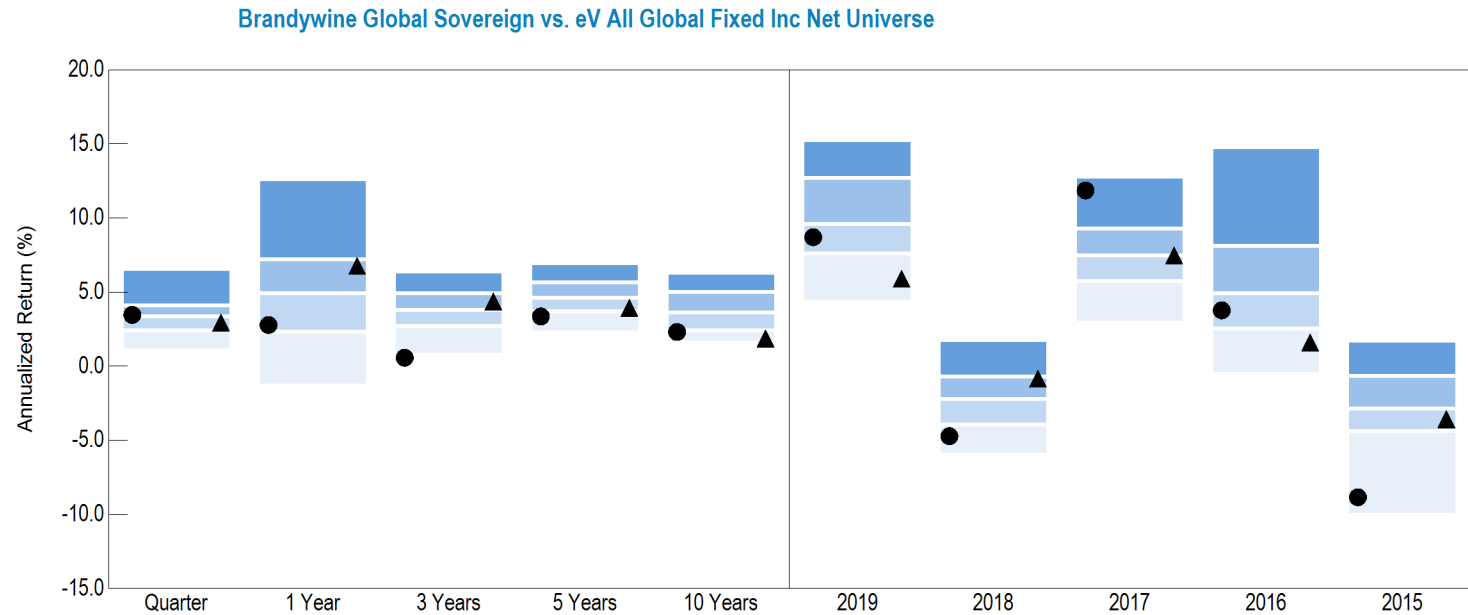
5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
Eaton Vance Senior Loan Fund	3.6%	5.5%	0.4
S&P/LSTA Leveraged Loan Index	4.0%	7.0%	0.4
eV US Float-Rate Bank Loan Fixed Inc Net Median	3.4%	6.1%	0.4

Returns prior to inception date are composite returns.

Brandywine Global Sovereign  
Manager Performance Comparisons (Net of Fees)

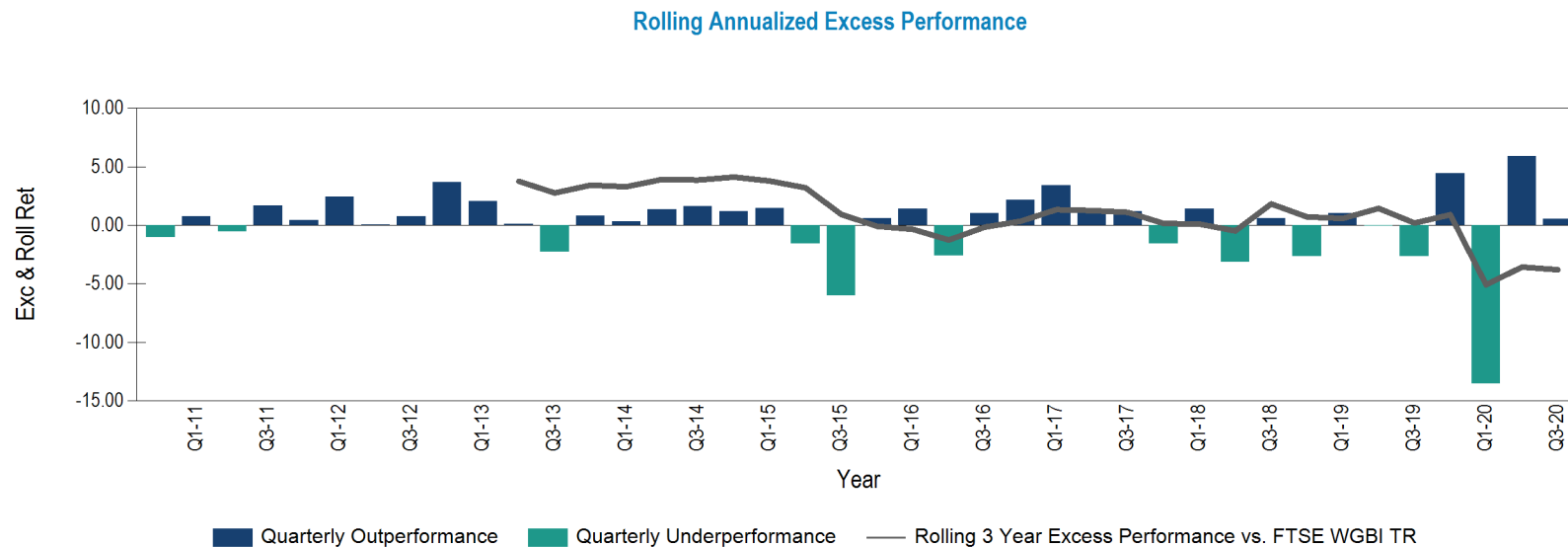
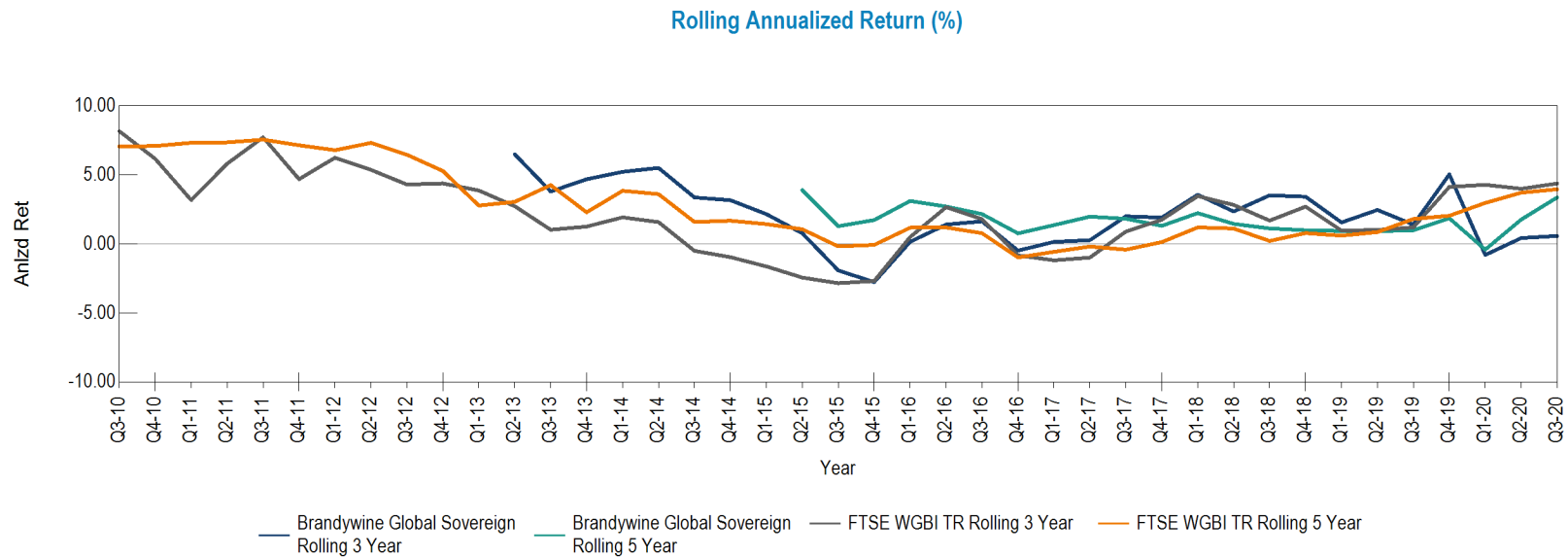
Period Ending: September 30, 2020



	Return (Rank)									
5th Percentile	6.5	12.6	6.4	6.9	6.3	15.2	1.7	12.8	14.7	1.7
25th Percentile	4.1	7.2	4.9	5.7	5.0	12.7	-0.7	9.3	8.1	-0.6
Median	3.4	4.9	3.8	4.7	3.6	9.6	-2.2	7.5	5.0	-2.9
75th Percentile	2.4	2.4	2.7	3.7	2.5	7.6	-3.9	5.8	2.6	-4.4
95th Percentile	1.1	-1.3	0.8	2.3	1.6	4.4	-6.0	2.9	-0.5	-10.0
# of Portfolios	249	236	223	206	128	239	218	214	209	175
● Brandywine Global Sovereign	3.5 (46)	2.8 (71)	0.6 (96)	3.4 (87)	2.3 (82)	8.7 (60)	-4.7 (87)	11.9 (6)	3.8 (63)	-8.8 (93)
▲ FTSE WGBI TR	2.9 (64)	6.8 (31)	4.4 (40)	3.9 (71)	1.9 (90)	5.9 (87)	-0.8 (27)	7.5 (51)	1.6 (81)	-3.6 (63)

# Brandywine Global Sovereign Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

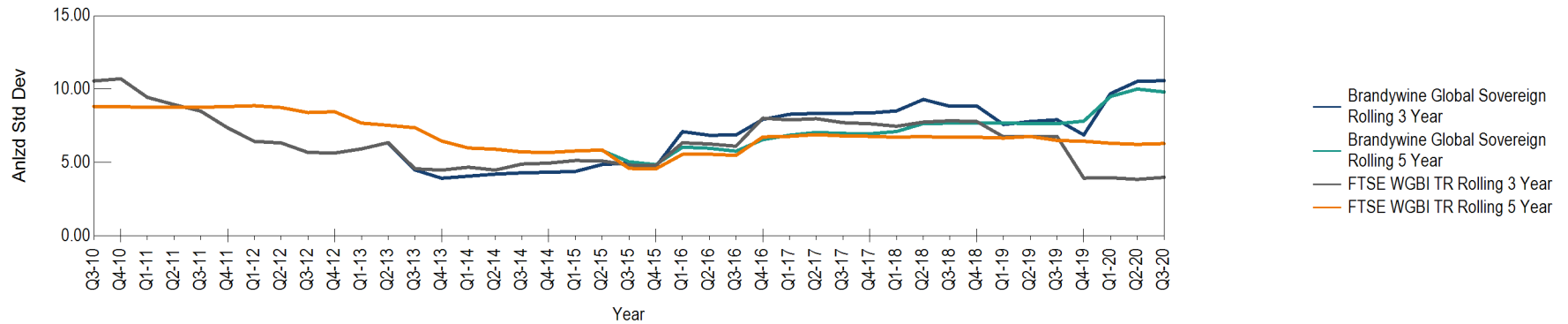


# Brandywine Global Sovereign

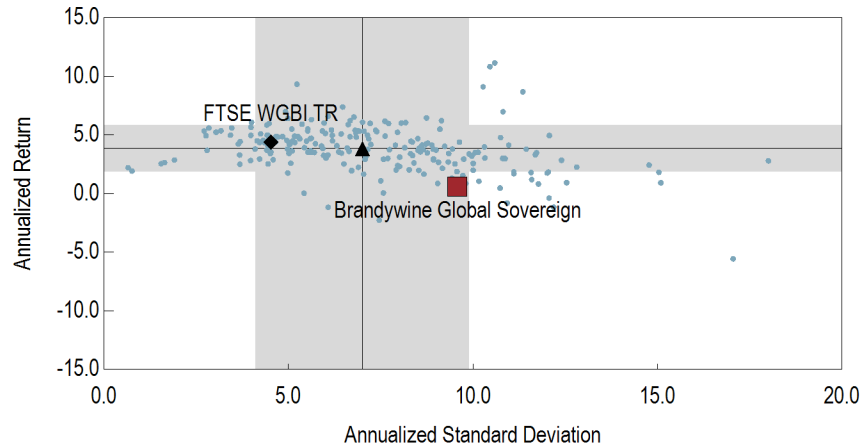
## Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

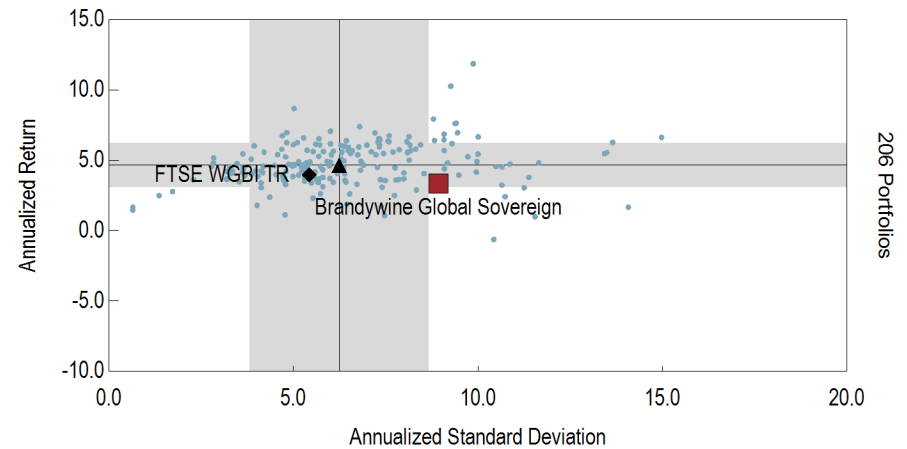
Rolling Annualized Standard Deviation



3 Years



5 Years



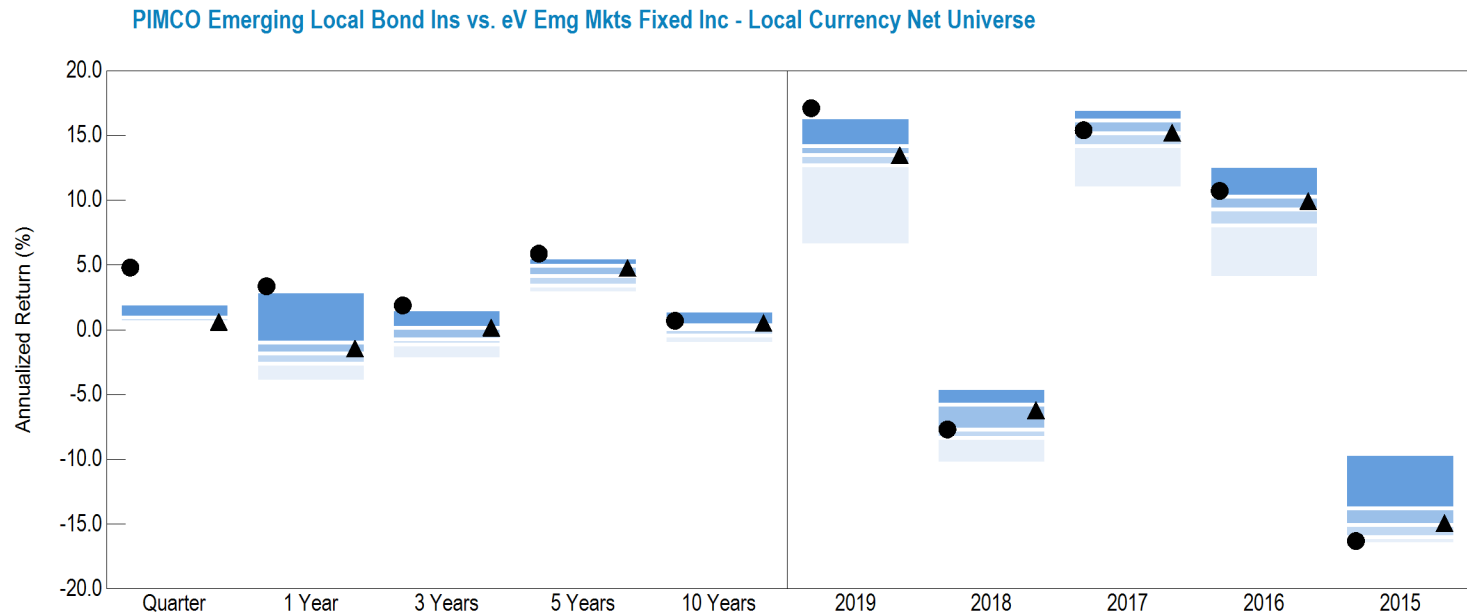
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio		Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
BBgBarc US TIPS TR	5.8%	3.8%	1.1	BBgBarc US TIPS TR	4.6%	3.6%	1.0
eV US TIPS / Inflation Fixed Inc Net Median	5.8%	4.0%	1.0	eV US TIPS / Inflation Fixed Inc Net Median	4.6%	3.7%	0.9

Returns prior to inception date are composite returns.

# PIMCO Emerging Local Bond Ins Manager Performance Comparisons (Net of Fees)

Period Ending: September 30, 2020

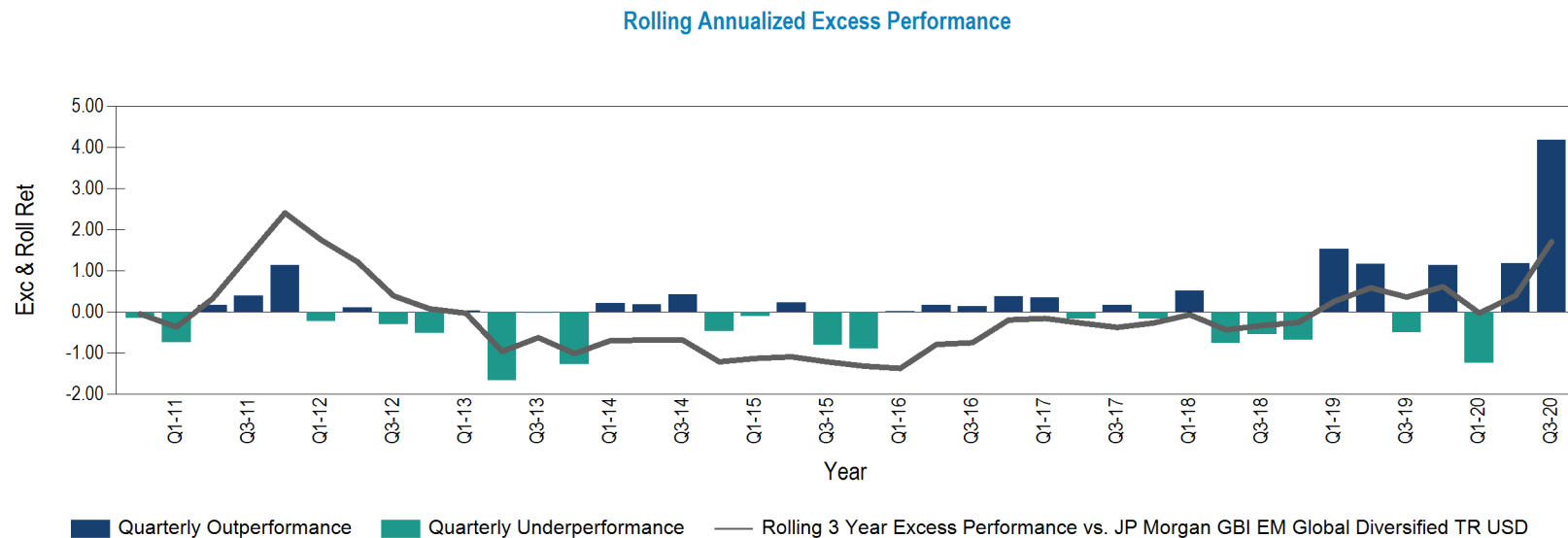
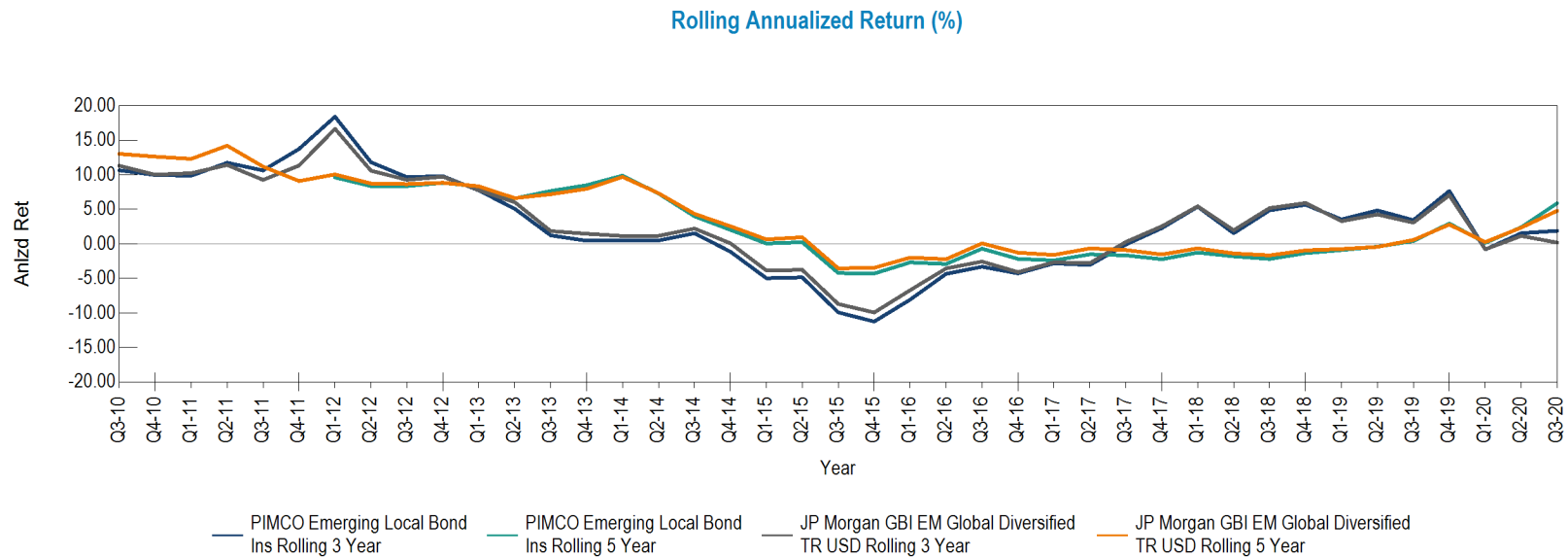


	Return (Rank)									
5th Percentile	2.0	3.0	1.5	5.5	1.5	16.4	-4.5	17.0	12.6	-9.6
25th Percentile	1.0	-1.0	0.2	5.0	0.4	14.2	-5.8	16.2	10.3	-13.7
Median	0.6	-1.8	-0.7	4.2	0.1	13.5	-7.7	15.2	9.3	-15.0
75th Percentile	0.3	-2.6	-1.1	3.4	-0.4	12.7	-8.3	14.2	8.1	-16.0
95th Percentile	0.0	-4.0	-2.3	2.9	-1.0	6.5	-10.3	11.0	4.0	-16.5
# of Portfolios	34	33	33	32	18	35	33	31	30	29
● PIMCO Emerging Local Bond Ins	4.8 (1)	3.4 (3)	1.9 (5)	5.9 (3)	0.7 (21)	17.1 (3)	-7.7 (54)	15.4 (39)	10.7 (18)	-16.3 (91)
▲ JP Morgan GBI EM Global Diversified TR USD	0.6 (53)	-1.4 (40)	0.2 (24)	4.8 (33)	0.5 (23)	13.5 (51)	-6.2 (33)	15.2 (47)	9.9 (33)	-14.9 (47)

Returns prior to inception date are composite returns.

# PIMCO Emerging Local Bond Ins Rolling Manager Performance (Net of Fees)

Period Ending: September 30, 2020



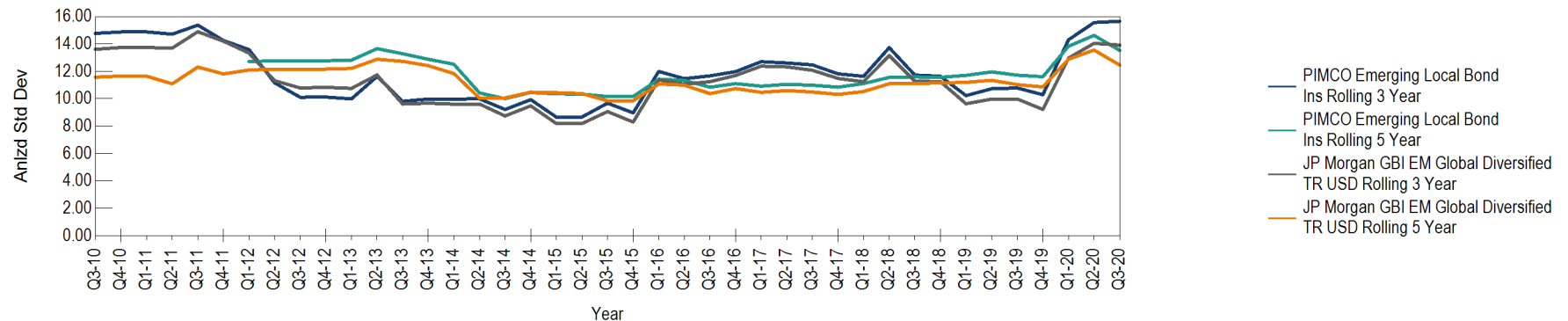
Returns prior to inception date are composite returns.

# PIMCO Emerging Local Bond Ins

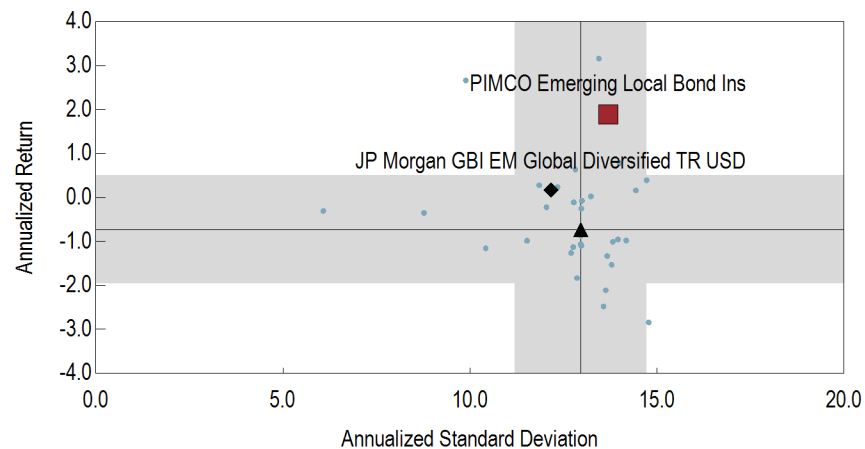
## Risk vs. Return 3 & 5 Year (Net of Fees)

Period Ending: September 30, 2020

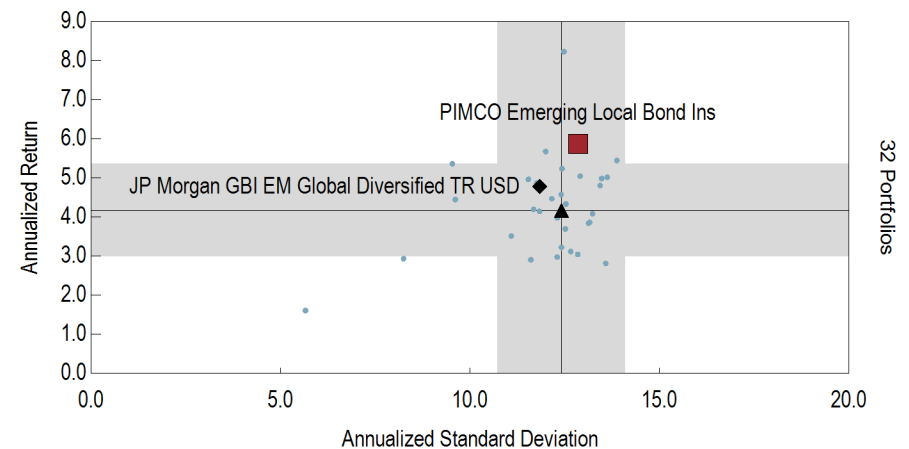
Rolling Annualized Standard Deviation



3 Years



5 Years



3 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO Emerging Local Bond Ins	1.9%	13.7%	0.0
JP Morgan GBI EM Global Diversified TR USD	0.2%	12.2%	-0.1
eV Emg Mkts Fixed Inc - Local Currency Net Median	-0.7%	13.0%	-0.2

5 Years

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio
PIMCO Emerging Local Bond Ins	5.9%	12.9%	0.4
JP Morgan GBI EM Global Diversified TR USD	4.8%	11.8%	0.3
eV Emg Mkts Fixed Inc - Local Currency Net Median	4.2%	12.4%	0.3

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**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
Benefits Payment Cash	N/A	Northern Trust	Warburg Pincus XII	2015	Hamilton Lane
Custodied	N/A	Northern Trust	Gerding Edlen Green Cities III	2016	Gerding Edlen
County Cash	N/A	FCERA	Hamilton Lane PE Fund IX	2016	Hamilton Lane
Aronson Johnson Ortiz	12/4/1995	Northern Trust	Kennedy Wilson Real Estate V	2016	Kennedy Wilson
Warburg Pincus	1998	Hamilton Lane	TSSP Adjacent Opportunities	2016	Carlyle
TCW Shop III	1998	Carlyle	OHA Strategic Credit Fund II, L.P.	2016	Carlyle
Warburg Pincus VIII	2001	Hamilton Lane	Horsley Bridge XI GBO	2016	Hamilton Lane
Blackstone IV	2002	Hamilton Lane	GCM Better Futures Fund	2016	Grosvenor
Lonestar IV	2002	Carlyle	Parametric Overlay	2016	Northern Trust
TCW Shop IV	2002	Carlyle	EQT European S. Situations Debt	2017	Carlyle
Mondrian Emerging Markets	11/17/2005	Mondrian	Eaton Vance Ins. Sr Loan Plus	2017	Eaton Vance
Invesco Core Real Estate	10/1/2007	Invesco	PIMCO StocksPLUS Small Fund	4/31/2018	PIMCO
New Mountain III	2007	Hamilton Lane	Hamilton Lane Secondary Fund IV	2017	Hamilton Lane
Hamilton Lane VI	2007	Hamilton Lane	TCG BDC II	2017	Carlyle
Warburg Pincus X	2007	Hamilton Lane	AlpInvest FC Credit Fund, L.P.	2017	Carlyle
Landmark Equity Partners XIV	2008	Hamilton Lane	CPC V, L.P.	2017	Carlyle
Mondrian Int'l Small Cap	11/2/2009	Mondrian	Kelso Investment Associates X, L.P	2018	Hamilton Lane
Colony Distressed Credit I	2009	Carlyle	Avista Capital Partners IV	2018	Hamilton Lane
TA Associates Realty 9	2009	TA Associates	Platinum Equity Small Cap Fund	2018	Hamilton Lane
Systematic Small/Mid Value	10/8/2010	Northern Trust	T. Rowe Price Large Cap Growth	10/23/2018	Northern Trust
KKR Mezzanine Partners I	2010	Carlyle	Baillie Gifford Emerging Markets	12/10/2018	Baillie Gifford
Angelo Gordon Cap. Recov. VII	2010	Carlyle	K4 Private Investors, L.P.	2018	Hamilton Lane
RAFI International Equity	4/30/2011	Northern Trust	SK Capital Partners Fund V, L.P.	2018	Hamilton Lane
Oaktree Opportunities Fund IX	2012	Carlyle	Thomas H. Lee Equity Fund VIII, L.P.	2019	Hamilton Lane
Artisan International Growth	4/1/2013	Northern Trust	H.I.G. Growth Buyouts & Equity Fund III	2019	Hamilton Lane
PIMCO Emerging Local Bond	7/31/2013	Northern Trust	RBC Access Capital	10/10/2018	Northern Trust
WAMCO Credit Index	10/1/2014	Northern Trust	Invesco US Value-Add Fund V	2/20/2019	Invesco
Loomis Sayles High Yield	10/1/2014	Northern Trust	NT MSCI US Index	6/2/2020	Northern Trust
Eaton Vance Senior Loan	10/1/2014	Eaton Vance	NT MSCI World Ex-US Index Fund	5/28/2020	Northern Trust
Colony Distressed Credit III	2014	Carlyle	JFL Equity Investors V, L.P.	2019	Hamilton Lane
Brandywine Global Sovereign	1/31/2015	Northern Trust	Insight Partners XI, L.P.	2019	Hamilton Lane
IFM Global Infrastructure	5/1/2015	IFM	HGGC Fund IV, L.P.	2019	Hamilton Lane
GSO European Senior Debt	2015	Carlyle	TCW TALF Opportunities Fund LP	6/12/2020	Northern Trust
CVI Credit Value Fund III	2015	Carlyle	Western Asset Management Treasuries	9/2/2020	Northern Trust
			Western Asset Management Agency MBS	9/2/2020	Northern Trust

## Policy &amp; Custom Index Composition

Floating Policy Index (9/1/2020-9/30/2020)	28% MSCI USA, 26% Fixed Income Custom Benchmark, 21% MSCI ACWI ex US, 0.87% Russell 2000, 0.58% BBgBarc US Corp. High Yield, 5.13% Private Equity Neutralized, 7.42% Private Credit Neutralized, 1% HFRI FoF Composite, 8% NCREIF ODCE Net, & 2% 91 Day T-Bills.
(8/1/2020-8/31/2020)	24% Russell 3000 Index, 26% BBgBarc Global Aggregate Index, 23% MSCI ACWI ex US, 0.98% Russell 2000, 0.77% BBgBarc US Corp. High Yield, 5.02% Private Equity Neutralized, 7.23% Private Credit Neutralized, 2% HFRI FoF Composite, 9% NCREIF ODCE Net, & 2% 91 Day T-Bills.
(7/1/2020-7/31/2020)	24% Russell 3000 Index, 26% BBgBarc Global Aggregate Index, 23% MSCI ACWI ex US, 0.87% Russell 2000, 0.55% BBgBarc US Corp. High Yield, 5.13% Private Equity Neutralized, 7.45% Private Credit Neutralized, 2% HFRI FoF Composite, 9% NCREIF ODCE Net, & 2% 91 Day T-Bills.
Fixed Income Custom Benchmark (9/1/2020- Present)	38.5% BgBarc U.S. Aggregate Index, 3.8% BBgBarc US Securitized Index, 30.8% 50% BBgBarc 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% BBgBarc Global Aggregate Index
Before 4/1/2014	100% BBgBarc U.S. Aggregate Index

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

## Other Disclosures

A non-cash contribution was made matching the investment manager fee for Invesco Real Estate and non-cash contributions were made estimating the investment manager fee for Invesco Commodities.

Fresno County Employees' Retirement Association fiscal year end is June 30.

# Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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