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**MARCH 24, 2021**

**AGENDA ITEM 5  
INFORMATION ITEM**

**SCHOLARSHARE INVESTMENT BOARD**

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***Background***

SIB and its investment consultant, Meketa Investment Group, Inc. (Meketa), monitor all portfolios in ScholarShare 529 (Plan) in accordance with the ScholarShare Monitoring Procedures and Criteria (Procedures) adopted by the Board.

In this item, SIB will review and discuss the “Investment Performance Report” (Exhibit A) for the Plan for fourth quarter 2020, provided by TIAA-CREF Tuition Financing, Inc., and the “Investment Performance Status Report” (Exhibit B) for fourth quarter 2020, provided by Meketa. Exhibit B provides comparisons for each underlying fund allocated to the portfolios used in the Plan to applicable benchmark criteria and labels the current status of funds as “positive,” “acceptable,” “caution,” or “watch.”

For the fourth quarter of 2020:

- Seven underlying funds were in the “positive” status,
- Eight underlying funds were in the “acceptable” status, and
- Four underlying funds were in the “caution” status (all of which are currently on “watch” status).

As outlined in its memo (Exhibit C), Meketa is recommending that:

- The DFA Emerging Markets Core Equity Portfolio (I), TIAA-CREF High-Yield Fund, TIAA-CREF Quant Small-Cap Equity Fund, and PIMCO Income Fund remain on “watch” status; and
- No new funds qualify for “watch” status.

***Presenters***

Jeremy Thiessen, Senior Director, Institutional Investment Strategist,  
TIAA-CREF Tuition Financing, Inc.

Glenn Friedman, Director, Asset Allocation and Investments, TIAA-CREF Tuition Financing, Inc.  
Eric White, Principal, Meketa Investment Group, Inc.

# Quarterly Investment Report

4th Quarter, 2020

BUILT TO PERFORM.

CREATED TO SERVE.

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Before investing in the ScholarShare 529 College Savings Plan, you should consider the investment objectives, risks, charges, and expenses. The information contained in this report is subject to further change and amendments over time. Some changes may occur due to the result of adjustments. For a prospectus containing this and other information, as well as a Participant Agreement and Disclosure Statement, please call 1-800-544-5248 or view it online at [www.scholarshare529.com](http://www.scholarshare529.com). Please read these documents carefully before investing.

TIAA-CREF Tuition Financing, Inc., Program Manager. TIAA-CREF Individual & Institutional Services, LLC, member FINRA and SIPC, distributor and underwriter for the ScholarShare 529 College Savings Plan.



ScholarShare529

## Key Themes

- The main focus around the country continued to be centered around the ongoing coronavirus pandemic, including national and local government responses, changing policies, plans for vaccine distribution, and economic/financial impacts. Many are hopeful that the new administration will prioritize the response plan to help end the crisis.

## Equities

- U.S. stocks gained nearly 15% for the quarter as all eleven U.S. equity sectors saw positive returns. Energy was the leader, gaining 27.77%, while Real Estate lagged, gaining only 4.94%. Broad baskets of non-U.S. developed and emerging markets equities gained approximately 16% and 20%, respectively.

## Fixed Income

- The yield curve steepened as yields at the lower end of the curve remained range-bound and longer-term rates floated higher. Core fixed income returns were somewhat modest as investment grade U.S. bonds returned 0.67%. The Federal Reserve continues to maintain a low Fed Funds Target Rate to promote liquidity and aid in the recovery.

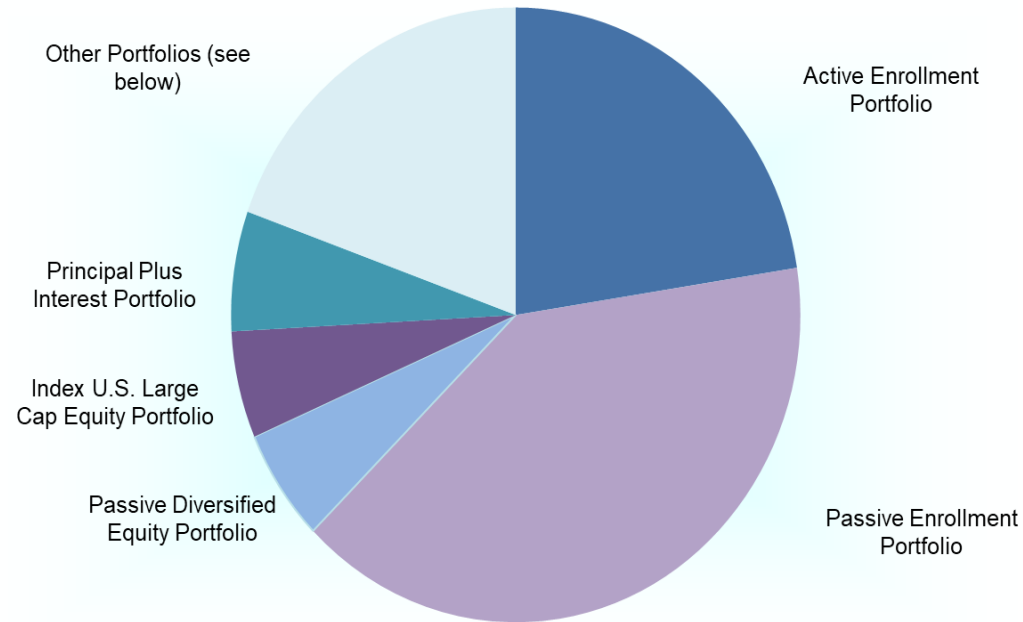
Asset Class	3 Month	1 Year	3 Year	5 Year
U.S. Equities	14.68	20.89	14.49	15.43
U.S. Growth Stocks	11.39	38.49	22.99	21.00
U.S. Value Stocks	16.25	2.80	6.07	9.74
U.S. Mid-Cap Stocks	19.91	17.10	11.61	13.40
U.S. Small-Cap Stocks	31.37	19.96	10.25	13.26
Int'l Developed Stocks	16.05	7.82	4.28	7.45
Emerging Markets Stocks	19.70	18.31	6.17	12.81
Real Estate Stocks	8.15	-5.12	5.41	6.70
U.S. Investment Grade Bonds	0.67	7.51	5.34	4.44
Inflation-Linked Bonds	1.60	8.39	4.93	4.13
High Yield Bonds	5.66	6.32	6.22	8.03
Commodities	10.19	-3.12	-2.53	1.03
Cash	0.03	0.67	1.62	1.21
<b>Annualized Tuition Inflation Ending as of 2020-2021 Academic Year* (%)</b>				
<b>Educational Institution</b>		<b>1 Year</b>	<b>3 Year</b>	<b>5 Year</b>
National Average Public 4-Year In-state		1.15	1.90	2.29
National Average Private Nonprofit 4-Year		2.09	2.75	3.09
Consumer Price Index, December 2020		1.36	1.85	1.95

\*Data are for the entire academic year and are average total charges for full-time attendance. Tuition and fees were enrollment weighted. SOURCES: CollegeBoard, Trends in College Pricing 2020 and U.S. Department of Labor: Bureau of Labor Statistics

Past performance is not indicative of future results. You can not invest directly in an index. U.S. Equities – Russell 3000 Index; U.S. Growth Stocks – Russell 1000 Growth Index; U.S. Value Stocks – Russell 1000 Value Index; U.S. Mid Cap Stocks – Russell Midcap Index; U.S. Small-Cap Stocks – Russell 2000 Index; International Developed Markets – MSCI EAFE Index; Emerging Markets – MSCI Emerging Markets Index; Real Estate Stocks – FTSE NAREIT All Equity REITS Index; U.S. Investment Grade Bonds – Bloomberg Barclays U.S. Aggregate Bond Index; Long-dated Bonds – Bloomberg Barclays U.S. Government/Credit Long Index; Inflation-Linked Bonds – Bloomberg Barclays TIPS 1-10 Years Index; High Yield Bonds – BofA Merrill Lynch BB/B Cash Pay Index; Commodities - Bloomberg Commodity Index; Cash - Bloomberg Barclays U.S. 3 month Treasury Bellweathers Index C34631

# Assets by Portfolio as of Q4 2020

## Total Assets: \$11.4 Billion

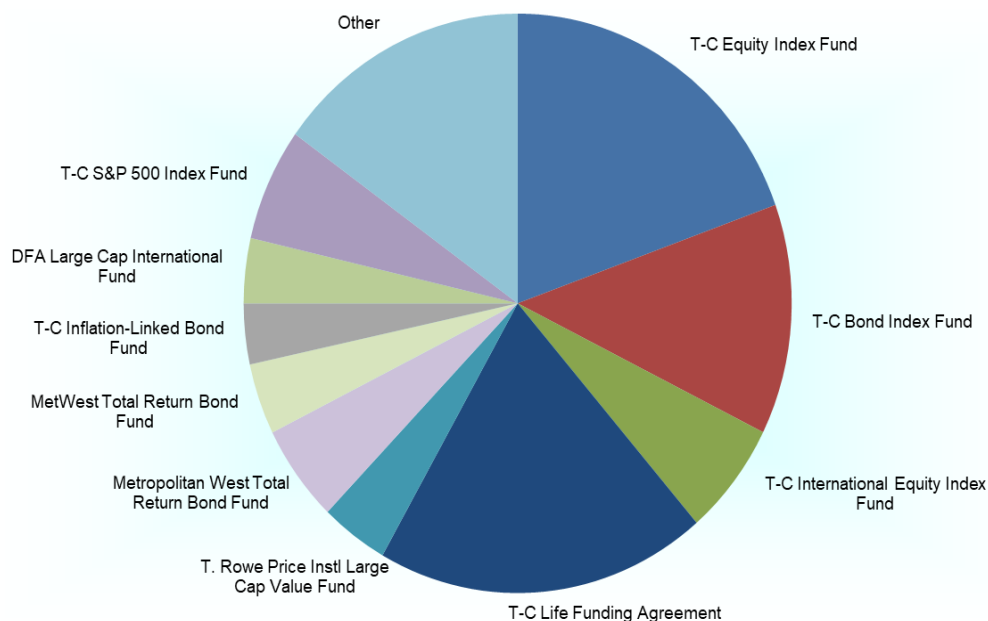


Portfolio	% of Assets	\$ Millions	Portfolio	% of Assets	\$ Millions
Passive Enrollment Portfolio	40.06%	\$ 4,551	Passive Diversified Equity Portfolio	5.91%	\$ 672
Active Enrollment Portfolio	22.55%	\$ 2,562	Principal Plus Interest Portfolio	5.62%	\$ 639
Index U.S. Large Cap Equity Portfolio	6.31%	\$ 716	Other Portfolios (see below)	19.55%	\$ 2,221

### Other Portfolios

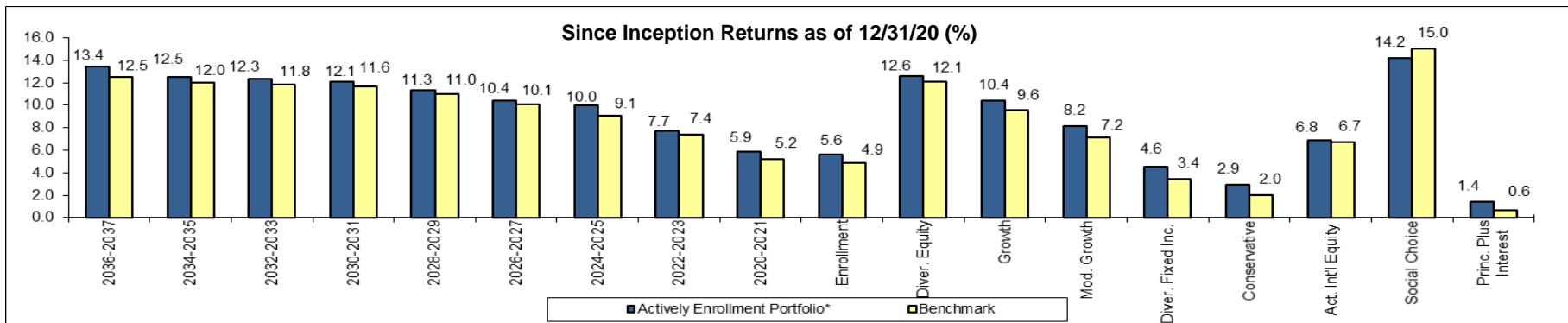
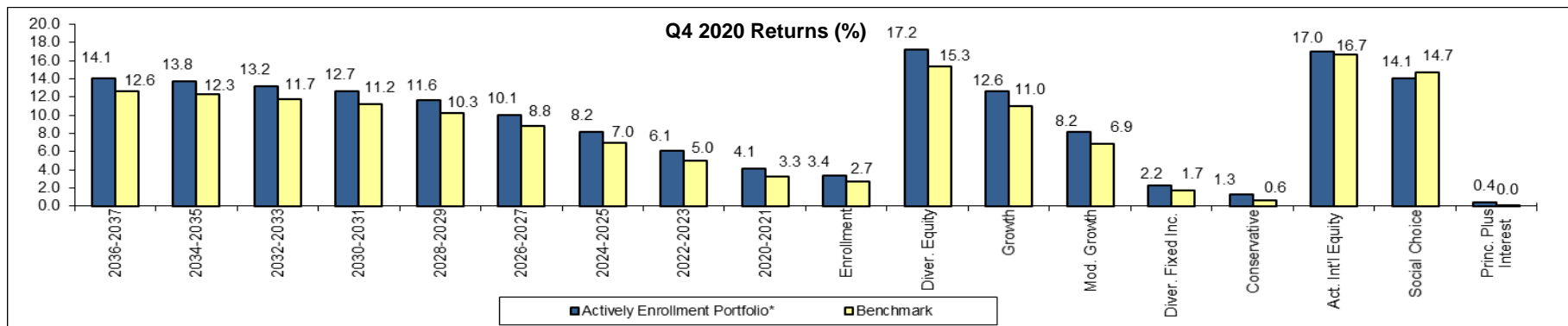
Index U.S. Equity Portfolio	5.53%	\$ 628	Passive Moderate Growth Portfolio	0.72%	\$ 82
Active Diversified Equity Portfolio	2.90%	\$ 330	Active Moderate Growth Portfolio	0.68%	\$ 77
Active Growth Portfolio	2.04%	\$ 232	Passive Conservative Portfolio	0.60%	\$ 68
Social Choice Portfolio	1.99%	\$ 226	Active Conservative Portfolio	0.40%	\$ 45
Passive Growth Portfolio	1.55%	\$ 176	Active Diversified Fixed Income Portfolio	0.34%	\$ 39
Index International Equity Portfolio	1.24%	\$ 141	Passive Diversified Fixed Income Portfolio	0.33%	\$ 37
Index Bond Portfolio	0.93%	\$ 106	Active International Equity Portfolio	0.30%	\$ 34

# Assets by Underlying Fund as of Q4 2020



Fund	% of Assets	\$ Millions	Fund	% of Assets	\$ Millions
T-C Life Funding Agreement	19.53%	\$ 2,219	T. Rowe Price Instl Large Cap Value Fund	4.00%	\$ 454
T-C Equity Index Fund	19.48%	\$ 2,213	T. Rowe Price Instl Large Cap Growth Fund	3.97%	\$ 451
T-C Bond Index Fund	12.86%	\$ 1,461	DFA Large Cap International Fund	3.62%	\$ 411
T-C International Equity Index Fund	6.34%	\$ 720	T-C Inflation-Linked Bond Fund	3.39%	\$ 385
T-C S&P 500 Index Fund	6.30%	\$ 716	Other	15.07%	\$ 1,712
Metropolitan West Total Return Bond Fund	5.44%	\$ 618			
<b>Other Funds</b>					
T-C Real Estate Securities Fund	2.55%	\$ 290	T-C Emerging Markets Equity Index Fund	1.61%	\$ 182
PIMCO Real Return Fund	2.17%	\$ 247	T. Rowe Price Instl Floating Rate Fund	1.08%	\$ 122
PIMCO Income Fund	2.17%	\$ 246	DFA Emerging Markets Core Equity Portfolio	0.92%	\$ 105
T-C Social Choice Equity Fund	1.99%	\$ 226	T-C Quant Small Cap Equity Fund	0.89%	\$ 101
T-C High Yield Bond Fund	1.70%	\$ 193			

# Actively Managed Portfolios vs Composite Benchmarks Q4 and Since Inception Returns (%)



- The U.S. economy lost 140,000 jobs in December and maintained an unemployment rate of 6.7%. This is the first job decrease in eight months as businesses continued fighting the pressures brought on by the pandemic.
- Real average hourly earnings of all employees on private nonfarm payrolls showed a 3.7% year-over-year increase from last December, seasonally adjusted.
- Confidence among the nation's homebuilders slid four points to 86 in December in the National Association of Home Builders/Wells Fargo Housing Market Index. This marks the fourth consecutive month with a reading over 80.
- All Active Enrollment Year Portfolios had positive absolute returns in Q4 and outperformed their blended benchmarks.
- Contributing most to absolute returns was the TIAA-CREF Quant Small Cap Index Fund, as smaller U.S. companies tended to lead other areas of the equity markets in Q4. This fund returned 32.14% for the quarter and outperformed its benchmark by 77 basis points.
- On the fixed income side, the PIMCO Income Fund supported absolute returns and returned 4.46%, outperforming its benchmark by 379 basis points due to its allocation to credit.
- The highest performing option in Q4 was the Active Diversified Equity Portfolio. This returned 17.24% by maintaining prudent allocations to both U.S. and international equity markets.

# Actively Managed Portfolios vs Composite Benchmarks

Investment Portfolios	3 Month	YTD	Average Annual Total Return			Since Inception	Inception Date
			1 Year	3 Year	5 Year		
<b>Active Enrollment Year Portfolios**</b>							
2036/2037 Enrollment Portfolio Active	14.08%	-	-	-	-	13.40%	01/24/20
Blended Benchmark Returns	12.62%	-	-	-	-	12.47%	
Difference	1.46%	-	-	-	-	0.93%	
2034/2035 Enrollment Portfolio Active	13.75%	-	-	-	-	12.50%	01/24/20
Blended Benchmark Returns	12.28%	-	-	-	-	12.02%	
Difference	1.47%	-	-	-	-	0.48%	
2032/2033 Enrollment Portfolio Active	13.21%	-	-	-	-	12.30%	01/24/20
Blended Benchmark Returns	11.73%	-	-	-	-	11.84%	
Difference	1.48%	-	-	-	-	0.46%	
2030/2031 Enrollment Portfolio Active	12.66%	-	-	-	-	12.10%	01/24/20
Blended Benchmark Returns	11.18%	-	-	-	-	11.64%	
Difference	1.48%	-	-	-	-	0.46%	
2028/2029 Enrollment Portfolio Active	11.63%	-	-	-	-	11.30%	01/24/20
Blended Benchmark Returns	10.29%	-	-	-	-	10.98%	
Difference	1.34%	-	-	-	-	0.32%	
2026/2027 Enrollment Portfolio Active	10.07%	-	-	-	-	10.40%	01/24/20
Blended Benchmark Returns	8.82%	-	-	-	-	10.07%	
Difference	1.25%	-	-	-	-	0.33%	
2024/2025 Enrollment Portfolio Active	8.16%	-	-	-	-	10.00%	01/24/20
Blended Benchmark Returns	7.01%	-	-	-	-	9.10%	
Difference	1.15%	-	-	-	-	0.90%	
2022/2023 Enrollment Portfolio Active	6.11%	-	-	-	-	7.70%	01/24/20
Blended Benchmark Returns	5.05%	-	-	-	-	7.38%	
Difference	1.06%	-	-	-	-	0.32%	
2020/2021 Enrollment Portfolio Active	4.13%	-	-	-	-	5.90%	01/24/20
Blended Benchmark Returns	3.31%	-	-	-	-	5.20%	
Difference	0.82%	-	-	-	-	0.70%	
Enrollment Year Portfolio Active	3.43%	-	-	-	-	5.60%	01/24/20
Blended Benchmark Returns	2.74%	-	-	-	-	4.87%	
Difference	0.69%	-	-	-	-	0.73%	
<b>Active Multi-Fund Investment Portfolios</b>							
Active Diversified Equity Portfolio	17.24%	15.32%	15.32%	10.59%	12.88%	12.58%	11/04/11
Blended Benchmark Returns	15.33%	14.89%	14.89%	10.63%	12.71%	12.06%	
Difference	1.91%	0.43%	0.43%	-0.04%	0.17%	0.52%	
Active Growth Portfolio	12.62%	13.86%	13.86%	9.38%	10.82%	10.39%	11/04/11
Blended Benchmark Returns	11.05%	13.43%	13.43%	9.40%	10.50%	9.59%	
Difference	1.57%	0.43%	0.43%	-0.02%	0.32%	0.80%	
Active Moderate Growth Portfolio	8.18%	12.02%	12.02%	7.92%	8.60%	8.17%	11/09/11
Blended Benchmark Returns	6.88%	11.51%	11.51%	7.88%	8.15%	7.15%	
Difference	1.30%	0.51%	0.51%	0.04%	0.45%	1.02%	
Active Conservative Portfolio	1.33%	5.10%	5.10%	3.58%	3.31%	2.90%	11/04/11
Blended Benchmark Returns	0.61%	4.20%	4.20%	3.47%	2.92%	2.03%	
Difference	0.72%	0.90%	0.90%	0.11%	0.39%	0.87%	
Active International Equity Portfolio	17.00%	9.31%	9.31%	4.12%	8.55%	6.84%	11/10/11
Blended Benchmark Returns	16.68%	9.80%	9.80%	4.69%	8.73%	6.67%	
Difference	0.32%	-0.49%	-0.49%	-0.57%	-0.18%	0.17%	
Active Diversified Fixed Income Portfolio	2.24%	8.35%	8.35%	5.57%	5.18%	4.57%	11/08/11
Blended Benchmark Returns	1.72%	8.24%	8.24%	5.42%	4.94%	3.43%	
Difference	0.52%	0.11%	0.11%	0.15%	0.24%	1.14%	
<b>Active Single Fund Investment Portfolios</b>							
Social Choice Portfolio	14.09%	20.28%	20.28%	14.25%	15.37%	14.19%	11/04/11
Benchmark Returns	14.68%	20.89%	20.89%	14.49%	15.43%	15.02%	
Difference	-0.59%	-0.61%	-0.61%	-0.24%	-0.06%	-0.83%	
Principal Plus Interest Portfolio**	0.44%	1.70%	1.70%	1.61%	1.47%	1.39%	11/04/11
Benchmark Returns	0.03%	0.54%	0.54%	1.53%	1.13%	0.06%	
Difference	0.41%	1.16%	1.16%	0.08%	0.34%	1.33%	

\* Returns are net of most recent weighted average Underlying Fund Fees, Program Management Fees and State Administrative Fees (5 bps).

\*\*The crediting rate of 1.10% for the TC Life Funding Agreement in the Active Age-Based Portfolio for the Principal Plus Interest Portfolio are guaranteed through 12/31/21.

# Asset Allocation, Fees, and Performance

Active Enrollment Year Portfolio	Annual Asset Based Fees (bp)*	T. Rowe Price Instl Large Cap Growth Fund	T. Rowe Price Instl Large Cap Value Fund	T. Rowe Price Instl Floating Rate Fund	TIAA-CREF Quant Small Cap Equity Fund	TIAA-CREF Real Estate Securities Fund	DFA Large Cap International Portfolio	DFA Emerging Markets Core Equity I Portfolio	MetWest Total Return Bond Fund	PIMCO Real Return Fund	PIMCO Income Fund	T-C Life Funding Agreement
<b>Underlying Fund Expenses (bp)</b>		<b>56</b>	<b>56</b>	<b>58</b>	<b>42</b>	<b>50</b>	<b>22</b>	<b>48</b>	<b>38</b>	<b>45</b>	<b>50</b>	<b>N/A</b>
<b>2036-2037</b>	<b>52</b>	22.70%	22.70%	2.00%	5.00%	5.60%	19.20%	4.80%	10.00%	4.00%	4.00%	0.00%
<b>2034-2035</b>	<b>52</b>	22.70%	22.70%	2.00%	5.00%	5.60%	19.20%	4.80%	10.00%	4.00%	4.00%	0.00%
<b>2032-2033</b>	<b>52</b>	21.60%	21.60%	2.40%	4.80%	5.30%	18.10%	4.60%	12.00%	4.80%	4.80%	0.00%
<b>2030-2031</b>	<b>51</b>	20.40%	20.40%	2.80%	4.50%	5.10%	17.30%	4.30%	14.00%	5.60%	5.60%	0.00%
<b>2028-2029</b>	<b>51</b>	19.30%	19.30%	3.20%	4.30%	4.80%	16.30%	4.00%	16.00%	6.40%	6.40%	0.00%
<b>2026-2027</b>	<b>51</b>	17.00%	17.00%	4.00%	3.80%	4.20%	14.40%	3.60%	20.00%	8.00%	8.00%	0.00%
<b>2024-2025</b>	<b>51</b>	13.60%	13.60%	5.20%	3.00%	3.40%	11.50%	2.90%	26.00%	10.40%	10.40%	0.00%
<b>2022-2023</b>	<b>46</b>	10.20%	10.20%	5.40%	2.30%	2.50%	8.60%	2.20%	27.00%	10.80%	10.80%	10.00%
<b>2020-2021</b>	<b>35</b>	7.10%	7.10%	4.00%	1.50%	1.80%	6.00%	1.50%	20.00%	8.00%	8.00%	35.00%
<b>Enrollment</b>	<b>28</b>	4.20%	4.20%	3.50%	1.00%	1.10%	3.60%	0.90%	17.50%	7.00%	7.00%	50.00%

## Active Multi-Fund Investment Portfolios

Active Diversified Equity Portfolio	52	28.35%	28.35%		6.30%	7.00%	24.00%	6.00%				
Active Growth Portfolio	51	19.85%	19.85%	3.00%	4.40%	4.90%	16.80%	4.20%	15.00%	6.00%	6.00%	
Active Moderate Growth Portfolio	51	11.34%	11.34%	6.00%	2.52%	2.80%	9.60%	2.40%	30.00%	12.00%	12.00%	
Active Diversified Fixed Income Portfolio	50			10.00%					50.00%	20.00%	20.00%	
Active Conservative Portfolio	28			5.00%					25.00%	10.00%	10.00%	50.00%
Active International Equity Portfolio	33						80.00%	20.00%				
<b>Fund's Performance vs Benchmk Q4 2020 (bp)</b>		<b>166</b>	<b>445</b>	<b>(65)</b>	<b>77</b>	<b>20</b>	<b>9</b>	<b>155</b>	<b>62</b>	<b>42</b>	<b>379</b>	<b>41</b>

Glide Path asset allocations are as reflected in the Plan Description.

## Active Single Fund Investment Portfolios

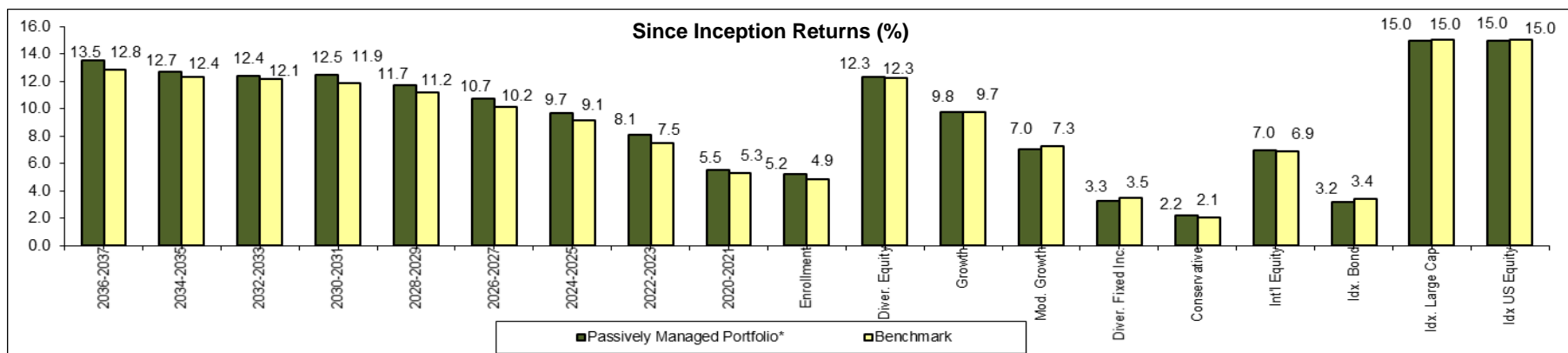
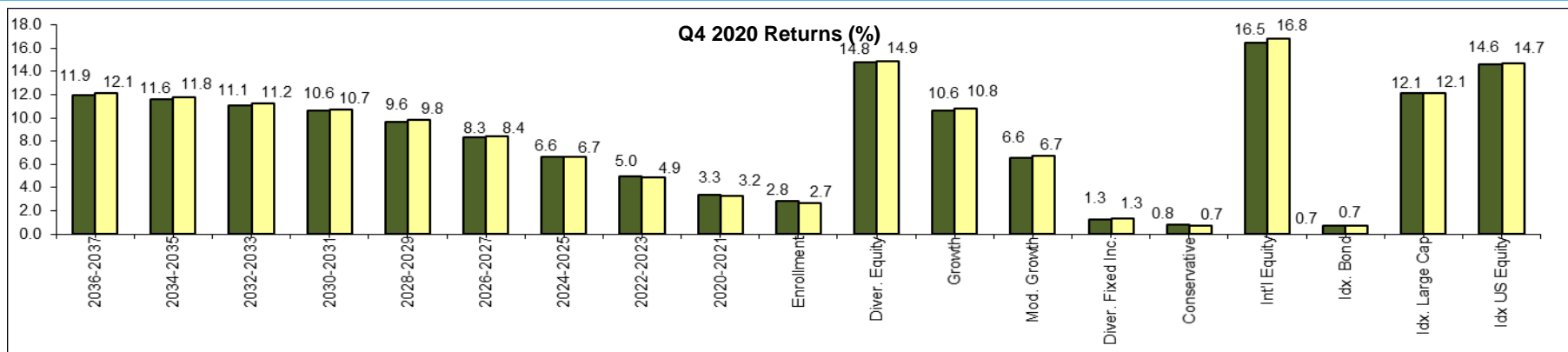
Investment Portfolios	Annual Asset Based Fees (bp)*	Percent Allocation	Underlying Mutual Fund	Fund's Performance vs Benchmk Q4 2020 (bp)
Social Choice Portfolio	23	100.00%	TIAA-CREF Social Choice Equity Fund	(55)
Principal Plus Interest Portfolio	N/A	100.00%	TIAA-CREF Life Co. Funding Agreement	41

\* Asset Based Fees include most recent weighted average Underlying Fund Fees, Program Management Fees and State Administrative Fees (5 bps).

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# Passively Managed Portfolios vs Composite Benchmarks Q4 and Since Inception Returns (%)



\* Returns are net of most recent weighted average Underlying Fund Fees and Program Management Fees for the quarter, as well as State Administrative Fees (5 bps) before 11/12/13.

\*\* Inception for the Multi-Fund and Single-Fund Portfolios was 11/4/11 - 11/8/11. Inception for the Enrollment Year Portfolios was 1/24/20.

- Global markets continued a robust recovery in Q4 and finished the year in strongly positive territory. The S&P 500 Index saw a gain of 12.15% for the quarter and 18.40% for the year.
- The Treasury yield curve steepened in the quarter. The Bloomberg Barclays U.S. Aggregate Bond Index of intermediate-term investment grade U.S. bonds returned 0.67%.
- All Passive Enrollment Year Portfolios posted positive absolute returns in Q4.
- A main contributor to absolute returns was the TIAA-CREF Emerging Markets Equity Index Fund, which tracks a diversified index of stocks in less developed nations, and returned 18.81%.
- Multi-Fund and Single Fund Portfolios also saw positive results in Q4, with more aggressive portfolios achieving higher returns.

# Passively Managed Portfolios vs Composite Benchmarks



Investment Portfolios	3 Month	YTD	Average Annual Total Return			Since Inception	Inception Date
			1 Year	3 Year	5 Year		
<b>Passive Enrollment Year Portfolios**</b>							
2036/2037 Enrollment Portfolio Passive	11.93%	-	-	-	-	13.50%	01/24/20
Blended Benchmark Returns	12.14%	-	-	-	-	12.82%	
Difference	-0.21%	-	-	-	-	0.68%	
2034/2035 Enrollment Portfolio Passive	11.58%	-	-	-	-	12.70%	01/24/20
Blended Benchmark Returns	11.79%	-	-	-	-	12.36%	
Difference	-0.21%	-	-	-	-	0.34%	
2032/2033 Enrollment Portfolio Passive	11.07%	-	-	-	-	12.40%	01/24/20
Blended Benchmark Returns	11.25%	-	-	-	-	12.13%	
Difference	-0.18%	-	-	-	-	0.27%	
2030/2031 Enrollment Portfolio Passive	10.62%	-	-	-	-	12.50%	01/24/20
Blended Benchmark Returns	10.70%	-	-	-	-	11.89%	
Difference	-0.08%	-	-	-	-	0.61%	
2028/2029 Enrollment Portfolio Passive	9.62%	-	-	-	-	11.70%	01/24/20
Blended Benchmark Returns	9.81%	-	-	-	-	11.16%	
Difference	-0.19%	-	-	-	-	0.54%	
2026/2027 Enrollment Portfolio Passive	8.32%	-	-	-	-	10.70%	01/24/20
Blended Benchmark Returns	8.38%	-	-	-	-	10.16%	
Difference	-0.06%	-	-	-	-	0.54%	
2024/2025 Enrollment Portfolio Passive	6.61%	-	-	-	-	9.70%	01/24/20
Blended Benchmark Returns	6.67%	-	-	-	-	9.14%	
Difference	-0.06%	-	-	-	-	0.56%	
2022/2023 Enrollment Portfolio Passive	4.95%	-	-	-	-	8.10%	01/24/20
Blended Benchmark Returns	4.88%	-	-	-	-	7.47%	
Difference	0.07%	-	-	-	-	0.63%	
2020/2021 Enrollment Portfolio Passive	3.33%	-	-	-	-	5.50%	01/24/20
Blended Benchmark Returns	3.24%	-	-	-	-	5.29%	
Difference	0.09%	-	-	-	-	0.21%	
Enrollment Year Portfolio Passive	2.83%	-	-	-	-	5.20%	01/24/20
Blended Benchmark Returns	2.69%	-	-	-	-	4.88%	
Difference	0.14%	-	-	-	-	0.32%	
<b>Passive Multi-Fund Investment Portfolios</b>							
Passive Diversified Equity Portfolio	14.77%	16.24%	16.24%	11.17%	12.93%	12.33%	11/04/11
Blended Benchmark Returns	14.86%	15.65%	15.65%	10.96%	12.82%	12.26%	
Difference	-0.09%	0.59%	0.59%	0.21%	0.11%	0.07%	
Passive Growth Portfolio	10.64%	14.24%	14.24%	9.66%	10.62%	9.78%	11/04/11
Blended Benchmark Returns	10.78%	13.86%	13.86%	9.62%	10.60%	9.75%	
Difference	-0.14%	0.38%	0.38%	0.04%	0.02%	0.03%	
Passive Moderate Growth Portfolio	6.58%	11.56%	11.56%	7.85%	8.14%	7.04%	11/08/11
Blended Benchmark Returns	6.72%	11.54%	11.54%	7.99%	8.20%	7.26%	
Difference	-0.14%	0.02%	0.02%	-0.14%	-0.06%	-0.22%	
Passive Conservative Portfolio	0.82%	4.52%	4.52%	3.40%	3.01%	2.24%	11/04/11
Blended Benchmark Returns	0.69%	4.09%	4.09%	3.48%	2.96%	2.08%	
Difference	0.13%	0.43%	0.43%	-0.08%	0.05%	0.16%	
Index International Equity Portfolio	16.45%	10.09%	10.09%	4.92%	8.78%	6.98%	11/04/11
Blended Benchmark Returns	16.84%	10.00%	10.00%	4.74%	8.58%	6.92%	
Difference	-0.39%	0.09%	0.09%	0.18%	0.20%	0.06%	
Passive Diversified Fixed Income Portfolio	1.28%	7.18%	7.18%	5.12%	4.53%	3.29%	11/08/11
Blended Benchmark Returns	1.35%	7.68%	7.68%	5.40%	4.77%	3.52%	
Difference	-0.07%	-0.50%	-0.50%	-0.28%	-0.24%	-0.23%	
<b>Passive Single Fund Investment Portfolios</b>							
Index Bond Portfolio	0.68%	7.49%	7.49%	5.19%	4.26%	3.20%	11/04/11
Benchmark Returns	0.67%	7.51%	7.51%	5.34%	4.44%	3.40%	
Difference	0.01%	-0.02%	-0.02%	-0.15%	-0.18%	-0.20%	
Index U.S. Large Cap Equity Portfolio	12.10%	18.35%	18.35%	14.09%	15.11%	14.97%	11/04/11
Benchmark Returns	12.15%	18.40%	18.40%	14.18%	15.22%	15.02%	
Difference	-0.05%	-0.05%	-0.05%	-0.09%	-0.11%	-0.05%	
Index U.S. Equity Portfolio	14.61%	20.78%	20.78%	14.40%	15.36%	14.97%	11/04/11
Benchmark Returns	14.68%	20.89%	20.89%	14.49%	15.43%	15.02%	
Difference	-0.07%	-0.11%	-0.11%	-0.09%	-0.07%	-0.05%	

\* Returns are net of most recent weighted average Underlying Fund Fees and Program Management Fees for the quarter, as well as State Administrative Fees (5 bps) before 11/12/13.  
 \*\*The crediting rate of 1.10% for the TC Life Funding Agreement in the Passive Age-Based Portfolio is guaranteed through 12/31/21.

# Asset Allocation, Fees, and Performance

Passive Enrollment Year Portfolios	Annual Asset Based Fees (bp)*	TIAA-CREF Equity Index Fund	TIAA-CREF International Equity Index Fund	TIAA-CREF Emerging Markets Equity Index Fund	TIAA-CREF Real Estate Securities Fund	TIAA-CREF Bond Index Fund	TIAA-CREF Inflation-Linked Bond Fund	TIAA-CREF High Yield Fund	T-C Life Funding Agreement
<b>Underlying Fund Expenses (bp)</b>		<b>5</b>	<b>6</b>	<b>20</b>	<b>50</b>	<b>11</b>	<b>26</b>	<b>36</b>	<b>N/A</b>
2036-2037	12	50.40%	19.20%	4.80%	5.60%	14.00%	4.00%	2.00%	0.00%
2034-2035	12	50.40%	19.20%	4.80%	5.60%	14.00%	4.00%	2.00%	0.00%
2032-2033	12	47.90%	18.20%	4.60%	5.30%	16.80%	4.80%	2.40%	0.00%
2030-2031	12	45.40%	17.30%	4.30%	5.00%	19.60%	5.60%	2.80%	0.00%
2028-2029	13	42.80%	16.30%	4.10%	4.80%	22.40%	6.40%	3.20%	0.00%
2026-2027	13	37.80%	14.40%	3.60%	4.20%	28.00%	8.00%	4.00%	0.00%
2024-2025	14	30.20%	11.50%	2.90%	3.40%	36.40%	10.40%	5.20%	0.00%
2022-2023	13	22.70%	8.60%	2.20%	2.50%	37.80%	10.80%	5.40%	10.00%
2020-2021	10	15.70%	6.00%	1.50%	1.80%	28.00%	8.00%	4.00%	35.00%
Enrollment	8	9.40%	3.60%	0.90%	1.10%	24.50%	7.00%	3.50%	50.00%

## Passive Multi-Fund Investment Portfolios

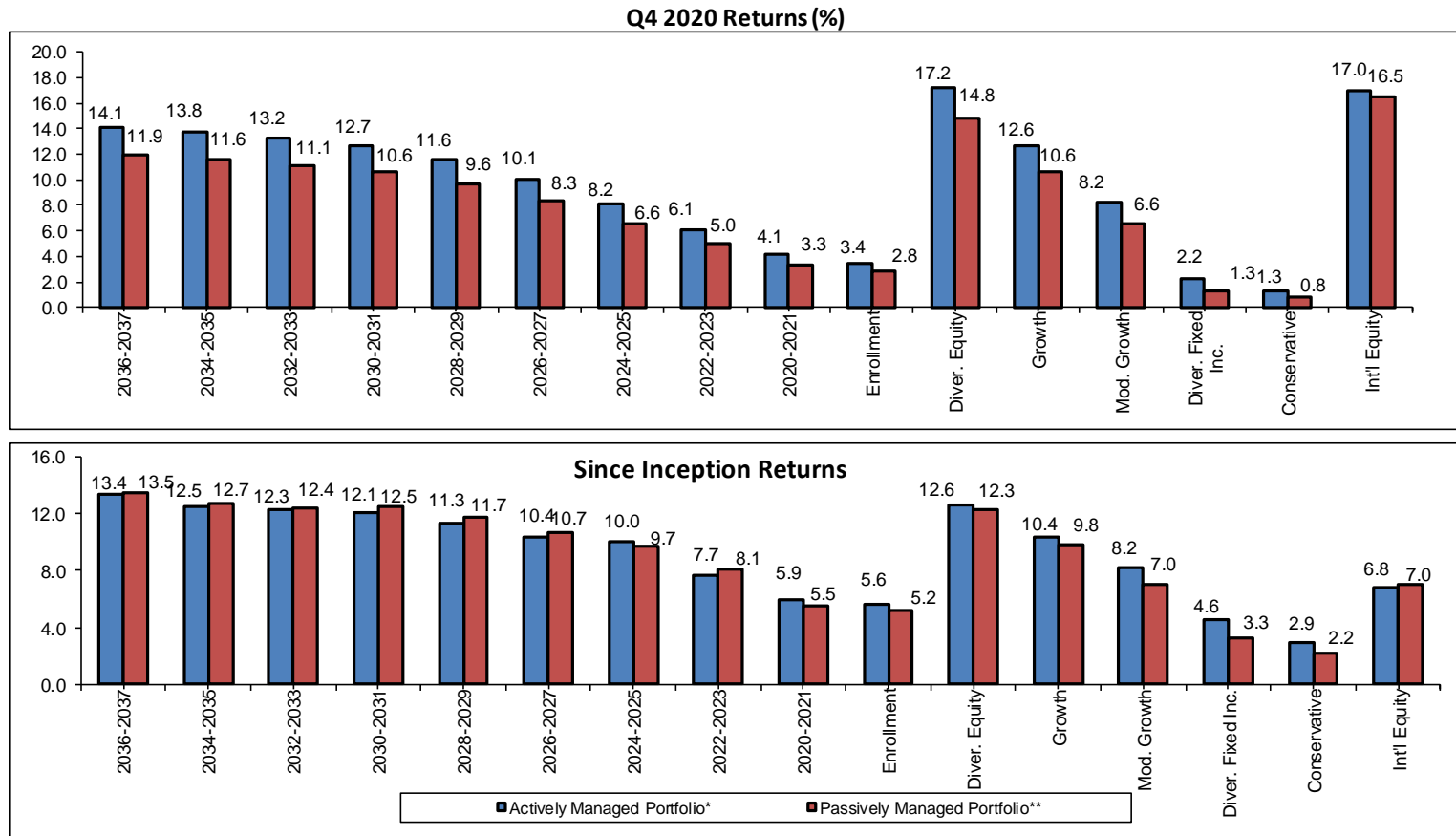
Passive Diversified Equity Portfolio	10	63.00%	24.00%	6.00%	7.00%				
Passive Growth Portfolio	12	44.10%	16.80%	4.20%	4.90%	21.00%	6.00%	3.00%	
Passive Moderate Growth Portfolio	15	25.20%	9.60%	2.40%	2.80%	42.00%	12.00%	6.00%	
Passive Diversified Fixed Income Portfolio	18					70.00%	20.00%	10.00%	
Passive Conservative Portfolio	9					35.00%	10.00%	5.00%	50.00%
Index International Equity Portfolio	10		80.00%	20.00%					
<b>Fund's Performance vs Benchmk Q4 2020 (bp)</b>		<b>(5)</b>	<b>(20)</b>	<b>(89)</b>	<b>20</b>	<b>(1)</b>	<b>(15)</b>	<b>(24)</b>	<b>41</b>

Glide Path asset allocations are as reflected in the Plan Description.

Investment Portfolios	Annual Asset Based Fees (bp)*	Percent Allocation	Underlying Mutual Fund	Fund's Performance vs Benchmk Q4 2020 (bp)
Index Bond Portfolio	12	100.00%	TIAA-CREF Bond Index Fund	(1)
Index U.S. Large Cap Equity Portfolio	6	100.00%	TIAA-CREF S&P 500 Index Fund	(5)
Index U.S. Equity Portfolio	6	100.00%	TIAA-CREF Equity Index Fund	(5)

\* Asset Based Fees include most recent weighted average Underlying Fund Fees and Program Management Fees.

# Actively Managed Portfolios vs. Passively Managed Portfolios Q4 and Since Inception Returns (%)



\* Returns are net of most recent weighted average Underlying Fund Fees, Program Management Fees, and State Administrative Fees (5 bps).

\*\* Returns are net of most recent weighted average Underlying Fund Fees, Program Management Fees, and State Administrative Fees (5 bps) before 11/12/13.

\*\*\* Inception for the Multi-Fund and Single-Fund Portfolios was 11/4/11 - 11/10/11. Inception for the Enrollment Year Portfolios was 1/24/20.

- In Q4, Active Portfolios outperformed Passive Portfolios.
- Nearly all underlying funds in the Active Portfolios outperformed their benchmark, which resulted in higher returns for portfolios with allocations to those funds compared to their passive counterparts. For example, the T. Rowe Price Large Cap Value Fund returned 20.70%, outperforming the Russell 1000 Value Index by more than 400 basis points.
- Active continues to outperform Passive for the Multi-Fund Portfolios with longer performance history.

# Underlying Funds vs. Benchmarks

	Average Annual Total Return						Standard Deviation	Fund Incept. Date
	3 Month	YTD	1 Year	3 Year	5 Year	Life		
<b>TIAA-CREF FUNDS</b>								
T-C Bond Index Fund	0.66%	7.49%	7.49%	5.21%	4.28%	3.87%	3.42%	09/14/2009
Bloomberg Barclays U.S. Aggregate Bond Index	0.67%	7.51%	7.51%	5.34%	4.43%	4.05%	3.40%	
Difference	<b>-0.01%</b>	<b>-0.02%</b>	<b>-0.02%</b>	<b>-0.13%</b>	<b>-0.15%</b>	<b>-0.18%</b>		
T-C Emerging Markets Equity Index Fund*	18.81%	17.68%	17.68%	6.03%	12.71%	4.95%	20.01%	08/31/2010
MSCI Emerging Markets® Index	19.70%	18.31%	18.31%	6.17%	12.80%	5.29%	19.88%	
Difference	<b>-0.89%</b>	<b>-0.63%</b>	<b>-0.63%</b>	<b>-0.14%</b>	<b>-0.09%</b>	<b>-0.34%</b>		
T-C Equity Index Fund	14.63%	20.82%	20.82%	14.43%	15.39%	7.18%	19.65%	07/01/1999
Russell 3000 Index	14.68%	20.89%	20.89%	14.49%	15.43%	7.25%	19.69%	
Difference	<b>-0.05%</b>	<b>-0.07%</b>	<b>-0.07%</b>	<b>-0.06%</b>	<b>-0.04%</b>	<b>-0.07%</b>		
T-C High Yield Bond Fund	5.42%	2.23%	2.23%	4.96%	7.30%	6.71%	9.86%	03/31/2006
ICE BofAML BB/B Cash Pay Index	5.66%	6.32%	6.32%	6.22%	8.03%	6.92%	8.87%	
Difference	<b>-0.24%</b>	<b>-4.09%</b>	<b>-4.09%</b>	<b>-1.26%</b>	<b>-0.73%</b>	<b>-0.21%</b>		
T-C Inflation-Linked Bond Fund	1.45%	8.09%	8.09%	4.66%	3.87%	4.14%	2.71%	10/01/2002
Bloomberg Barclays 1-10 Year U.S. TIPS Index	1.60%	8.39%	8.39%	4.93%	4.13%	3.98%	2.87%	
Difference	<b>-0.15%</b>	<b>-0.30%</b>	<b>-0.30%</b>	<b>-0.27%</b>	<b>-0.26%</b>	<b>0.16%</b>		
T-C International Equity Index Fund*	15.85%	8.14%	8.14%	4.54%	7.70%	7.77%	18.14%	10/01/2002
MSCI EAFE Index	16.05%	7.82%	7.82%	4.28%	7.45%	7.72%	18.14%	
Difference	<b>-0.20%</b>	<b>0.32%</b>	<b>0.32%</b>	<b>0.26%</b>	<b>0.25%</b>	<b>0.05%</b>		
T-C Real Estate Securities Fund	8.35%	1.33%	1.33%	8.43%	8.36%	10.34%	16.88%	10/01/2002
FTSE NAREIT Equity Index	8.15%	-5.12%	-5.12%	5.41%	6.69%	10.05%	18.46%	
Difference	<b>0.20%</b>	<b>6.45%</b>	<b>6.45%</b>	<b>3.02%</b>	<b>1.67%</b>	<b>0.29%</b>		
T-C S&P 500 Index Fund	12.10%	18.34%	18.34%	14.11%	15.14%	10.64%	18.78%	10/01/2002
S&P 500 Index	12.15%	18.40%	18.40%	14.18%	15.21%	10.72%	18.80%	
Difference	<b>-0.05%</b>	<b>-0.06%</b>	<b>-0.06%</b>	<b>-0.07%</b>	<b>-0.07%</b>	<b>-0.08%</b>		
T-C Quant Small Cap Equity Fund	32.14%	12.82%	12.82%	7.15%	11.16%	10.79%	26.22%	10/01/2002
Russell 2000 Index	31.37%	19.96%	19.96%	10.24%	13.25%	11.12%	25.63%	
Difference	<b>0.77%</b>	<b>-7.14%</b>	<b>-7.14%</b>	<b>-3.09%</b>	<b>-2.09%</b>	<b>-0.33%</b>		
T-C Social Choice Equity Fund	14.13%	20.34%	20.34%	14.34%	15.45%	6.99%	19.34%	07/01/1999
Russell 3000 Index	14.68%	20.89%	20.89%	14.49%	15.43%	7.25%	19.69%	
Difference	<b>-0.55%</b>	<b>-0.55%</b>	<b>-0.55%</b>	<b>-0.15%</b>	<b>0.02%</b>	<b>-0.26%</b>		
<b>DFA FUNDS</b>								
DFA Emerging Markets Core Equity Portfolio*	21.25%	13.86%	13.86%	3.84%	11.43%	7.97%	21.30%	04/05/2005
MSCI Emerging Markets® Index	19.70%	18.31%	18.31%	6.17%	12.80%	8.11%	19.88%	
Difference	<b>1.55%</b>	<b>-4.45%</b>	<b>-4.45%</b>	<b>-2.33%</b>	<b>-1.37%</b>	<b>-0.14%</b>		
DFA Large Cap International Portfolio*	15.94%	8.12%	8.12%	4.24%	7.93%	5.81%	18.91%	07/17/1991
MSCI World Ex US Index	15.85%	7.59%	7.59%	4.22%	7.63%	5.87%	18.37%	
Difference	<b>0.09%</b>	<b>0.53%</b>	<b>0.53%</b>	<b>0.02%</b>	<b>0.30%</b>	<b>-0.06%</b>		
<b>METWEST FUNDS</b>								
MetWest Total Return Bond Fund	1.29%	9.18%	9.18%	6.14%	4.88%	4.61%	3.55%	07/01/1999
Bloomberg Barclays U.S. Aggregate Bond Index	0.67%	7.51%	7.51%	5.34%	4.43%	3.61%	3.40%	
Difference	<b>0.62%</b>	<b>1.67%</b>	<b>1.67%</b>	<b>0.80%</b>	<b>0.45%</b>	<b>1.00%</b>		
<b>PIMCO FUNDS</b>								
PIMCO Income Fund	4.46%	5.80%	5.80%	4.76%	6.30%	8.06%	5.78%	03/30/2007
Barclays Capital U.S. Aggregate Bond Index	0.67%	7.51%	7.51%	5.34%	4.43%	4.47%	3.40%	
Difference	<b>3.79%</b>	<b>-1.71%</b>	<b>-1.71%</b>	<b>-0.58%</b>	<b>1.87%</b>	<b>3.59%</b>		
PIMCO Real Return Fund	2.04%	12.09%	12.09%	6.04%	5.41%	5.92%	4.06%	01/29/1997
Bloomberg Barclays U.S. TIPS Index	1.62%	10.99%	10.99%	5.92%	5.08%	-	3.87%	
Difference	<b>0.42%</b>	<b>1.10%</b>	<b>1.10%</b>	<b>0.12%</b>	<b>0.33%</b>	<b>-</b>		
<b>T. ROWE PRICE FUNDS</b>								
T. Rowe Price Instl Floating Rate Fund	3.37%	2.40%	2.40%	3.80%	4.62%	4.93%	7.51%	01/31/2008
S&P/LSTA Performing Loan Index	4.02%	3.50%	3.50%	4.21%	5.43%	5.17%	9.15%	
Difference	<b>-0.65%</b>	<b>-1.10%</b>	<b>-1.10%</b>	<b>-0.41%</b>	<b>-0.81%</b>	<b>-0.24%</b>		
T. Rowe Price Instl Large Cap Growth Fund	13.05%	39.56%	39.56%	23.21%	21.53%	12.26%	19.77%	10/31/2001
Russell 1000 Growth Index	11.39%	38.49%	38.49%	22.98%	20.99%	10.47%	19.92%	
Difference	<b>1.66%</b>	<b>1.07%</b>	<b>1.07%</b>	<b>0.23%</b>	<b>0.54%</b>	<b>1.79%</b>		
T. Rowe Price Instl Large Cap Value Fund	20.70%	3.03%	3.03%	5.77%	9.94%	8.15%	20.59%	3/31/2000
Russell 1000 Value Index	16.25%	2.80%	2.80%	6.06%	9.73%	6.89%	19.90%	
Difference	<b>4.45%</b>	<b>0.23%</b>	<b>0.23%</b>	<b>-0.29%</b>	<b>0.21%</b>	<b>1.26%</b>		

\* For funds holding securities traded on foreign exchange that close before the U.S. market, fair value pricing creates tracking error relative to a benchmark index that uses foreign closing prices.



TIAA-CREF Tuition Financing, Inc.

BUILT TO PERFORM.

CREATED TO SERVE.

# ScholarShare 529 College Savings Plan

March 24, 2021

4Q 2020 Investment  
Performance Status Report

1. The World Markets in the Fourth Quarter of 2020
2. Review of ScholarShare Policy
3. Sensitivity Analyses
4. Summary Points
5. Enrollment Date Fund Analysis
6. Appendix

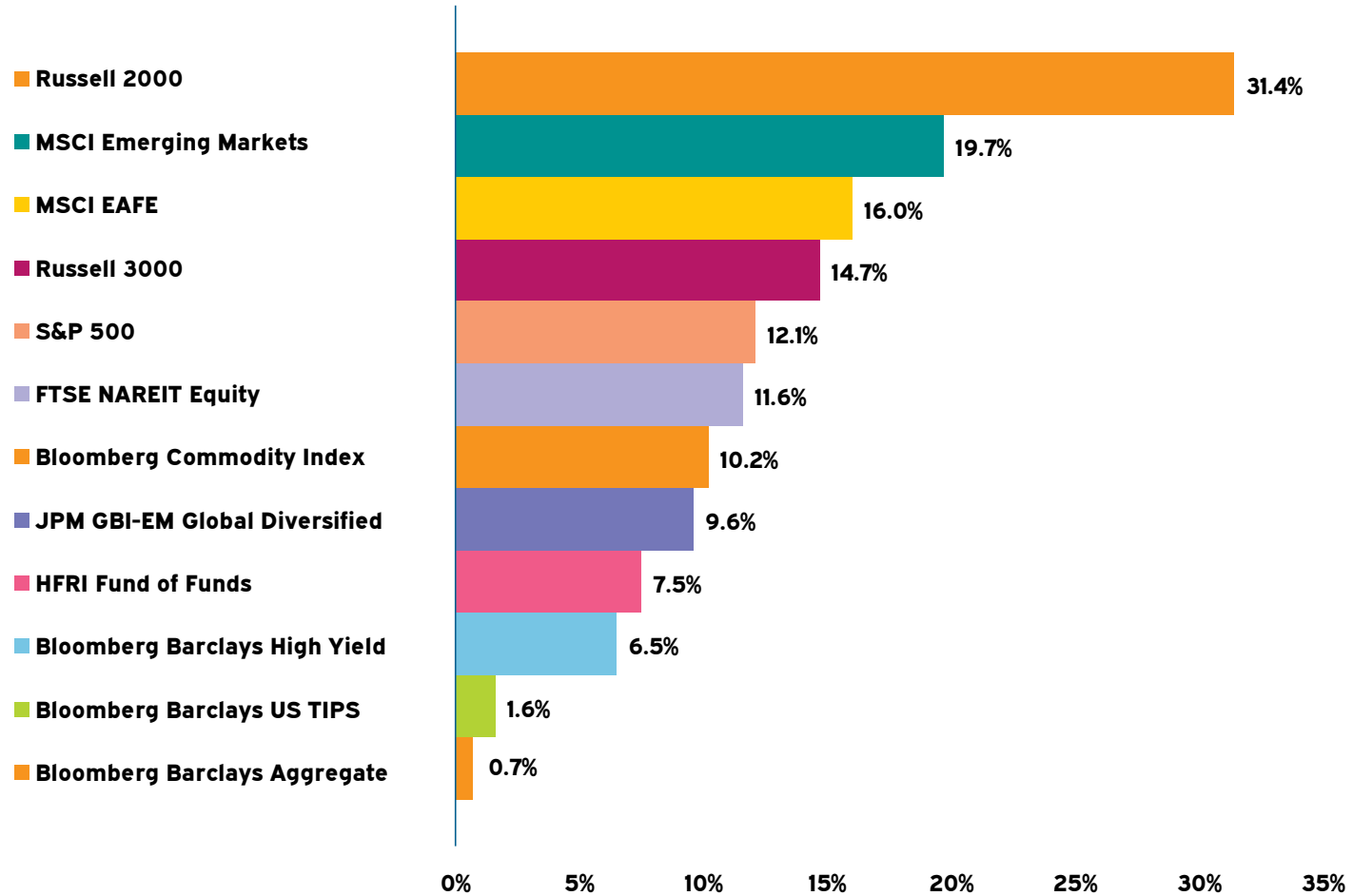


### Takeaways

- The Program transitioned to Enrollment-Date portfolios during the first quarter of 2020 and long-term trailing performance is not yet available.
- In December, equities, particularly emerging markets, continued to do well given progress on a US fiscal package, the passing of the US presidential election, and positive developments regarding a COVID-19 vaccine. The yield curve steepened, weighing on Treasury prices.
- US and International equities posted positive results over the quarter. US small cap outperformed large cap over the quarter and the Program's TIAA Quant Small Cap Equity fund outperformed the T. Rowe Institutional Large Cap Growth fund by 19.1%. Value outperformed growth in the large-, mid-, and small-cap spaces. The Program's T. Rowe Institutional Large Cap Growth outperformed its benchmark over the quarter.
- The Program's underlying active international fund, DFA Large Cap International, produced positive relative and absolute results over the quarter and trailing 1-year.
- Fixed income returns once again trailed equity over the quarter. The Program's actively-managed fixed income funds generated mixed results versus their respective benchmarks for the quarter. The PIMCO Income fund generated a return of 4.5% and outperformed its benchmark by 3.8% over the quarter. The fund underperformed its benchmark by (1.7%) over the trailing 1-year period.
- The TIAA Real Estate Securities fund produced positive absolute and relative results over the most recent quarter.

# **The World Markets Fourth Quarter of 2020**

### The World Markets<sup>1</sup> Fourth Quarter of 2020



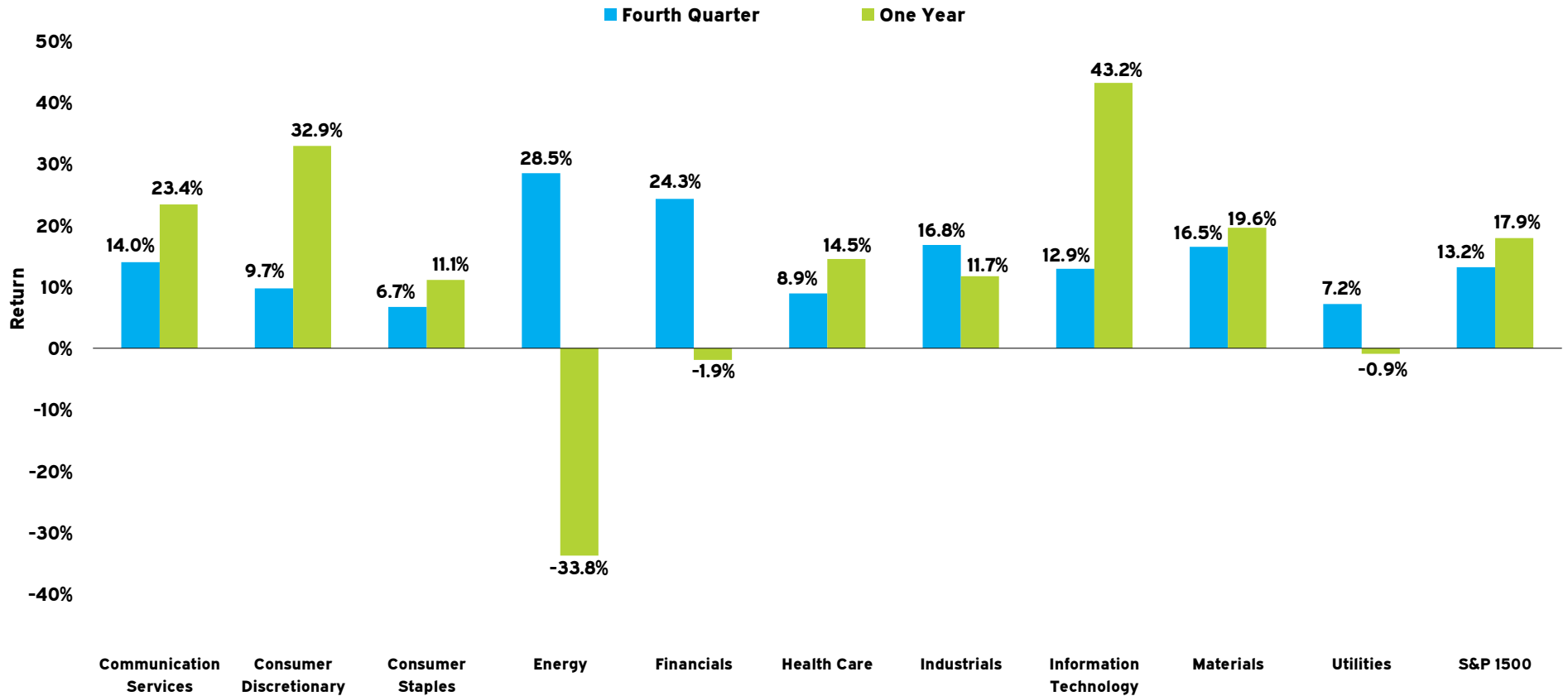
<sup>1</sup> Source: InvestorForce.

### Index Returns<sup>1</sup>

	4Q20 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>					
S&P 500	12.1	18.4	14.2	15.2	13.9
Russell 3000	14.7	20.9	14.5	15.4	13.8
Russell 1000	13.7	21.0	14.8	15.6	14.0
Russell 1000 Growth	11.4	38.5	23.0	21.0	17.2
Russell 1000 Value	16.3	2.8	6.1	9.7	10.5
Russell MidCap	19.9	17.1	11.6	13.4	12.4
Russell MidCap Growth	19.0	35.6	20.5	18.7	15.0
Russell MidCap Value	20.4	5.0	5.4	9.7	10.5
Russell 2000	31.4	20.0	10.2	13.3	11.2
Russell 2000 Growth	29.6	34.6	16.2	16.4	13.5
Russell 2000 Value	33.4	4.6	3.7	9.7	8.7
<b>Foreign Equity</b>					
MSCI ACWI (ex. US)	17.0	10.7	4.9	8.9	4.9
MSCI EAFE	16.0	7.8	4.3	7.4	5.5
MSCI EAFE (Local Currency)	11.4	0.8	3.0	5.8	6.8
MSCI EAFE Small Cap	17.3	12.3	4.9	9.4	7.8
MSCI Emerging Markets	19.7	18.3	6.2	12.8	3.6
MSCI Emerging Markets (Local Currency)	16.0	19.1	8.1	12.6	6.6
<b>Fixed Income</b>					
Bloomberg Barclays Universal	1.3	7.6	5.5	4.9	4.2
Bloomberg Barclays Aggregate	0.7	7.5	5.3	4.4	3.8
Bloomberg Barclays US TIPS	1.6	11.0	5.9	5.1	3.8
Bloomberg Barclays High Yield	6.5	7.1	6.2	8.6	6.8
JPM GBI-EM Global Diversified	9.6	2.7	3.0	6.7	1.5
<b>Other</b>					
FTSE NAREIT Equity	11.6	-8.0	3.4	4.8	8.3
Bloomberg Commodity Index	10.2	-3.1	-2.5	1.0	-6.5
HFRI Fund of Funds	7.5	10.3	4.7	4.4	3.3

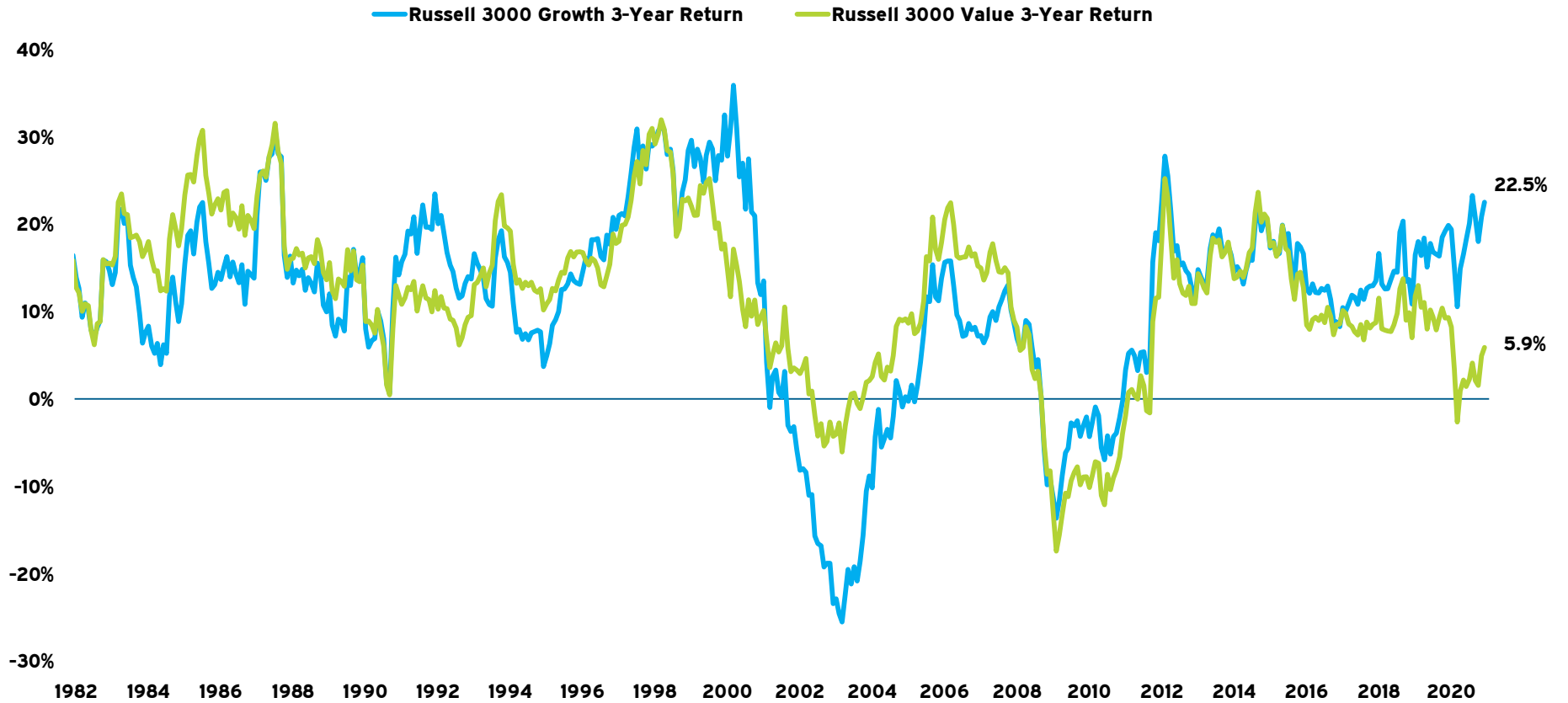
<sup>1</sup> Source: InvestorForce.

### S&P Sector Returns<sup>1</sup>



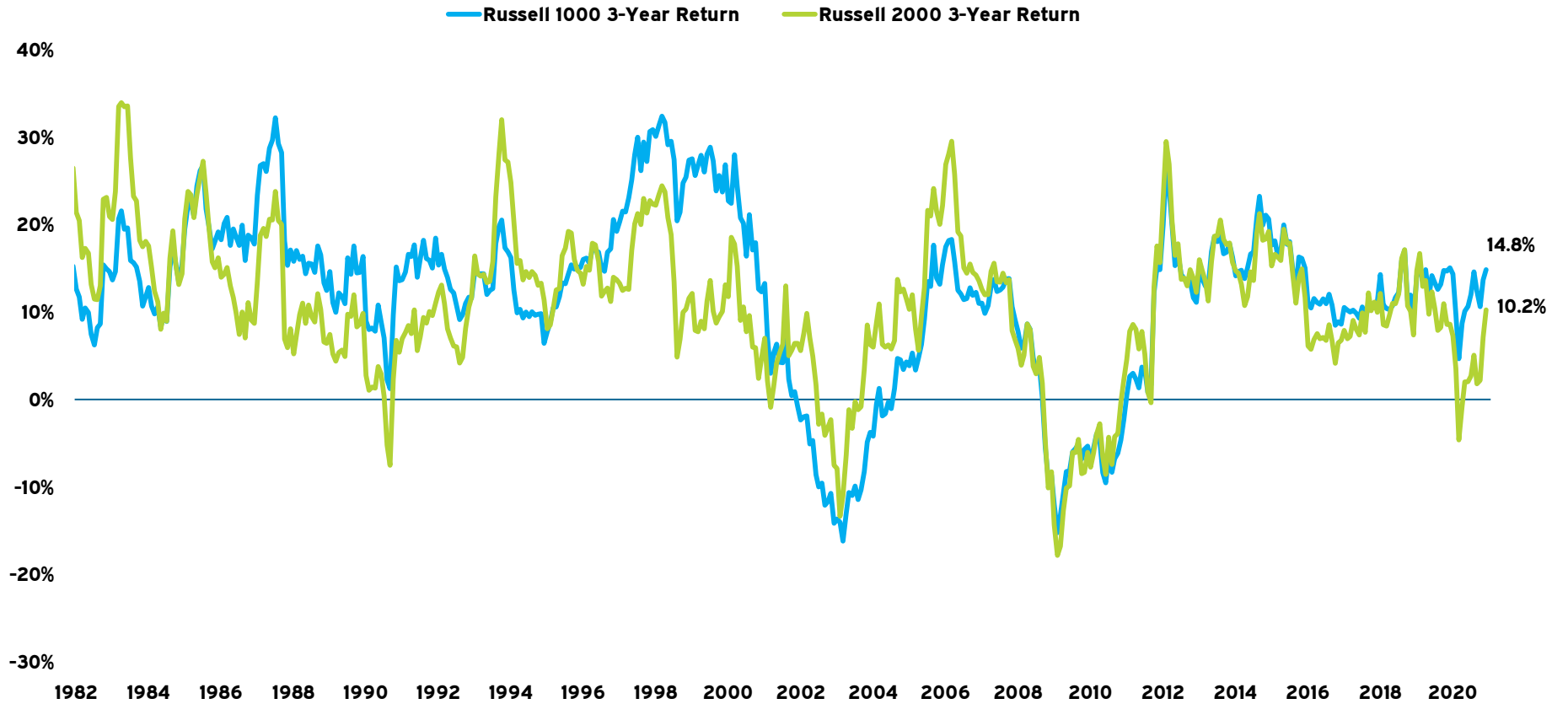
<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.

Growth and Value Rolling Three Year Returns<sup>1</sup>



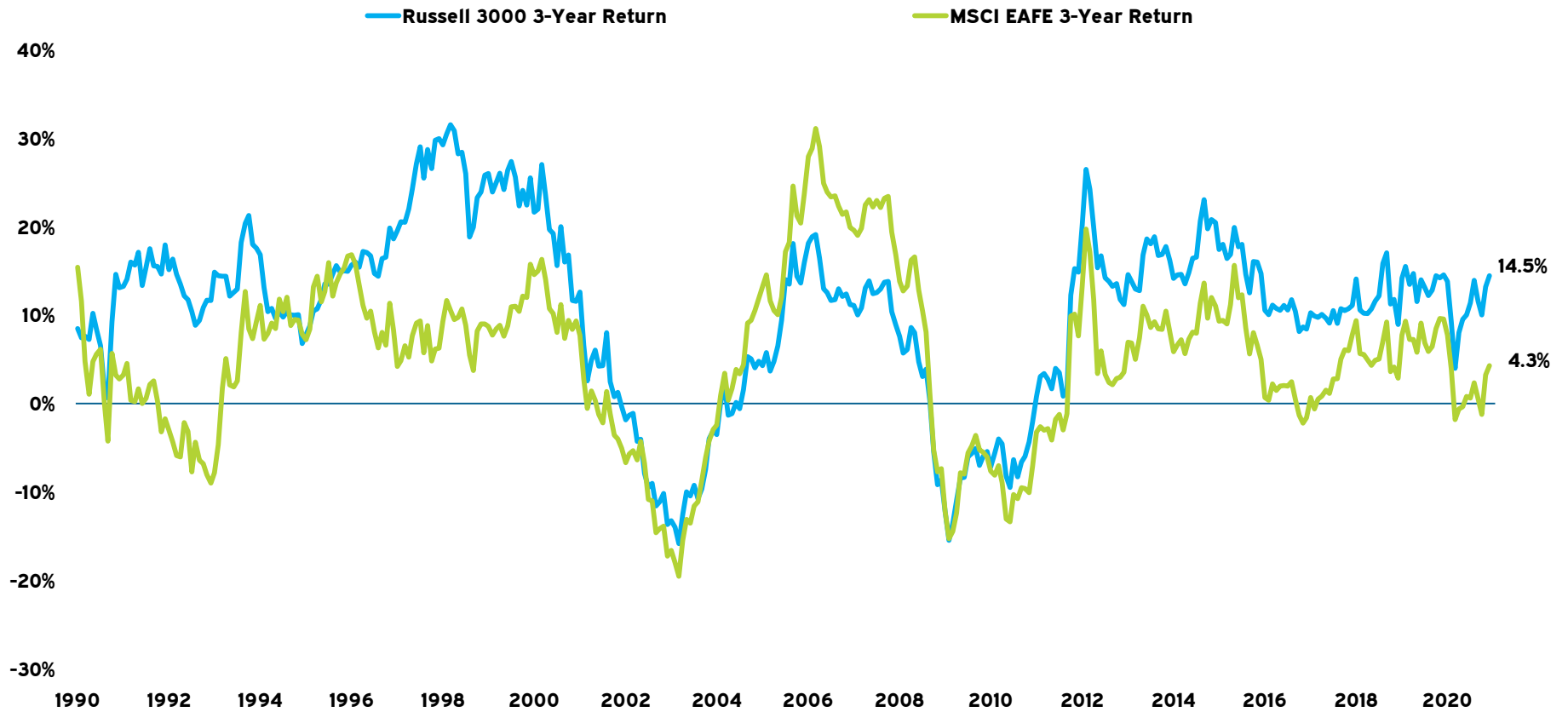
<sup>1</sup> Source: InvestorForce.

Large Cap (Russell 1000) and Small Cap (Russell 2000) Rolling Three Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

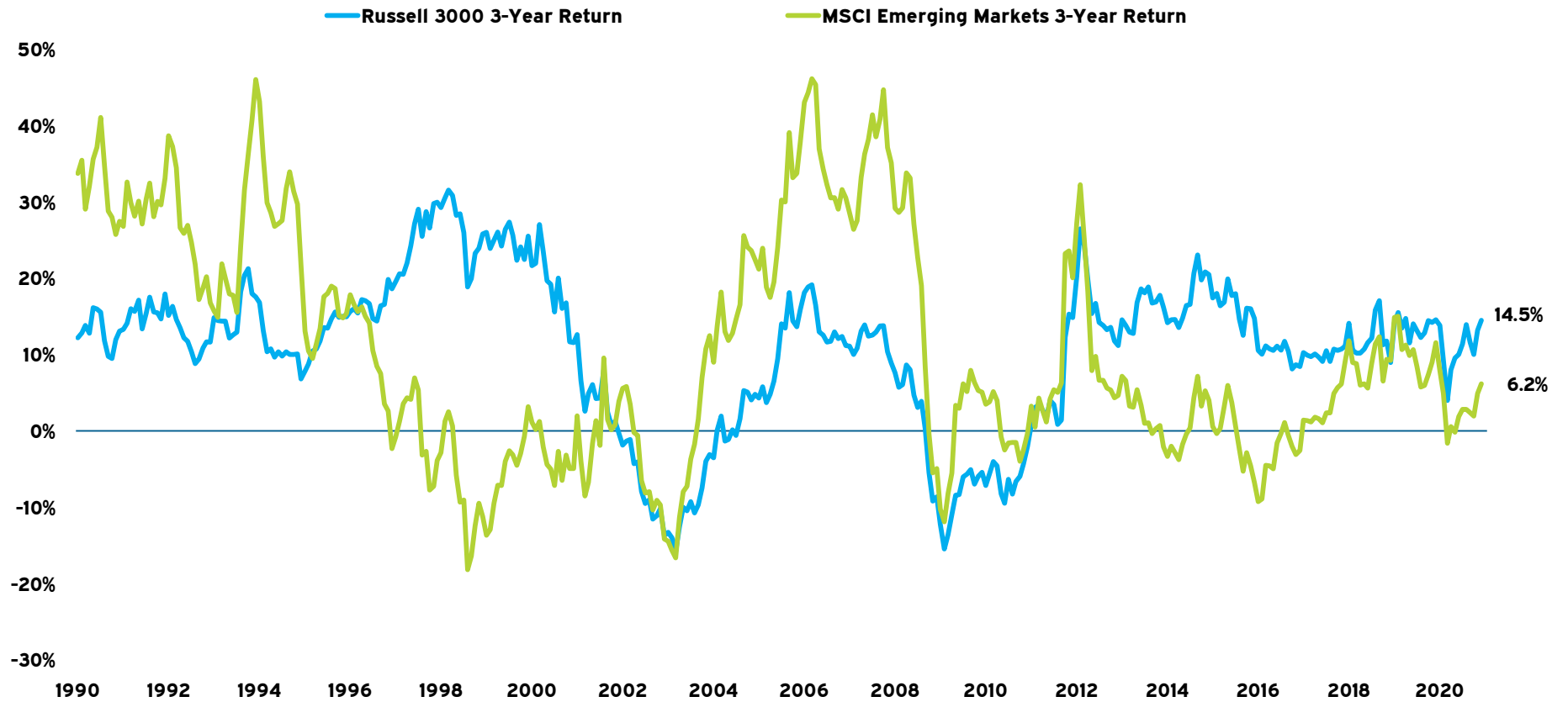
US and Developed Market Foreign Equity Rolling Three-Year Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

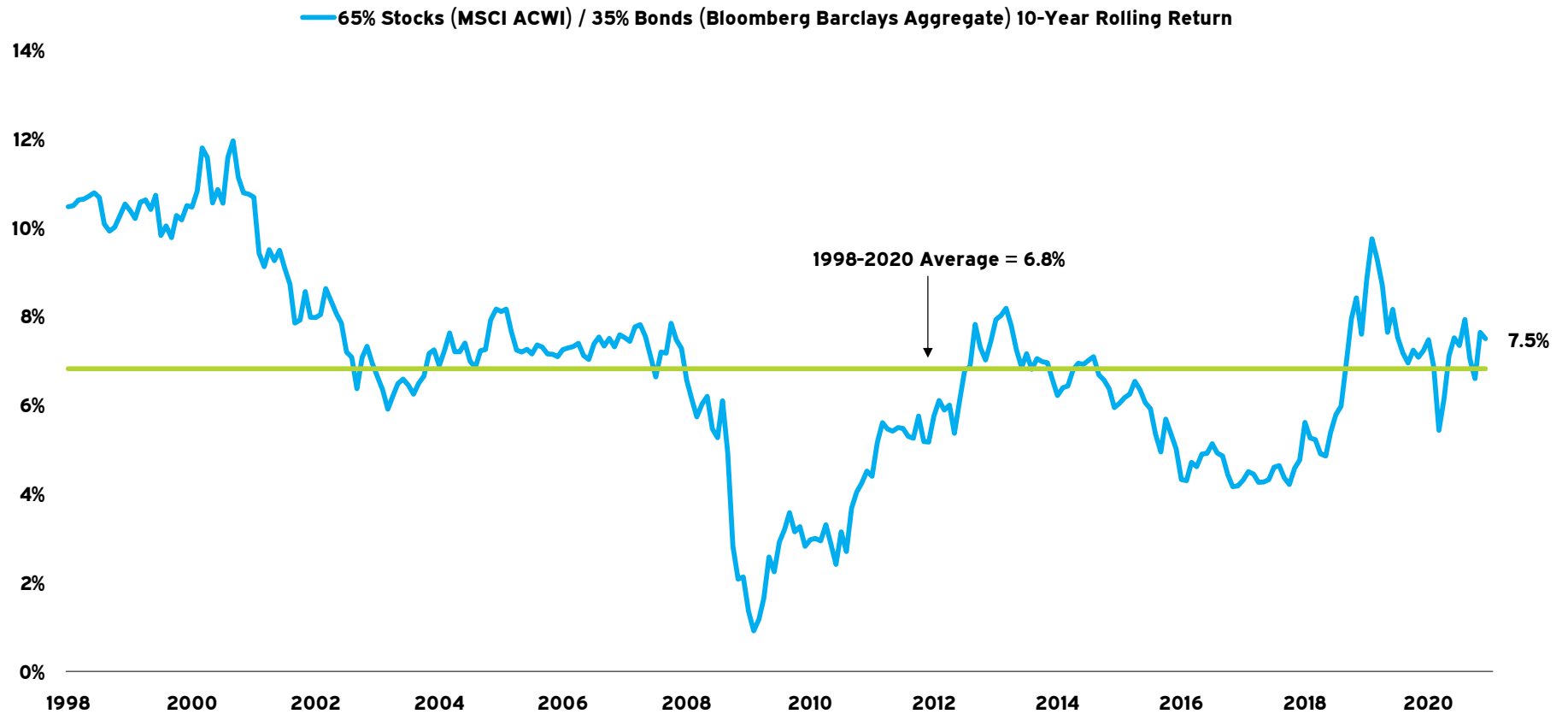


US and Emerging Market Equity Rolling Three-Year Returns<sup>1</sup>



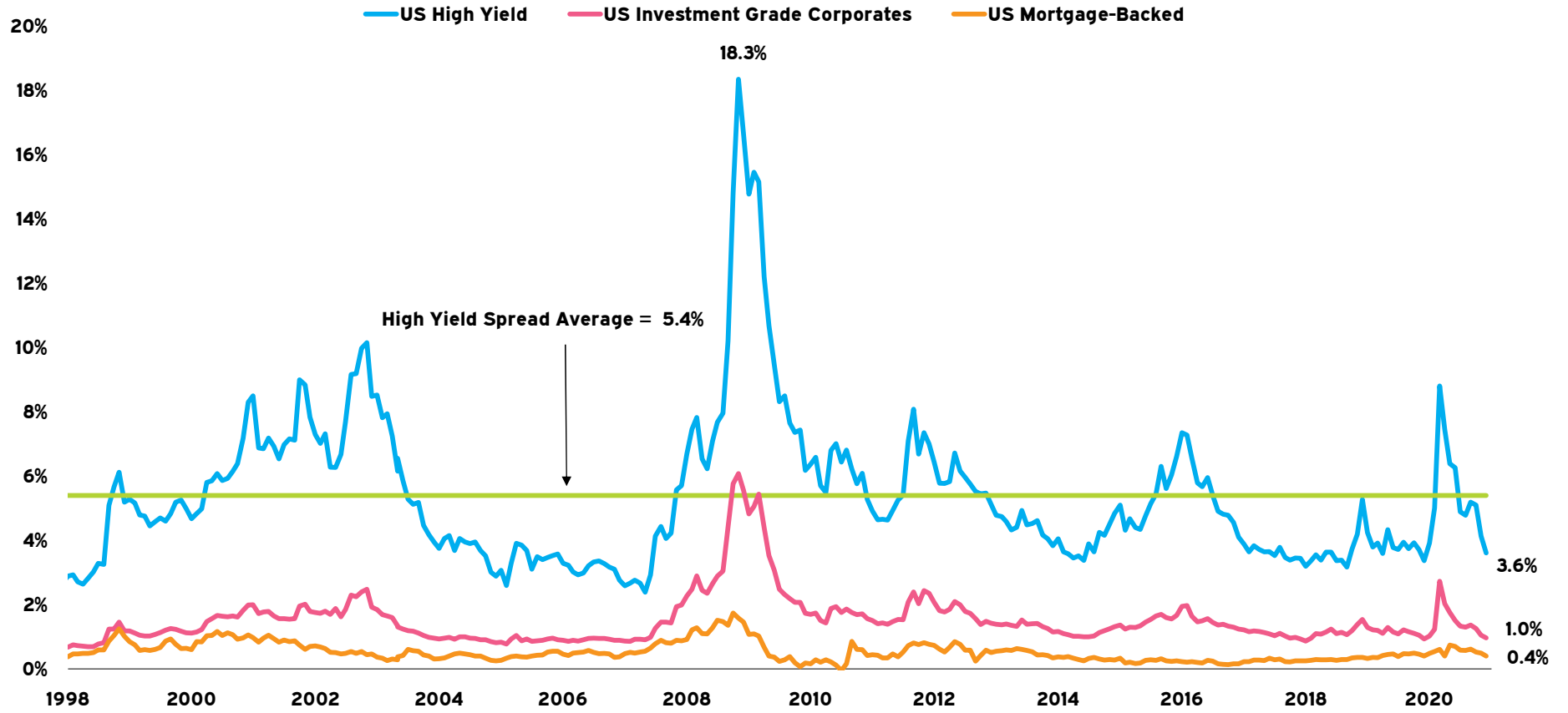
<sup>1</sup> Source: InvestorForce.

### Rolling Ten-Year Returns: 65% Stocks and 35% Bonds<sup>1</sup>



<sup>1</sup> Source: InvestorForce.

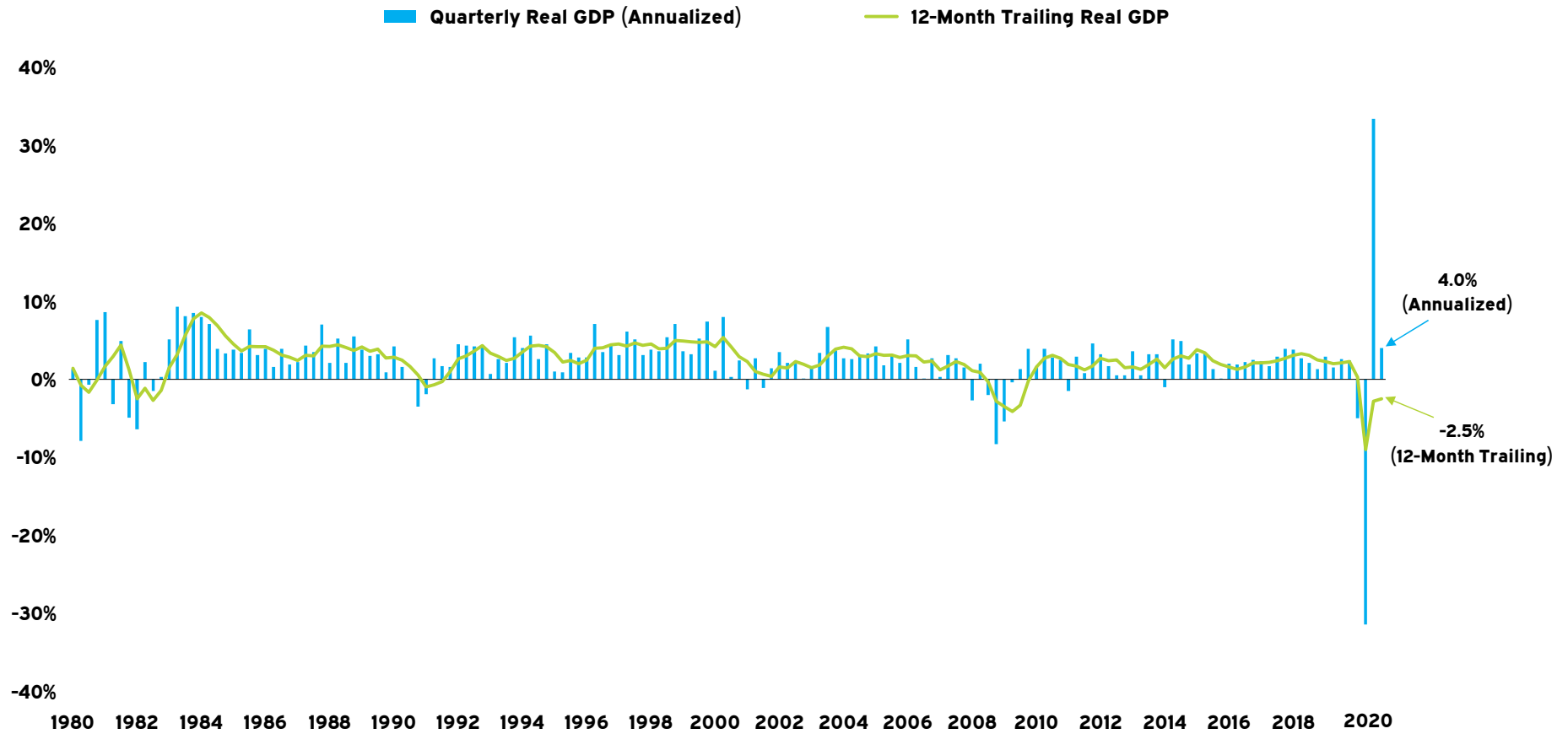
Credit Spreads vs. US Treasury Bonds<sup>1,2</sup>



<sup>1</sup> Source: Barclays Live. Data represents the OAS.

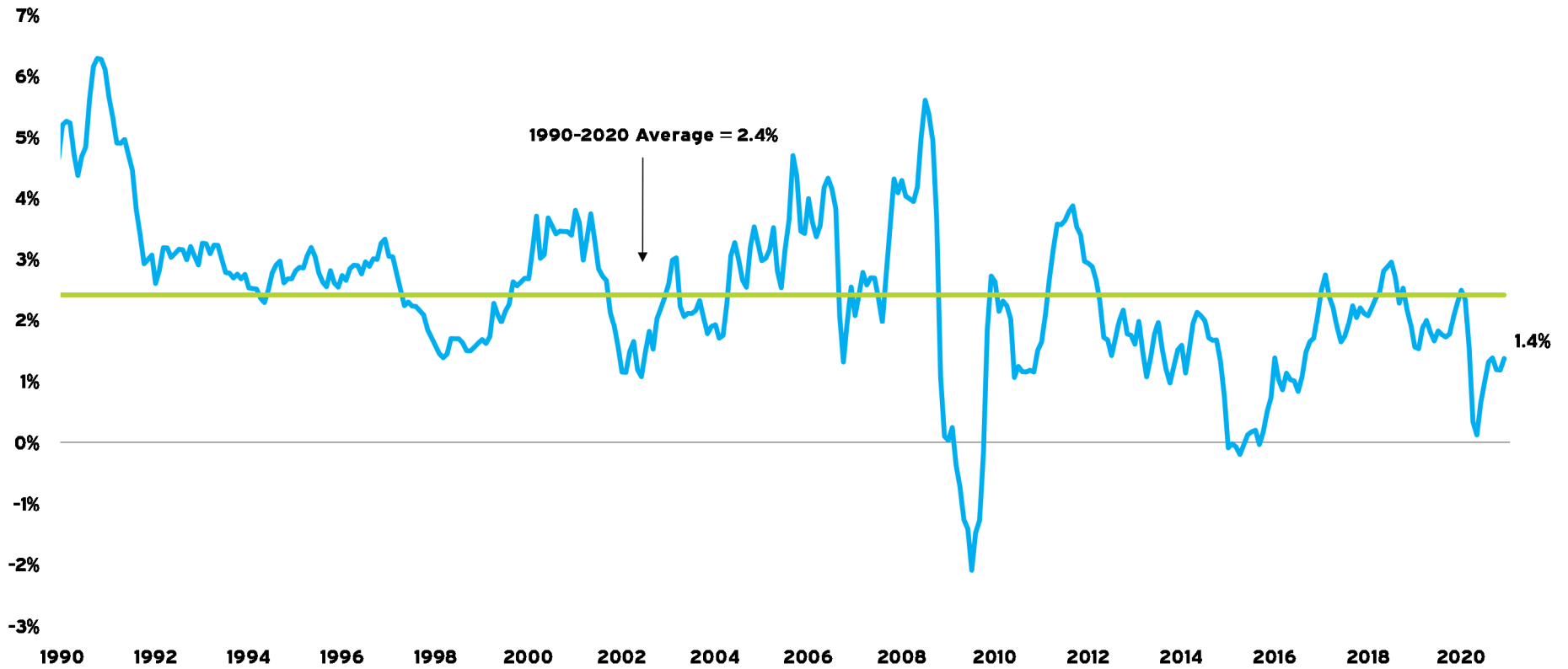
<sup>2</sup> The median high yield spread was 4.8% from 1997-2020.

US Real Gross Domestic Product (GDP) Growth<sup>1</sup>



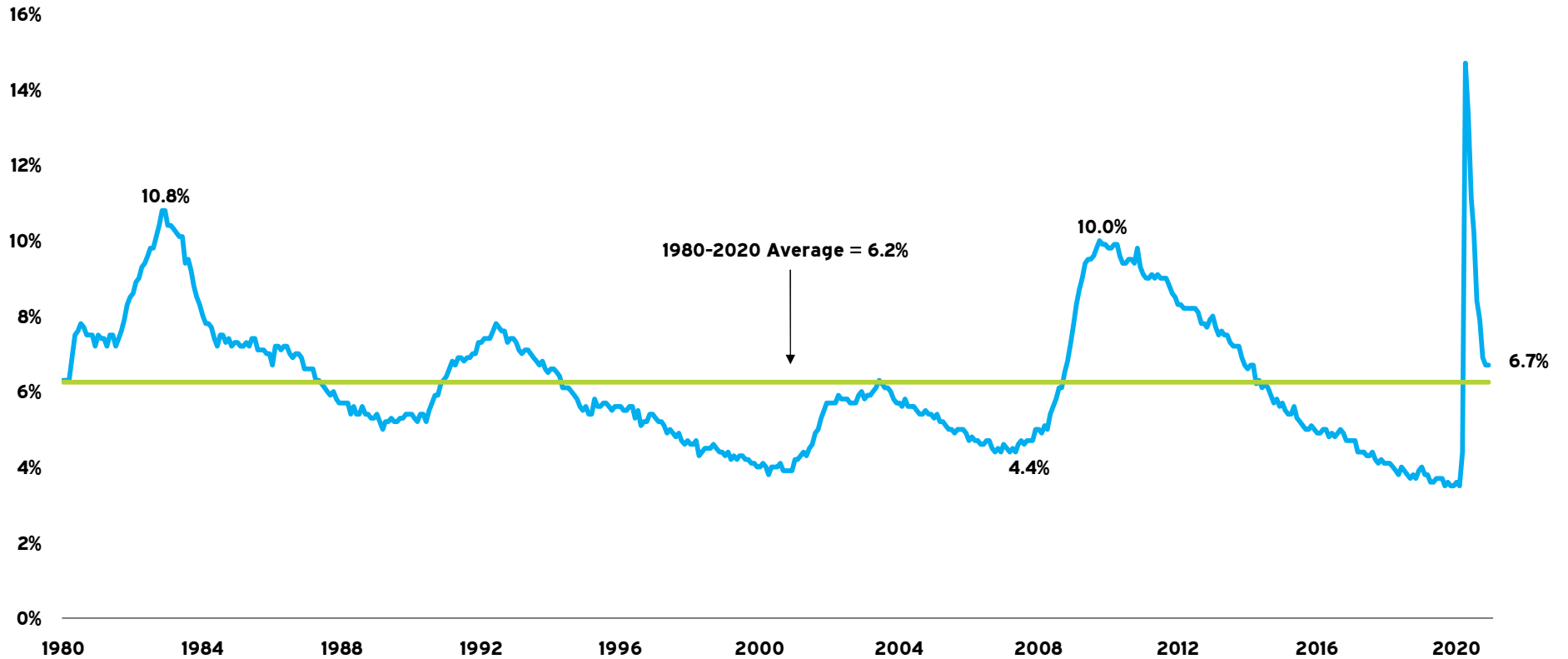
<sup>1</sup> Source: Bureau of Economic Analysis. Data is as of Q4 2020 and represents the first estimate.

US Inflation (CPI)  
Trailing Twelve Months<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of December 31, 2020.

### US Unemployment<sup>1</sup>



<sup>1</sup> Source: Bureau of Labor Statistics. Data is as of December 31, 2020.

## **Review of ScholarShare Policy**

Active Funds		
Fund	Asset Class	Benchmark
T. Rowe Price Instl Large Cap Growth	Domestic Equity	Russell 1000 Growth TR USD
T. Rowe Price Instl Large Cap Value	Domestic Equity	Russell 1000 Value TR USD
TIAA-CREF Quant Small Cap Equity	Domestic Equity	Russell 2000 TR USD
TIAA-CREF Social Choice Equity	Domestic Equity	Russell 3000 TR USD
TIAA-CREF Real Estate Securities	Domestic Equity	FTSE NAREIT All Equity REITs TR
DFA Large Cap International	International Equity	MSCI World ex US NR USD
DFA Emerging Markets Core Equity	International Equity	MSCI EM NR USD
Metropolitan West Total Return Bond	Fixed Income	BBg BarCap US Agg Bond TR USD
PIMCO Real Return	Fixed Income	BBg BarCap US Trsy US TIPS TR USD
PIMCO Income	Fixed Income	BBg BarCap US Agg Bond TR USD
TIAA-CREF Inflation-Linked Bond	Fixed Income	BBg BarCap US TIPS 1-10 year TR USD
T. Rowe Price Institutional Floating Rate	High Yield	S&P/LSTA Performing Loan TR
TIAA-CREF High Yield Bond	High Yield	BofA ML US HY C Pay BB-B Constd TR
Passive Funds		
Fund	Asset Class	Benchmark
TIAA-CREF Equity Index	Domestic Equity	Russell 3000 TR USD
TIAA-CREF S&P 500 Index	Domestic Equity	S&P 500 TR
TIAA-CREF International Equity Index	International Equity	MSCI EAFE NR USD
TIAA-CREF Emerging Markets Equity Index	International Equity	MSCI EM NR USD
TIAA-CREF Bond Index	Fixed Income	BBg BarCap US Agg Bond TR USD
T-C Life Funding Agreements		
T-C Life Funding Agreements <sup>1</sup>	---	---

<sup>1</sup> Investment through a funding agreement with TIAA-CREF Life Insurance Company. Not benchmarked to an index, rather, portfolio performance is monitored using a set of qualitative guidelines.



Performance Criteria for Placing a Fund on Watch  
Actively Managed Funds

Asset Class	Short-Term (rolling 12-month periods)	Medium-term (rolling 36-month periods)	Long-term (> 60 months)	Morningstar Sustainability Rating
Domestic Equity	Fund return < bench return -3.5% for 6 consecutive months	Fund return < bench return - 1.75% for 6 consecutive months	VRR< 0.97 for 6 consecutive months	--
International Equity	Fund return < bench return -4.5% for 6 consecutive months	Fund return < bench return - 2.0% for 6 consecutive months	VRR< 0.97 for 6 consecutive months	--
Fixed Income	Fund return < bench return -1.0% for 6 consecutive months	Fund return < bench return - 0.5% for 6 consecutive months	VRR< 0.98 for 6 consecutive months	--
High Yield	Fund return < bench return -6.5% for 6 consecutive months	Fund return < bench return - 3.25% for 6 consecutive months	VRR< 0.96 for 6 consecutive months	--
Social Choice	Fund return < bench return -5.0% for 6 consecutive months	Fund return < bench return - 2.50% for 6 consecutive months	VRR < 0.9 for 6 consecutive months	Above Average

Passively Managed Funds

Asset Class	Short-Term (rolling 12-month periods)	Medium-term (rolling 36-month periods)	Long-term (rolling 60-month periods)
Domestic Equity	Tracking Error > 0.30% for 6 consecutive months	Tracking Error> 0.25% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.30% for 6 consecutive months
International Equity	Tracking Error > 0.75% for 6 consecutive months	Tracking Error> 0.70% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.30% for 6 consecutive months
Fixed Income	Tracking Error > 0.40% for 6 consecutive months	Tracking Error> 0.55% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.35% for 6 consecutive months

[1] Return discounts from a benchmark return based on 2/3rds of the typical tracking error estimates of the specified type of fund manager.  
 [2] Annualized return is the average annual return of either the manager or its benchmark.  
 [3] VRR – Value Relative Ratio – is calculated as: Manager Cumulative Return / Benchmark Cumulative Return.  
 [4] Tracking error is a measure of the volatility of the average annual difference between the manager’s return and the benchmark’s return.

Performance Criteria for Placing a Fund on Watch (Continued)

T-C Life Funding Agreements<sup>1</sup>  
(based on non-investment performance criteria)

Fund Name	Financial Strength	Mortgage Portfolio	Bond Portfolio	Account Diversification
T-C Life Funding Agreements	Moody's $\geq$ Aa2 Standard & Poor's $\geq$ AA A.M. Best $\geq$ A+ Fitch $\geq$ AA	100% in Good Standing	At least 90% Investment Grade	Portfolio is diversified across asset classes and types

<sup>1</sup> The T-C Life Funding Agreements are measured against a set of non-investment performance criteria (see above) in a published TIAA-CREF report every quarter.

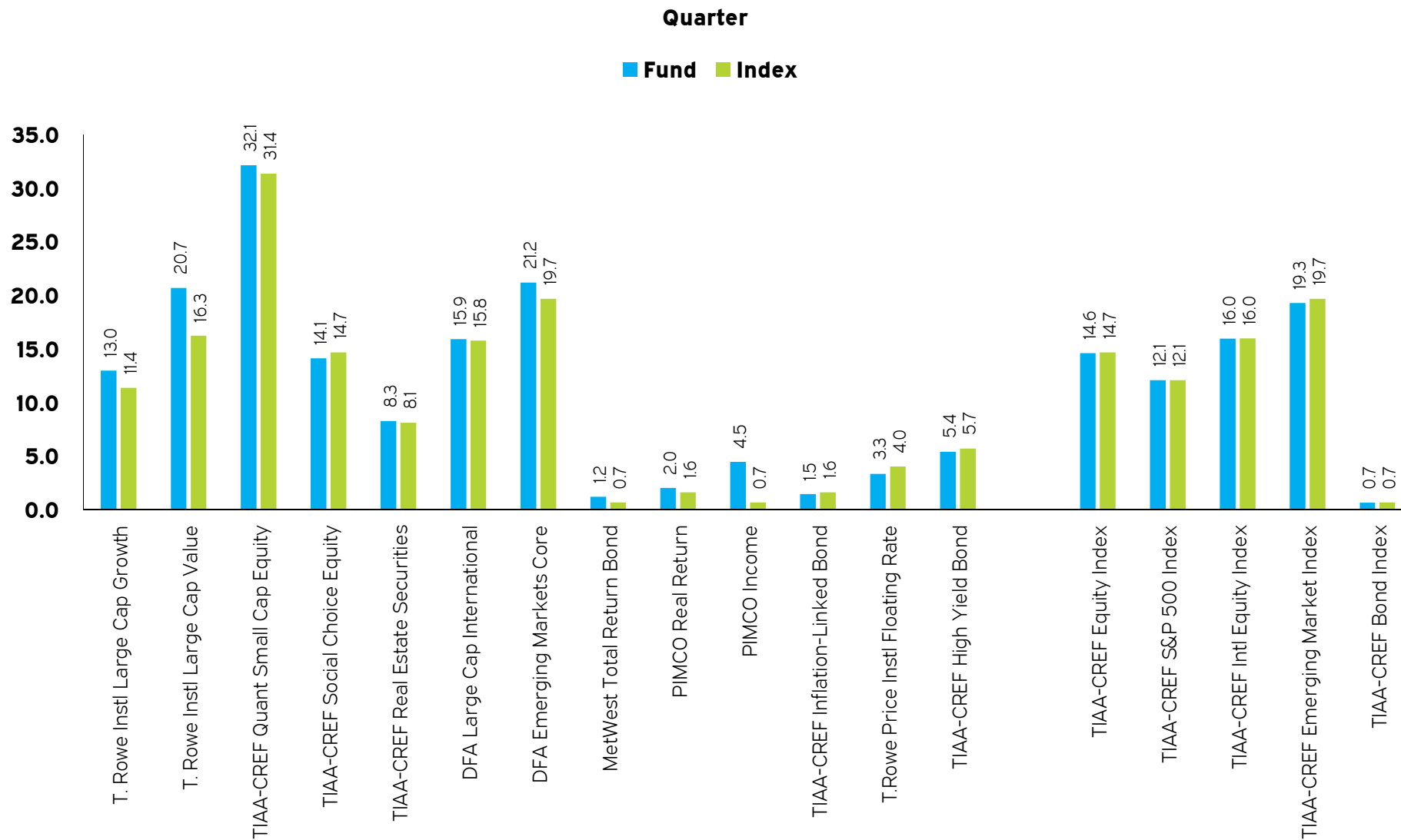
### Investment Status Schedule

Performance Category <sup>1</sup>	Actively Managed Portfolios	Passively Managed Portfolios
Positive	<ul style="list-style-type: none"> <li>Performance exceeds the benchmark.</li> </ul>	<ul style="list-style-type: none"> <li>Performance exceeds the benchmark (first 1-12 month period), or</li> <li>Tracking error is within the allowable range<sup>1</sup> (short, medium, and long time periods).</li> </ul>
Acceptable	<ul style="list-style-type: none"> <li>Performance meets or is under the benchmark and is within the allowable range.</li> </ul>	<ul style="list-style-type: none"> <li>Performance does not exceed the benchmark but is within the allowable range (first 1-12 month period only).</li> </ul>
Caution	<ul style="list-style-type: none"> <li>Performance is below allowable range but either:               <ol style="list-style-type: none"> <li>for less than six consecutive months, or</li> <li>the Board has not taken (or decided not to take) a formal action to place the asset class or individual fund portfolio on Watch even though performance has been below allowable range for six months or longer.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Tracking error falls outside of the allowable range but either               <ol style="list-style-type: none"> <li>for less than six consecutive months, or</li> <li>the Board has not voted to place the asset class or stand alone fund on Watch</li> </ol> </li> </ul>
Watch <sup>2</sup>	<ul style="list-style-type: none"> <li>Performance is below allowable range for more than six consecutive months and the Board has formally voted to place the asset class or individual fund on Watch.</li> </ul>	<ul style="list-style-type: none"> <li>Tracking error falls outside of the allowable range for more than six consecutive months and the Board has formally voted to place the asset class or individual fund portfolio on Watch.</li> </ul>

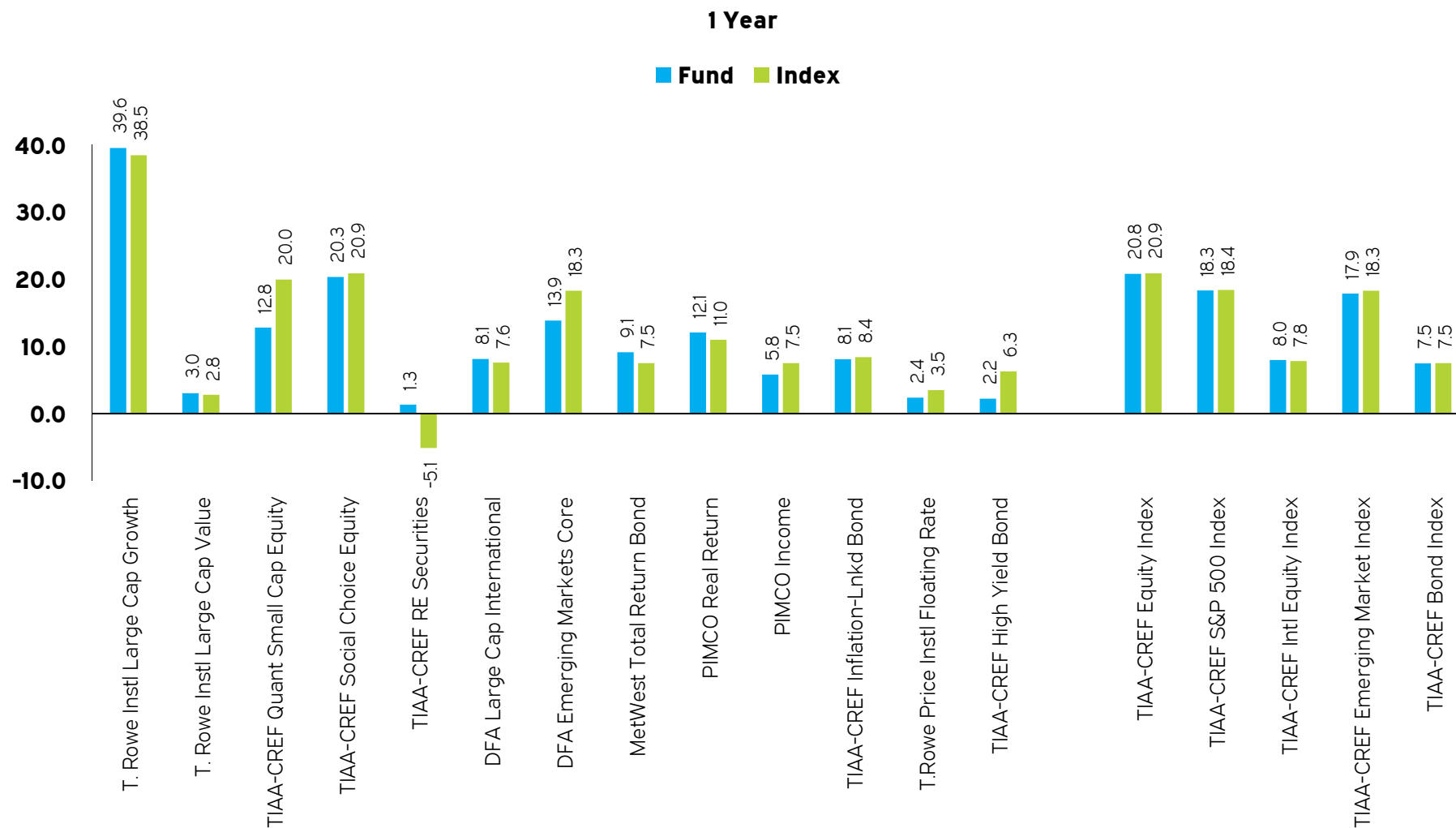
<sup>1</sup> Ranges are shown in the Investment Performance Criteria Schedules.

<sup>2</sup> The amount of time generally required before an investment is put on watch.

#### Summary Of Fund Performance 12/31/20



#### Summary Of Fund Performance 12/31/20



### Summary of Fund Performance Status

Program	Total Funds	Positive	Acceptable	Caution	Watch <sup>^</sup>
Number of Funds	19	7	8	4	4
% of Funds	100%	37%	42%	21%	6%
% of Program Assets	100%	44%	51%	6%	--
Fund Status $\uparrow$	2	2	--	--	--
Fund Status $\downarrow$	0	--	--	--	--
Domestic Equity Funds	7	2	4	1	1
Intl Equity Funds	4	2	1	1	1
Fixed Income Funds	5	2	2	1	1
High Yield Funds	2	--	1	1	1
Funding Agreement	1	1	--	--	--

<sup>^</sup>Includes funds on Watch and new funds qualifying for Watch status. Number has not been adjusted to remove funds no longer qualifying for Watch.

- Seventy-nine percent of the Program's funds have either a Positive or Acceptable performance status
- Two funds improved in status over the quarter.
  - T.Rowe Price Large Cap Growth
  - DFA Large Cap International
- Four funds are on "Watch" status
  - PIMCO Income Fund
  - DFA Emerging Markets Core Fund
  - TIAA-CREF High Yield Bond
  - TIAA Quant Small Cap Equity
- No new funds qualify for "Watch" status

#### Summary of Fund Performance Status

Funds	Prior Quarter		Current Quarter	
	Status	On Watch	Status	On Watch
<b>Active Funds</b>				
T. Rowe Price Instl Large Cap Growth	Acceptable	No	Positive	
T. Rowe Price Instl Large Cap Value	Acceptable	No	Acceptable	
TIAA-CREF Quant Small Cap Equity	Caution	No	Caution	10/1/2020
TIAA-CREF Social Choice Equity	Acceptable	No	Acceptable	
TIAA-CREF Real Estate Securities	Positive	No	Positive	
DFA Large Cap International	Acceptable	No	Positive	
DFA Emerging Markets Core Equity	Caution	No	Caution	10/1/2020
Metropolitan West Total Return Bond	Positive	No	Positive	
PIMCO Real Return	Positive	No	Positive	
PIMCO Income	Caution	Yes	Caution	7/1/2020
TIAA-CREF Inflation-Linked Bond	Acceptable	No	Acceptable	
T. Rowe Price Instl Floating Rate	Acceptable	No	Acceptable	
TIAA-CREF High-Yield Bond	Caution	No	Caution	10/1/2020
<b>Passive Funds</b>				
TIAA-CREF Equity Index	Acceptable	No	Acceptable	
TIAA-CREF S&P 500 Index	Acceptable	No	Acceptable	
TIAA-CREF International Equity Index <sup>1</sup>	Positive	No	Positive	
TIAA-CREF Emerging Markets Index <sup>1</sup>	Acceptable	No	Acceptable	
TIAA-CREF Bond Index	Acceptable	No	Acceptable	
<b>T-C Life Funding Agreements</b>				
T-C Life Funding Agreements	Positive	No	Positive	

- Current status is based on Short-Term (rolling 12-month), Medium-Term (rolling 36-month) and Long-Term (rolling 60-month) evaluation results.
- According to the Investment Status Schedule on the previous page, the portfolio's overall "Current Status" equals the lowest status as achieved by one or more of the criteria during the quarter.

<sup>1</sup> The TIAA-CREF International Equity and Emerging Markets Index funds' returns have been adjusted to remove F/X and Fair Value impact for the purpose of monitoring.

### Summary of Fund Assets as of 12/31/2020

Funds	Assets (\$)	% of Total
<b>Active Funds</b>		
T. Rowe Price Instl Large Cap Growth	450,516,831	3.97%
T. Rowe Price Instl Large Cap Value	453,992,397	4.00%
TIAA-CREF Quant Small Cap Equity	100,952,955	0.89%
TIAA-CREF Social Choice Equity	226,004,128	1.99%
TIAA-CREF Real Estate Securities	290,001,094	1.99%
DFA Large Cap International	411,005,576	3.63%
DFA Emerging Markets Core Equity	104,591,833	0.92%
Metropolitan West Total Return Bond	617,858,723	5.44%
PIMCO Real Return	246,827,390	2.17%
PIMCO Income	246,180,849	2.17%
TIAA-CREF Inflation-Linked Bond	385,436,893	3.39%
T. Rowe Price Instl Floating Rate	122,494,265	1.08%
TIAA-CREF High-Yield Bond	192,950,847	1.70%
<b>Active Funds Total</b>	<b>3,848,813,781</b>	<b>33.88%</b>
<b>Passive Funds</b>		
TIAA-CREF Equity Index	2,214,105,840	19.49%
TIAA-CREF S&P 500 Index	716,245,260	6.30%
TIAA-CREF International Equity Index	719,829,365	6.34%
TIAA-CREF Emerging Markets Index	182,417,617	1.61%
TIAA-CREF Bond Index	1,460,577,102	12.86%
<b>Passive Funds Total</b>	<b>5,293,175,184</b>	<b>46.59%</b>
<b>T-C Life Funding Agreements</b>		
T-C Life Funding Agreements	2,218,994,287	19.53%
<b>TOTAL</b>	<b>11,360,983,251</b>	<b>100.00</b>



### Portfolio Management Overview

Fund	Ticker	Current PM Team		Recent PM Departures <sup>1</sup>	
T.Rowe Price Large Cap Growth	TRLGX	01/01/2017-	Taymour R. Tamaddon		
T.Rowe Price Large Cap Value	TILCX	03/31/2000- 02/25/2010- 01/01/2015-	John D. Linehan Mark S. Finn Heather K. McPherson		
TIAA-CREF Quant Small Cap Equity	TISEX	03/01/2016- 03/01/2019-	Pei Chen Max Kozlov	10/23/2006- 10/1/2020	Adam Cao
TIAA-CREF Social Choice Equity	TISCX	12/31/2005- 05/30/2014-	Philip James Campagna Lei Liao		
TIAA-CREF Real Estate Securities	TIREX	12/31/2005- 07/10/2006-	David Copp Brendan W. Lee		
DFA Large Cap International	DFALX	02/28/2010- 07/21/2015- 02/28/2020 02/28/2020	Jed S. Fogdall Bhanu P. Singh Joel P. Schneider Arun C. Keswani	02/28/2010-02/28/2019 07/21/2015-02/28/2020	Joseph H. Chi Mary T. Phillips
DFA Emerging Markets Core Equity	DFCEX	02/28/2010- 07/21/2015- 07/21/2015- 02/28/2017- 02/28/2019-	Jed S. Fogdall Allen Pu Bhanu P. Singh Mary T. Phillips William Collins-Dean	02/28/2010-02/28/2019	Joseph H. Chi
Metropolitan West Total Return Bond	MWTIX	03/31/1997- 03/31/1997- 03/31/1997- 12/31/2004-	Stephen M. Kane Laird R. Landman Tad Rivelle Bryan T. Whalen		
PIMCO Real Return	PRRIX	01/09/2019- 12/11/2019-	Stephen A. Rodosky Daniel He	01/02/2015-01/09/2019 12/31/2007-12/11/2019	Jeramie Banet Mihir P. Worah
PIMCO Income	PIMIX	03/30/2007- 03/15/2013- 07/30/2018-	Daniel J. Ivascyn Alfred T. Murata Joshua Anderson		

<sup>1</sup> Recent is defined as having occurred in the last three years.

Source: MorningStar

### Portfolio Management Overview

Fund	Ticker	Current PM Team	Recent PM Departures <sup>1</sup>
TIAA-CREF Inflation-Linked Bond	TIILX	08/21/2008-08/01/2016 08/01/2019 John Michael Cerra Nicholas Travaglino <a href="#">Chad W. Kemper</a>	
T.Rowe Price Floating Rate	RPIFX	05/01/2009- Paul M. Massaro	
TIAA-CREF High Yield	TIHYX	03/31/2006-10/01/2011- Kevin R. Lorenz Jean C. Lin	
TIAA-CREF Equity Index	TIEIX	12/31/2005-05/30/2014- 03/01/2019- Philip James Campagna Lei Liao <a href="#">Darren Tran</a>	
TIAA-CREF S&P 500 Index	TISPX	12/31/2005-05/30/2014- 03/01/2019- Philip James Campagna Lei Liao <a href="#">Darren Tran</a>	
TIAA-CREF International Equity Index	TCIEX	08/01/2005-05/30/2014- 03/01/2019- Philip James Campagna Lei Liao <a href="#">Darren Tran</a>	
TIAA-CREF Emerging Markets Equity Index	TEQLX	08/31/2010-05/30/2014- 03/01/2019- Philip James Campagna Lei Liao <a href="#">Darren Tran</a>	
TIAA-CREF Bond Index	TBIIX	12/31/2009-08/24/2011- Lijun (Kevin) Chen James Tsang	

#### Observations:

- TIAA Quant Small Cap Equity – Portfolio Manager Adam Cao is no longer a Portfolio Manager on the fund as of October 2020.

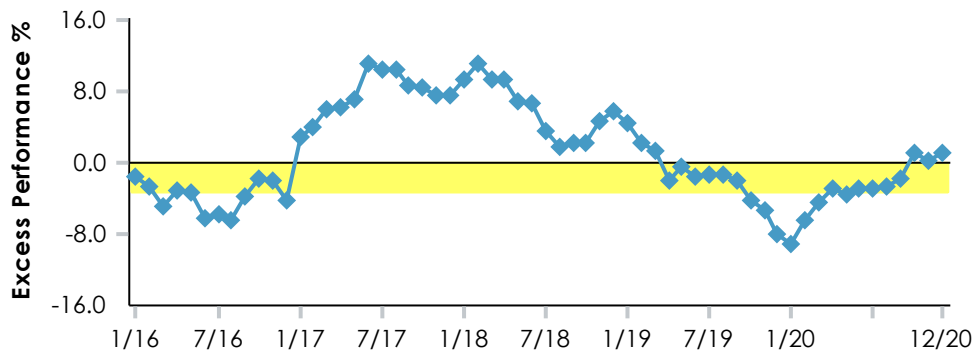
<sup>1</sup> Recent is defined as having occurred in the last three years.

Source: MorningStar

## **Sensitivity Analyses: Active Funds**

# TRowe Price Large Cap Growth I vs. Russell 1000 Growth Index

## Short-term (Rolling 12 Months Excess Performance)

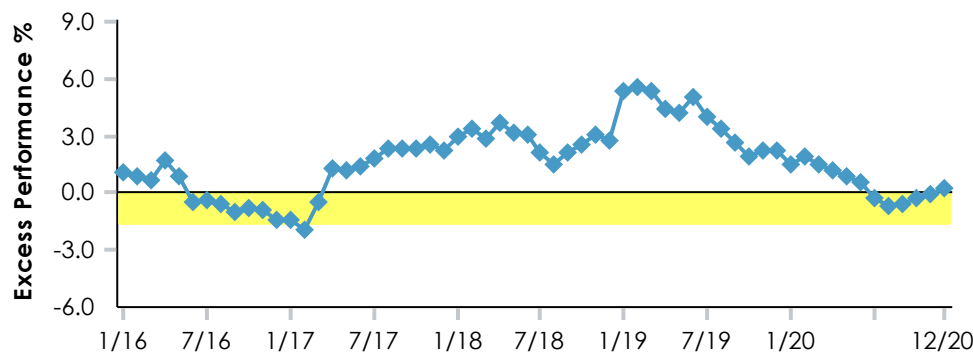


### Short-Term Performance

Positive

Probationary Performance -3.50%

## Medium-term (Rolling 36 Months Excess Performance)

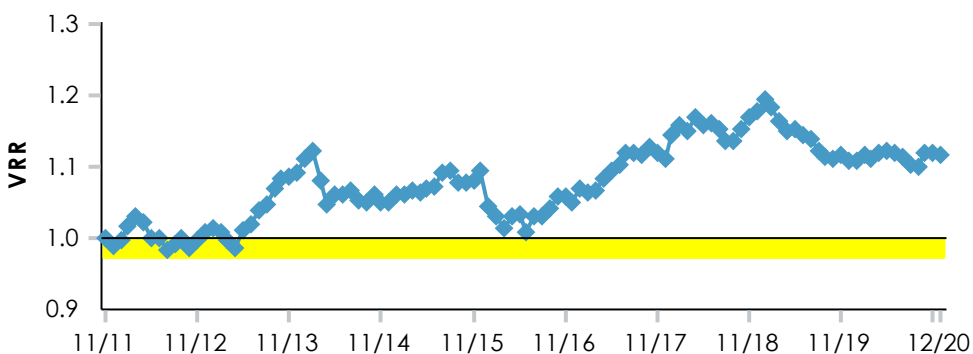


### Medium-Term Performance

Positive

Probationary Performance -1.75%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TRowe Price Large Cap Growth I	13.0 (21)	39.6 (32)	23.2 (36)	21.5 (13)	20.2 (7)
Russell 1000 Growth Index	11.4 (45)	38.5 (37)	23.0 (39)	21.0 (16)	18.7 (22)
IM U.S. Large Cap Growth Equity (MF) Median	11.1	36.2	22.1	19.0	17.5

Monitoring Status

Positive

### TRowe Price Large Cap Growth I | As of December 31, 2020

#### Description:

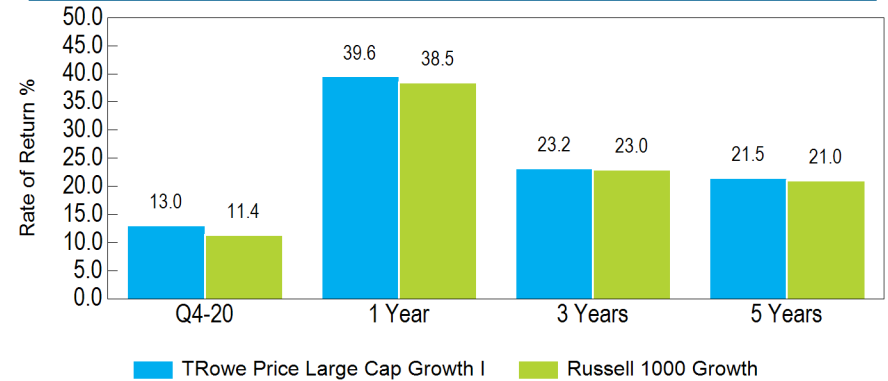
The investment seeks to provide long-term capital appreciation through investments in common stocks of growth companies.

In taking a growth approach to stock selection, the fund will normally invest at least 80% of its net assets (including any borrowings for investment purposes) in the common stocks of large-cap companies. The advisor defines a large-cap company as one whose market capitalization is larger than the median market capitalization of companies in the Russell 1000® Growth Index, a widely used benchmark of the largest U.S. growth stocks. The fund is non-diversified.

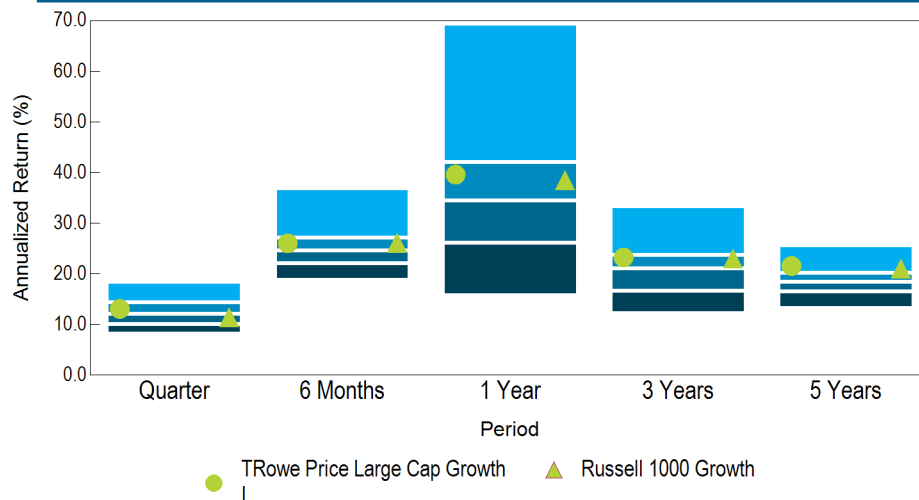
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TRLGX
<b>Morningstar Category</b>	Large Growth
<b>Average Market Cap (\$mm)</b>	252,665.28
<b>Net Assets (\$mm)</b>	21,280.57
<b>% Assets in Top 10 Holdings</b>	48.46
<b>Total Number of Holdings</b>	67
<b>Manager Name</b>	Taymour R. Tamaddon
<b>Manager Tenure</b>	4
<b>Expense Ratio</b>	0.56%
<b>Closed to New Investors</b>	No

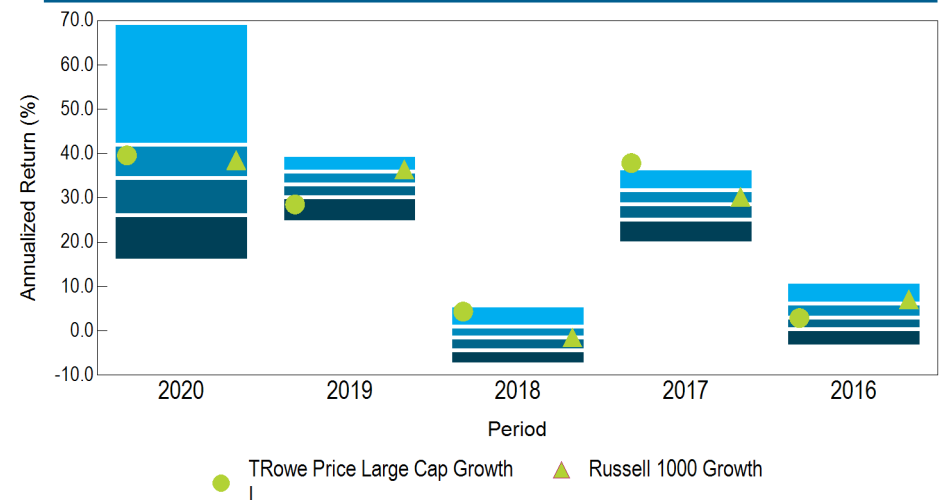
#### Return Summary



#### Large Growth MStar MF Return Comparison

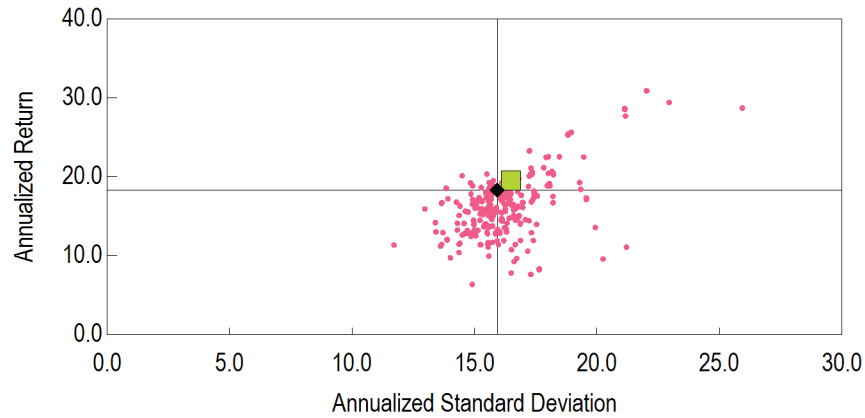


#### Large Growth MStar MF Return Comparison



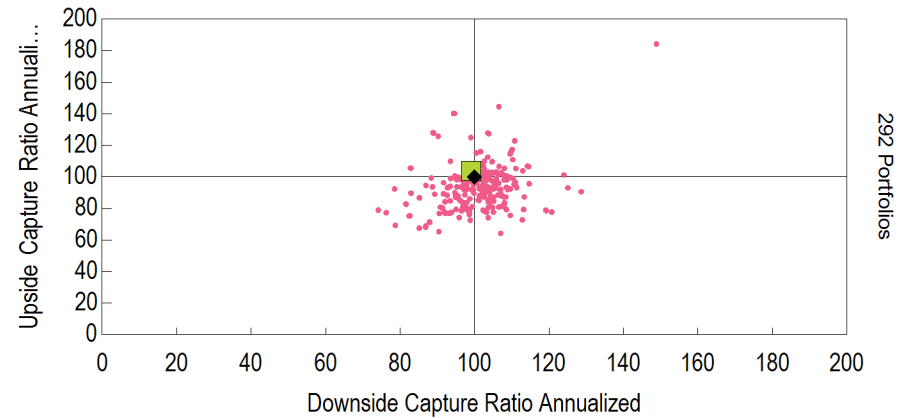
### TRowe Price Large Cap Growth I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



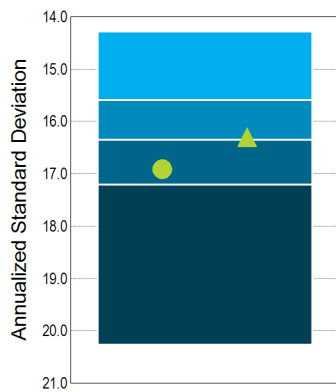
■ TRowe Price Large Cap Growth I    ● Large Growth MStar MF  
◆ Russell 1000 Growth

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020

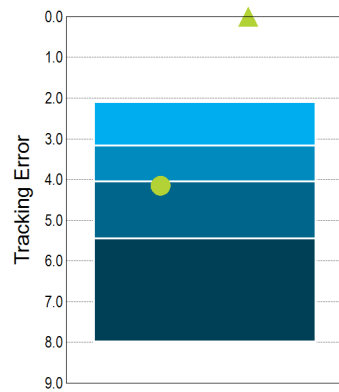


■ TRowe Price Large Cap Growth I    ● Large Growth MStar MF  
◆ Russell 1000 Growth

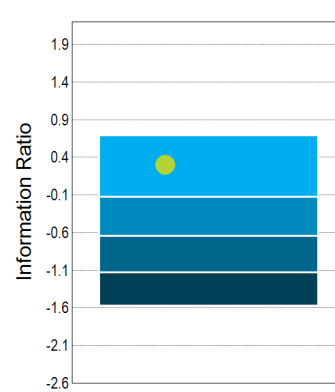
Annualized Standard Deviation



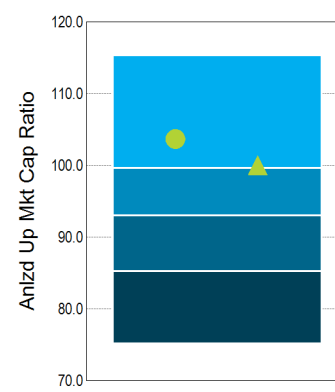
Tracking Error



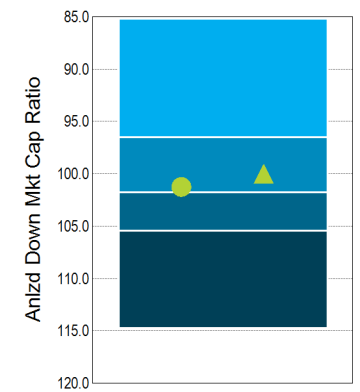
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● TRowe Price Large Cap Growth I    ▲ Russell 1000 Growth    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

### TRowe Price Large Cap Growth I | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	1.10
Average Market Cap (\$mm)	252,665.28
Price/Earnings	30.73
Price/Book	5.41
Price/Sales	3.60
Price/Cash Flow	20.72
Dividend Yield	0.51
Number of Equity Holdings	66
R-Squared (3 Year)	0.97
Alpha (3 Year)	0.06%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	0.77%
COMMUNICATION SERVICES	24.63%
CONSUMER CYCLICAL	19.67%
CONSUMER DEFENSIVE	1.21%
ENERGY	0.00%
FINANCIAL SERVICES	8.04%
HEALTHCARE	13.36%
INDUSTRIALS	5.02%
REAL ESTATE	0.77%
TECHNOLOGY	25.57%
UTILITIES	0.96%

#### Top Holdings as of December 31, 2020

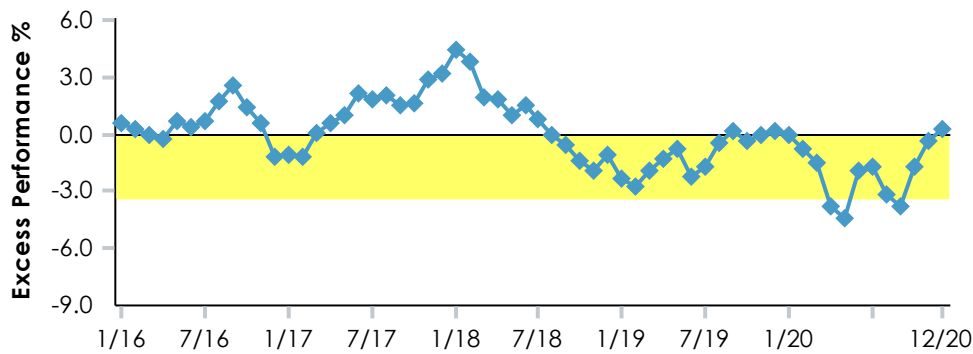
AMAZON.COM INC	9.67%
MICROSOFT CORP	8.00%
FACEBOOK INC A	5.79%
ALPHABET INC A	5.51%
APPLE INC	4.58%
VISA INC CLASS A	3.96%
GLOBAL PAYMENTS INC	3.67%
SNAP INC CLASS A	2.55%
INTUIT INC	2.48%
ALPHABET INC CLASS C	2.24%

#### Top Countries as of December 31, 2020

United States	93.15%
China	4.36%
Netherlands	1.49%
Israel	0.28%
Singapore	0.27%
Brazil	0.24%
Canada	0.11%
Poland	0.09%

# TRowe Price Large Cap Value I vs. Russell 1000 Value Index

## Short-term (Rolling 12 Months Excess Performance)

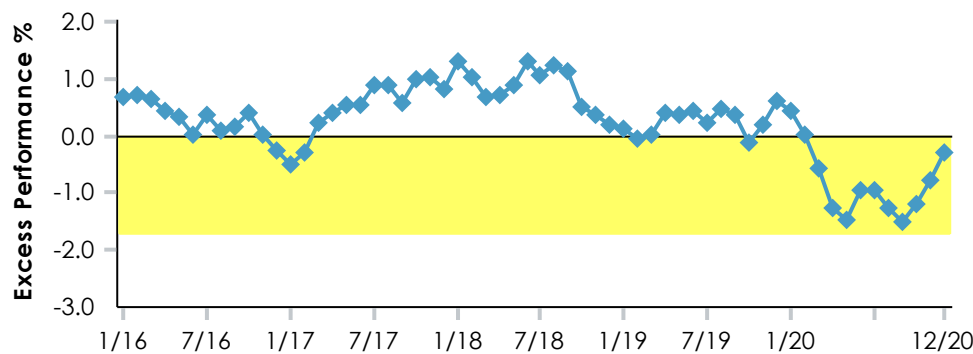


### Short-Term Performance

Positive

Probationary Performance -3.50%

## Medium-term (Rolling 36 Months Excess Performance)

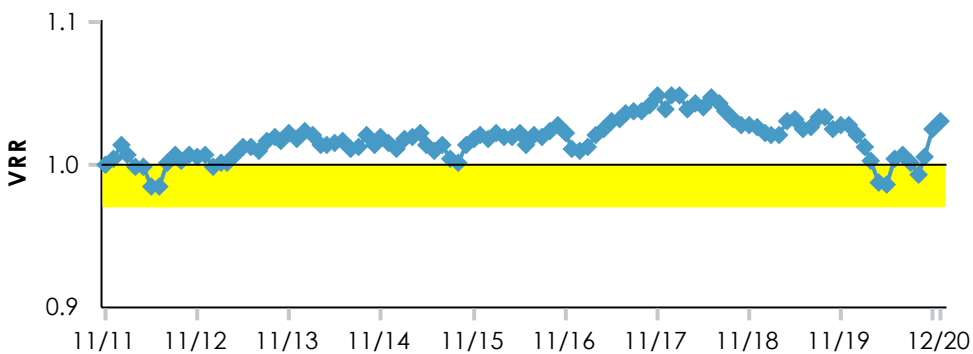


### Medium-Term Performance

Acceptable

Probationary Performance -1.75%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TRowe Price Large Cap Value I	20.7 (11)	3.0 (44)	5.8 (52)	9.9 (33)	12.2 (19)
Russell 1000 Value Index	16.3 (43)	2.8 (48)	6.1 (47)	9.7 (38)	11.8 (26)
IM U.S. Large Cap Value Equity (MF) Median	15.8	2.6	5.8	9.3	11.1

Monitoring Status

Acceptable



### TRowe Price Large Cap Value I | As of December 31, 2020

#### Description:

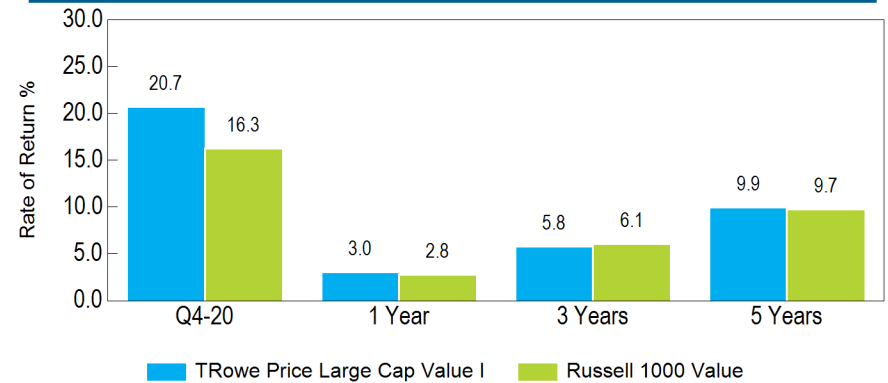
The investment seeks long-term capital appreciation; income is a secondary objective.

The fund will normally invest at least 80% of its net assets (including any borrowings for investment purposes) in securities of large-cap companies that the portfolio manager regards as undervalued. The manager defines a large-cap company as having a market capitalization that, at the time of purchase, is either (i) larger than the current median market capitalization of companies in the Russell 1000® Value Index or (ii) larger than the three year average median market capitalization of companies in the index as of December 31 of the three preceding years.

#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TILCX
<b>Morningstar Category</b>	Large Value
<b>Average Market Cap (\$mm)</b>	68,129.07
<b>Net Assets (\$mm)</b>	3,277.83
<b>% Assets in Top 10 Holdings</b>	25.99
<b>Total Number of Holdings</b>	88
<b>Manager Name</b>	John D. Linehan
<b>Manager Tenure</b>	21
<b>Expense Ratio</b>	0.56%
<b>Closed to New Investors</b>	No

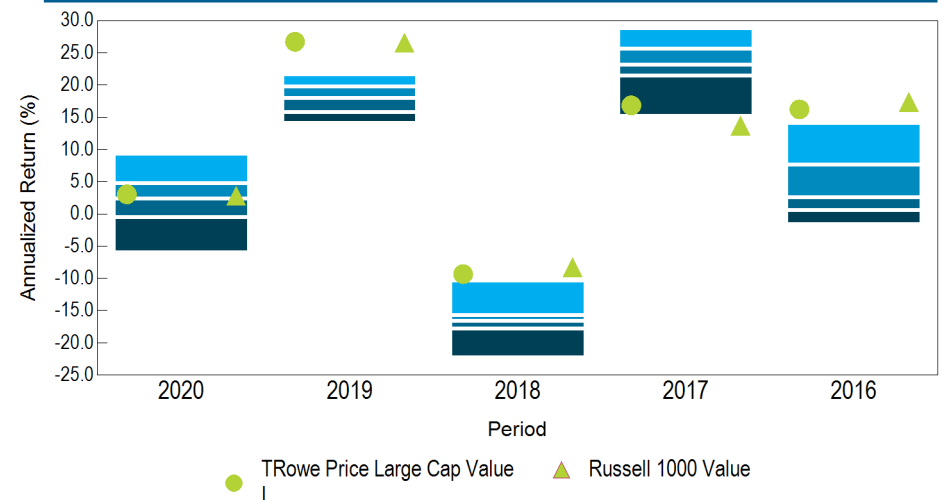
#### Return Summary



#### Foreign Large Value MStar MF Return Comparison

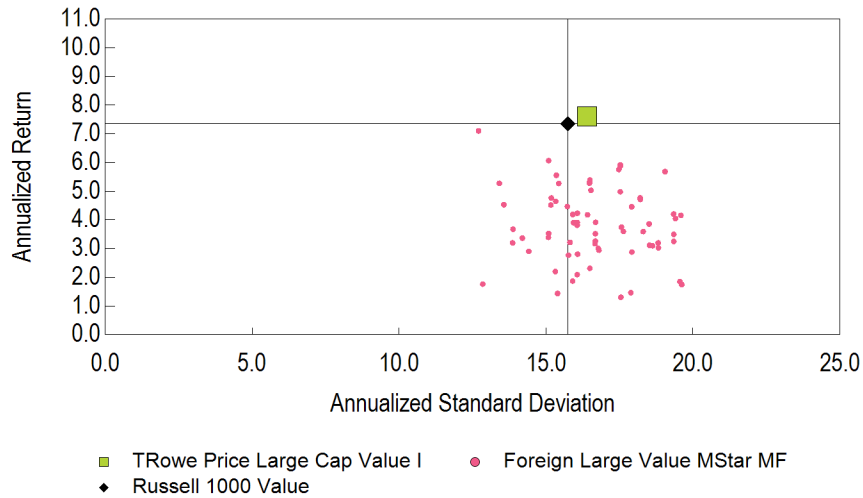


#### Foreign Large Value MStar MF Return Comparison

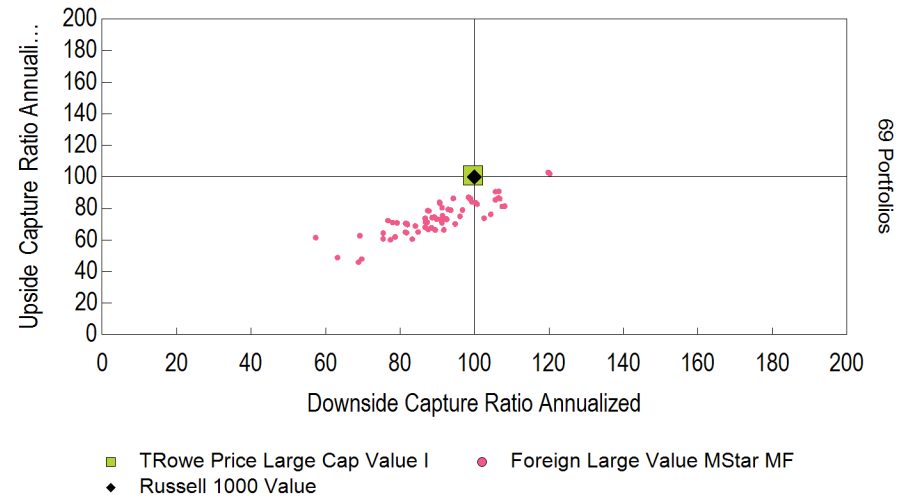


### TRowe Price Large Cap Value I | As of December 31, 2020

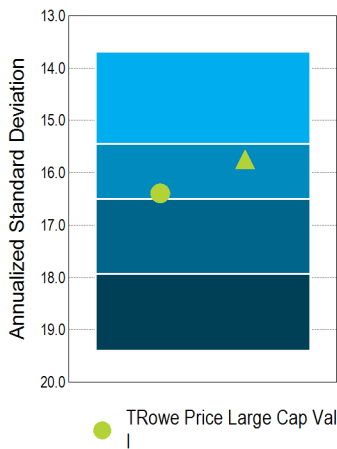
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



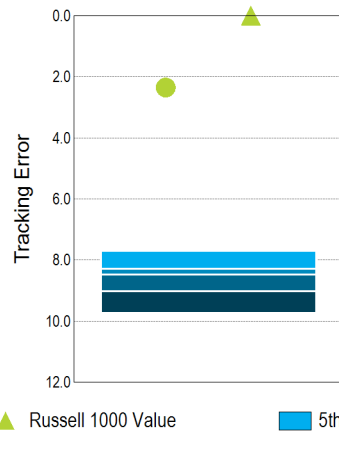
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



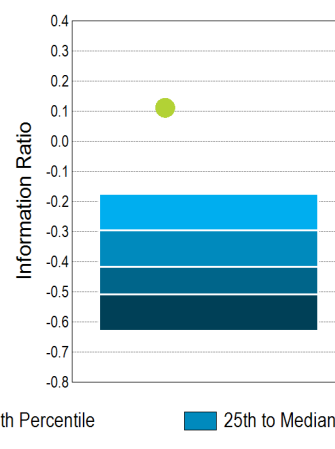
Annualized Standard Deviation



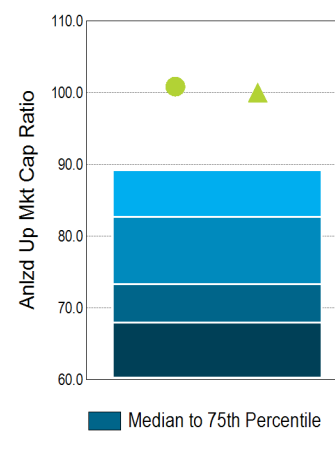
Tracking Error



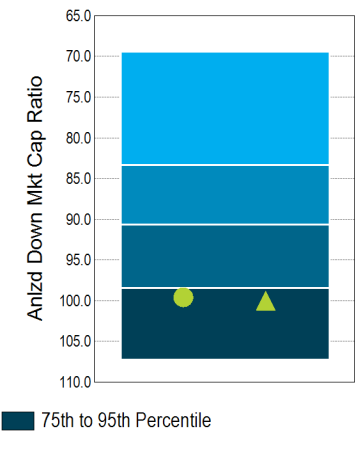
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.21
Average Market Cap (\$mm)	68,129.07
Price/Earnings	16.58
Price/Book	1.93
Price/Sales	1.77
Price/Cash Flow	12.23
Dividend Yield	2.65
Number of Equity Holdings	84
R-Squared (3 Year)	0.98
Alpha (3 Year)	-0.03%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	3.42%
COMMUNICATION SERVICES	4.32%
CONSUMER CYCLICAL	5.93%
CONSUMER DEFENSIVE	7.32%
ENERGY	5.86%
FINANCIAL SERVICES	21.99%
HEALTHCARE	15.12%
INDUSTRIALS	11.68%
REAL ESTATE	3.64%
TECHNOLOGY	12.89%
UTILITIES	7.82%

#### Top Holdings as of December 31, 2020

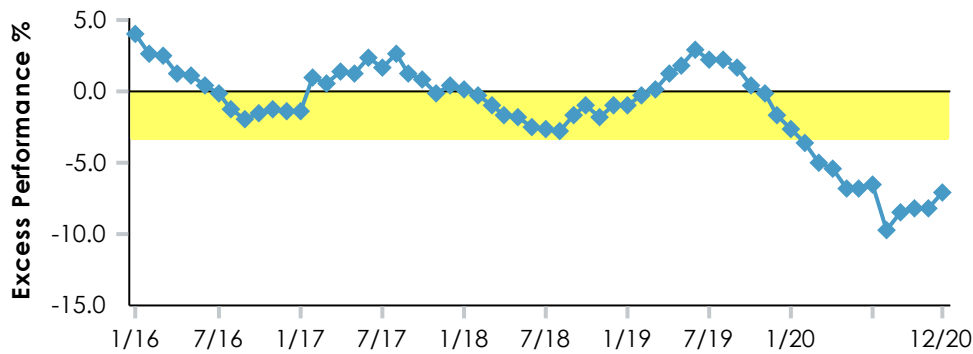
MORGAN STANLEY	3.18%
GENERAL ELECTRIC CO	3.16%
SOUTHERN CO	2.73%
QUALCOMM INC	2.62%
UNITED PARCEL SERVICE INC CLASS B	2.57%
WELLS FARGO & CO	2.55%
CHUBB LTD	2.49%
MICROSOFT CORP	2.28%
DUPONT DE NEMOURS INC	2.24%
TOTAL SE ADR	2.18%

#### Top Countries as of December 31, 2020

United States	92.38%
Switzerland	2.54%
France	2.22%
Canada	2.04%
China	0.82%

# TIAA-CREF Quant Small Cap Equity I vs. Russell 2000 Index

## Short-term (Rolling 12 Months Excess Performance)

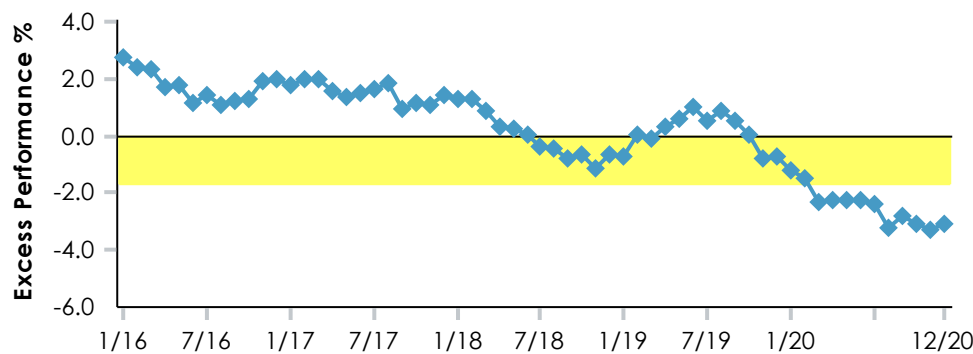


### Short-Term Performance

Caution

Probationary Performance -3.50%

## Medium-term (Rolling 36 Months Excess Performance)

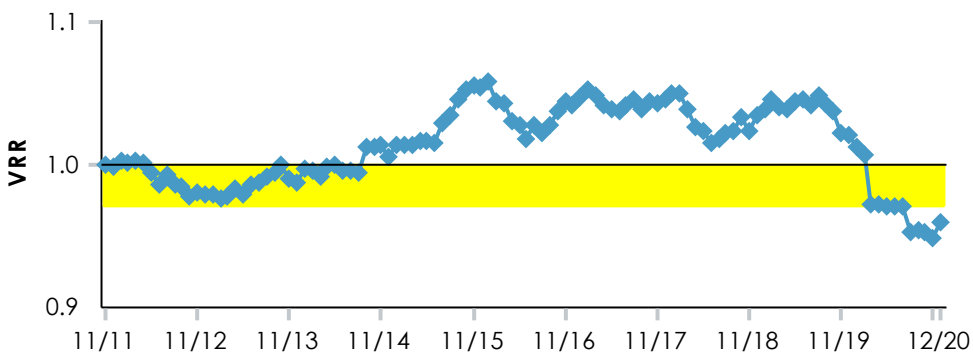


### Medium-Term Performance

Caution

Probationary Performance -1.75%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Caution

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Quant Small Cap Equity I	32.1 (6)	12.8 (50)	7.1 (51)	11.2 (45)	12.5 (28)
Russell 2000 Index	31.4 (6)	20.0 (13)	10.2 (23)	13.3 (19)	13.0 (19)
IM U.S. SMID Cap Core Equity (MF) Median	24.9	12.8	7.2	10.5	11.5

Monitoring Status

Caution/On Watch

### TIAA-CREF Quant Small Cap Equity I | As of December 31, 2020

#### Description:

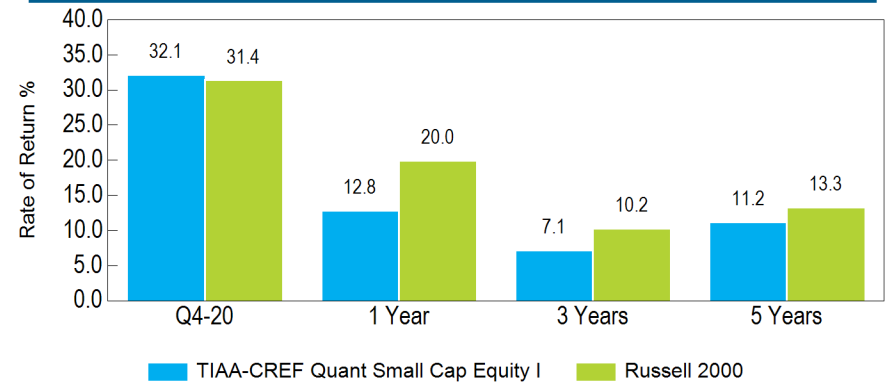
The investment seeks a favorable long-term total return, mainly through capital appreciation, primarily from equity securities of smaller domestic companies.

Under normal circumstances, the fund invests at least 80% of its assets in small-cap equity securities. A small-cap equity security is a security within the capitalization range of the companies included in the fund's benchmark index, the Russell 2000® Index, at the time of purchase. It invests primarily in equity securities of smaller domestic companies across a wide range of sectors, growth rates and valuations.

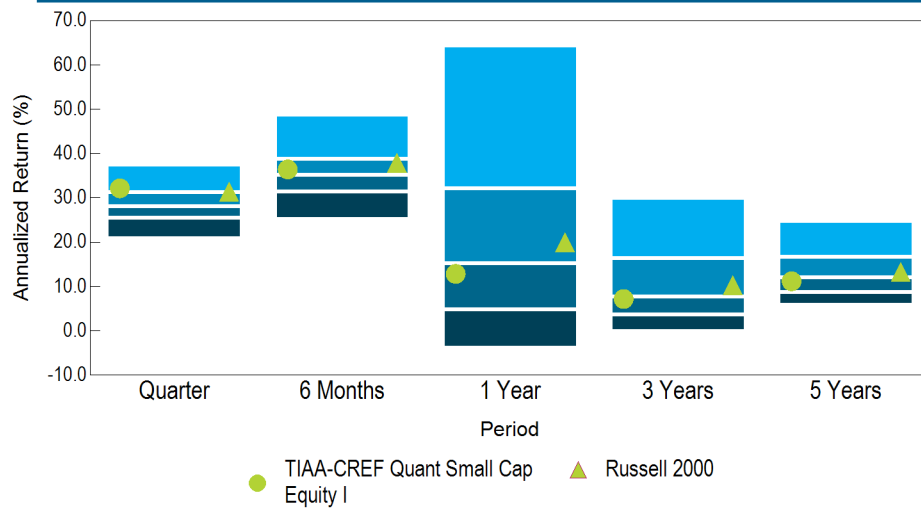
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TISEX
<b>Morningstar Category</b>	Small Blend
<b>Average Market Cap (\$mm)</b>	2,449.67
<b>Net Assets (\$mm)</b>	1,437.72
<b>% Assets in Top 10 Holdings</b>	7.58
<b>Total Number of Holdings</b>	417
<b>Manager Name</b>	Pei Chen
<b>Manager Tenure</b>	5
<b>Expense Ratio</b>	0.42%
<b>Closed to New Investors</b>	No

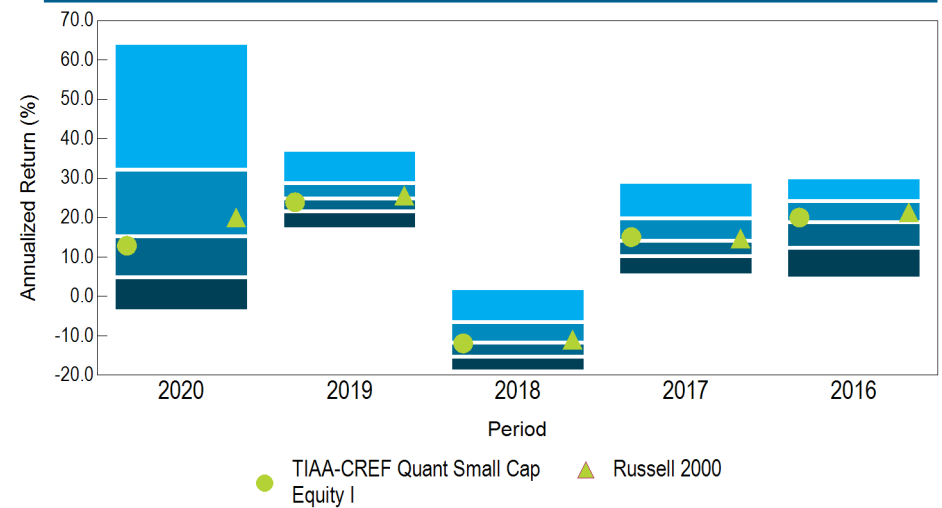
#### Return Summary



#### Small Cap MStar MF Return Comparison

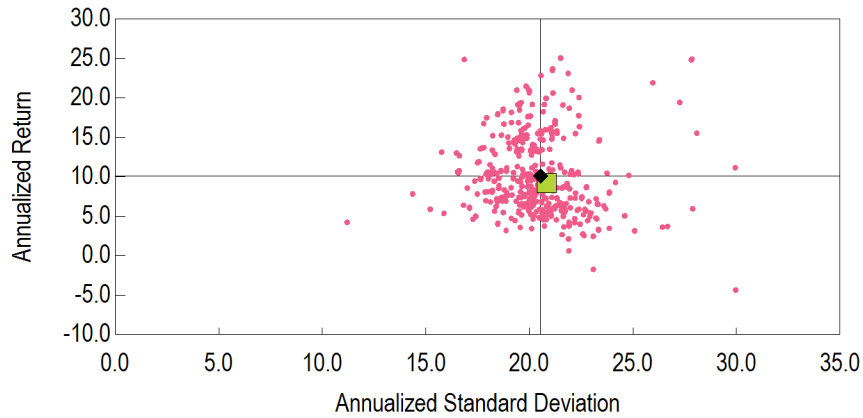


#### Small Cap MStar MF Return Comparison



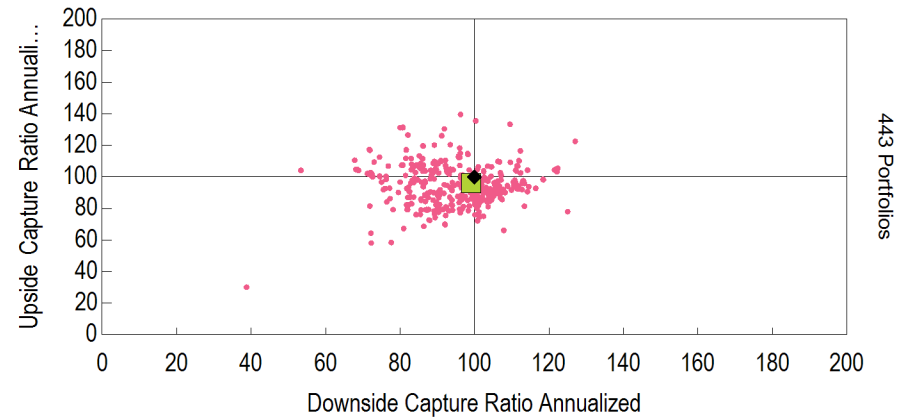
### TIAA-CREF Quant Small Cap Equity I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



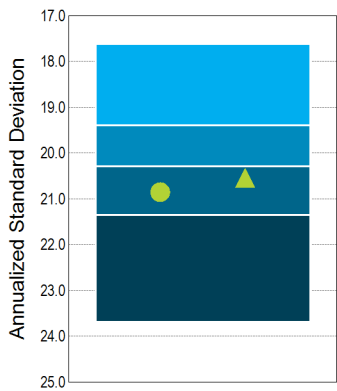
- TIAA-CREF Quant Small Cap Equity I
- Small Cap MStar MF
- ◆ Russell 2000

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



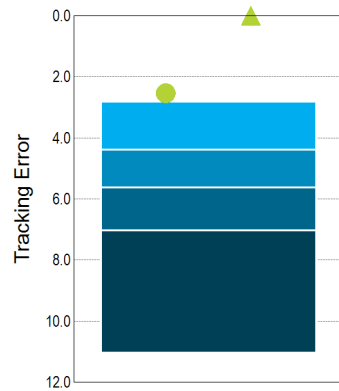
- TIAA-CREF Quant Small Cap Equity I
- Small Cap MStar MF
- ◆ Russell 2000

Annualized Standard Deviation



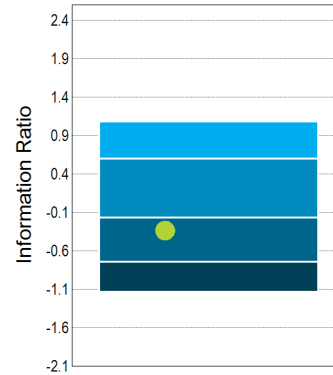
- TIAA-CREF Quant Small Cap Equity I

Tracking Error



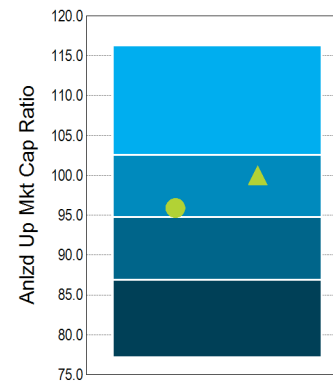
- ▲ Russell 2000

Information Ratio



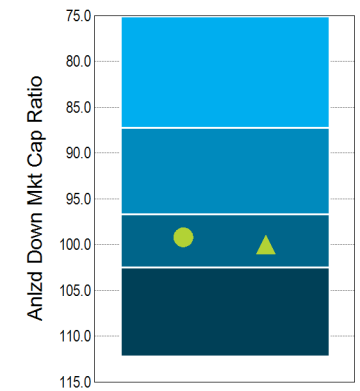
- 5th to 25th Percentile

Anlzd Up Mkt Cap Ratio



- Median to 75th Percentile

Anlzd Down Mkt Cap Ratio



- 75th to 95th Percentile

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.22
Average Market Cap (\$mm)	2,449.67
Price/Earnings	13.10
Price/Book	2.15
Price/Sales	1.15
Price/Cash Flow	8.11
Dividend Yield	1.15
Number of Equity Holdings	412
R-Squared (3 Year)	0.99
Alpha (3 Year)	-0.24%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	5.19%
COMMUNICATION SERVICES	2.31%
CONSUMER CYCLICAL	11.00%
CONSUMER DEFENSIVE	4.50%
ENERGY	2.45%
FINANCIAL SERVICES	14.46%
HEALTHCARE	20.56%
INDUSTRIALS	16.66%
REAL ESTATE	6.13%
TECHNOLOGY	15.28%
UTILITIES	1.46%

#### Top Holdings as of December 31, 2020

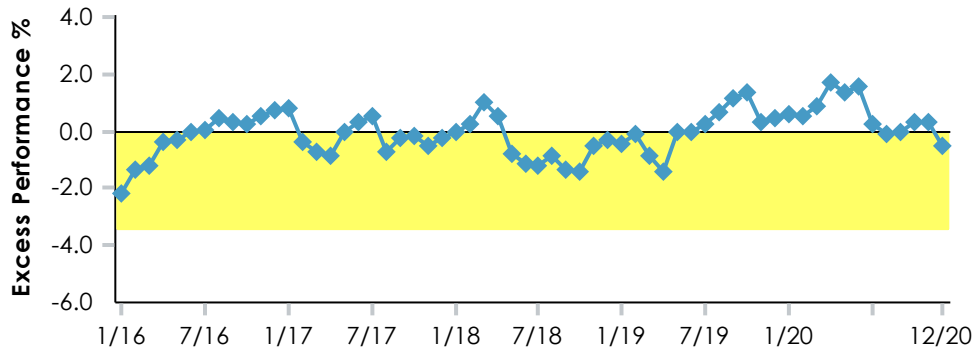
DIGITAL TURBINE INC	0.85%
NATERA INC	0.85%
STIFEL FINANCIAL CORP	0.84%
ADVANCED DRAINAGE SYSTEMS INC	0.76%
WORKIVA INC CLASS A	0.74%
BMC STOCK HOLDINGS INC	0.73%
TRINET GROUP INC ORDINARY SHARES	0.73%
PLUG POWER INC ORDINARY SHARES	0.70%
RENT-A-CENTER INC ORDINARY SHARES	0.70%
BJ'S WHOLESALE CLUB HOLDINGS INC	0.69%

#### Top Countries as of December 31, 2020

United States	99.68%
Puerto Rico	0.33%

# TIAA-CREF Social Choice Equity I vs. Russell 3000 Index

## Short-term (Rolling 12 Months Excess Performance)

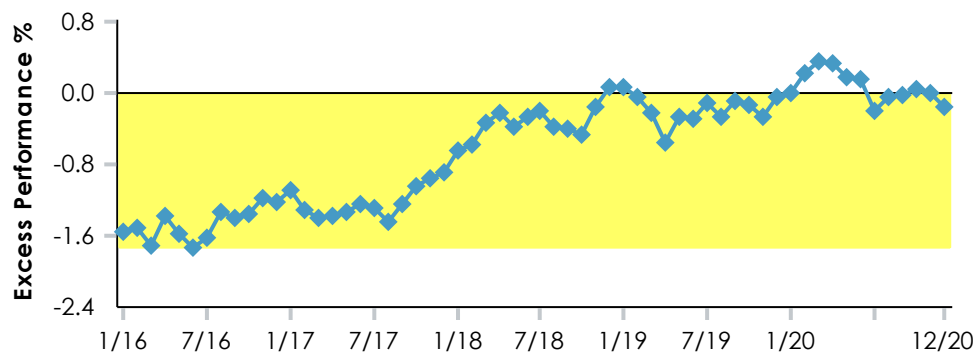


### Short-Term Performance

Positive

Probationary Performance -5.00%

## Medium-term (Rolling 36 Months Excess Performance)

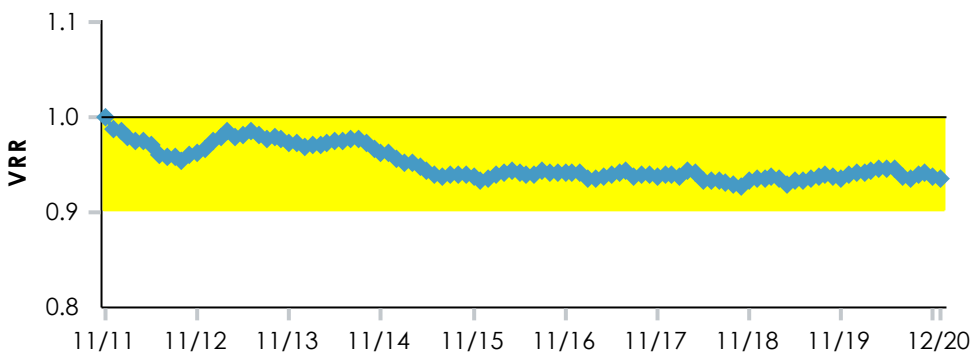


### Medium-Term Performance

Positive

Probationary Performance -2.50%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Acceptable

Probationary Performance < 0.90

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Social Choice Equity I	14.1 (20)	20.3 (28)	14.3 (28)	15.5 (17)	14.4 (38)
Russell 3000 Index	14.7 (15)	20.9 (24)	14.5 (27)	15.4 (18)	15.3 (17)
IM U.S. Large Cap Core Equity (MF) Median	12.0	16.0	12.4	13.6	13.9

Monitoring Status

Acceptable



### TIAA-CREF Social Choice Equity I | As of December 31, 2020

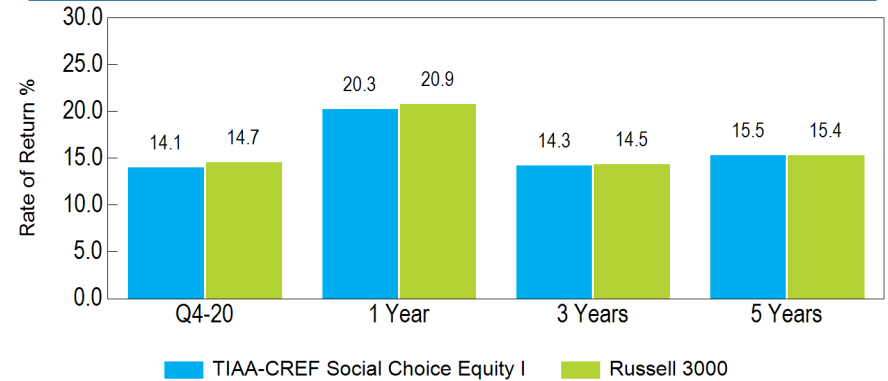
#### Description:

The investment seeks a favorable long-term total return that reflects the investment performance of the overall U.S. stock market while giving special consideration to certain ESG criteria. Under normal circumstances, the fund invests at least 80% of its assets in equity securities. The Advisor attempts to achieve the return of the U.S. stock market as represented by its benchmark, the Russell 3000® Index, while investing in companies whose activities are consistent with the fund's ESG criteria.

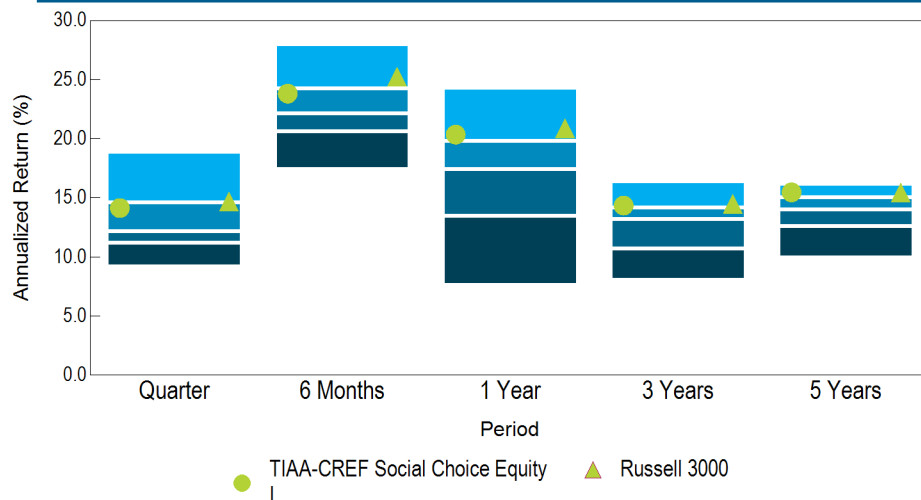
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TISCX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	84,993.86
<b>Net Assets (\$mm)</b>	4,690.59
<b>% Assets in Top 10 Holdings</b>	21.75
<b>Total Number of Holdings</b>	631
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.17%
<b>Closed to New Investors</b>	No

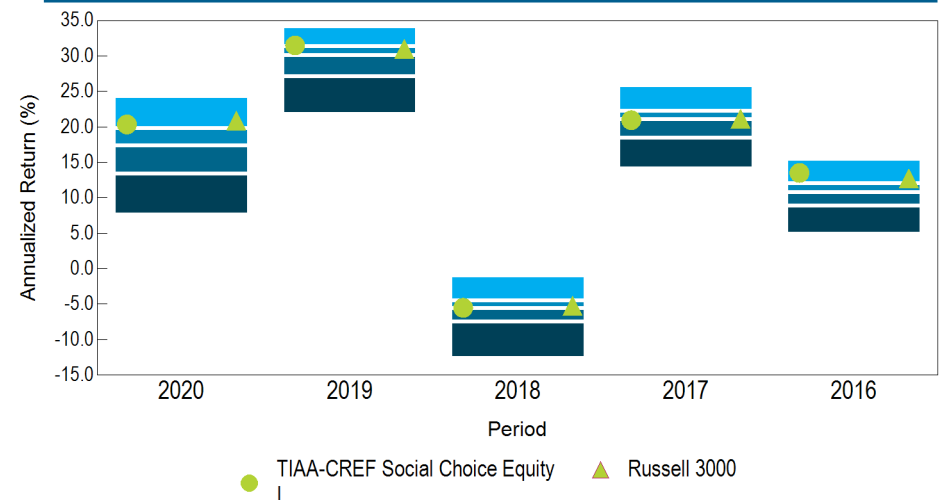
#### Return Summary



#### Large Blend MStar MF Return Comparison

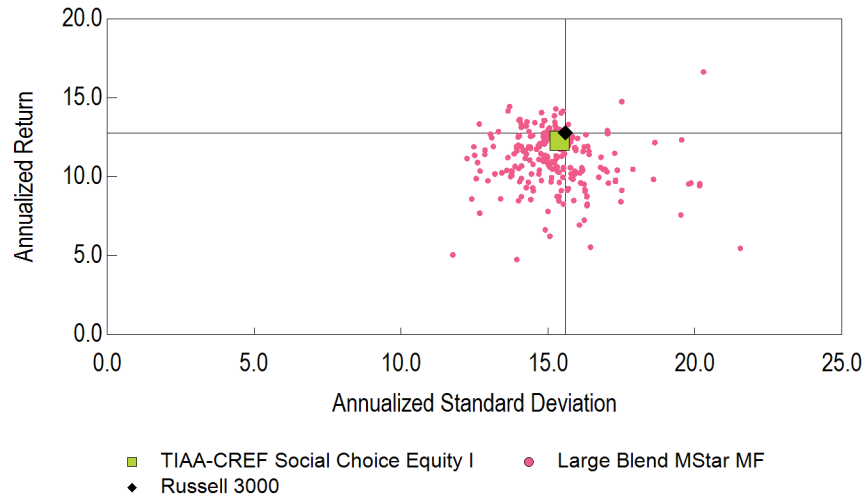


#### Large Blend MStar MF Return Comparison

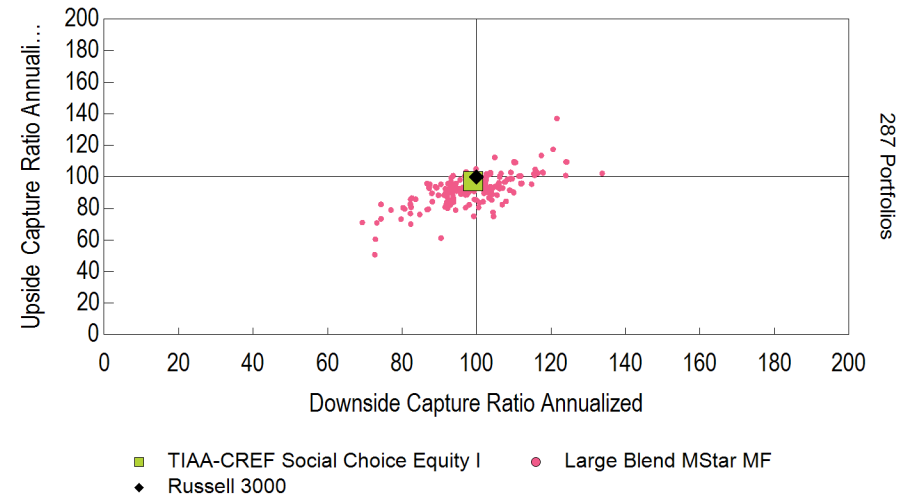


### TIAA-CREF Social Choice Equity I | As of December 31, 2020

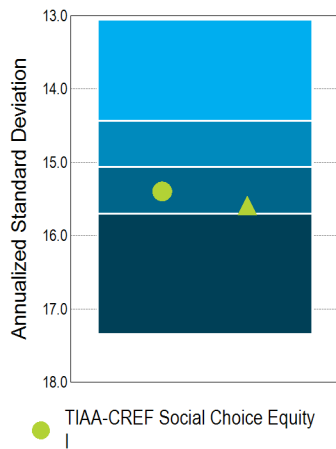
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



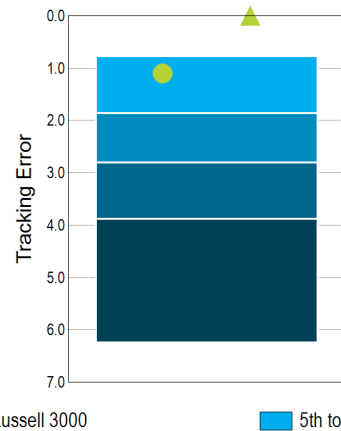
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



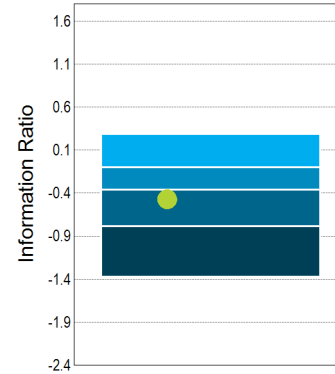
Annualized Standard Deviation



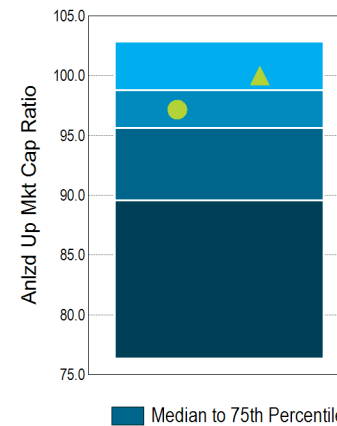
Tracking Error



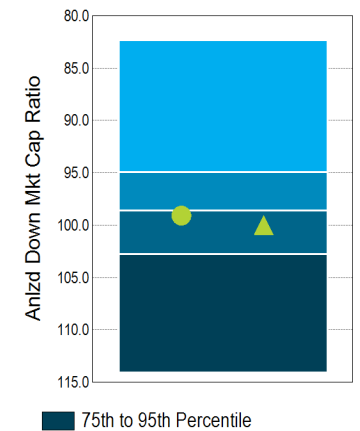
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### TIAA-CREF Social Choice Equity I | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.66
Average Market Cap (\$mm)	84,993.86
Price/Earnings	22.20
Price/Book	3.64
Price/Sales	2.52
Price/Cash Flow	14.89
Dividend Yield	1.54
Number of Equity Holdings	623
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.01%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	2.66%
COMMUNICATION SERVICES	9.37%
CONSUMER CYCLICAL	11.21%
CONSUMER DEFENSIVE	6.54%
ENERGY	2.27%
FINANCIAL SERVICES	11.65%
HEALTHCARE	14.82%
INDUSTRIALS	9.46%
REAL ESTATE	3.13%
TECHNOLOGY	26.33%
UTILITIES	2.57%

#### Top Holdings as of December 31, 2020

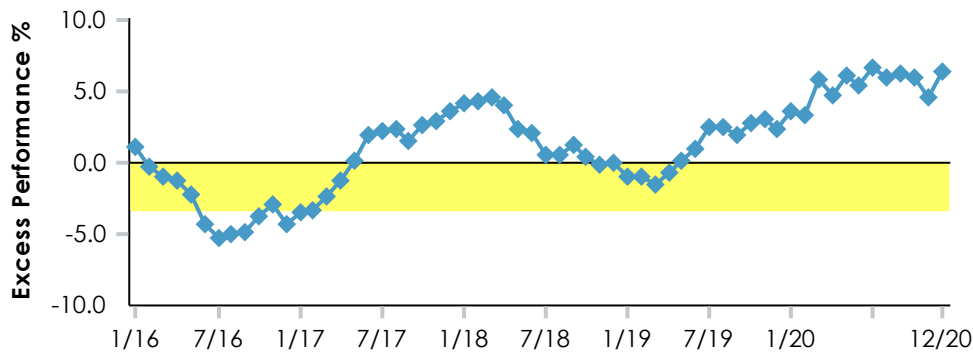
APPLE INC ORDINARY SHARES	6.01%
MICROSOFT CORP	4.79%
TESLA INC	1.88%
ALPHABET INC A	1.61%
ALPHABET INC CLASS C	1.58%
PROCTER & GAMBLE CO ORDINARY SHARES	1.35%
NVIDIA CORP ORDINARY SHARES	1.27%
ADOBE INC	1.11%
THE HOME DEPOT INC ORDINARY SHARES	1.08%
VERIZON COMMUNICATIONS INC ORDINARY SHARES	1.07%

#### Top Countries as of December 31, 2020

United States	98.56%
United Kingdom	0.90%
Switzerland	0.51%
Canada	0.02%
Ireland	0.01%

# TIAA-CREF Real Estate Securities I vs. FTSE NAREIT All Equity REITs

## Short-term (Rolling 12 Months Excess Performance)

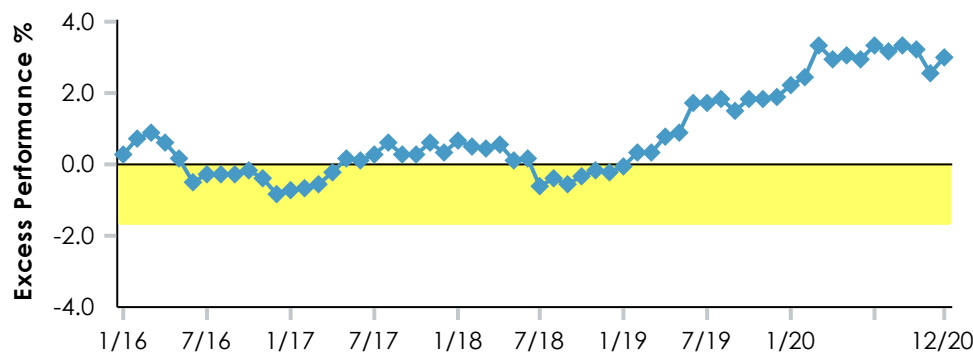


### Short-Term Performance

Positive

Probationary Performance -3.50%

## Medium-term (Rolling 36 Months Excess Performance)

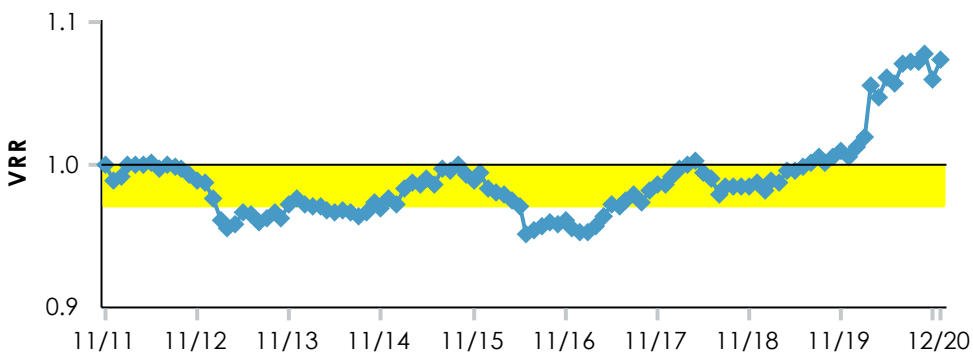


### Medium-Term Performance

Positive

Probationary Performance -1.75%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Real Estate Securities I	8.3 (74)	1.3 (9)	8.4 (6)	8.4 (5)	10.7 (4)
FTSE NAREIT All Equity REITs	8.1 (77)	-5.1 (61)	5.4 (33)	6.7 (18)	9.9 (14)
IM Real Estate Sector (MF) Median	9.2	-4.2	4.7	5.0	8.4

Monitoring Status

Positive

### TIAA-CREF Real Estate Securities I | As of December 31, 2020

#### Description:

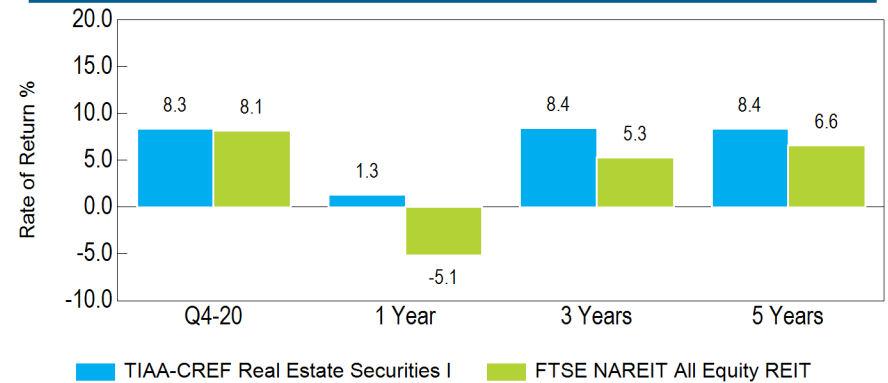
The investment seeks to obtain a favorable long-term total return through both capital appreciation and current income, by investing primarily in equity securities of companies principally engaged in or related to the real estate industry.

The fund invests at least 80% of its assets in the securities of companies that are principally engaged in or related to the real estate industry, including those that own significant real estate assets. It may invest up to 15% of its assets in real estate securities of foreign issuers and up to 20% of its assets in equity and debt securities of issuers that are not engaged in or related to the real estate industry.

#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TIREX
<b>Morningstar Category</b>	Real Estate
<b>Average Market Cap (\$mm)</b>	20,979.27
<b>Net Assets (\$mm)</b>	2,047.04
<b>% Assets in Top 10 Holdings</b>	44.00
<b>Total Number of Holdings</b>	66
<b>Manager Name</b>	David Copp
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.50%
<b>Closed to New Investors</b>	No

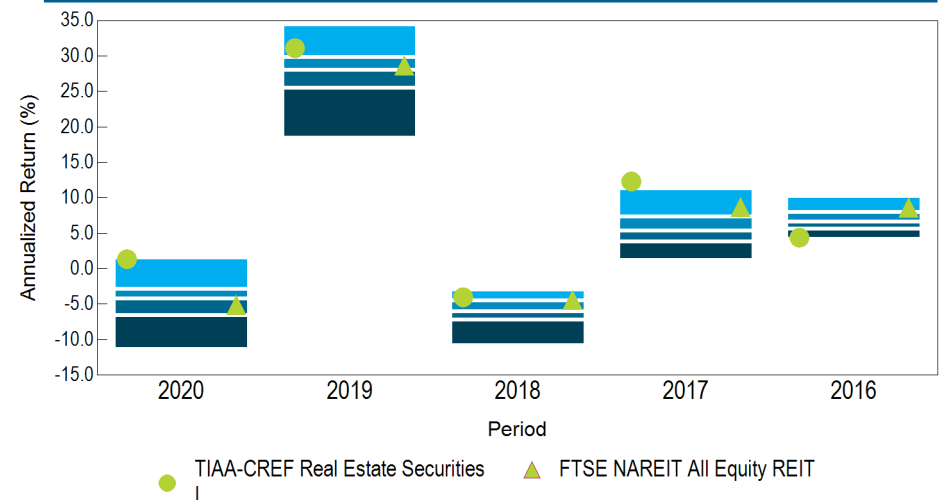
#### Return Summary



#### Real Estate MStar MF Return Comparison

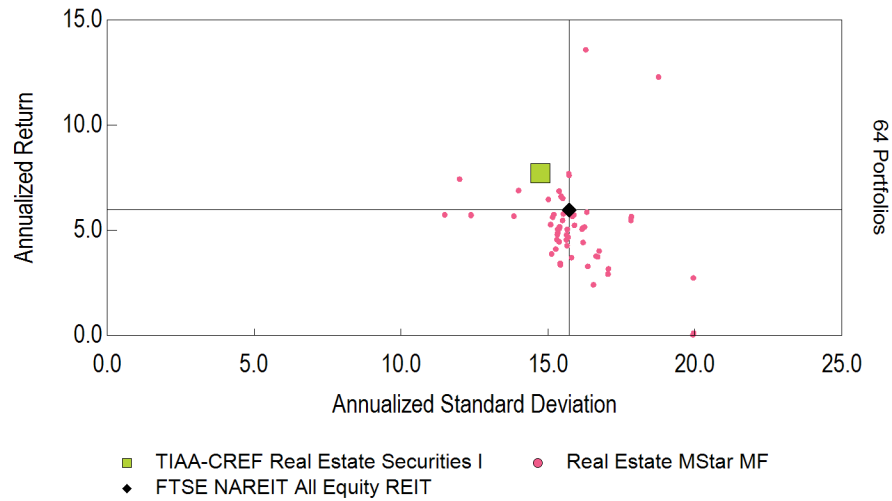


#### Real Estate MStar MF Return Comparison

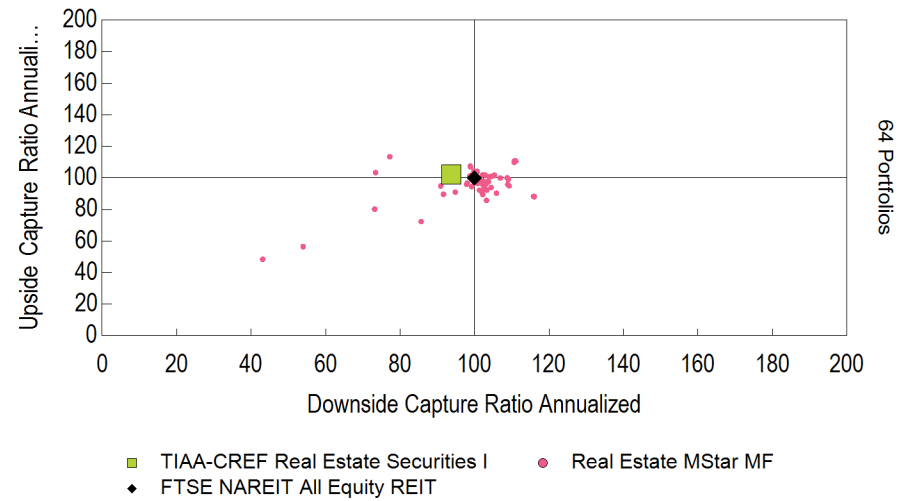


### TIAA-CREF Real Estate Securities I | As of December 31, 2020

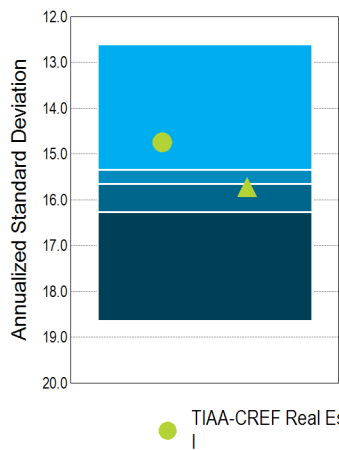
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



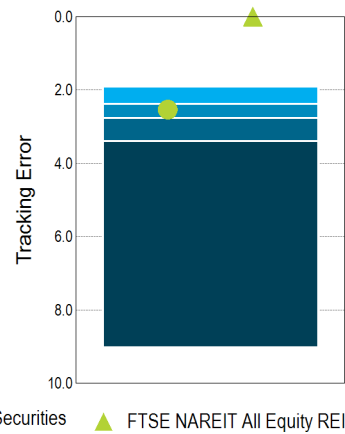
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



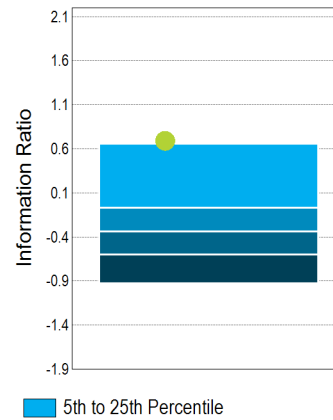
Annualized Standard Deviation



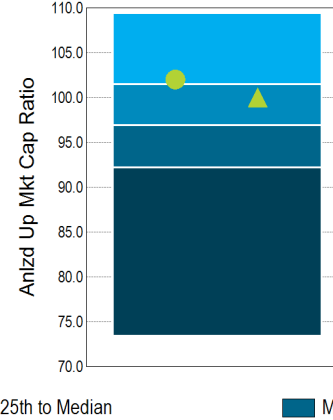
Tracking Error



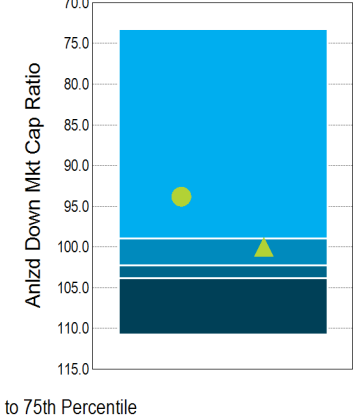
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● TIAA-CREF Real Estate Securities I   
 ▲ FTSE NAREIT All Equity REIT   
  5th to 25th Percentile   
  25th to Median   
  Median to 75th Percentile

### TIAA-CREF Real Estate Securities I | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.41
Average Market Cap (\$mm)	20,979.27
Price/Earnings	43.20
Price/Book	2.63
Price/Sales	8.27
Price/Cash Flow	16.52
Dividend Yield	3.20
Number of Equity Holdings	58
R-Squared (3 Year)	0.98
Alpha (3 Year)	0.27%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	0.00%
COMMUNICATION SERVICES	0.00%
CONSUMER CYCLICAL	3.94%
CONSUMER DEFENSIVE	0.00%
ENERGY	0.00%
FINANCIAL SERVICES	0.00%
HEALTHCARE	0.00%
INDUSTRIALS	0.00%
REAL ESTATE	93.44%
TECHNOLOGY	2.62%
UTILITIES	0.00%

#### Top Holdings as of December 31, 2020

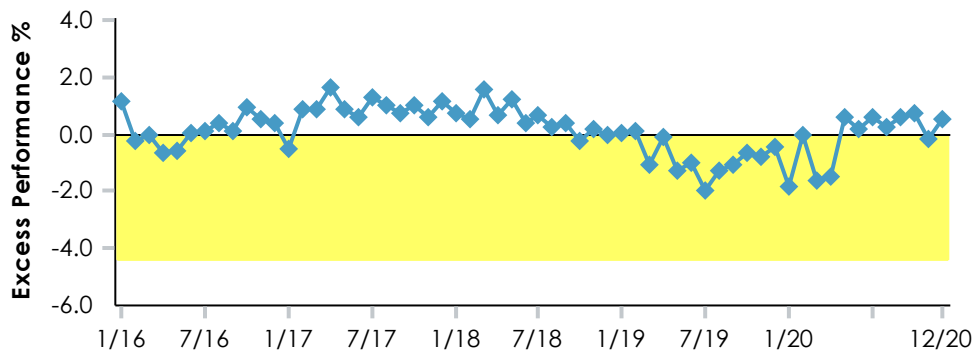
AMERICAN TOWER CORP ORDINARY SHARES	6.93%
PROLOGIS INC	6.72%
EQUINIX INC	5.78%
SIMON PROPERTY GROUP INC ORDINARY SHARES	4.96%
CROWN CASTLE INTERNATIONAL CORP ORDINARY SHARES	4.03%
SUN COMMUNITIES INC ORDINARY SHARES	3.33%
REXFORD INDUSTRIAL REALTY INC ORDINARY SHARES	3.31%
WELLTOWER INC	3.05%
EQUITY LIFESTYLE PROPERTIES INC ORDINARY SHARES	2.99%
INVITATION HOMES INC	2.90%

#### Top Countries as of December 31, 2020

United States	97.38%
China	1.37%
Australia	1.24%

# DFA Large Cap International I vs. MSCI World ex-U.S. (net)

## Short-term (Rolling 12 Months Excess Performance)

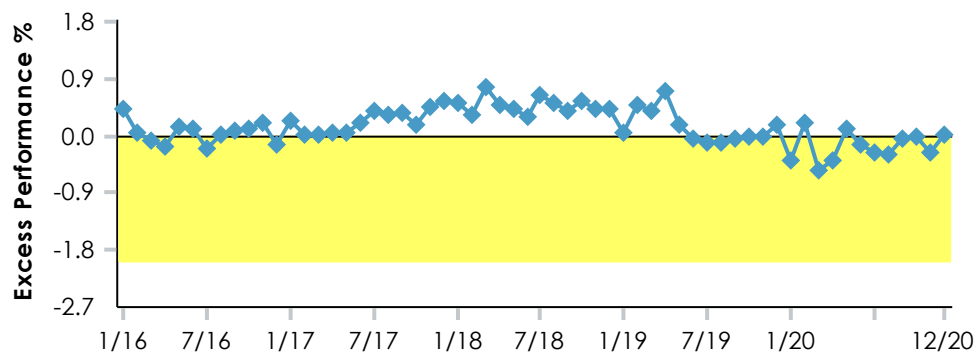


### Short-Term Performance

Positive

Probationary Performance -4.50%

## Medium-term (Rolling 36 Months Excess Performance)

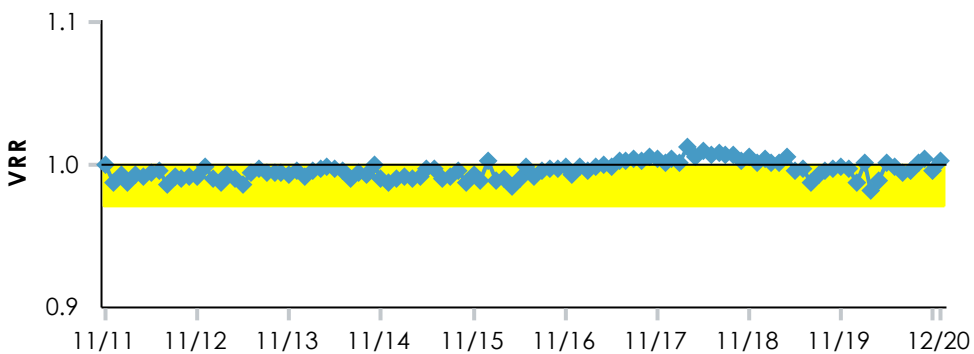


### Medium-Term Performance

Positive

Probationary Performance -2.00%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
DFA Large Cap International I	15.9 (39)	8.1 (43)	4.2 (44)	7.9 (29)	7.1 (48)
MSCI World ex-U.S. (net)	15.8 (43)	7.6 (50)	4.2 (45)	7.6 (38)	7.1 (49)
IM International Multi-Cap Core Equity (MF) Median	15.7	7.5	3.9	7.2	7.1

Monitoring Status

Positive



### DFA Large Cap International I | As of December 31, 2020

#### Description:

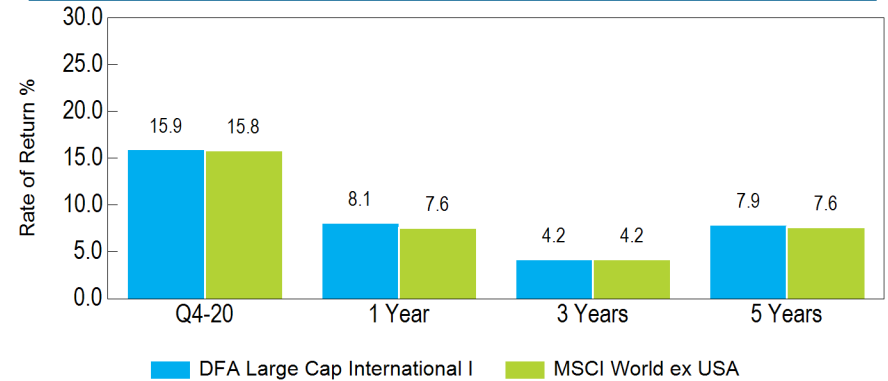
The investment seeks long-term capital appreciation.

The Portfolio will invest at least 80% of its net assets in securities of large cap companies in the particular markets in which the Portfolio invests. The Advisor determines the minimum market capitalization of a large company with respect to each country or region in which the Portfolio invests. It also may purchase or sell futures contracts and options on futures contracts for foreign or U.S. equity securities and indices, to adjust market exposure based on actual or expected cash inflows to or outflows from the Portfolio.

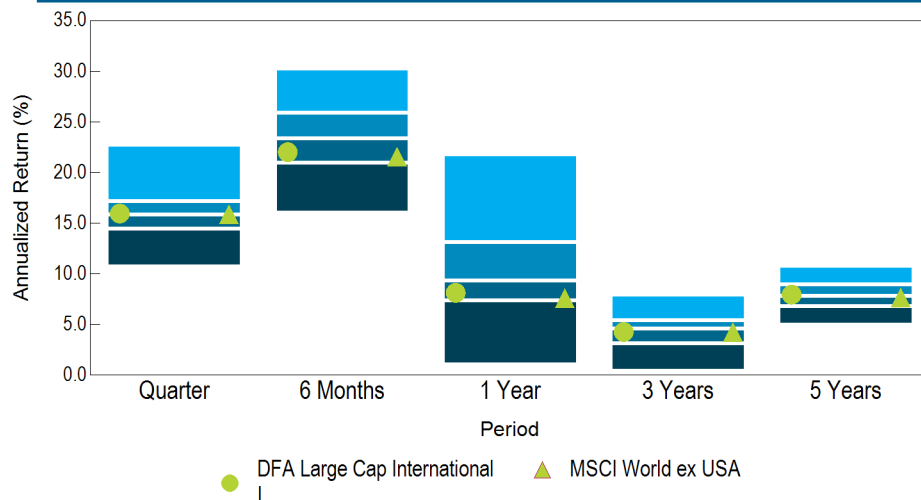
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	DFALX
<b>Morningstar Category</b>	Foreign Large Blend
<b>Average Market Cap (\$mm)</b>	32,511.45
<b>Net Assets (\$mm)</b>	5,503.98
<b>% Assets in Top 10 Holdings</b>	9.65
<b>Total Number of Holdings</b>	1,295
<b>Manager Name</b>	Jed S. Fogdall
<b>Manager Tenure</b>	11
<b>Expense Ratio</b>	0.22%
<b>Closed to New Investors</b>	No

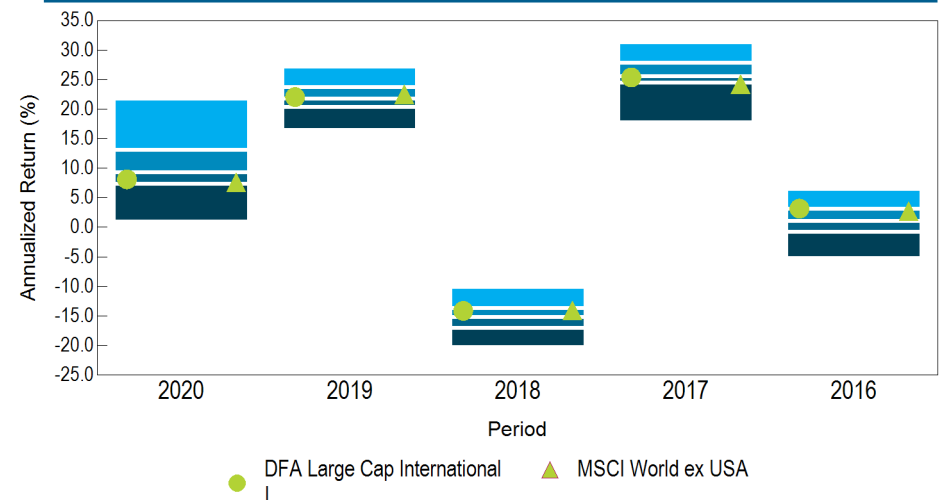
#### Return Summary



#### Foreign Large Blend MStar MF Return Comparison

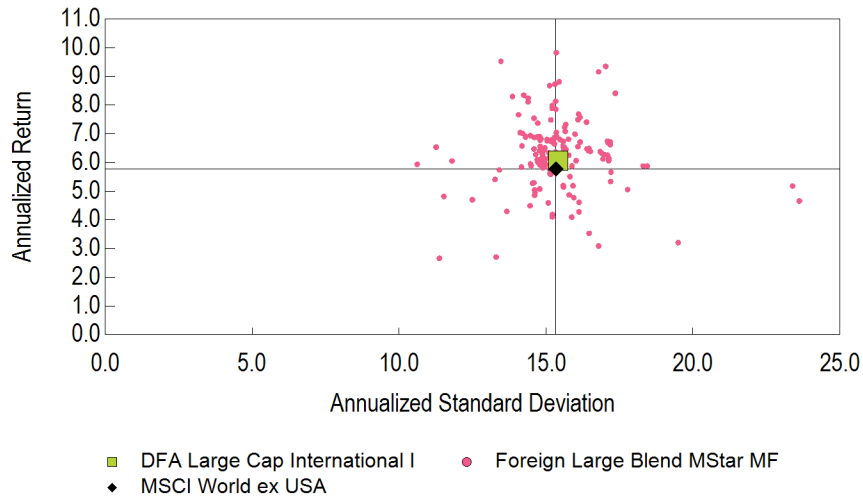


#### Foreign Large Blend MStar MF Return Comparison

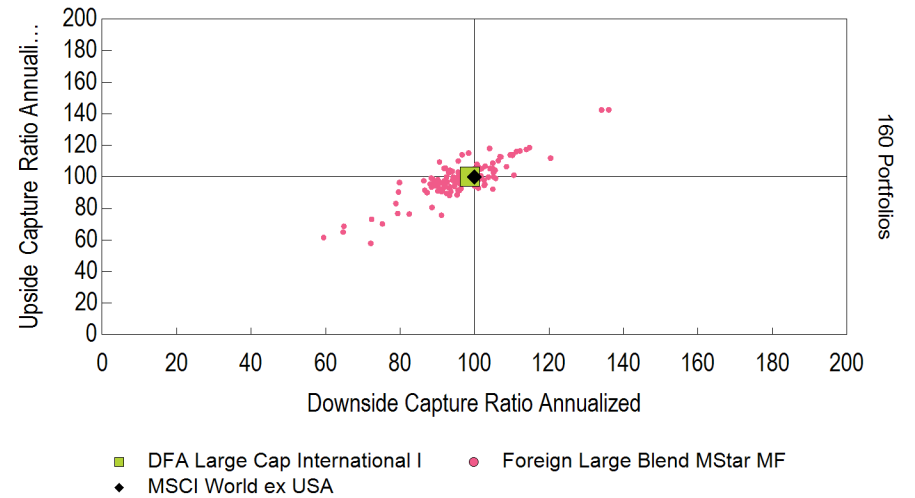


### DFA Large Cap International I | As of December 31, 2020

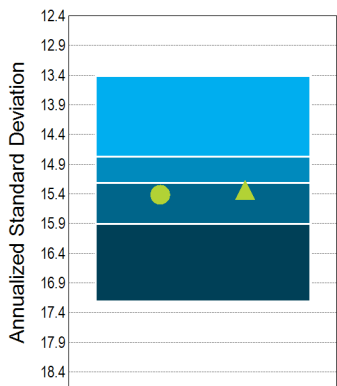
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



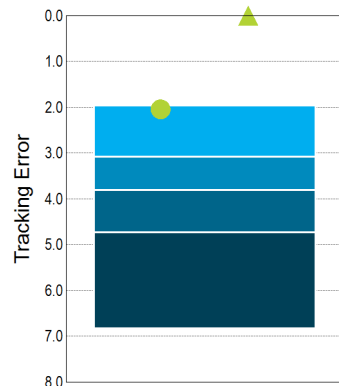
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



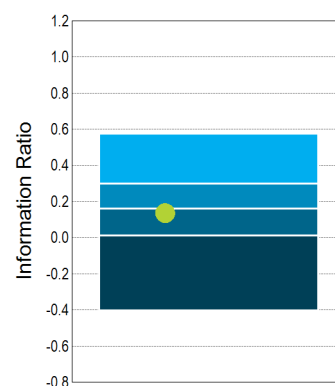
Annualized Standard Deviation



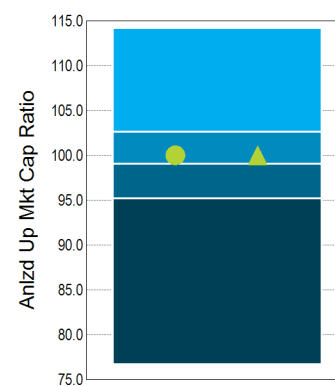
Tracking Error



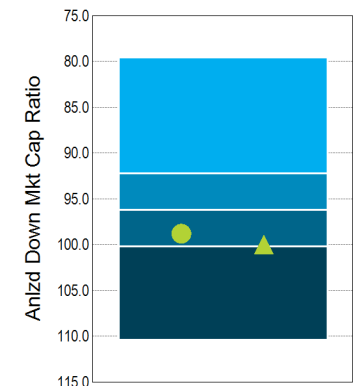
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● DFA Large Cap International I    ▲ MSCI World ex USA    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.15
Average Market Cap (\$mm)	32,511.45
Price/Earnings	16.30
Price/Book	1.68
Price/Sales	1.23
Price/Cash Flow	9.33
Dividend Yield	2.54
Number of Equity Holdings	1,277
R-Squared (3 Year)	0.99
Alpha (3 Year)	0.00%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	10.07%
COMMUNICATION SERVICES	6.69%
CONSUMER CYCLICAL	12.02%
CONSUMER DEFENSIVE	10.68%
ENERGY	4.12%
FINANCIAL SERVICES	15.28%
HEALTHCARE	11.42%
INDUSTRIALS	15.89%
REAL ESTATE	1.68%
TECHNOLOGY	8.61%
UTILITIES	3.54%

#### Top Holdings as of December 31, 2020

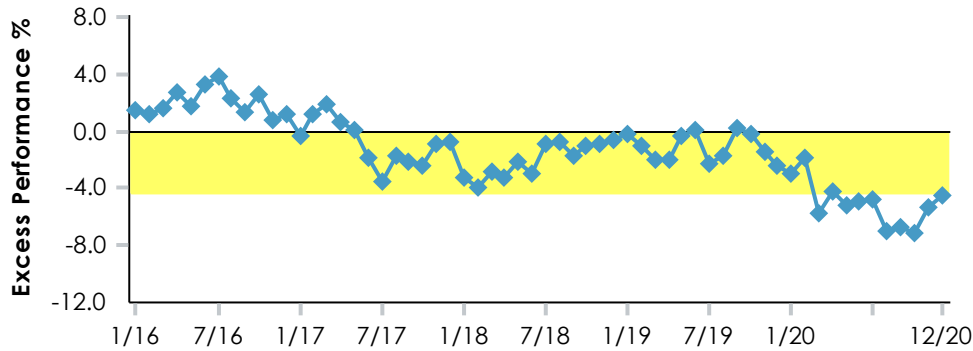
NESTLE SA	1.96%
ROCHE HOLDING AG DIVIDEND RIGHT CERT.	1.43%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.05%
TOYOTA MOTOR CORP	0.85%
ROYAL BANK OF CANADA	0.82%
NOVARTIS AG	0.76%
SONY CORP	0.73%
AIA GROUP LTD	0.72%
NOVO NORDISK A/S B	0.68%
ASML HOLDING NV ADR	0.64%

#### Top Countries as of December 31, 2020

Japan	23.98%
United Kingdom	13.59%
France	9.38%
Canada	8.71%
Switzerland	8.45%
Germany	7.52%
Australia	6.23%
Netherlands	3.72%
Sweden	3.07%
Denmark	2.55%

# DFA Emerging Markets Core Equity I vs. MSCI Emerging Markets (Net) Index

## Short-term (Rolling 12 Months Excess Performance)

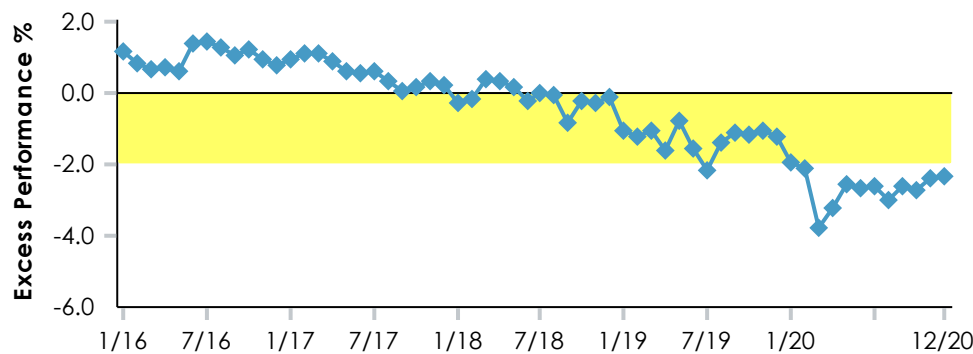


### Short-Term Performance

Caution

Probationary Performance -4.50%

## Medium-term (Rolling 36 Months Excess Performance)

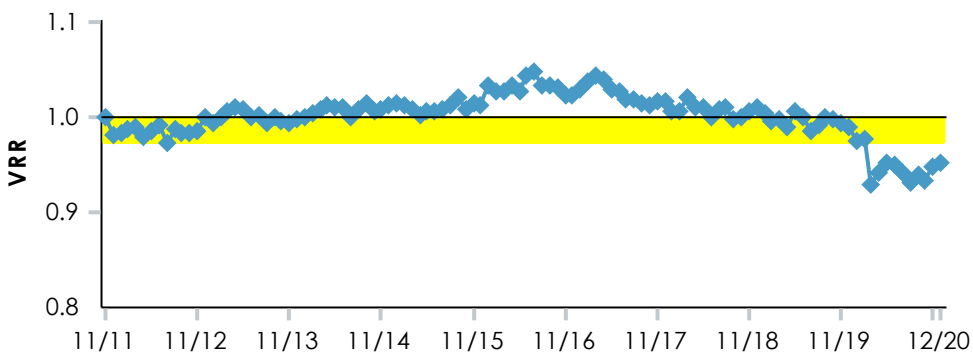


### Medium-Term Performance

Caution

Probationary Performance -2.00%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Caution

Probationary Performance < 0.97

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
DFA Emerging Markets Core Equity I	21.2 (26)	13.9 (68)	3.8 (70)	11.4 (56)	5.6 (53)
MSCI Emerging Markets (Net) Index	19.7 (41)	18.3 (46)	6.2 (44)	12.8 (38)	6.2 (44)
IM Emerging Markets Equity (MF) Median	19.1	17.5	5.6	11.7	5.9

Monitoring Status

Caution/On Watch

### DFA Emerging Markets Core Equity I | As of December 31, 2020

#### Description:

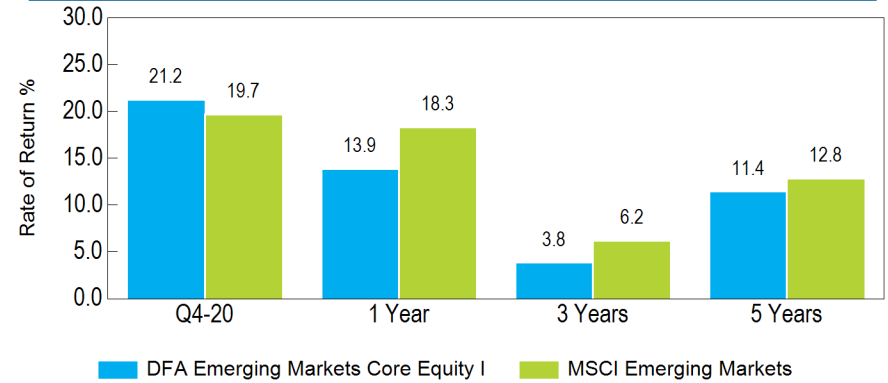
The investment seeks long-term capital appreciation.

The Portfolio purchases a broad and diverse group of securities associated with emerging markets, which may include frontier markets (emerging market countries in an earlier stage of development), authorized for investment by Dimensional Fund Advisors LP's (the "Advisor") Investment Committee ("Approved Markets"), with a greater emphasis on small capitalization, value, and/or high profitability companies.

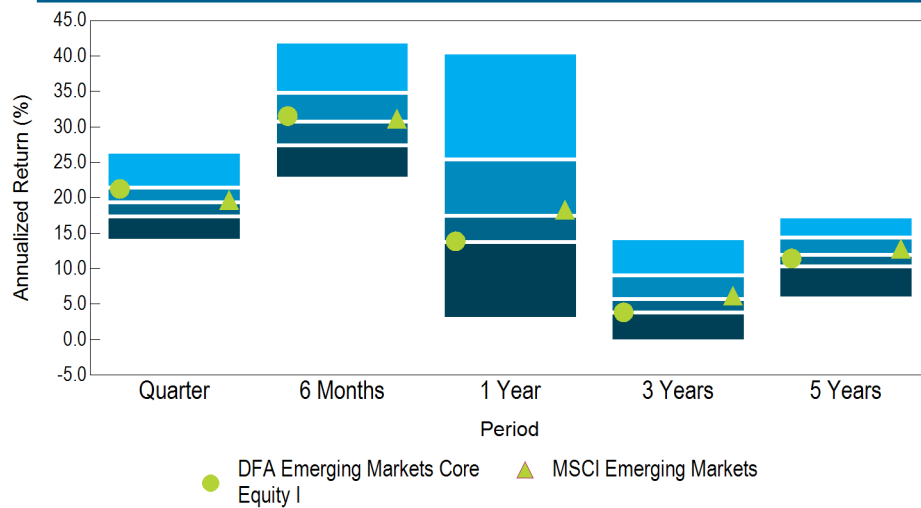
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	DFCEX
<b>Morningstar Category</b>	Diversified Emerging Mkts
<b>Average Market Cap (\$mm)</b>	17,163.17
<b>Net Assets (\$mm)</b>	29,061.30
<b>% Assets in Top 10 Holdings</b>	20.28
<b>Total Number of Holdings</b>	5,609
<b>Manager Name</b>	Jed S. Fogdall
<b>Manager Tenure</b>	11
<b>Expense Ratio</b>	0.48%
<b>Closed to New Investors</b>	No

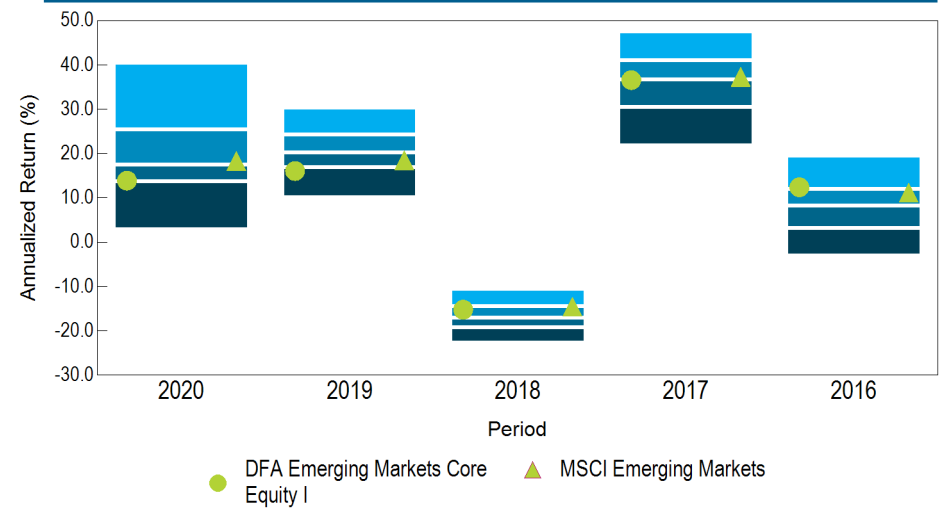
#### Return Summary



#### Diversified Emerging Mkts MStar MF Return Comparison

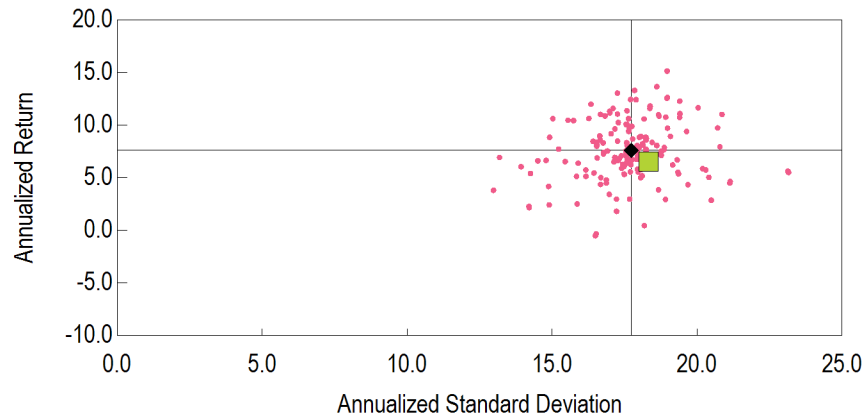


#### Diversified Emerging Mkts MStar MF Return Comparison

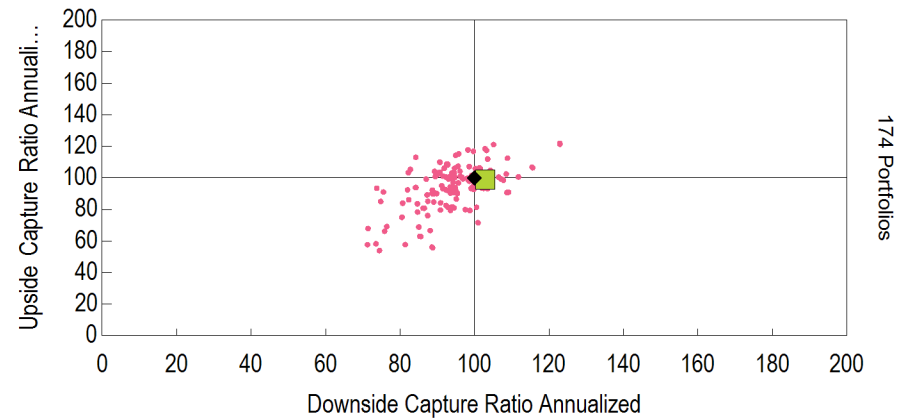


### DFA Emerging Markets Core Equity I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



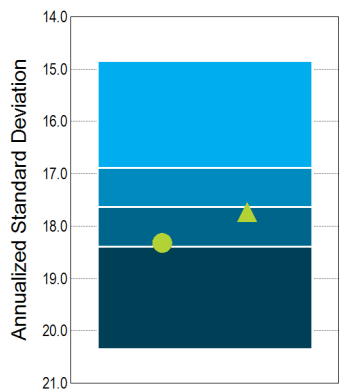
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



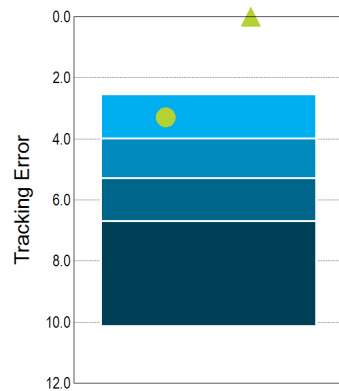
- DFA Emerging Markets Core Equity I
- Diversified Emerging Mkts MStar MF
- ◆ MSCI Emerging Markets

- DFA Emerging Markets Core Equity I
- Diversified Emerging Mkts MStar MF
- ◆ MSCI Emerging Markets

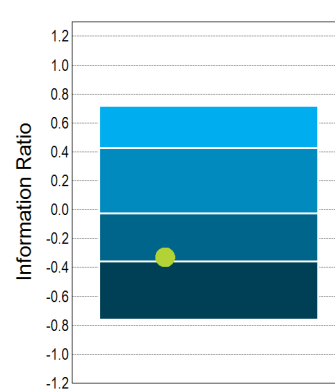
Annualized Standard Deviation



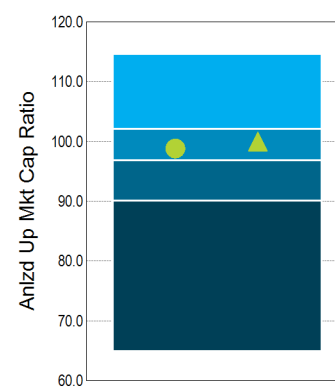
Tracking Error



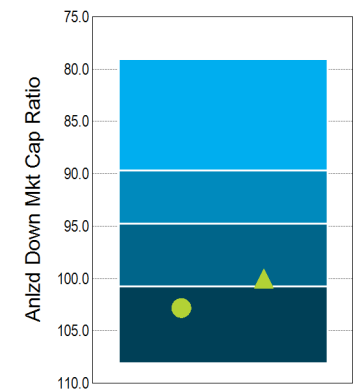
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- DFA Emerging Markets Core Equity I
- ▲ MSCI Emerging Markets
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

### DFA Emerging Markets Core Equity I | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.11
Average Market Cap (\$mm)	17,163.17
Price/Earnings	12.60
Price/Book	1.44
Price/Sales	1.04
Price/Cash Flow	6.57
Dividend Yield	2.71
Number of Equity Holdings	5,549
R-Squared (3 Year)	0.97
Alpha (3 Year)	-0.19%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	10.29%
COMMUNICATION SERVICES	9.73%
CONSUMER CYCLICAL	12.35%
CONSUMER DEFENSIVE	6.31%
ENERGY	5.01%
FINANCIAL SERVICES	15.42%
HEALTHCARE	4.01%
INDUSTRIALS	8.11%
REAL ESTATE	4.07%
TECHNOLOGY	21.92%
UTILITIES	2.77%

#### Top Holdings as of December 31, 2020

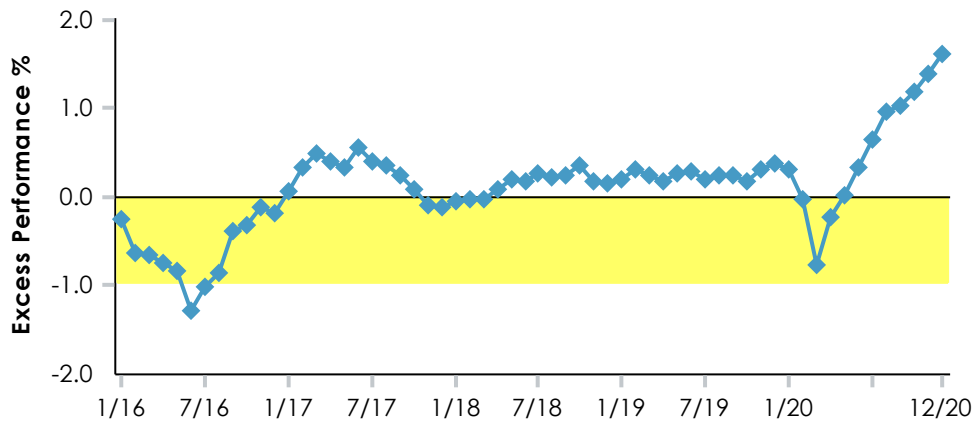
SAMSUNG ELECTRONICS CO LTD	4.65%
TENCENT HOLDINGS LTD	4.32%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.69%
ALIBABA GROUP HOLDING LTD ADR	2.03%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD ADR	1.82%
PING AN INSURANCE (GROUP) CO. OF CHINA LTD CLASS H	1.28%
VALE SA	1.01%
CHINA CONSTRUCTION BANK CORP CLASS H	0.87%
RELIANCE INDUSTRIES LTD	0.86%
SK HYNIX INC	0.76%

#### Top Countries as of December 31, 2020

China	32.67%
Taiwan	15.82%
South Korea	14.63%
India	11.17%
Brazil	5.50%
South Africa	4.39%
Mexico	2.36%
Malaysia	2.05%
Thailand	2.03%
Indonesia	1.87%

# Metropolitan West Total Return Bond I vs. BBg BC U.S. Aggregate Index

## Short-term (Rolling 12 Months Excess Performance)

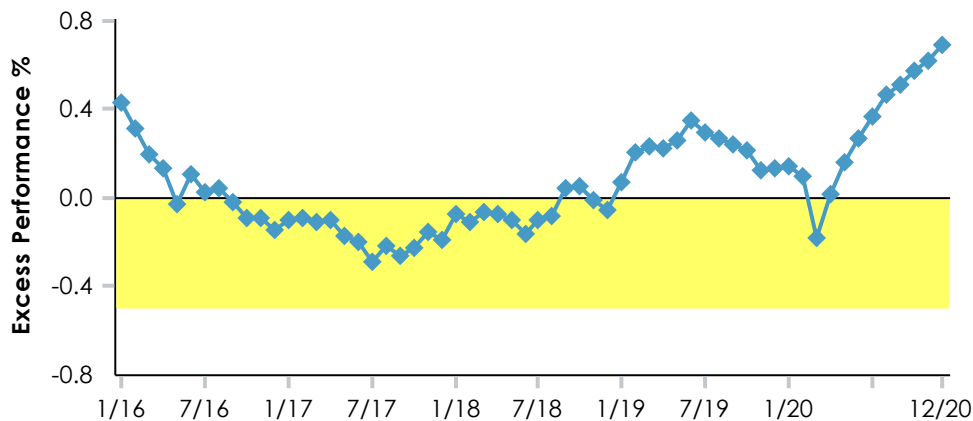


### Short-Term Performance

Positive

Probationary Performance -1.00%

## Medium-term (Rolling 36 Months Excess Performance)



### Medium-Term Performance

Positive

Probationary Performance -0.50%

- Long-term criteria to take effect 1Q 2021

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (10/2015)
Metropolitan West Total Return Bond I	1.2 (84)	9.1 (35)	6.0 (34)	4.8 (65)	4.5 (66)
BBg BC U.S. Aggregate Index	0.7 (94)	7.5 (73)	5.3 (65)	4.4 (79)	4.1 (79)
IM U.S. Broad Market Core+ Fixed Income (MF) Median	2.0	8.5	5.6	5.1	4.7

### Monitoring Status

**Positive**



### Metropolitan West Total Return Bond I | As of December 31, 2020

#### Description:

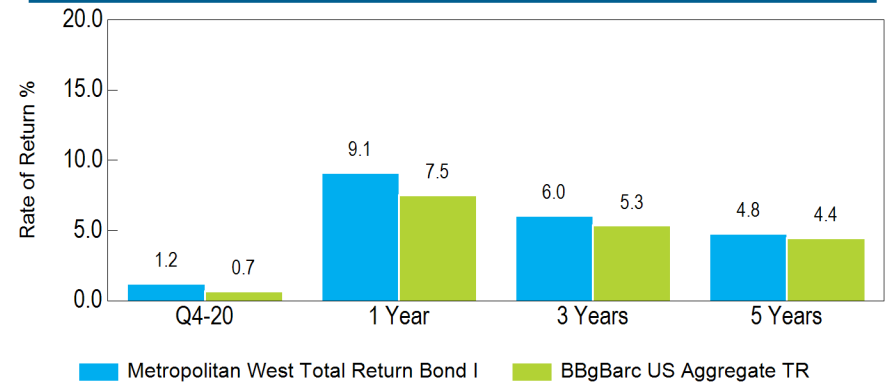
The investment seeks to maximize long-term total return.

The fund pursues its objective by investing, under normal circumstances, at least 80% of its net assets in investment grade fixed income securities or unrated securities determined by the Adviser to be of comparable quality. Up to 20% of the fund's net assets may be invested in securities rated below investment grade or unrated securities determined by the Adviser to be of comparable quality. The fund also invests at least 80% of its net assets plus borrowings for investment purposes in fixed income securities it regards as bonds.

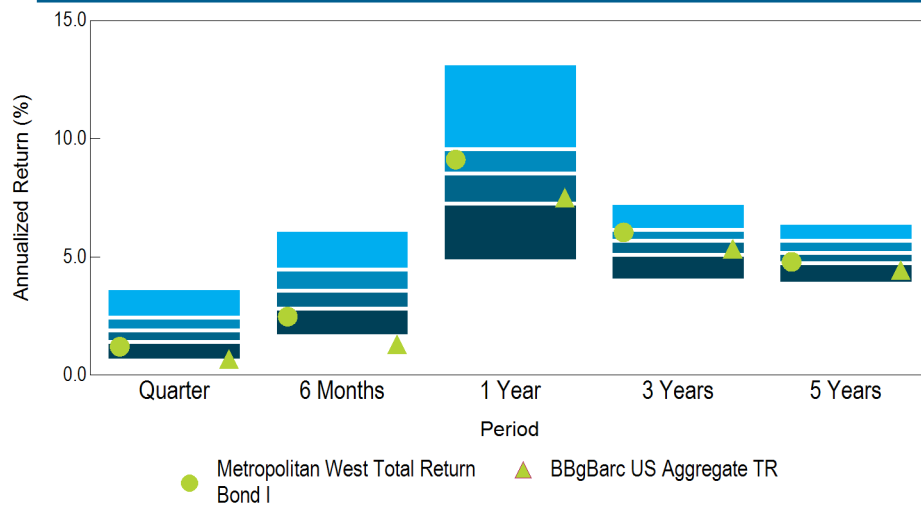
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	MWTIX
<b>Morningstar Category</b>	Intermediate Core-Plus Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	53,023.95
<b>% Assets in Top 10 Holdings</b>	44.84
<b>Total Number of Holdings</b>	1,880
<b>Manager Name</b>	Stephen M. Kane
<b>Manager Tenure</b>	24
<b>Expense Ratio</b>	0.46%
<b>Closed to New Investors</b>	No

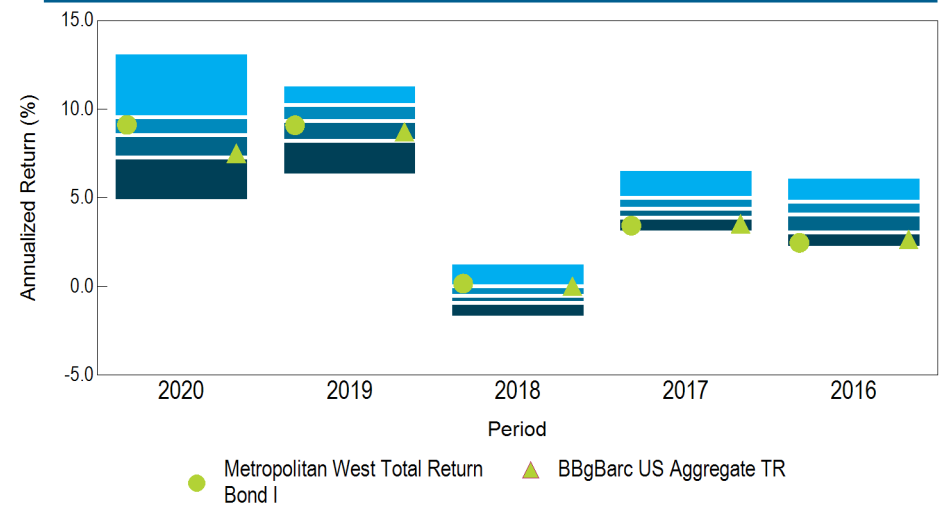
#### Return Summary



#### Intermediate Core Plus Bond MStar MF Return Comparison

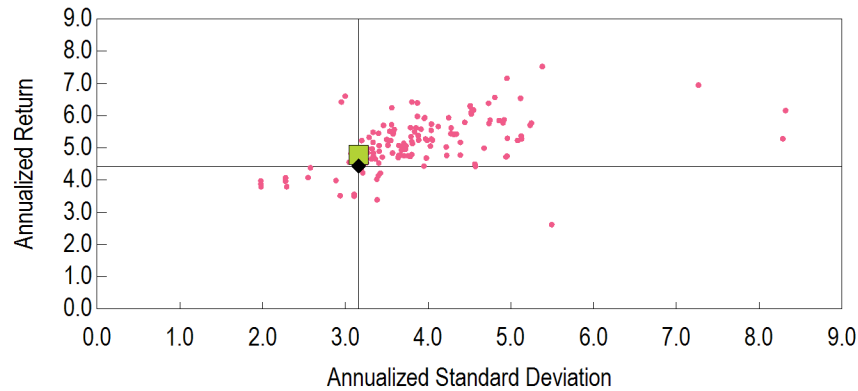


#### Intermediate Core Plus Bond MStar MF Return Comparison



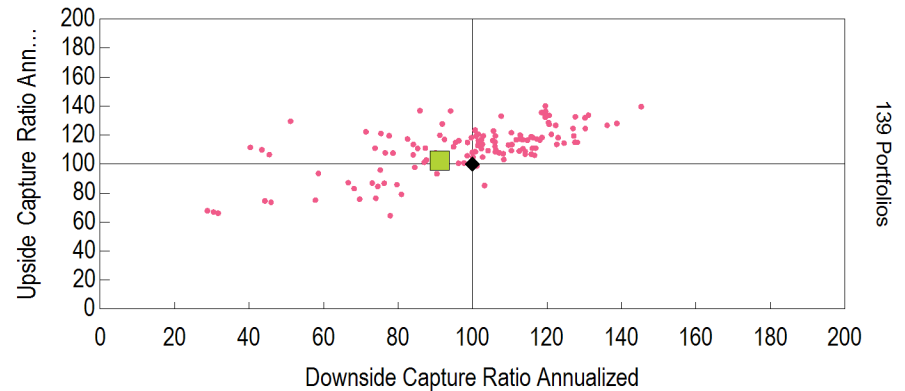
### Metropolitan West Total Return Bond I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending December 31, 2020



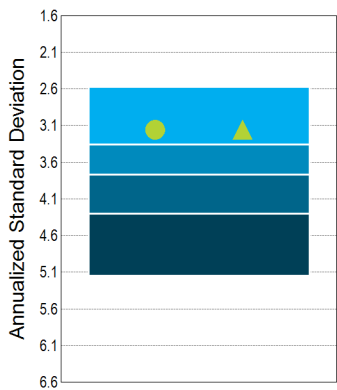
- Metropolitan West Total Return Bond I
- BBgBarc US Aggregate TR
- Intermediate Core Plus Bond MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending December 31, 2020

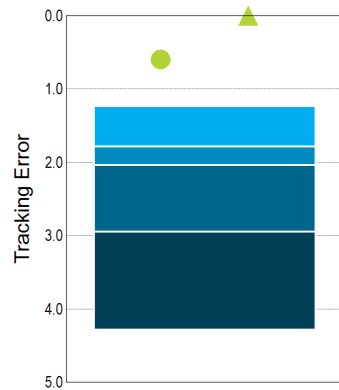


- Metropolitan West Total Return Bond I
- BBgBarc US Aggregate TR
- Intermediate Core Plus Bond MStar MF

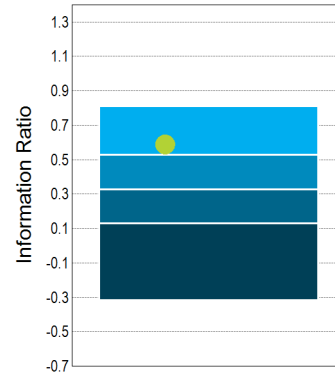
Annualized Standard Deviation



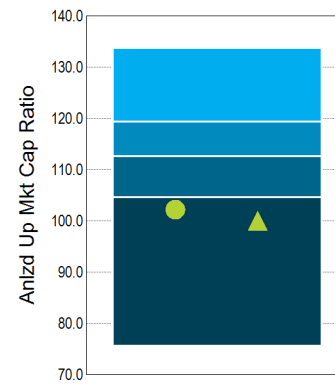
Tracking Error



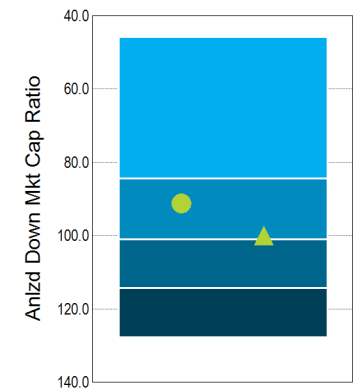
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- Metropolitan West Total Return Bond I
- BBgBarc US Aggregate TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

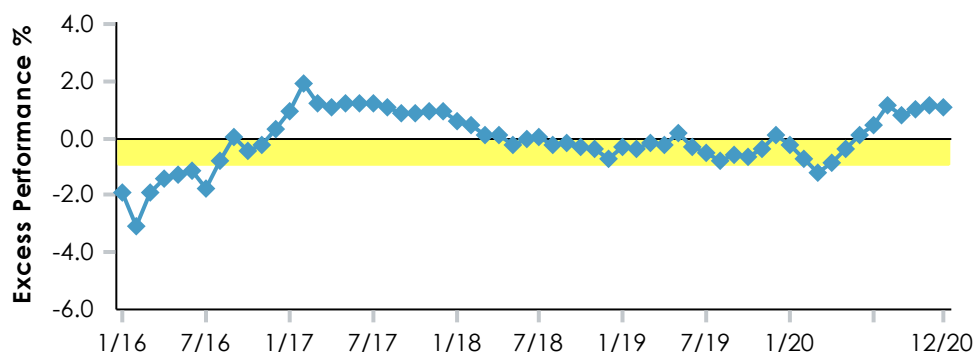
Metropolitan West Total Return Bond I | As of December 31, 2020

Fund Characteristics as of December 31, 2020		Top Holdings as of December 31, 2020		Fixed Income Sectors as of December 31, 2020	
Sharpe Ratio (3 Year)	1.28	UNITED STATES TREASURY NOTES 0.12%	8.08%	GOVERNMENT	38.08%
Average Duration	5.66	UNITED STATES TREASURY NOTES 0.12%	6.26%	MUNICIPAL	1.60%
Average Coupon	2.15%	UNITED STATES TREASURY NOTES 0.38%	5.53%	CORPORATE	18.54%
Average Effective Maturity	8.06	UNITED STATES TREASURY BONDS 1.62%	4.87%	SECURITIZED	36.98%
R-Squared (3 Year)	0.96	UNITED STATES TREASURY NOTES 0.12%	4.61%	CASH & EQUIVALENTS	3.19%
Alpha (3 Year)	0.05%	FEDERAL NATIONAL MORTGAGE ASSOCIATION 2%	4.02%	DERIVATIVE	1.62%
Beta (3 Year)	1.02	FEDERAL NATIONAL MORTGAGE ASSOCIATION 2%	3.35%		
		UNITED STATES TREASURY NOTES 0.38%	3.09%		
		UNITED STATES TREASURY NOTES 0.25%	3.03%		
		GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2%	1.99%		

Credit Quality as of December 31, 2020		Maturities as of December 31, 2020		Top Countries as of December 31, 2020	
AAA	69.13%	1 to 3 Years	20.74%	United States	94.51%
AA	2.87%	3 to 5 Years	11.12%	United Kingdom	1.43%
A	6.60%	5 to 7 Years	5.15%	Cayman Islands	0.93%
BBB	15.26%	7 to 10 Years	8.11%	Mexico	0.51%
BB	2.90%	10 to 15 Years	3.91%	Netherlands	0.50%
B	0.64%	15 to 20 Years	6.94%	Germany	0.40%
Below B	2.59%	20 to 30 Years	26.47%	Ireland	0.38%
Not Rated	0.00%	Greater than 30 Years	16.80%	Belgium	0.35%
				Canada	0.17%
				Indonesia	0.14%

# PIMCO Real Return vs. Bloomberg Barclays U.S. TIPS Index

## Short-term (Rolling 12 Months Excess Performance)

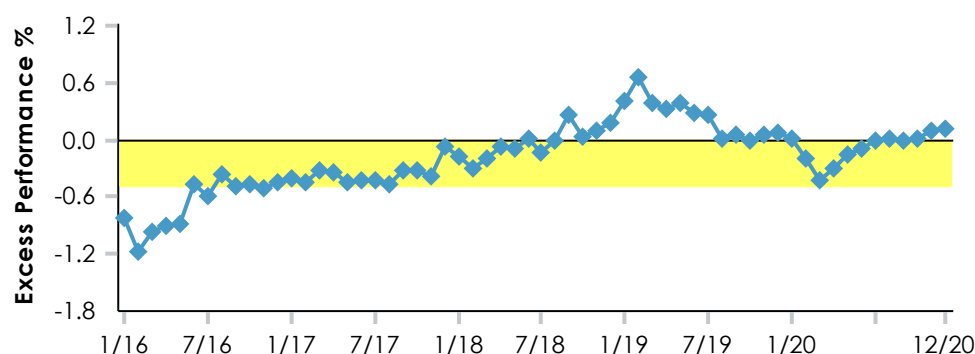


### Short-Term Performance

Positive

Probationary Performance -1.00%

## Medium-term (Rolling 36 Months Excess Performance)

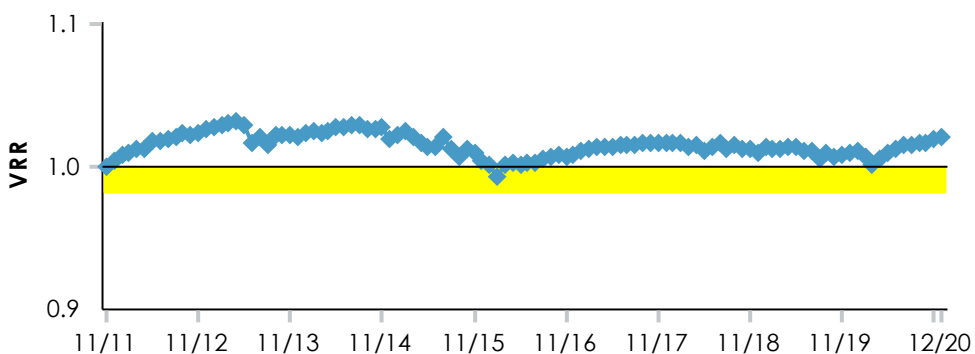


### Medium-Term Performance

Positive

Probationary Performance -0.50%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.98

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
PIMCO Real Return	2.0 (29)	12.1 (14)	6.0 (13)	5.4 (7)	3.0 (4)
Bloomberg Barclays U.S. TIPS Index	1.6 (64)	11.0 (25)	5.9 (17)	5.1 (19)	2.8 (12)
IM U.S. TIPS (MF) Median	1.8	9.6	5.1	4.4	2.1

Monitoring Status

Positive

#### Description:

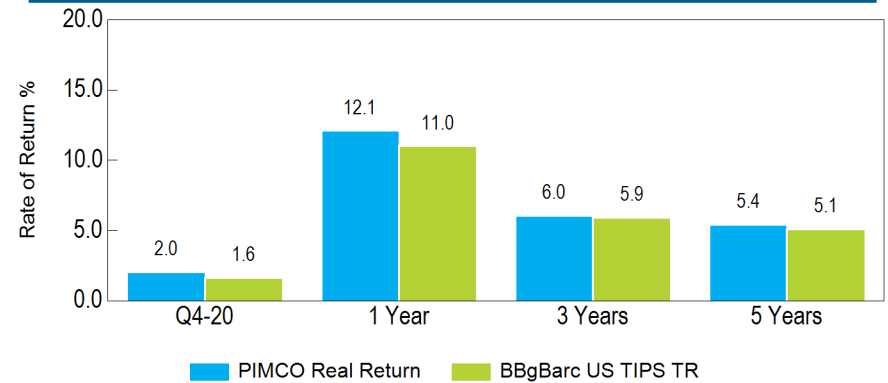
The investment seeks maximum real return, consistent with preservation of capital and prudent investment management.

The fund normally invests at least 80% of its net assets in inflation-indexed bonds of varying maturities issued by the U.S. and non-U.S. governments, their agencies or instrumentalities, and corporations, which may be represented by forwards or derivatives such as options, futures contracts or swap agreements.

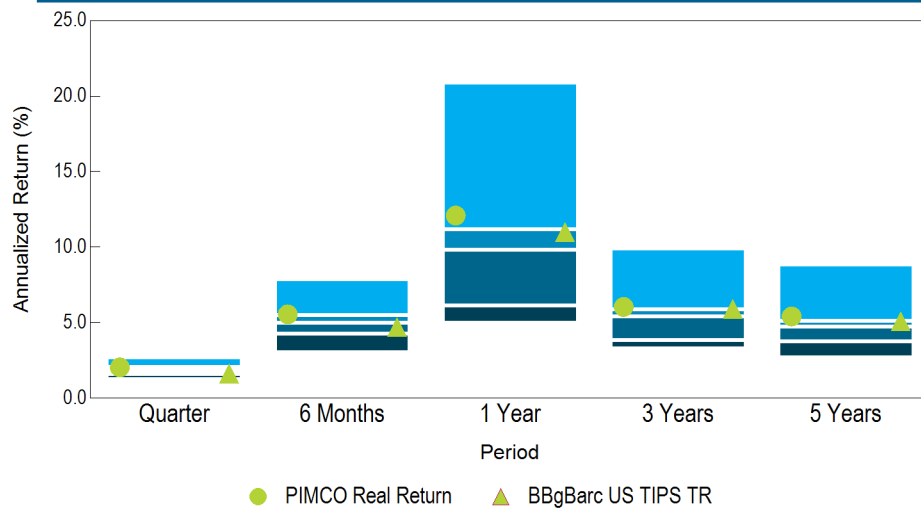
#### Portfolio Fund Information as of September 30, 2020

<b>Ticker</b>	PRRIX
<b>Morningstar Category</b>	Inflation-Protected Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	6,318.51
<b>% Assets in Top 10 Holdings</b>	79.53
<b>Total Number of Holdings</b>	742
<b>Manager Name</b>	Stephen A. Rodosky
<b>Manager Tenure</b>	2
<b>Expense Ratio</b>	0.53%
<b>Closed to New Investors</b>	No

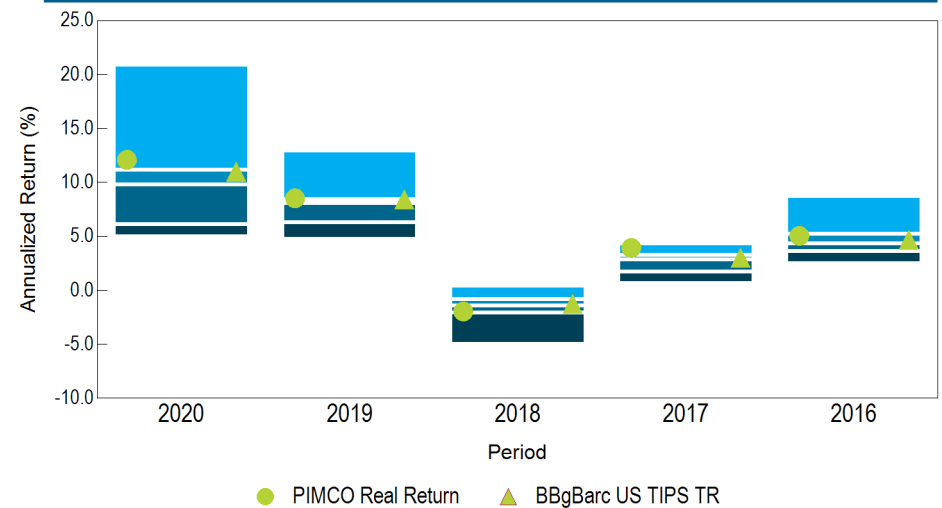
#### Return Summary



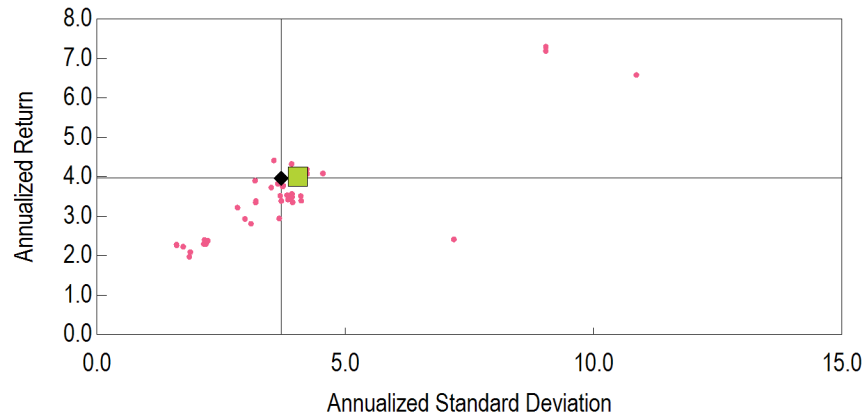
#### Inflation-Protected Bond MStar MF Return Comparison



#### Inflation-Protected Bond MStar MF Return Comparison

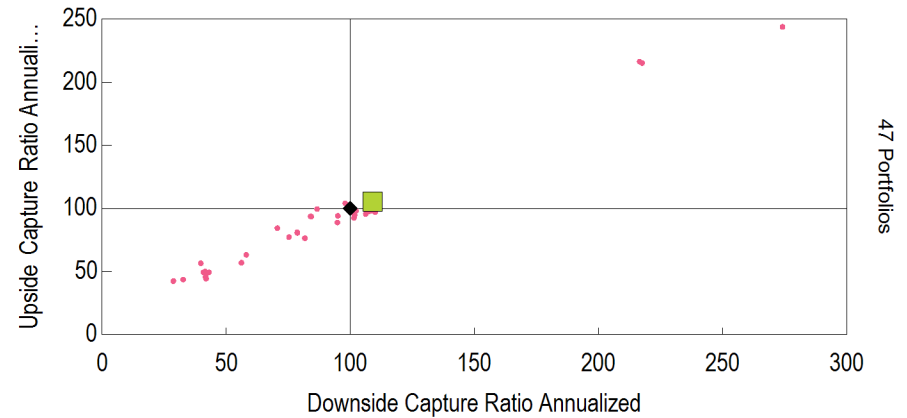


Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



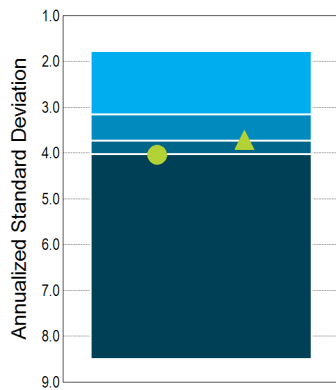
■ PIMCO Real Return    ● Inflation-Protected Bond MStar MF  
◆ BBgBarc US TIPS TR

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020

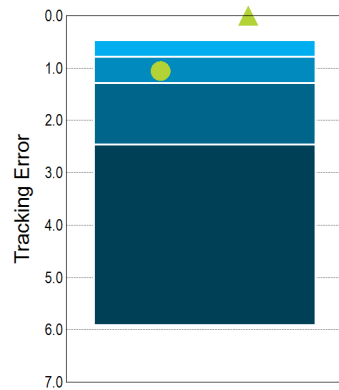


■ PIMCO Real Return    ● Inflation-Protected Bond MStar MF  
◆ BBgBarc US TIPS TR

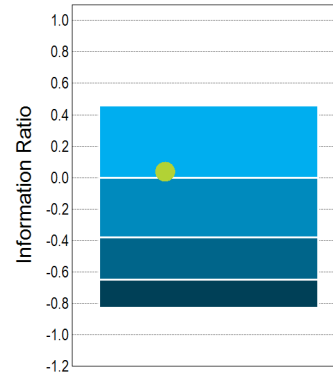
Annualized Standard Deviation



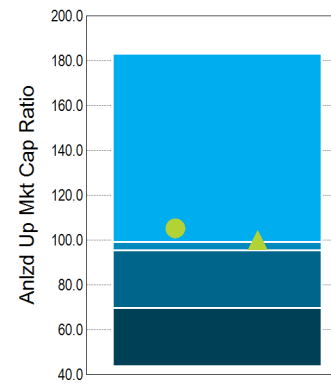
Tracking Error



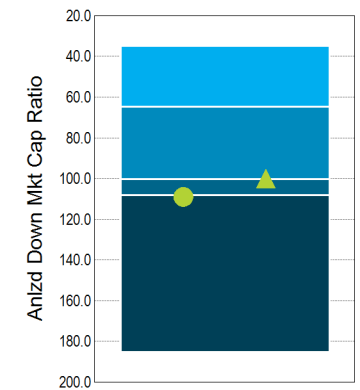
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● PIMCO Real Return    ▲ BBgBarc US TIPS TR    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

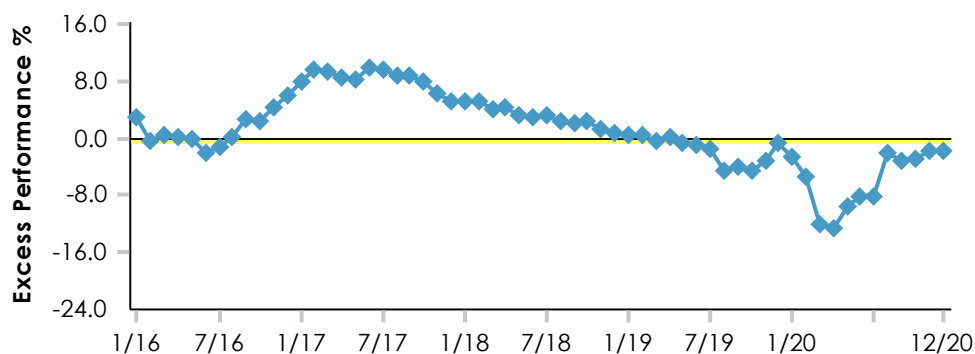
Fund Characteristics as of September 30, 2020		Top Holdings as of September 30, 2020		Fixed Income Sectors as of September 30, 2020	
Sharpe Ratio (3 Year)	1.06	EURO SCHATZ FUTURE DEC 20	21.41%	GOVERNMENT	60.73%
Average Duration	8.12	10 YEAR TREASURY NOTE FUTURE DEC 20	13.07%	MUNICIPAL	0.00%
Average Coupon	1.58%	UNITED STATES TREASURY BONDS 3.625%	7.46%	CORPORATE	1.13%
Average Effective Maturity	8.09	FEDERAL NATIONAL MORTGAGE ASSOCIATION	6.76%	SECURITIZED	15.86%
R-Squared (3 Year)	0.95	4%	6.47%	CASH & EQUIVALENTS	16.66%
Alpha (3 Year)	-0.01%	UNITED STATES TREASURY BONDS 1.375%	6.47%	DERIVATIVE	5.61%
Beta (3 Year)	1.02	5 YEAR TREASURY NOTE FUTURE DEC 20	5.34%		
		UNITED STATES TREASURY NOTES 0.25%	5.22%		
		UNITED STATES TREASURY NOTES 0.5%	4.84%		
		UNITED STATES TREASURY NOTES 0.625%	4.61%		
		UNITED STATES TREASURY NOTES 0.125%	4.35%		

Maturities as of September 30, 2020	
1 to 3 Years	11.08%
3 to 5 Years	12.91%
5 to 7 Years	9.77%
7 to 10 Years	25.17%
10 to 15 Years	1.14%
15 to 20 Years	3.17%
20 to 30 Years	13.30%
Greater than 30 Years	13.28%

Top Countries as of September 30, 2020	
United States	85.45%
Germany	3.80%
Italy	1.93%
Denmark	1.70%
Ireland	1.17%
Cayman Islands	1.15%
France	1.06%
Japan	0.88%
United Kingdom	0.70%
New Zealand	0.67%

# PIMCO Income I vs. Blmbg. Barc. U.S. Aggregate Index

## Short-term (Rolling 12 Months Excess Performance)

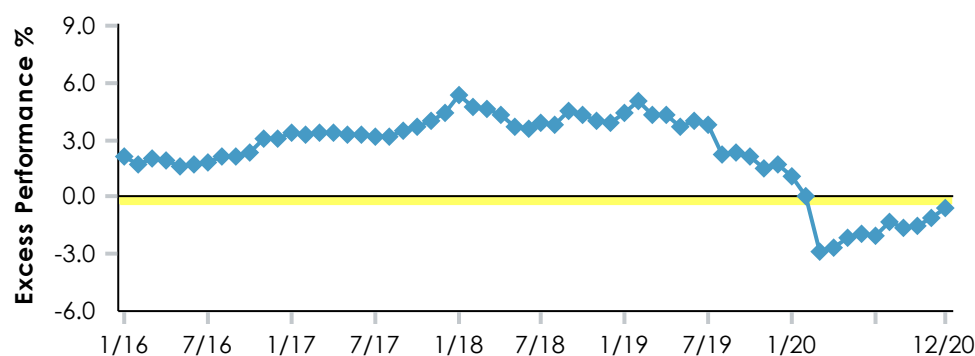


### Short-Term Performance

Caution

Probationary Performance -1.00%

## Medium-term (Rolling 36 Months Excess Performance)

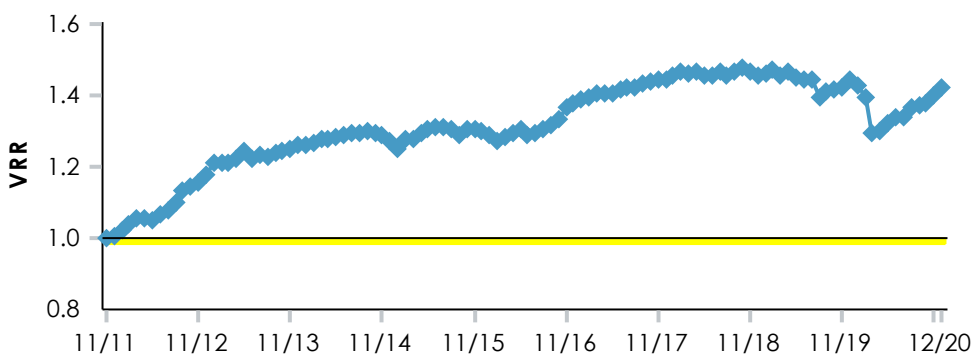


### Medium-Term Performance

Caution

Probationary Performance -0.50%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Positive

Probationary Performance < 0.98

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
PIMCO Income I	4.5 (43)	5.8 (59)	4.8 (52)	6.3 (20)	7.6 (2)
Blmbg. Barc. U.S. Aggregate Index	0.7 (94)	7.5 (39)	5.3 (35)	4.4 (78)	3.5 (89)
IM Multi-Sector General Bond (MF) Median	4.2	6.6	4.8	5.5	4.9

Monitoring Status

Caution/On Watch



#### Description:

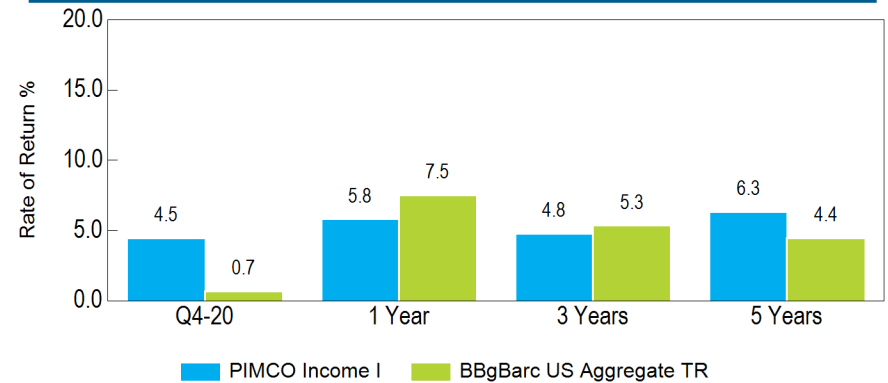
The investment seeks to maximize current income; long-term capital appreciation is a secondary objective.

The fund invests at least 65% of its total assets in a multi-sector portfolio of Fixed Income Instruments of varying maturities, which may be represented by forwards or derivatives such as options, futures contracts or swap agreements. It may invest up to 50% of its total assets in high yield securities rated below investment grade by Moody's, S&P or Fitch, or if unrated, as determined by PIMCO.

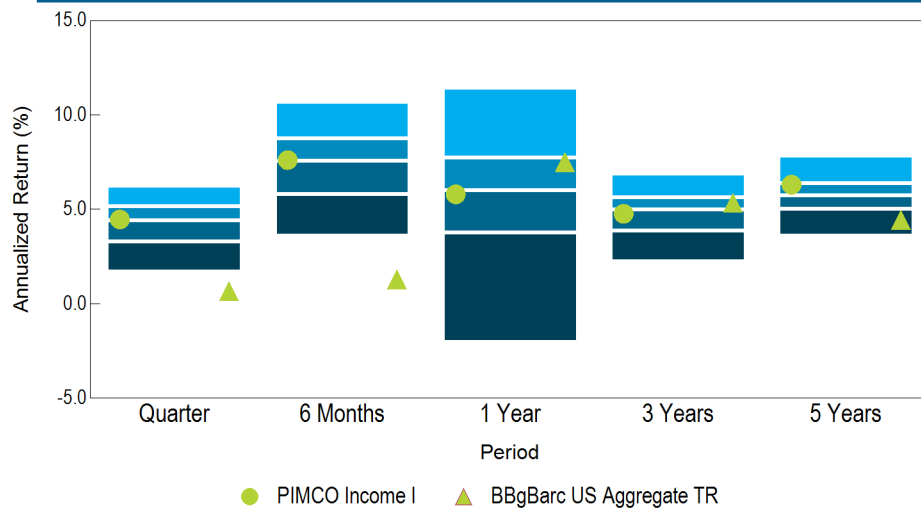
#### Portfolio Fund Information as of September 30, 2020

<b>Ticker</b>	PIMIX
<b>Morningstar Category</b>	Multisector Bond
<b>Average Market Cap (\$mm)</b>	3,923.67
<b>Net Assets (\$mm)</b>	67,103.67
<b>% Assets in Top 10 Holdings</b>	39.43
<b>Total Number of Holdings</b>	7,251
<b>Manager Name</b>	Daniel J. Ivascyn
<b>Manager Tenure</b>	14
<b>Expense Ratio</b>	1.09%
<b>Closed to New Investors</b>	No

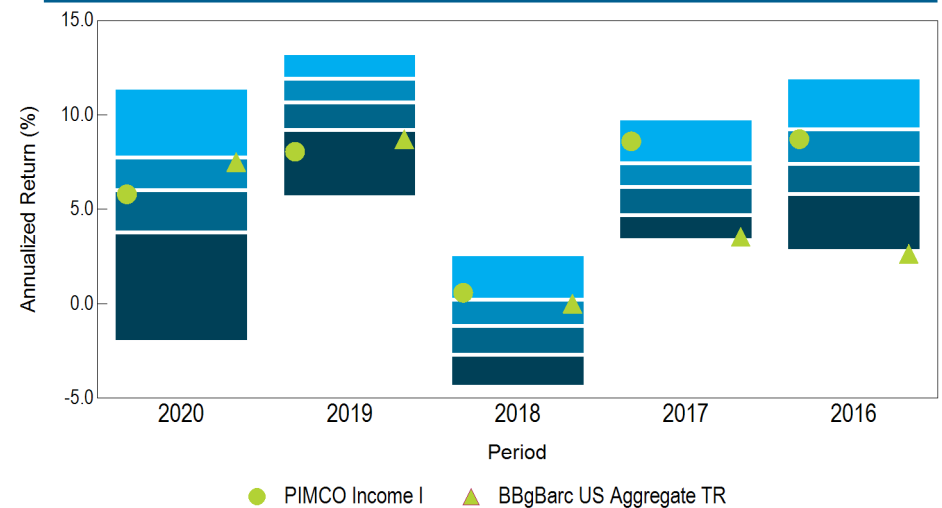
#### Return Summary



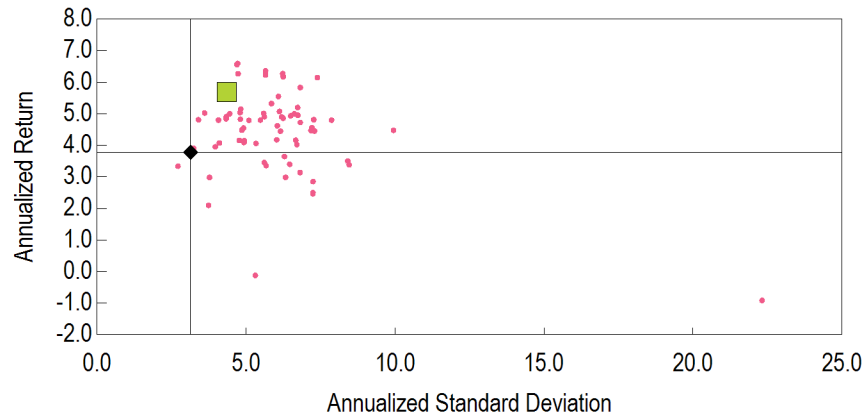
#### Multisector Bond MStar MF Return Comparison



#### Multisector Bond MStar MF Return Comparison

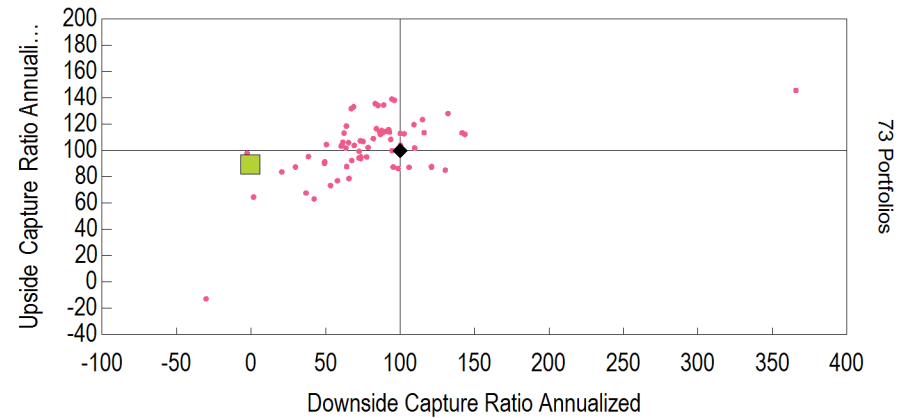


Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



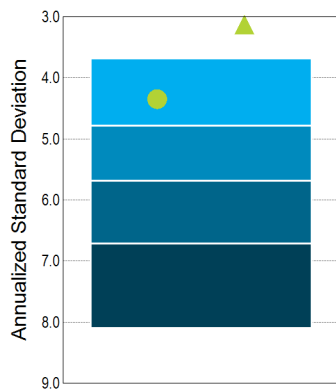
- PIMCO Income I
- Multisector Bond MStar MF
- ◆ BBgBarc US Aggregate TR

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



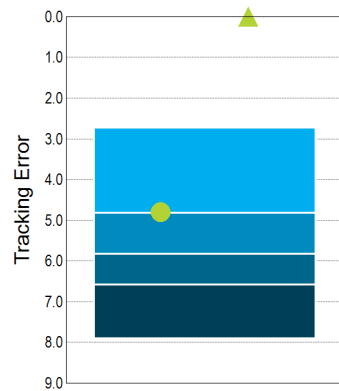
- PIMCO Income I
- Multisector Bond MStar MF
- ◆ BBgBarc US Aggregate TR

Annualized Standard Deviation



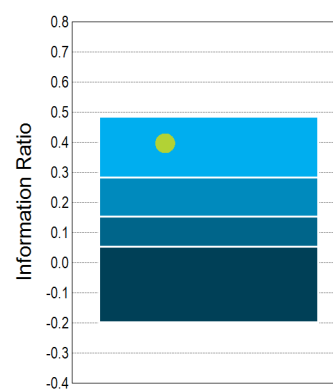
- PIMCO Income I

Tracking Error

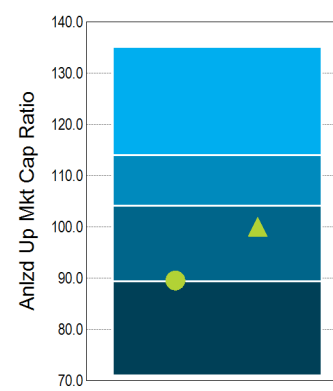


- ▲ BBgBarc US Aggregate TR

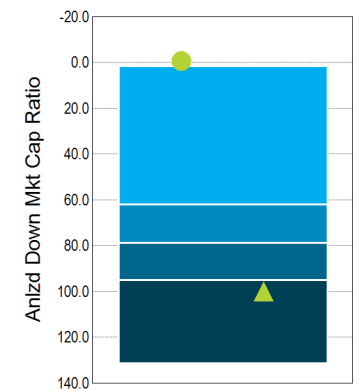
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

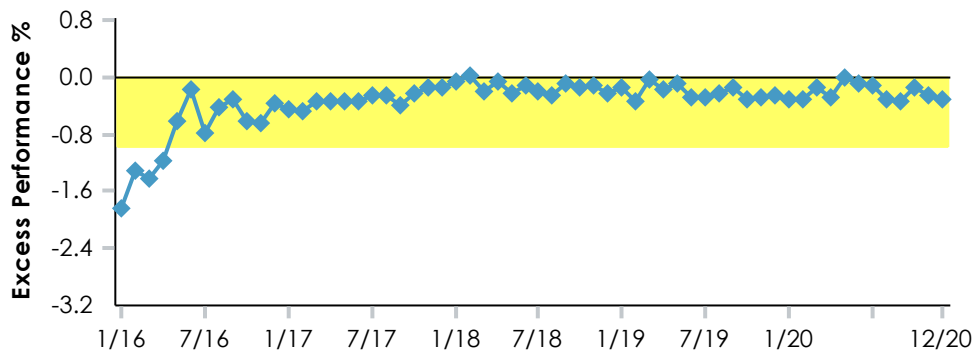
Fund Characteristics as of September 30, 2020		Top Holdings as of September 30, 2020		Fixed Income Sectors as of September 30, 2020	
Sharpe Ratio (3 Year)	0.37	10 YEAR TREASURY NOTE FUTURE DEC 20	12.27%	GOVERNMENT	17.49%
Average Duration	1.93	FEDERAL NATIONAL MORTGAGE ASSOCIATION	6.69%	MUNICIPAL	0.05%
Average Coupon	3.26%	FEDERAL NATIONAL MORTGAGE ASSOCIATION	4.95%	CORPORATE	9.70%
Average Effective Maturity	4.14	PIMCO FDS	3.22%	SECURITIZED	31.17%
R-Squared (3 Year)	0.06	FEDERAL NATIONAL MORTGAGE ASSOCIATION	2.68%	CASH & EQUIVALENTS	32.96%
Alpha (3 Year)	0.14%	LONG-TERM EURO BTP FUTURE DEC 20	2.59%	DERIVATIVE	8.64%
Beta (3 Year)	0.40	FEDERAL HOME LOAN BANKS	2.06%		
		CSMC TRUST	2.05%		
		FEDERAL NATIONAL MORTGAGE ASSOCIATION	1.50%		
		UNITED STATES TREASURY NOTES	1.42%		

Maturities as of September 30, 2020	
1 to 3 Years	7.59%
3 to 5 Years	7.51%
5 to 7 Years	4.79%
7 to 10 Years	13.38%
10 to 15 Years	3.63%
15 to 20 Years	8.85%
20 to 30 Years	30.45%
Greater than 30 Years	20.56%

Top Countries as of September 30, 2020	
United States	80.57%
United Kingdom	5.46%
Germany	2.33%
Ireland	1.50%
Russia	1.37%
Mexico	1.24%
Turkey	1.06%
China	0.78%
Peru	0.75%
Saudi Arabia	0.60%

# TIAA-CREF Inflation Link Bond I vs. Blmbg. Barc. U.S. TIPS 1-10 Year

## Short-term (Rolling 12 Months Excess Performance)

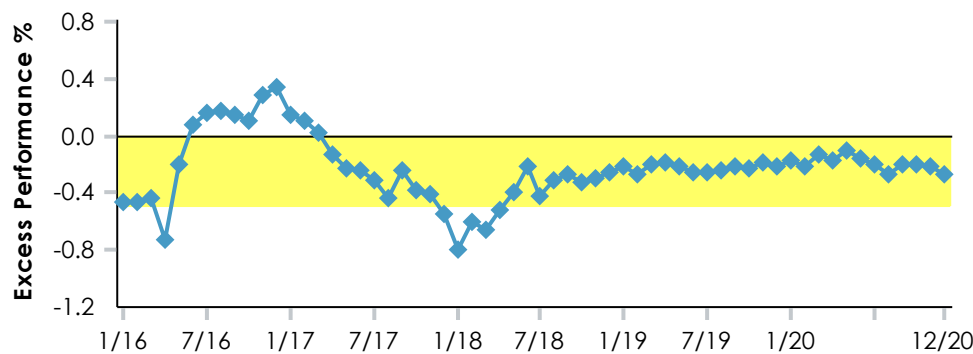


### Short-Term Performance

Acceptable

Probationary Performance -1.00%

## Medium-term (Rolling 36 Months Excess Performance)

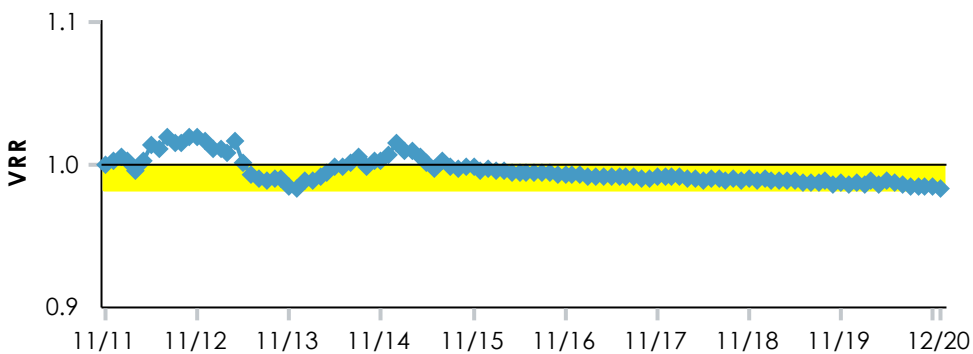


### Medium-Term Performance

Acceptable

Probationary Performance -0.50%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Acceptable

Probationary Performance < 0.98

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Inflation Link Bond I	1.5 (82)	8.1 (70)	4.7 (65)	3.9 (67)	2.0 (56)
Blmbg. Barc. U.S. TIPS 1-10 Year	1.6 (69)	8.4 (67)	4.9 (56)	4.1 (59)	2.2 (47)
IM U.S. TIPS (MF) Median	1.8	9.6	5.1	4.4	2.1

Monitoring Status

Acceptable

### TIAA-CREF Inflation Link Bond I | As of December 31, 2020

#### Description:

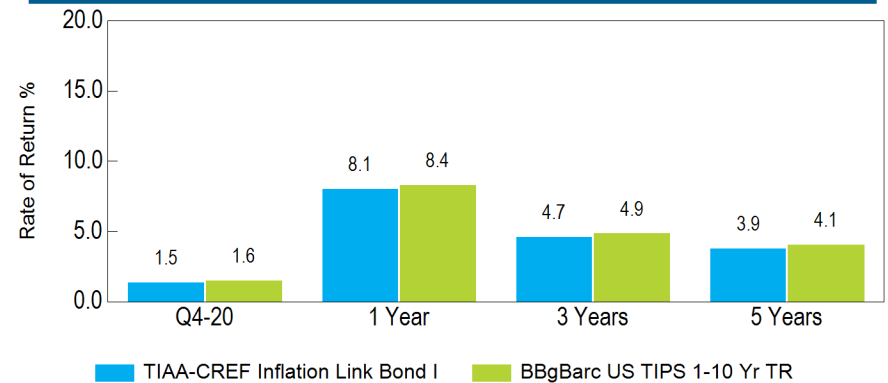
The investment seeks to provide inflation protection and income, primarily through investment in inflation-linked bonds.

The fund invests at least 80% of its assets in fixed-income securities whose principal value increases or decreases based on changes in the Consumer Price Index for All Urban Consumers ("CPI-U"), over the life of the security. Typically, it will invest in U.S. Treasury Inflation-Indexed Securities ("TIS"). Under most circumstances, the fund's investments in inflation-linked bonds of foreign issuers are generally less than 20% of its assets.

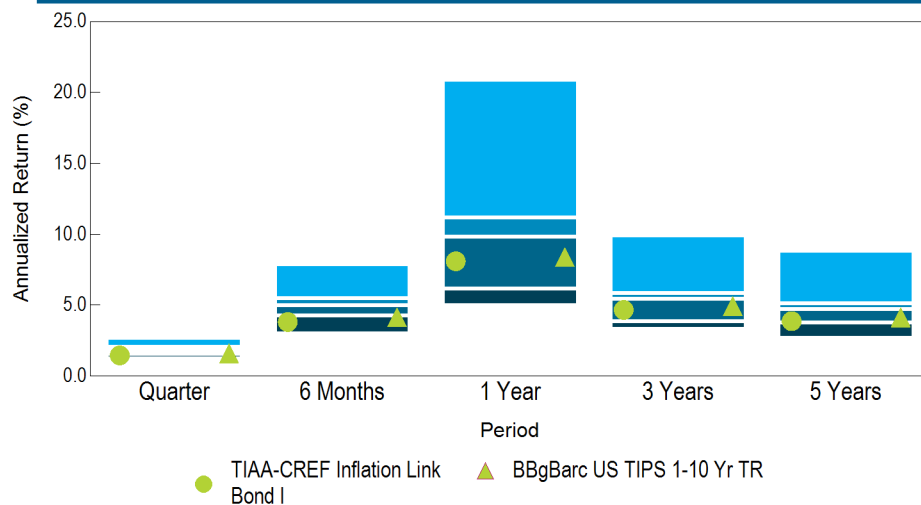
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TILX
<b>Morningstar Category</b>	Inflation-Protected Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	1,442.29
<b>% Assets in Top 10 Holdings</b>	40.17
<b>Total Number of Holdings</b>	52
<b>Manager Name</b>	John Michael Cerra
<b>Manager Tenure</b>	12
<b>Expense Ratio</b>	0.26%
<b>Closed to New Investors</b>	No

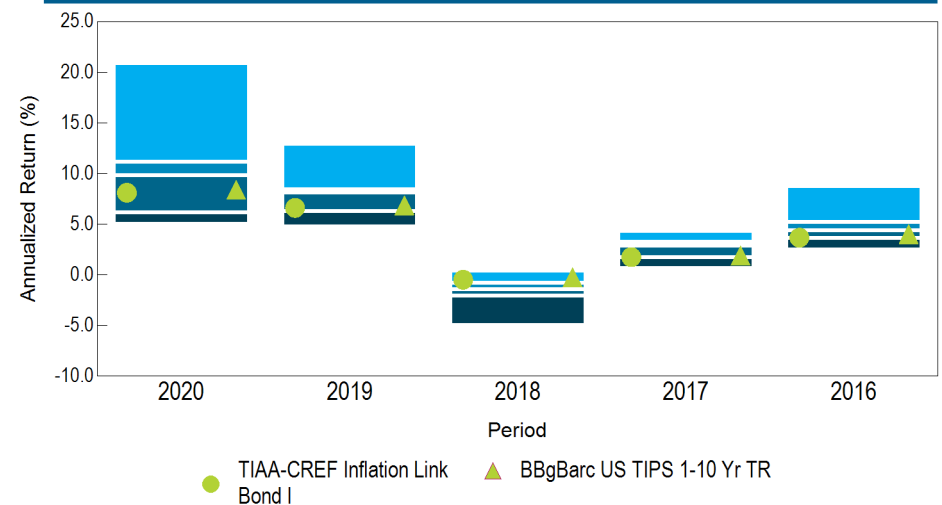
#### Return Summary



#### Inflation-Protected Bond MStar MF Return Comparison

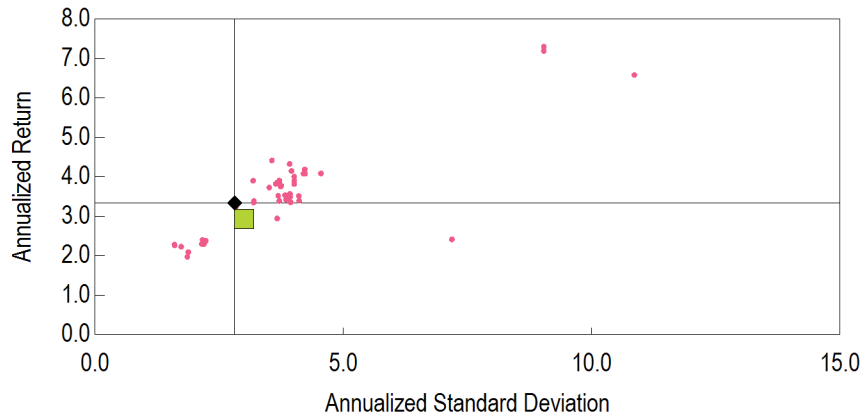


#### Inflation-Protected Bond MStar MF Return Comparison



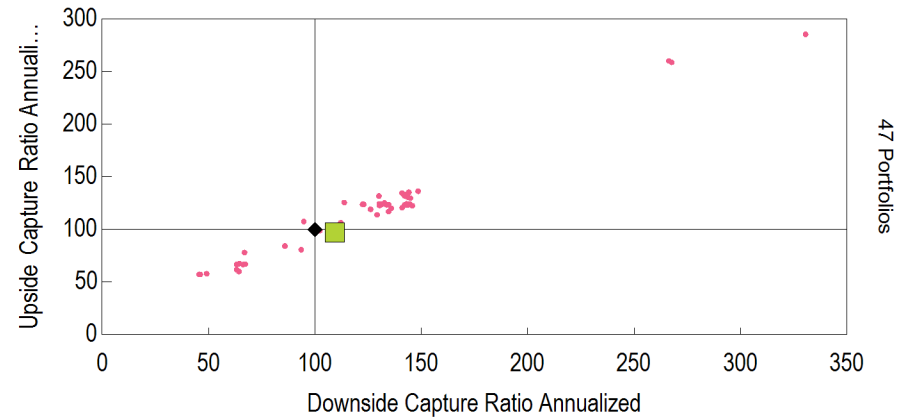
### TIAA-CREF Inflation Link Bond I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



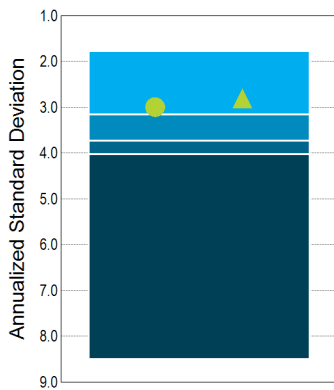
- TIAA-CREF Inflation Link Bond I
- Inflation-Protected Bond MStar MF
- ◆ BBgBarc US TIPS 1-10 Yr TR

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020

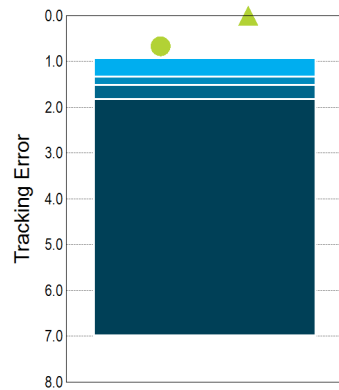


- TIAA-CREF Inflation Link Bond I
- Inflation-Protected Bond MStar MF
- ◆ BBgBarc US TIPS 1-10 Yr TR

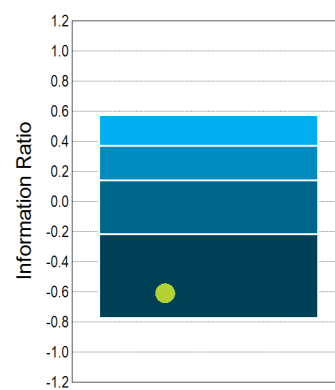
Annualized Standard Deviation



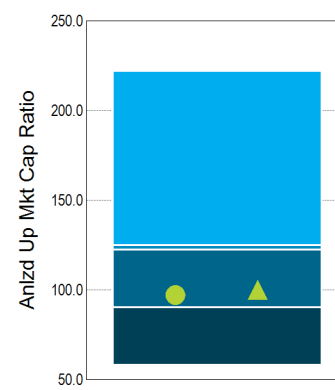
Tracking Error



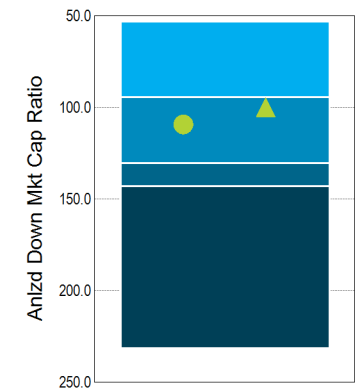
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



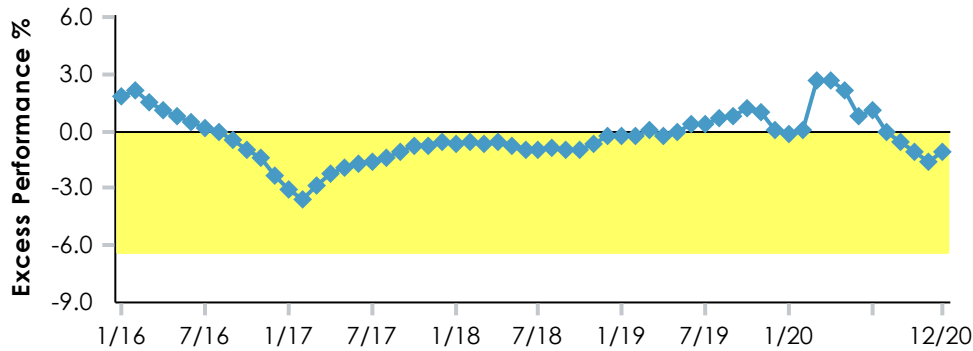
- TIAA-CREF Inflation Link Bond I
- ▲ BBgBarc US TIPS 1-10 Yr TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Fund Characteristics as of December 31, 2020		Top Holdings as of December 31, 2020		Fixed Income Sectors as of December 31, 2020	
Sharpe Ratio (3 Year)	1.17	UNITED STATES TREASURY BONDS 3.88%	4.77%	GOVERNMENT	95.80%
Average Duration	4.80	UNITED STATES TREASURY NOTES 0.5%	4.40%	MUNICIPAL	0.00%
Average Coupon	0.94%	UNITED STATES TREASURY NOTES 0.38%	4.21%	CORPORATE	0.39%
Average Effective Maturity	4.99	UNITED STATES TREASURY NOTES 0.25%	4.09%	SECURITIZED	2.87%
R-Squared (3 Year)	0.98	UNITED STATES TREASURY NOTES 0.62%	4.03%	CASH & EQUIVALENTS	0.95%
Alpha (3 Year)	0.00%	UNITED STATES TREASURY NOTES 0.12%	4.01%	DERIVATIVE	0.00%
Beta (3 Year)	0.94	UNITED STATES TREASURY NOTES 0.12%	3.79%		
		UNITED STATES TREASURY NOTES 0.62%	3.73%		
		UNITED STATES TREASURY NOTES 0.12%	3.65%		
		UNITED STATES TREASURY NOTES 0.62%	3.50%		

Credit Quality as of December 31, 2020		Maturities as of December 31, 2020		Top Countries as of December 31, 2020	
AAA	99.72%	1 to 3 Years	22.00%	United States	99.89%
AA	0.00%	3 to 5 Years	28.71%	India	0.11%
A	0.00%	5 to 7 Years	16.98%		
BBB	0.00%	7 to 10 Years	27.02%		
BB	0.00%	10 to 15 Years	2.41%		
B	0.00%	15 to 20 Years	1.50%		
Below B	0.00%	20 to 30 Years	0.95%		
Not Rated	0.28%	Greater than 30 Years	0.00%		

# T. Rowe Price Floating Rate I vs. S&P/LSTA Performing Loans Index

## Short-term (Rolling 12 Months Excess Performance)

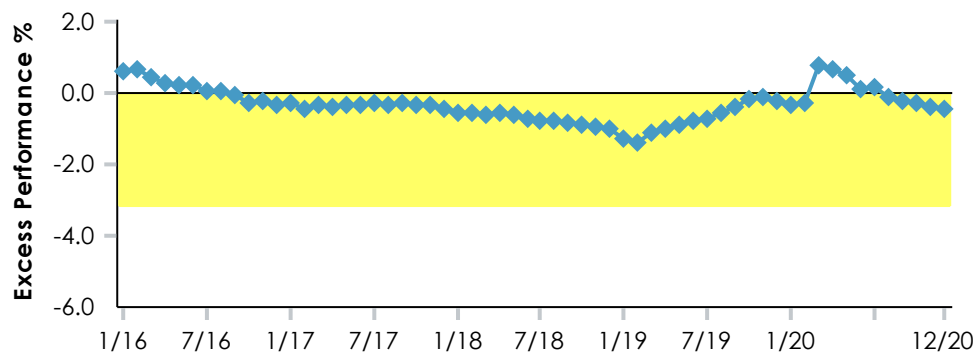


### Short-Term Performance

Acceptable

Probationary Performance -6.50%

## Medium-term (Rolling 36 Months Excess Performance)

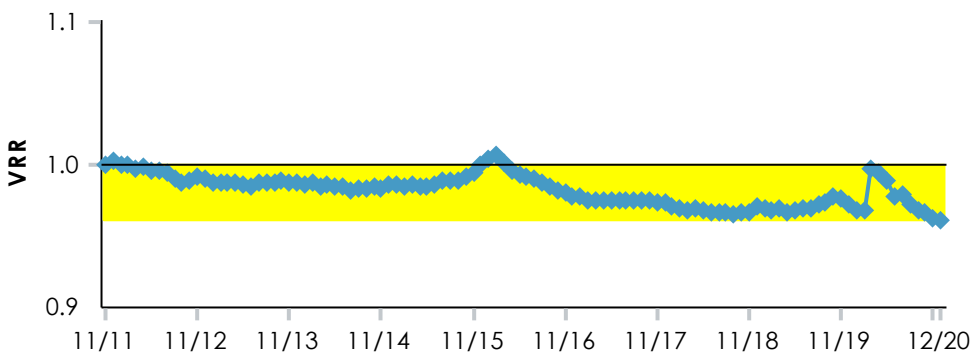


### Medium-Term Performance

Acceptable

Probationary Performance -3.25%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Acceptable

Probationary Performance < 0.96

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
T. Rowe Price Floating Rate I	3.3 (65)	2.4 (23)	3.8 (8)	4.6 (28)	4.5 (16)
S&P/LSTA Performing Loans Index	4.0 (31)	3.5 (6)	4.2 (3)	5.4 (8)	4.9 (2)
IM U.S. Bank Loans (MF) Median	3.5	1.4	2.9	4.0	3.8

Monitoring Status

Acceptable



### TRowe Price Floating Rate I | As of December 31, 2020

#### Description:

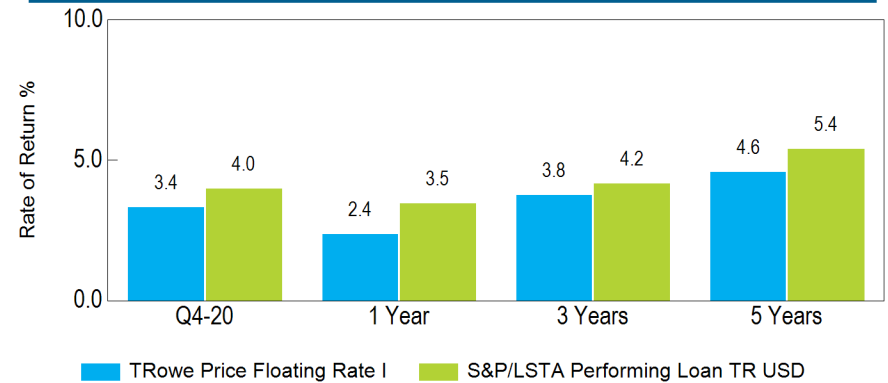
The investment seeks high current income and, secondarily, capital appreciation.

The fund invests at least 80% of its net assets (including any borrowings for investment purposes) in floating rate loans and floating rate debt securities. Floating rate loans represent amounts borrowed by companies or other entities from banks and other lenders. It may invest up to 20% of its net assets in fixed rate debt instruments. The fund may also invest up to 20% of its total assets in non-U.S. dollar-denominated loans and debt instruments (including instruments of issuers in emerging markets) in keeping with the fund's investment objective.

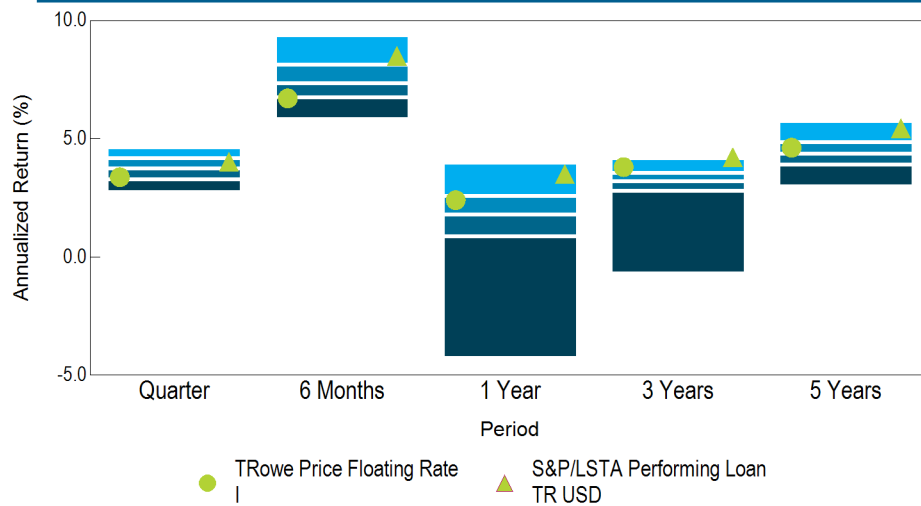
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	RPIFX
<b>Morningstar Category</b>	Bank Loan
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	2,002.82
<b>% Assets in Top 10 Holdings</b>	21.18
<b>Total Number of Holdings</b>	357
<b>Manager Name</b>	Paul M. Massaro
<b>Manager Tenure</b>	12
<b>Expense Ratio</b>	0.58%
<b>Closed to New Investors</b>	No

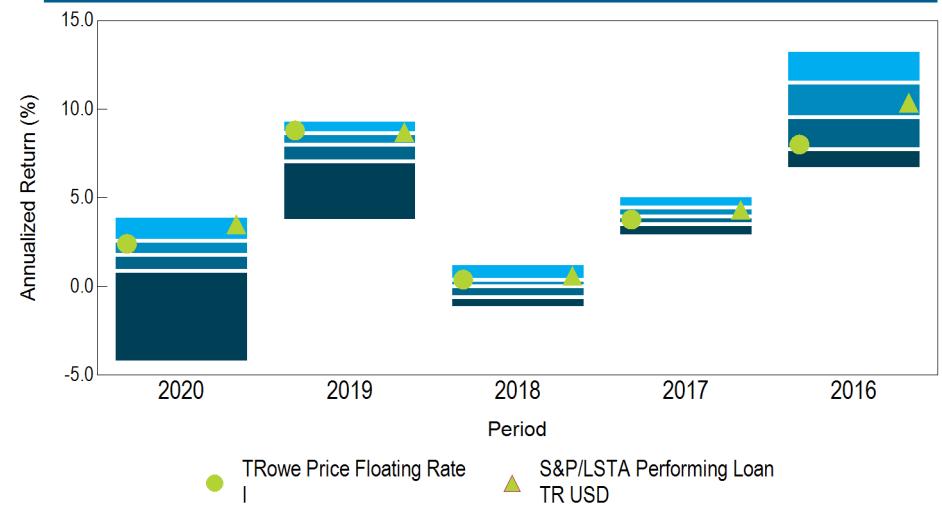
#### Return Summary



#### Bank Loan MStar MF Return Comparison

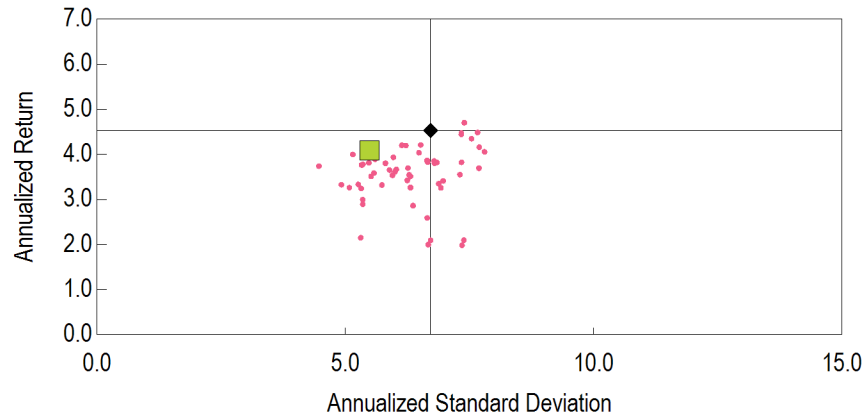


#### Bank Loan MStar MF Return Comparison



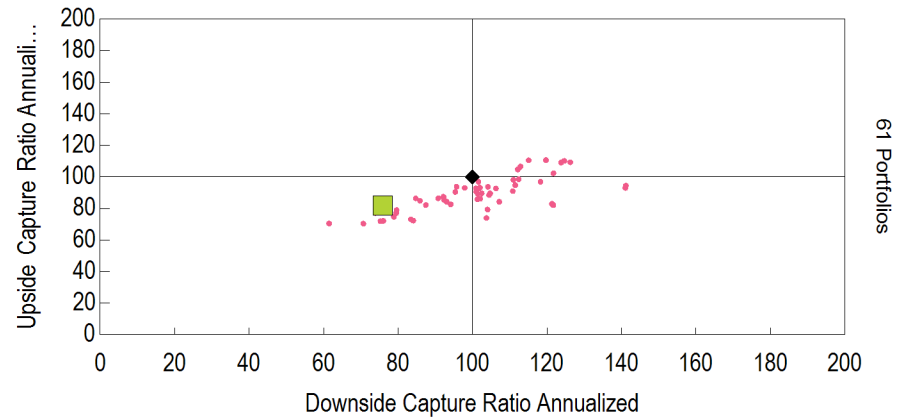
### TRowe Price Floating Rate I | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



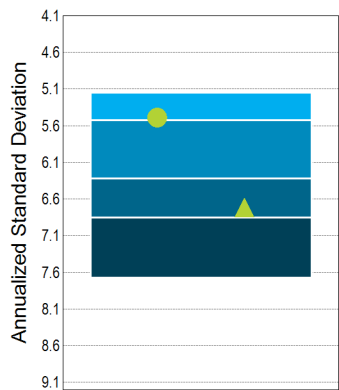
- TRowe Price Floating Rate I
- ◆ S&P/LSTA Performing Loan TR USD
- Bank Loan MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



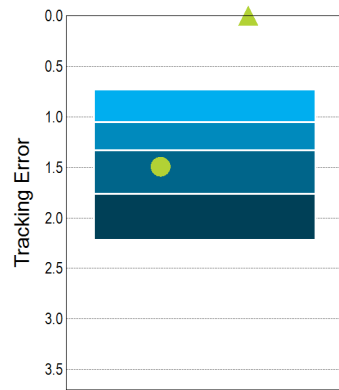
- TRowe Price Floating Rate I
- ◆ S&P/LSTA Performing Loan TR USD
- Bank Loan MStar MF

Annualized Standard Deviation



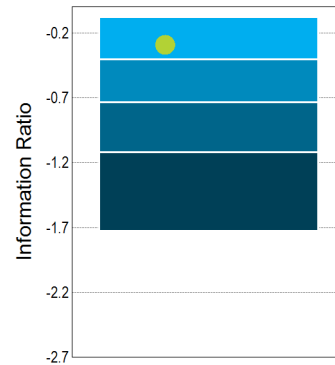
- TRowe Price Floating Rate I
- ▲ S&P/LSTA Performing Loan TR USD

Tracking Error

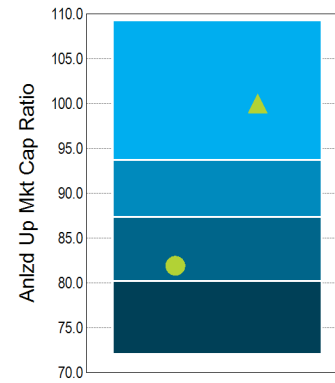


- ▲ S&P/LSTA Performing Loan TR USD
- TRowe Price Floating Rate I

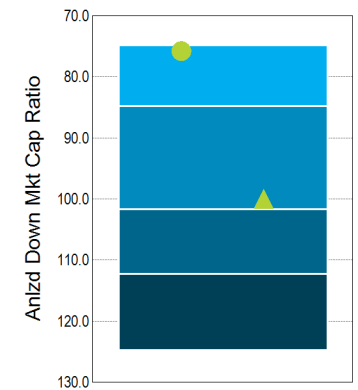
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



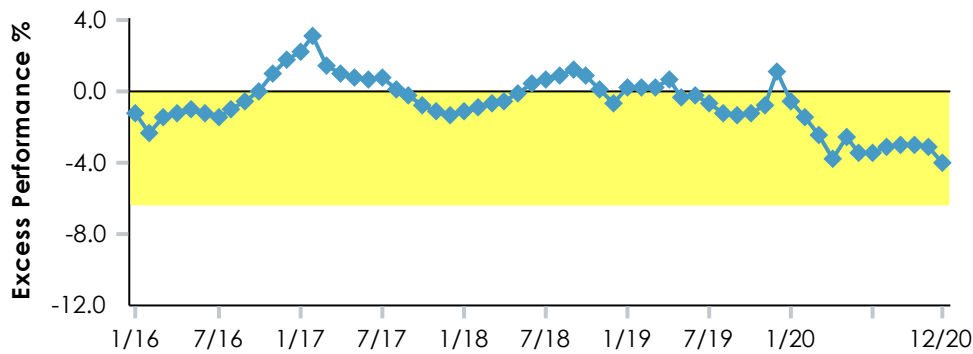
- Median to 75th Percentile
- 75th to 95th Percentile

Fund Characteristics as of December 31, 2020		Top Holdings as of December 31, 2020		Fixed Income Sectors as of December 31, 2020	
Sharpe Ratio (3 Year)	0.31	T. ROWE PRICE GOV. RESERVE	7.56%	GOVERNMENT	0.21%
Average Duration	0.52	ASURION	2.23%	MUNICIPAL	2.40%
Average Coupon	4.93%	ULTIMATE SOFTWARE	2.17%	CORPORATE	87.67%
Average Effective Maturity	5.00	UFC HOLDINGS	1.65%	SECURITIZED	0.86%
R-Squared (3 Year)	0.98	ULTIMATE SOFTWARE	1.56%	CASH & EQUIVALENTS	8.85%
Alpha (3 Year)	0.03%	HUB INTERNATIONAL	1.53%	DERIVATIVE	0.00%
Beta (3 Year)	0.81	MILEAGE PLUS HOLDINGS	1.31%		
		LIFE TIME	1.09%		
		ASCEND LEARNING	1.07%		
		COMMERCE CHARTER TWP MICH 5	1.02%		

Credit Quality as of December 31, 2020		Maturities as of December 31, 2020		Top Countries as of December 31, 2020	
AAA	4.55%	1 to 3 Years	7.72%	United States	93.70%
AA	0.00%	3 to 5 Years	42.92%	United Kingdom	1.73%
A	0.37%	5 to 7 Years	46.21%	Canada	1.14%
BBB	3.27%	7 to 10 Years	2.99%	Germany	0.95%
BB	12.95%	10 to 15 Years	0.00%	France	0.79%
B	64.18%	15 to 20 Years	0.00%	Luxembourg	0.36%
Below B	11.76%	20 to 30 Years	0.13%	Finland	0.35%
Not Rated	2.92%	Greater than 30 Years	0.00%	Mexico	0.23%
				Cayman Islands	0.21%
				Malaysia	0.20%

# TIAA-CREF High-Yield I vs. ICE BofAML High Yield BB-B Constrained Index

## Short-term (Rolling 12 Months Excess Performance)

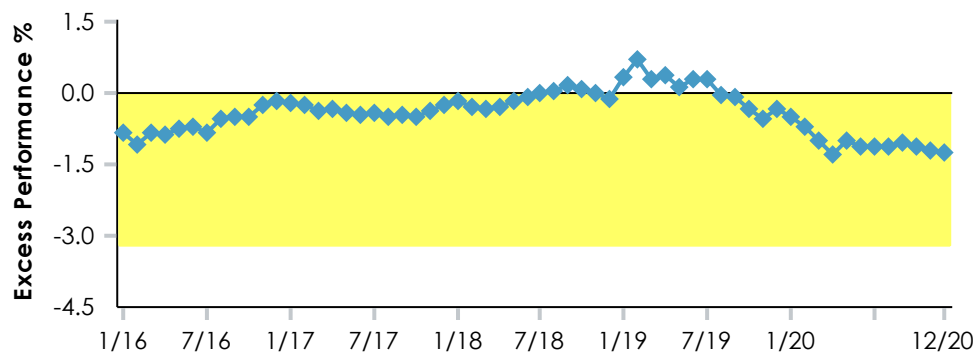


### Short-Term Performance

Acceptable

Probationary Performance -6.50%

## Medium-term (Rolling 36 Months Excess Performance)

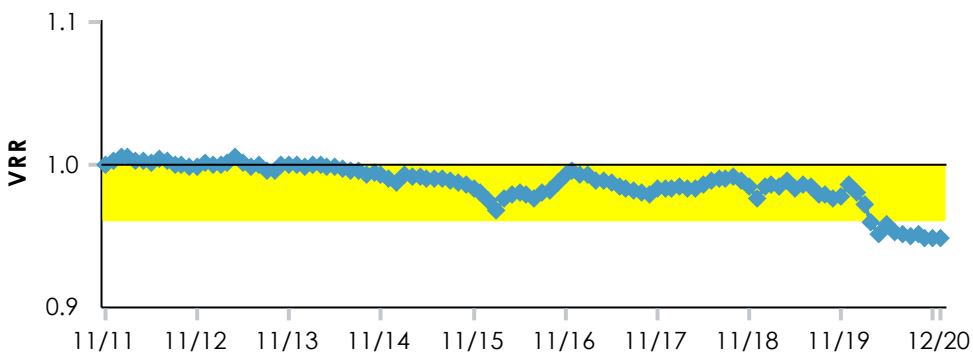


### Medium-Term Performance

Acceptable

Probationary Performance -3.25%

## Long-term (December 1, 2011 To December 31, 2020 VRR)



### Long-Term Performance

Caution

Probationary Performance < 0.96

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF High-Yield I	5.4 (71)	2.2 (92)	5.0 (51)	7.3 (37)	6.4 (38)
ICE BofAML High Yield BB-B Constrained Index	5.7 (63)	6.3 (29)	6.2 (8)	8.0 (12)	7.0 (13)
IM U.S. High Yield Bonds (MF) Median	6.0	5.3	5.0	7.0	6.2

Monitoring Status

Caution/On Watch

#### Description:

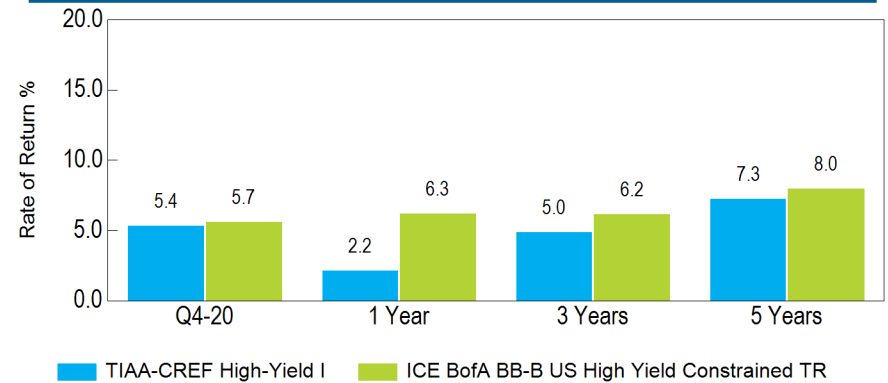
The investment seeks total return primarily through high current income and, when consistent with its primary objective, capital appreciation.

The fund invests primarily in lower-rated, higher-yielding fixed-income securities, such as domestic and foreign corporate bonds, debentures, loan participations and assignments and notes, as well as convertible and preferred securities. Under normal circumstances, it invests at least 80% of its assets in debt and other fixed-income securities rated lower than investment-grade (and their unrated equivalents) or other high-yielding debt securities.

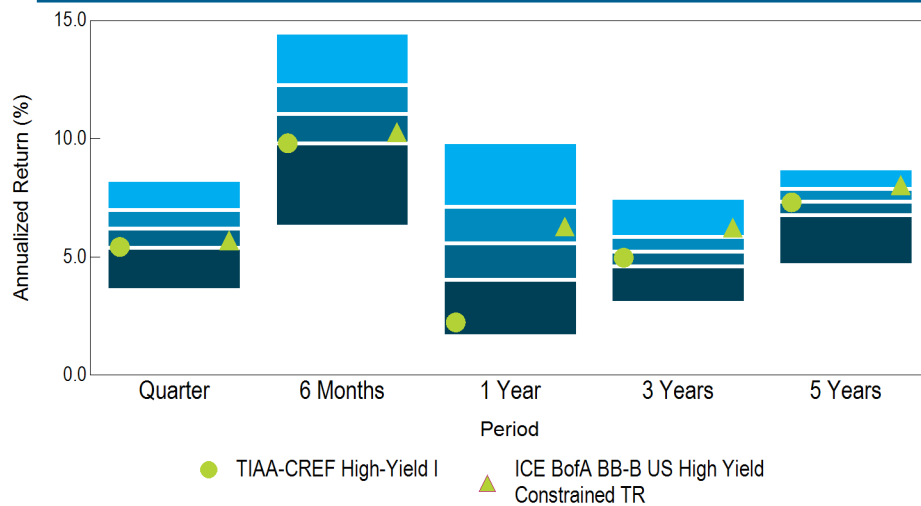
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TIHYX
<b>Morningstar Category</b>	High Yield Bond
<b>Average Market Cap (\$mm)</b>	350.52
<b>Net Assets (\$mm)</b>	2,941.41
<b>% Assets in Top 10 Holdings</b>	7.47
<b>Total Number of Holdings</b>	512
<b>Manager Name</b>	Kevin R. Lorenz
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.36%
<b>Closed to New Investors</b>	No

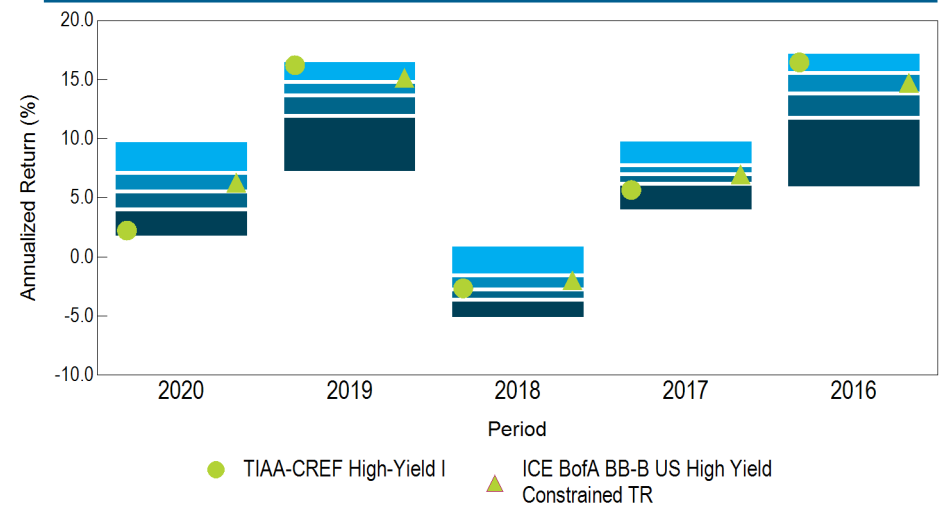
#### Return Summary



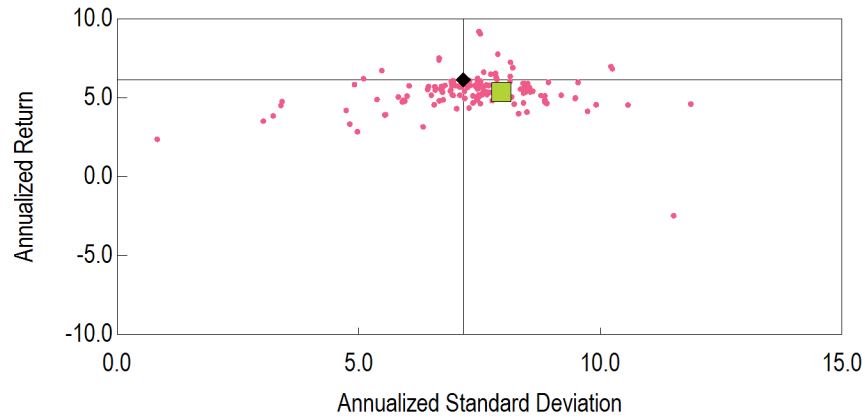
#### High Yield Bond MStar MF Return Comparison



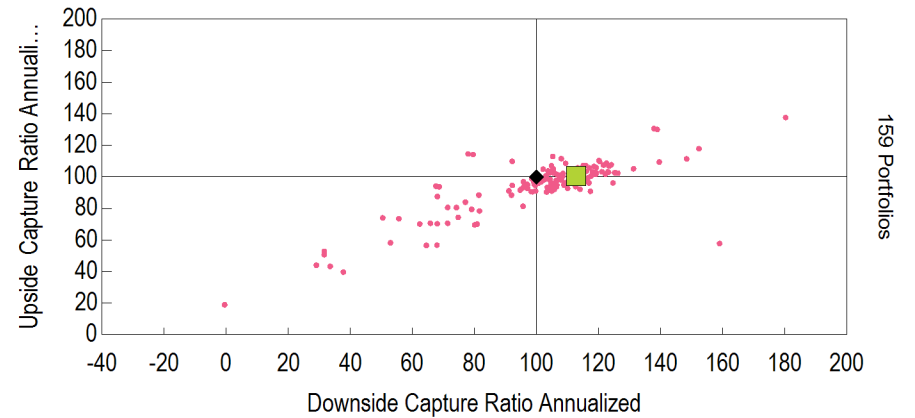
#### High Yield Bond MStar MF Return Comparison



Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



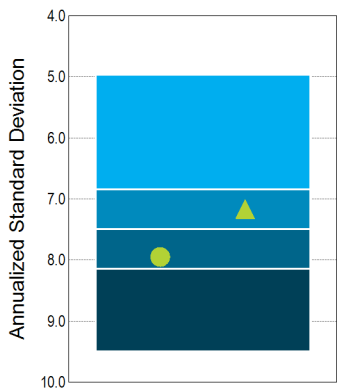
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



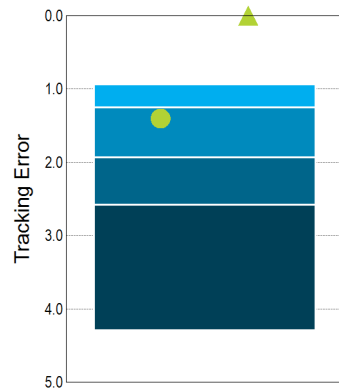
- TIAA-CREF High-Yield I
- ◆ ICE BofA BB-B US High Yield Constrained TR
- High Yield Bond MStar MF

- TIAA-CREF High-Yield I
- ◆ ICE BofA BB-B US High Yield Constrained TR
- High Yield Bond MStar MF

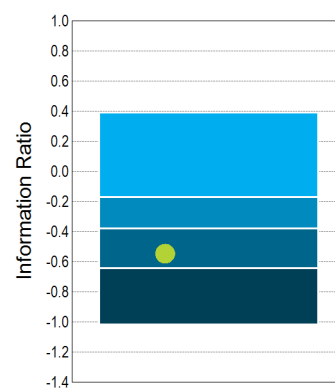
Annualized Standard Deviation



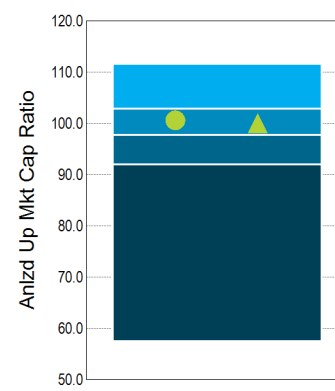
Tracking Error



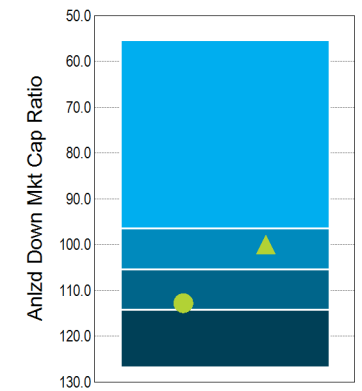
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- TIAA-CREF High-Yield I
- ▲ ICE BofA BB-B US High Yield Constrained TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Fund Characteristics as of December 31, 2020		Top Holdings as of December 31, 2020		Fixed Income Sectors as of December 31, 2020	
Sharpe Ratio (3 Year)	0.35	FEDERAL HOME LOAN BANKS 0.01%	1.18%	GOVERNMENT	0.00%
Average Duration	3.30	HCA INC. 5.38%	0.91%	MUNICIPAL	0.00%
Average Coupon	5.45%	NOVA CHEMICALS CORPORATION 4.88%	0.76%	CORPORATE	94.54%
Average Effective Maturity	5.82	STAPLES, INC. 10.75%	0.76%	SECURITIZED	0.00%
R-Squared (3 Year)	0.98	TENET HEALTHCARE CORPORATION 6.12%	0.68%	CASH & EQUIVALENTS	5.46%
Alpha (3 Year)	-0.15%	CCO HOLDINGS, LLC/ CCO HOLDINGS CAPITAL	0.67%	DERIVATIVE	0.00%
Beta (3 Year)	1.10	CORP. 4.5%			
		PRIME SECURITIES SERVICES BORROWER, LLC	0.66%		
		AND PRIME FINANCE, INC. 5.75%			
		FORD MOTOR CREDIT COMPANY LLC 4.06%	0.65%		
		FEDERAL HOME LOAN BANKS 0.01%	0.61%		
		KRAFT HEINZ FOODS COMPANY 3.88%	0.59%		

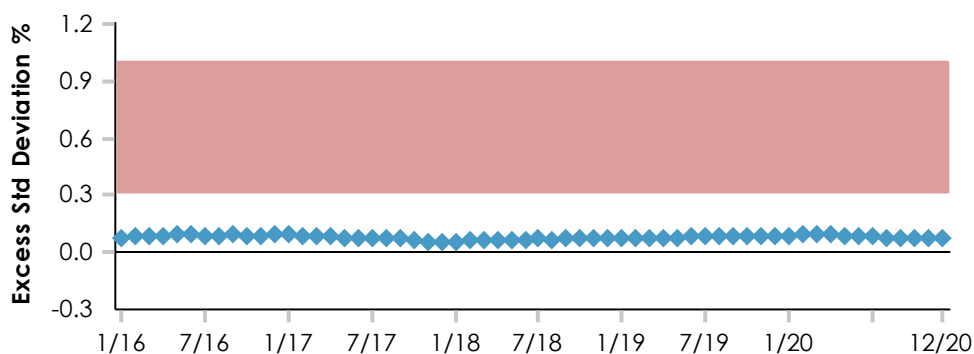
Credit Quality as of December 31, 2020		Maturities as of December 31, 2020		Top Countries as of December 31, 2020	
AAA	5.32%	1 to 3 Years	6.64%	United States	89.21%
AA	0.00%	3 to 5 Years	29.56%	Canada	4.96%
A	0.00%	5 to 7 Years	33.82%	France	1.13%
BBB	1.46%	7 to 10 Years	23.79%	United Kingdom	0.89%
BB	47.20%	10 to 15 Years	5.08%	Israel	0.68%
B	37.86%	15 to 20 Years	0.48%	Germany	0.66%
Below B	5.40%	20 to 30 Years	0.57%	Zambia	0.60%
Not Rated	2.76%	Greater than 30 Years	0.00%	Netherlands	0.55%
				Ireland	0.53%
				Italy	0.35%

# **Sensitivity Analyses: Passive Funds**



# TIAA-CREF Equity Index I vs. Russell 3000 Index

## Short-term (Rolling 12 Months Tracking Error)

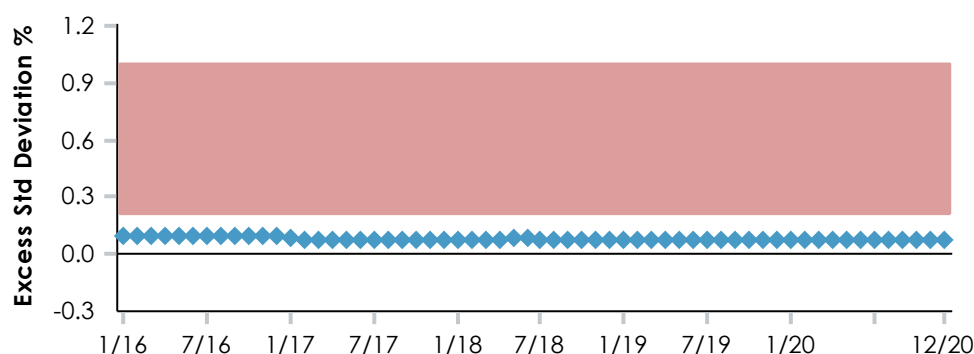


### Short-Term Performance

Positive

Probationary Performance 0.30%

## Medium-term (Rolling 36 Months Tracking Error)

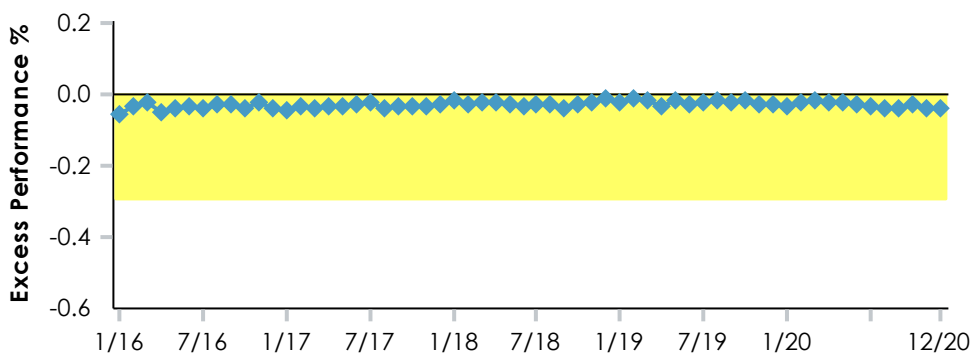


### Medium-Term Performance

Positive

Probationary Performance 0.25%

## Long-term (Rolling 60 Months Excess Performance)



### Long-Term Performance

Acceptable

Probationary Performance -0.30%

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Equity Index I	14.6 (41)	20.8 (25)	14.4 (20)	15.4 (13)	15.2 (10)
Russell 3000 Index	14.7 (39)	20.9 (24)	14.5 (19)	15.4 (12)	15.3 (9)
IM U.S. Multi-Cap Core Equity (MF) Median	13.8	15.4	11.1	12.6	13.4

**Monitoring Status**

**Acceptable**

#### Description:

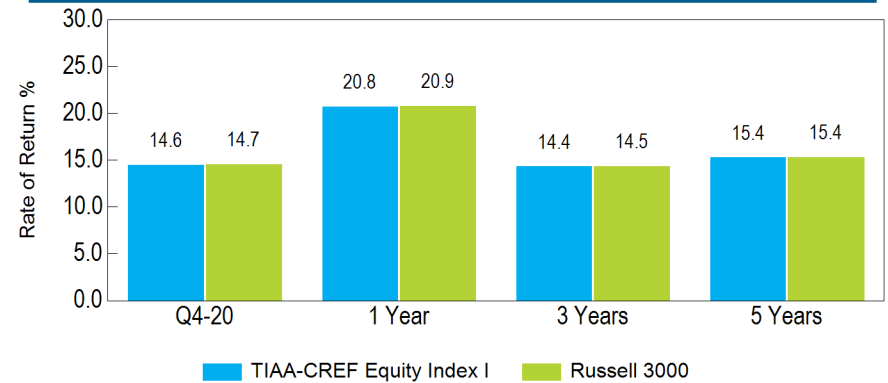
The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of equity securities selected to track the overall U.S. equity markets based on a market index.

Under normal circumstances, the fund invests at least 80% of its assets in equity securities of its benchmark index, the Russell 3000® Index. It buys most, but not necessarily all, of the stocks in its benchmark index, and the advisor will attempt to closely match the overall investment characteristics of its benchmark index.

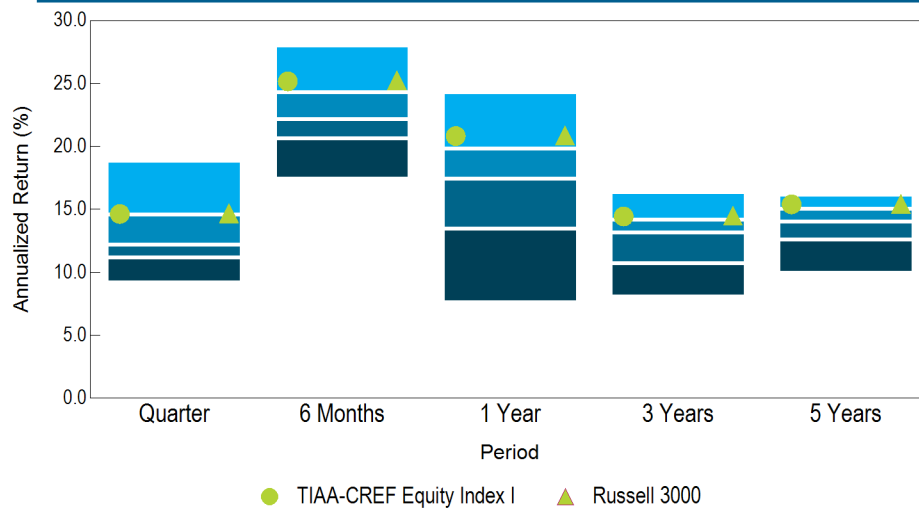
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TIEIX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	102,450.90
<b>Net Assets (\$mm)</b>	11,006.56
<b>% Assets in Top 10 Holdings</b>	22.56
<b>Total Number of Holdings</b>	2,973
<b>Manager Name</b>	Philip James (Jim) Campagna
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.05%
<b>Closed to New Investors</b>	No

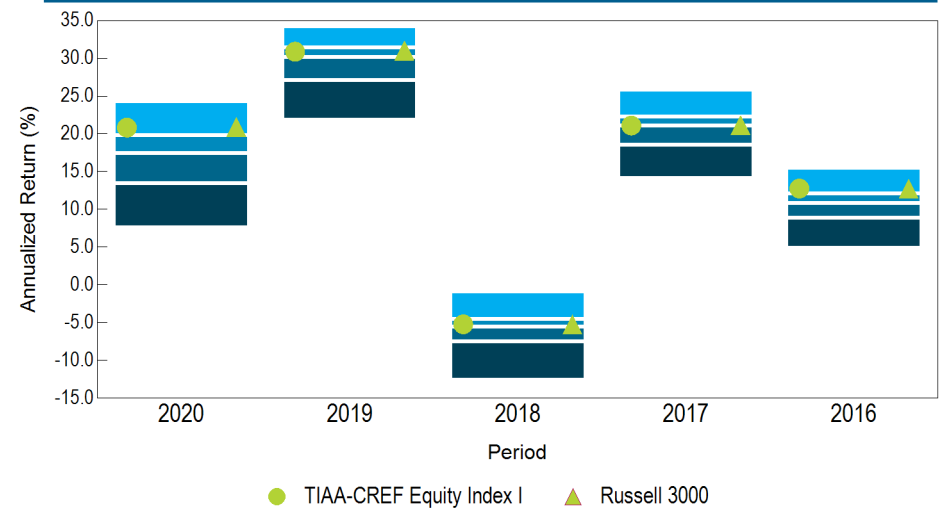
#### Return Summary



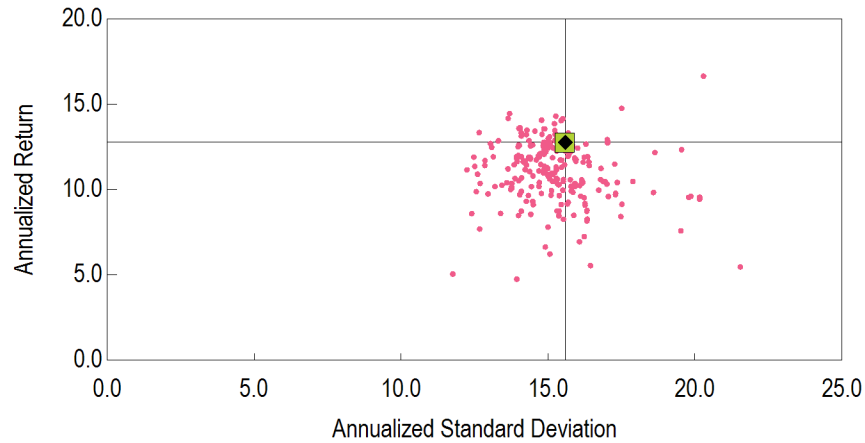
#### Large Blend MStar MF Return Comparison



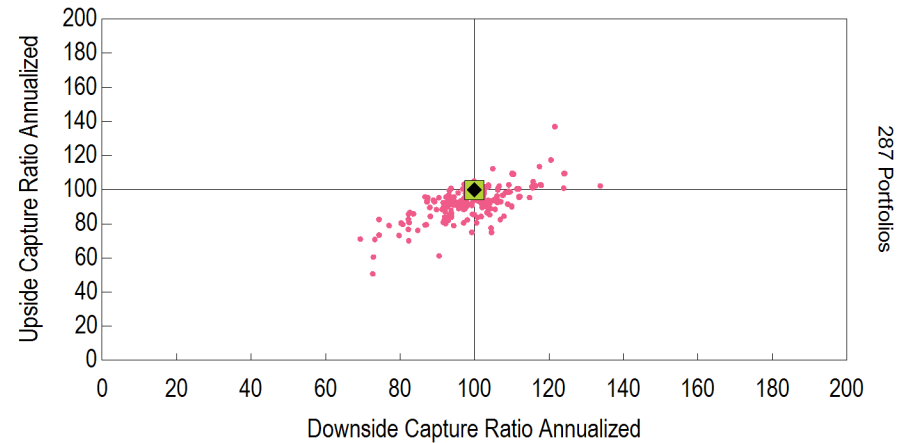
#### Large Blend MStar MF Return Comparison



Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



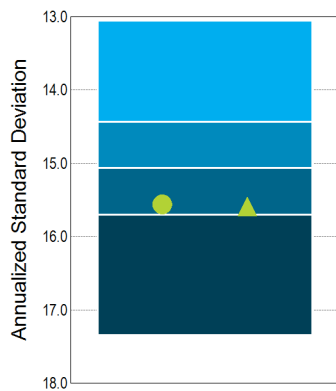
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



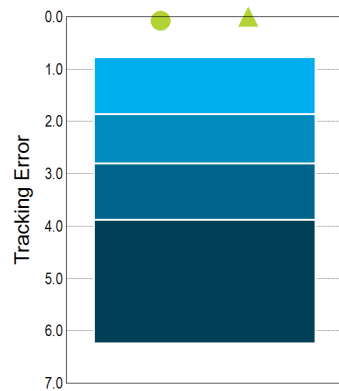
■ TIAA-CREF Equity Index I    ◆ Russell 3000    ● Large Blend MStar MF

■ TIAA-CREF Equity Index I    ◆ Russell 3000    ● Large Blend MStar MF

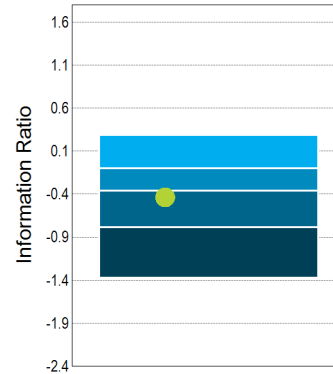
Annualized Standard Deviation



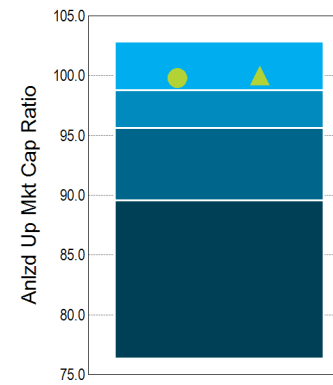
Tracking Error



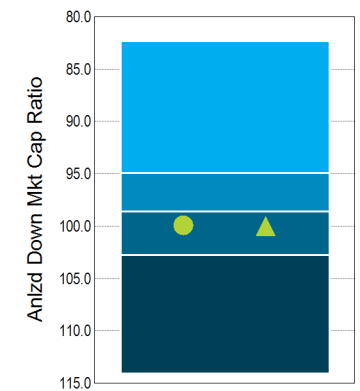
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● TIAA-CREF Equity Index I    ▲ Russell 3000    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

**Fund Characteristics as of December 31, 2020**

Sharpe Ratio (3 Year)	0.66
Average Market Cap (\$mm)	102,450.90
Price/Earnings	22.26
Price/Book	3.45
Price/Sales	2.53
Price/Cash Flow	14.42
Dividend Yield	1.56
Number of Equity Holdings	2,960
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.00%

**Sector Allocation as of December 31, 2020**

<b>BASIC MATERIALS</b>	2.43%
<b>COMMUNICATION SERVICES</b>	10.15%
<b>CONSUMER CYCLICAL</b>	12.23%
<b>CONSUMER DEFENSIVE</b>	6.32%
<b>ENERGY</b>	2.17%
<b>FINANCIAL SERVICES</b>	13.10%
<b>HEALTHCARE</b>	14.02%
<b>INDUSTRIALS</b>	9.27%
<b>REAL ESTATE</b>	3.43%
<b>TECHNOLOGY</b>	24.23%
<b>UTILITIES</b>	2.64%

**Top Holdings as of December 31, 2020**

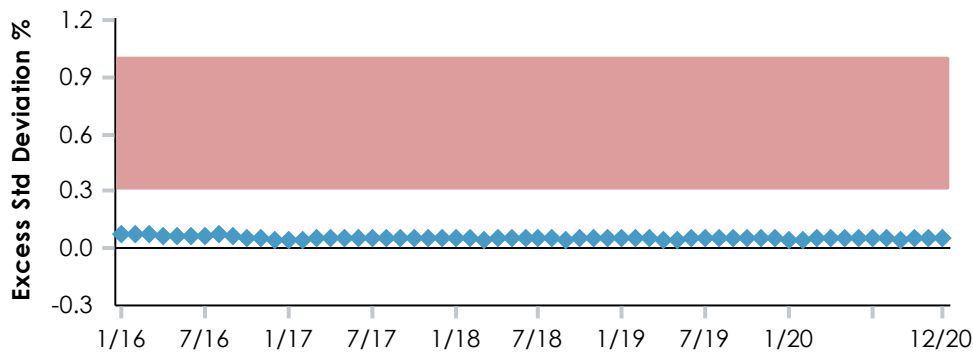
<b>APPLE INC ORDINARY SHARES</b>	5.59%
<b>MICROSOFT CORP</b>	4.35%
<b>AMAZON.COM INC ORDINARY SHARES</b>	3.60%
<b>FACEBOOK INC A</b>	1.71%
<b>TESLA INC</b>	1.39%
<b>ALPHABET INC A</b>	1.37%
<b>ALPHABET INC CLASS C</b>	1.33%
<b>BERKSHIRE HATHAWAY INC CLASS B</b>	1.13%
<b>JOHNSON &amp; JOHNSON ORDINARY SHARES</b>	1.08%
<b>JPMORGAN CHASE &amp; CO ORDINARY SHARES</b>	1.00%

**Top Countries as of December 31, 2020**

<b>United States</b>	98.99%
<b>United Kingdom</b>	0.46%
<b>Switzerland</b>	0.28%
<b>China</b>	0.14%
<b>Brazil</b>	0.05%
<b>Puerto Rico</b>	0.03%
<b>India</b>	0.02%
<b>Canada</b>	0.01%
<b>Taiwan</b>	0.01%

# TIAA-CREF S&P 500 Index I vs. S&P 500 Index

## Short-term (Rolling 12 Months Tracking Error)

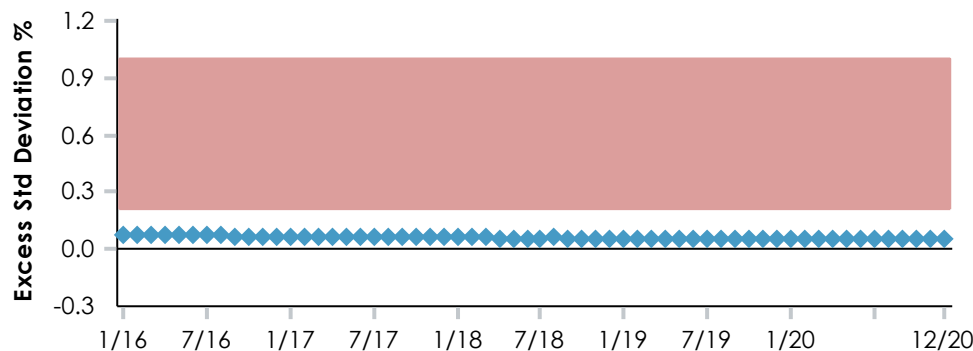


### Short-Term Performance

Positive

Probationary Performance 0.30%

## Medium-term (Rolling 36 Months Tracking Error)

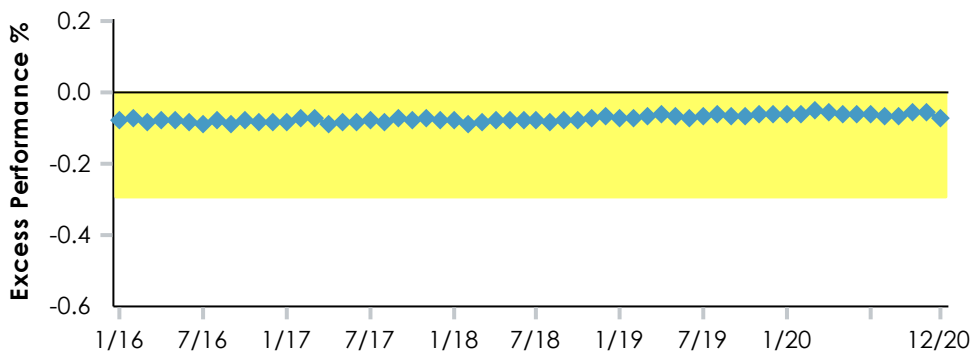


### Medium-Term Performance

Positive

Probationary Performance 0.25%

## Long-term (Rolling 60 Months Excess Performance)



### Long-Term Performance

Acceptable

Probationary Performance -0.30%

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF S&P 500 Index I	12.1 (29)	18.3 (18)	14.1 (16)	15.1 (14)	15.2 (13)
S&P 500 Index	12.1 (9)	18.4 (9)	14.2 (3)	15.2 (3)	15.3 (3)
IM S&P 500 Index (MF) Median	12.1	18.0	13.8	14.8	14.7

**Monitoring Status**

**Acceptable**

### TIAA-CREF S&P 500 Index I | As of December 31, 2020

#### Description:

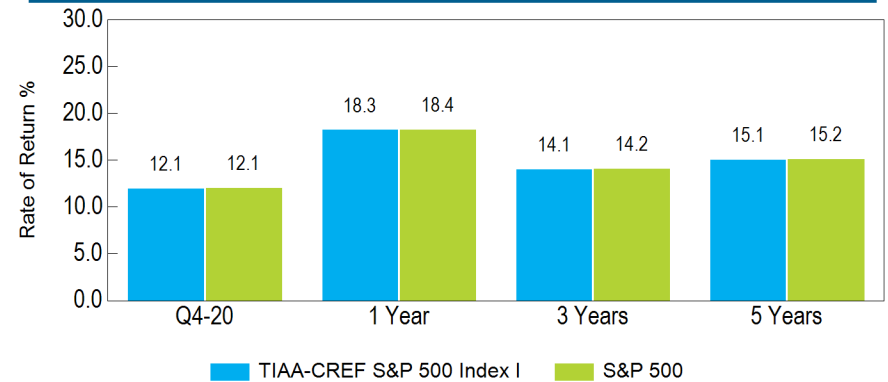
The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of equity securities of large domestic companies selected to track U.S. equity markets based on a market index.

The fund invests at least 80% of its assets in securities of its benchmark index, the S&P 500® Index. It buys most, but not necessarily all, of the stocks in its benchmark index, and the advisor will attempt to closely match the overall investment characteristics of the fund's benchmark index.

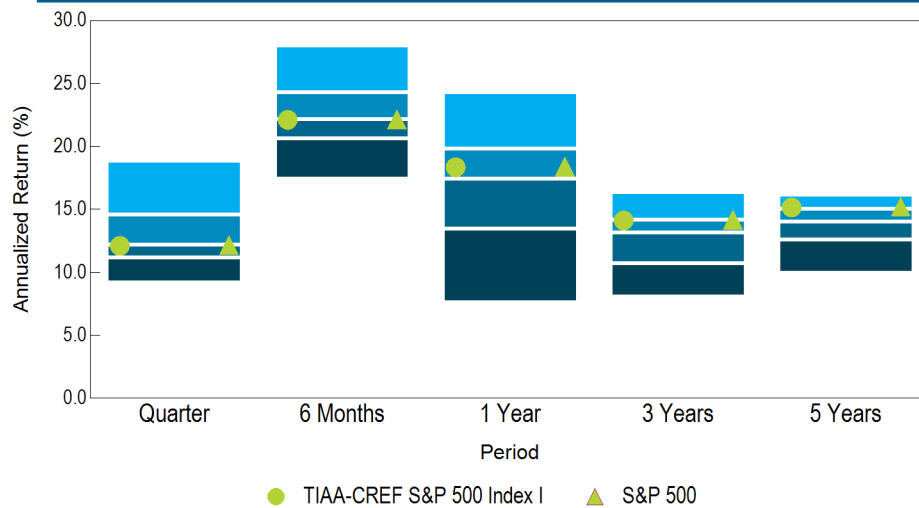
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TISPX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	176,903.47
<b>Net Assets (\$mm)</b>	5,167.36
<b>% Assets in Top 10 Holdings</b>	27.06
<b>Total Number of Holdings</b>	510
<b>Manager Name</b>	Philip James (Jim) Campagna
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.05%
<b>Closed to New Investors</b>	No

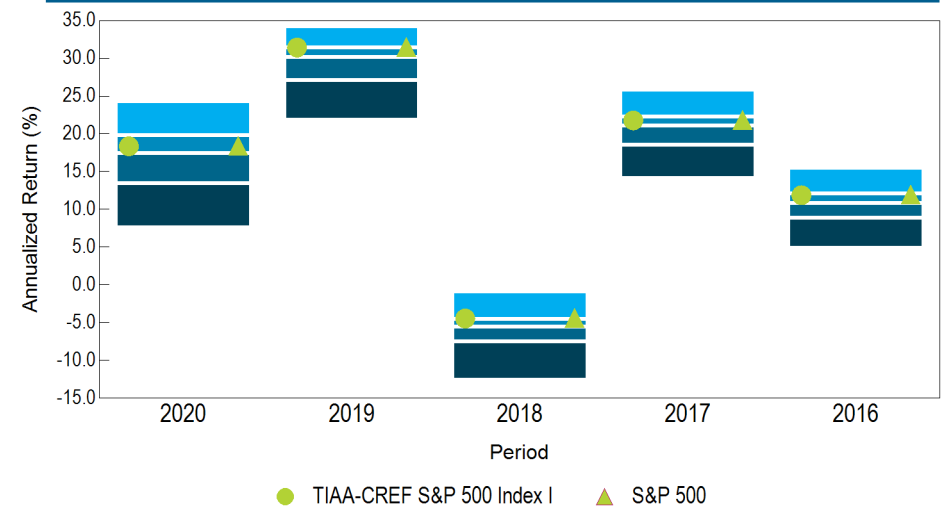
#### Return Summary



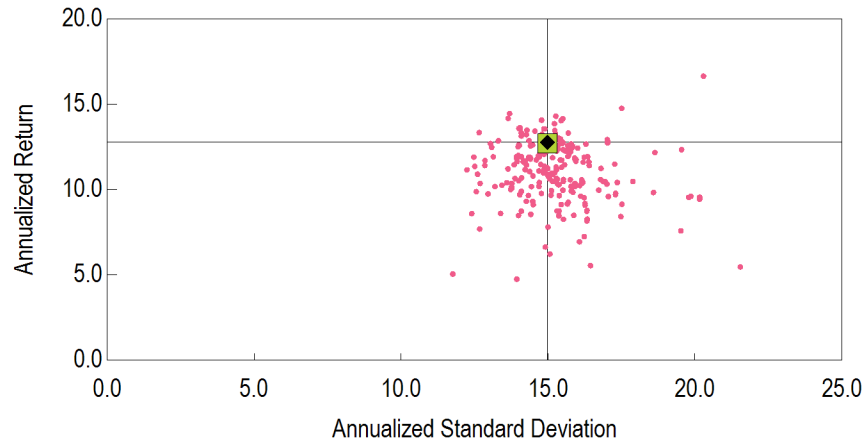
#### Large Blend MStar MF Return Comparison



#### Large Blend MStar MF Return Comparison

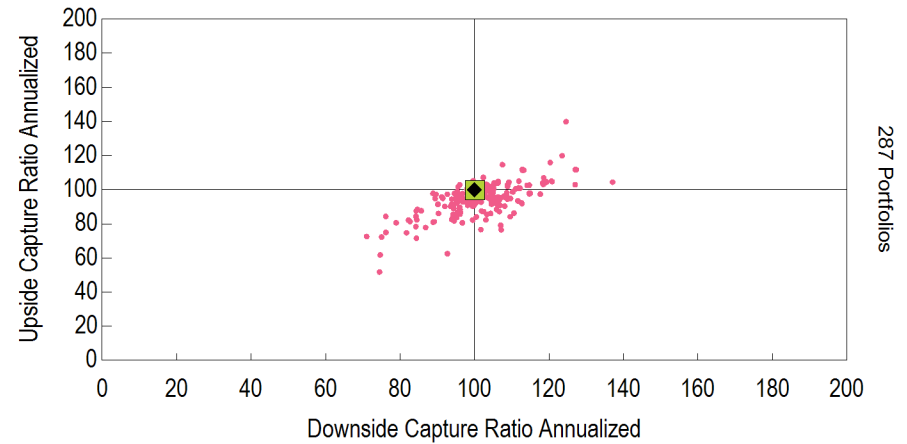


Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



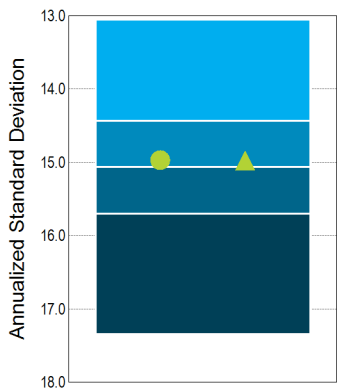
■ TIAA-CREF S&P 500 Index I    ◆ S&P 500    ● Large Blend MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



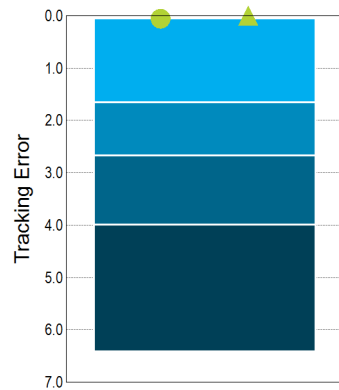
■ TIAA-CREF S&P 500 Index I    ◆ S&P 500    ● Large Blend MStar MF

Annualized Standard Deviation

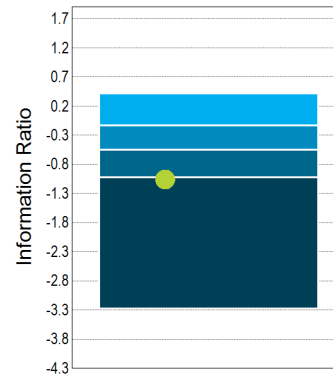


● TIAA-CREF S&P 500 Index I    ▲ S&P 500

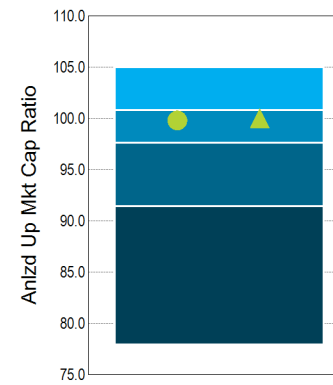
Tracking Error



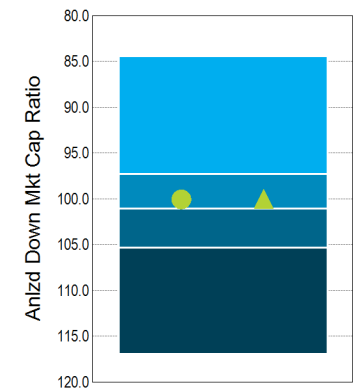
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

**Fund Characteristics as of December 31, 2020**

Sharpe Ratio (3 Year)	0.67
Average Market Cap (\$mm)	176,903.47
Price/Earnings	22.62
Price/Book	3.67
Price/Sales	2.70
Price/Cash Flow	15.03
Dividend Yield	1.65
Number of Equity Holdings	505
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.00%

**Sector Allocation as of December 31, 2020**

<b>BASIC MATERIALS</b>	2.27%
<b>COMMUNICATION SERVICES</b>	10.77%
<b>CONSUMER CYCLICAL</b>	12.51%
<b>CONSUMER DEFENSIVE</b>	6.96%
<b>ENERGY</b>	2.28%
<b>FINANCIAL SERVICES</b>	13.50%
<b>HEALTHCARE</b>	13.55%
<b>INDUSTRIALS</b>	8.78%
<b>REAL ESTATE</b>	2.42%
<b>TECHNOLOGY</b>	24.19%
<b>UTILITIES</b>	2.76%

**Top Holdings as of December 31, 2020**

<b>APPLE INC ORDINARY SHARES</b>	6.62%
<b>MICROSOFT CORP</b>	5.25%
<b>AMAZON.COM INC ORDINARY SHARES</b>	4.33%
<b>FACEBOOK INC A</b>	2.05%
<b>TESLA INC</b>	1.67%
<b>ALPHABET INC A</b>	1.64%
<b>ALPHABET INC CLASS C</b>	1.59%
<b>BERKSHIRE HATHAWAY INC CLASS B</b>	1.41%
<b>JOHNSON &amp; JOHNSON ORDINARY SHARES</b>	1.29%
<b>JPMORGAN CHASE &amp; CO ORDINARY SHARES</b>	1.21%

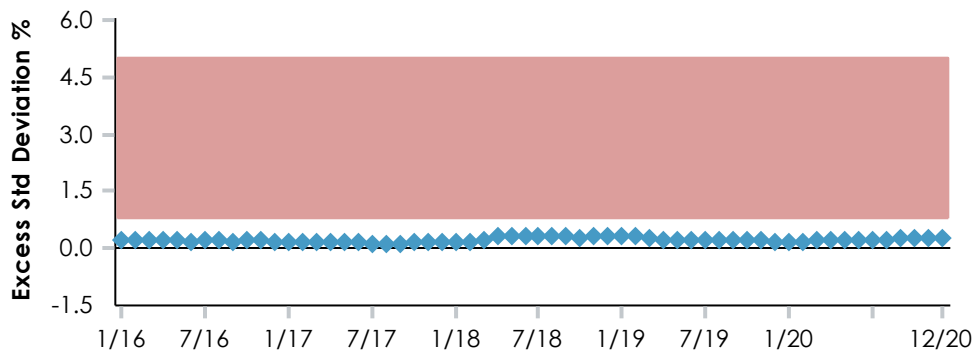
**Top Countries as of December 31, 2020**

<b>United States</b>	99.09%
<b>United Kingdom</b>	0.53%
<b>Switzerland</b>	0.33%
<b>Singapore</b>	0.04%
<b>Russia</b>	0.01%



# TIAA-CREF International Equity Index I (actual) vs. MSCI EAFE (Net) Index

## Short-term (Rolling 12 Months Tracking Error)

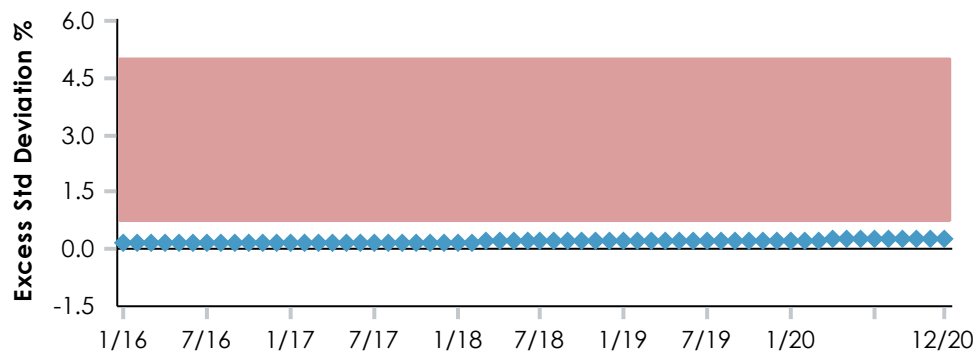


### Short-Term Performance

Positive

Probationary Performance 0.75%

## Medium-term (Rolling 36 Months Tracking Error)

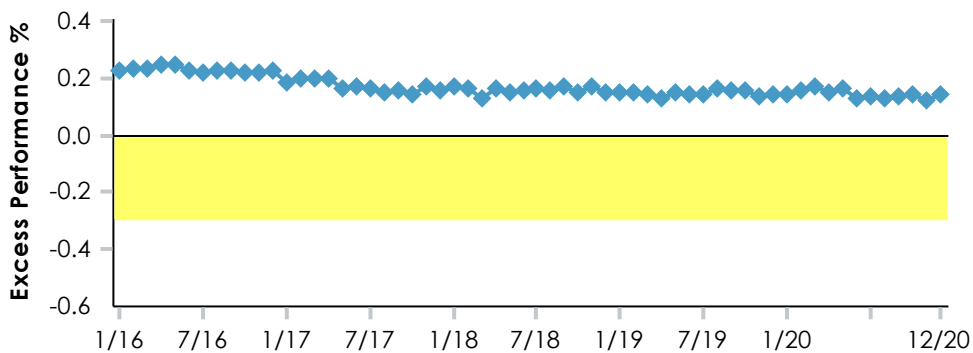


### Medium-Term Performance

Positive

Probationary Performance 0.70%

## Long-term (Rolling 60 Months Excess Performance)



### Long-Term Performance

Positive

Probationary Performance -0.30%

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF International Equity Index I (actual)	16.0 (38)	8.0 (44)	4.4 (37)	7.6 (39)	7.7 (28)
MSCI EAFE (Net) Index	16.0 (37)	7.8 (47)	4.3 (42)	7.4 (45)	7.5 (32)
IM International Multi-Cap Core Equity (MF) Median	15.7	7.5	3.9	7.2	7.1

Monitoring Status

Positive

### TIAA-CREF International Equity Index | As of December 31, 2020

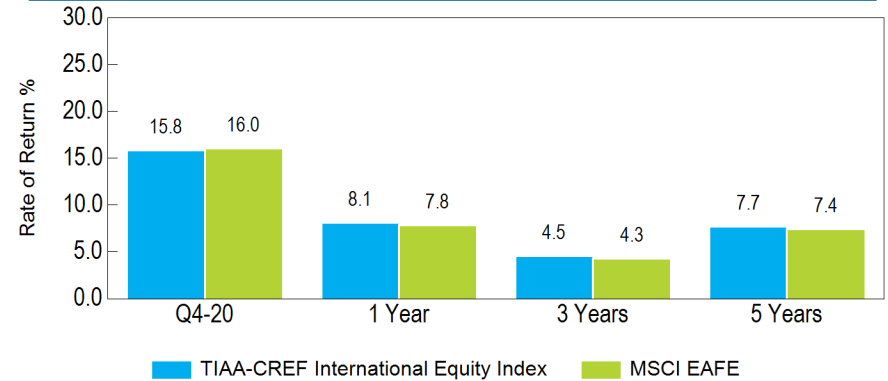
#### Description:

The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of foreign equity investments based on a market index. Under normal circumstances, the fund invests at least 80% of its assets in securities of its benchmark index, the MSCI EAFE Index. It buys most, but not necessarily all, of the stocks included in its benchmark index, and the advisor will attempt to closely match the overall investment characteristics of the fund's benchmark index.

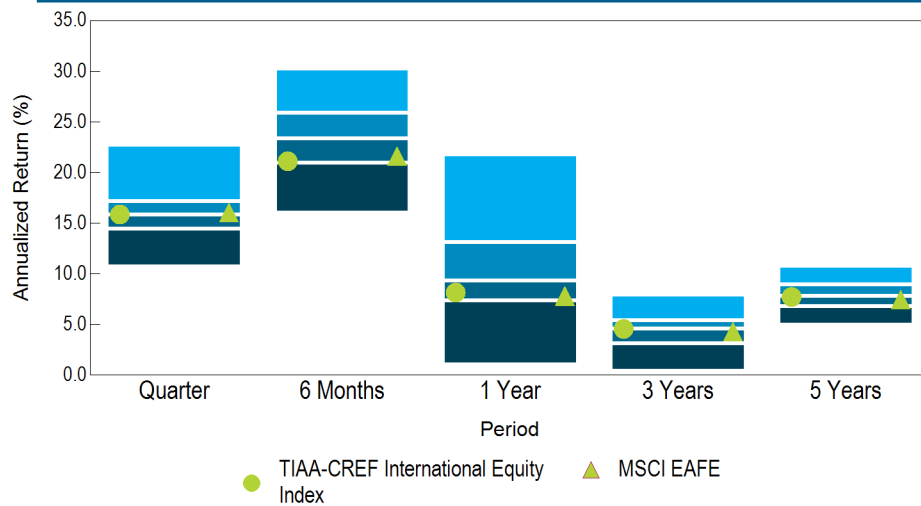
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TCIEX
<b>Morningstar Category</b>	Foreign Large Blend
<b>Average Market Cap (\$mm)</b>	42,166.68
<b>Net Assets (\$mm)</b>	9,217.88
<b>% Assets in Top 10 Holdings</b>	11.94
<b>Total Number of Holdings</b>	894
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	16
<b>Expense Ratio</b>	0.06%
<b>Closed to New Investors</b>	No

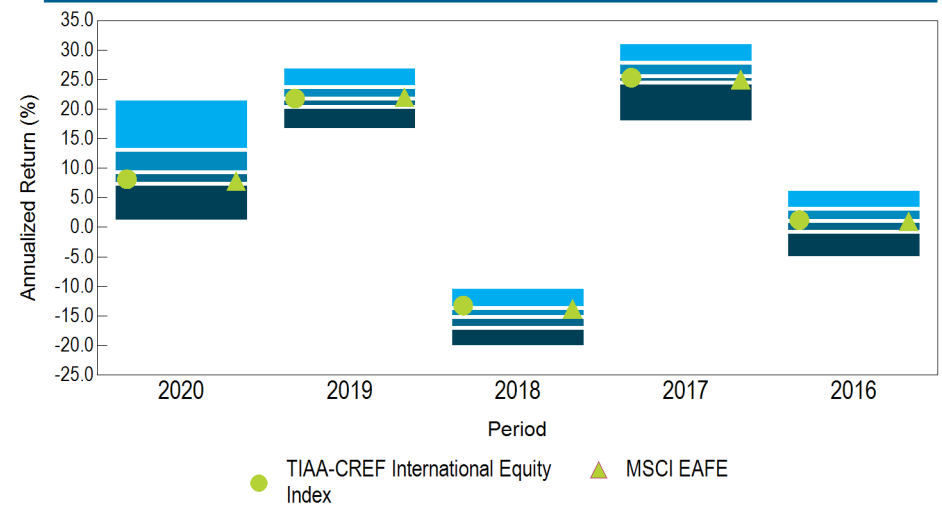
#### Return Summary



#### Foreign Large Blend MStar MF Return Comparison

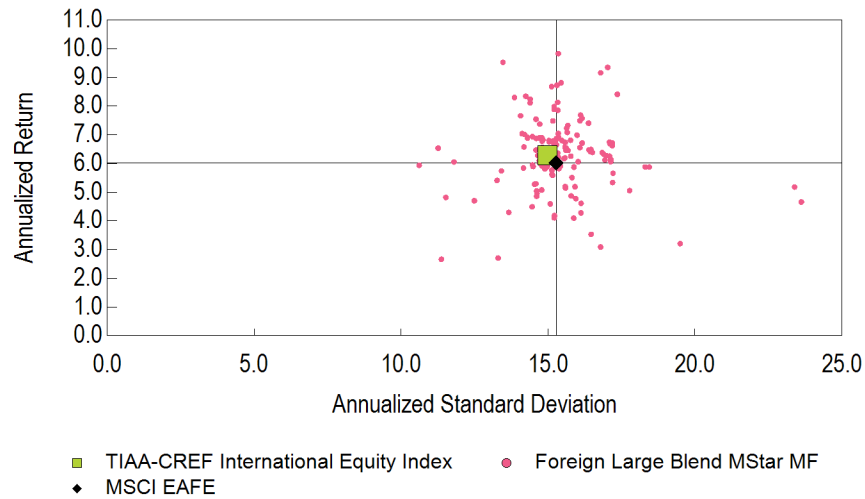


#### Foreign Large Blend MStar MF Return Comparison

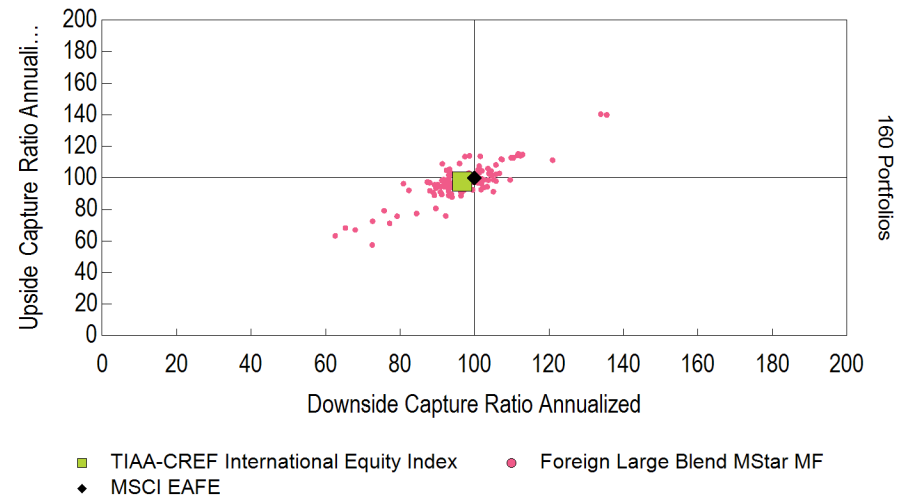


### TIAA-CREF International Equity Index | As of December 31, 2020

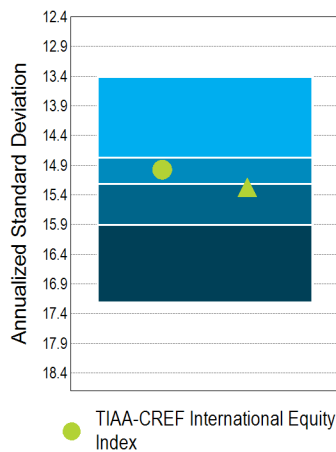
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



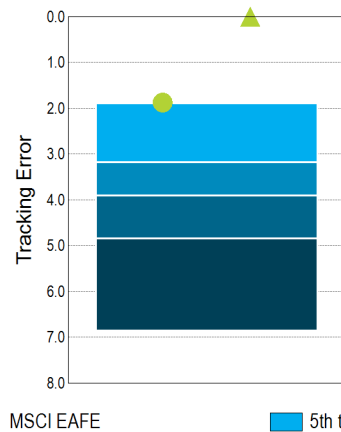
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



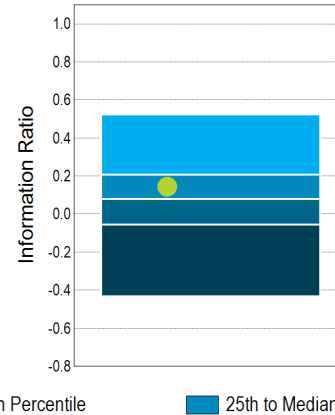
Annualized Standard Deviation



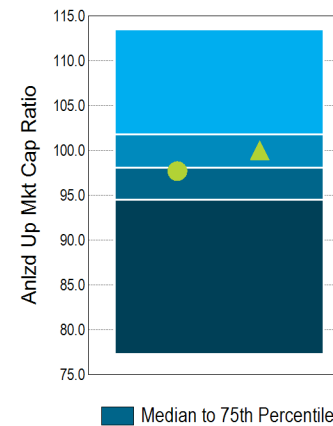
Tracking Error



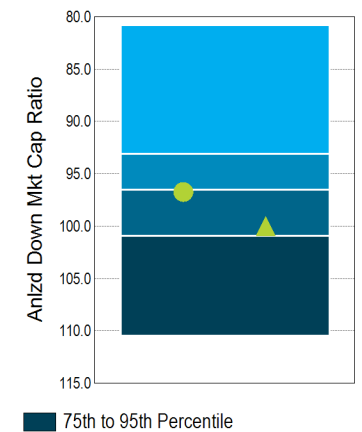
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### TIAA-CREF International Equity Index | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.17
Average Market Cap (\$mm)	42,166.68
Price/Earnings	17.03
Price/Book	1.67
Price/Sales	1.39
Price/Cash Flow	10.40
Dividend Yield	2.49
Number of Equity Holdings	879
R-Squared (3 Year)	0.99
Alpha (3 Year)	0.02%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	7.89%
COMMUNICATION SERVICES	5.91%
CONSUMER CYCLICAL	11.02%
CONSUMER DEFENSIVE	10.97%
ENERGY	3.35%
FINANCIAL SERVICES	16.43%
HEALTHCARE	13.26%
INDUSTRIALS	14.94%
REAL ESTATE	3.08%
TECHNOLOGY	9.37%
UTILITIES	3.76%

#### Top Holdings as of December 31, 2020

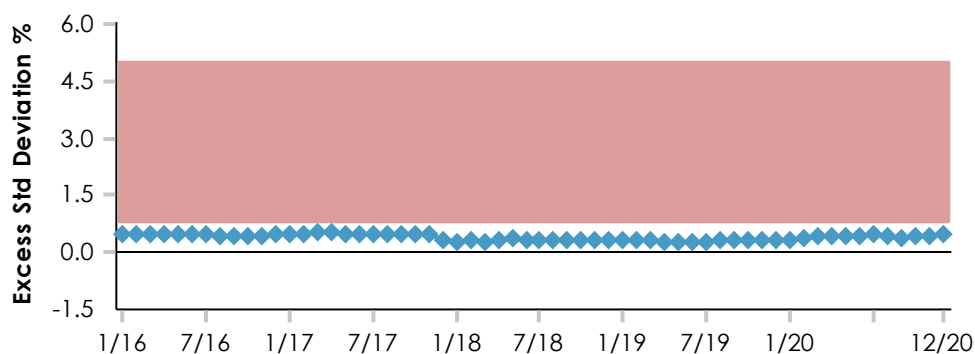
NESTLE SA ORDINARY SHARES	2.13%
ROCHE HOLDING AG ORDINARY SHARES	1.53%
NOVARTIS AG ORDINARY SHARES (REGISTERED)	1.31%
ASML HOLDING NV	1.29%
LVMH MOET HENNESSY LOUIS VUITTON SE ORDINARY SHARES	1.09%
TOYOTA MOTOR CORP	1.02%
UNILEVER PLC	0.99%
AIA GROUP LTD	0.92%
SAP SE	0.85%
ASTRAZENECA PLC	0.82%

#### Top Countries as of December 31, 2020

Japan	25.43%
United Kingdom	14.04%
France	10.42%
Switzerland	9.90%
Germany	9.20%
Australia	6.95%
Netherlands	4.38%
Sweden	3.17%
Hong Kong	2.86%
Denmark	2.52%

# TIAA-CREF Emerging Markets Equity Index (actual) vs. MSCI Emerging Markets

## Short-term (Rolling 12 Months Tracking Error)

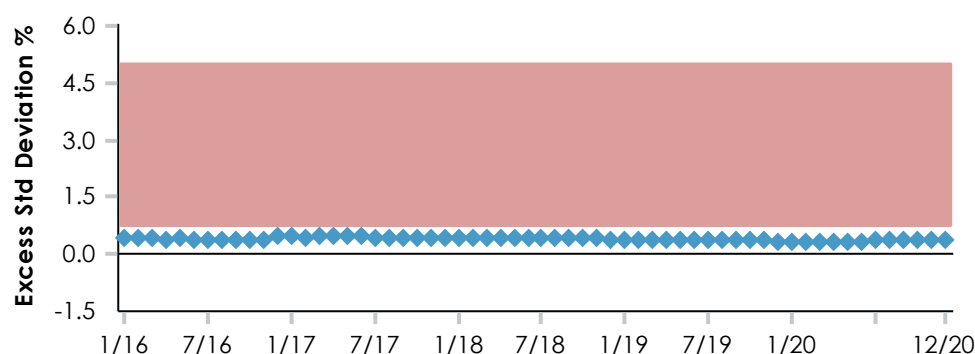


### Short-Term Performance

Positive

Probationary Performance 0.75%

## Medium-term (Rolling 36 Months Tracking Error)

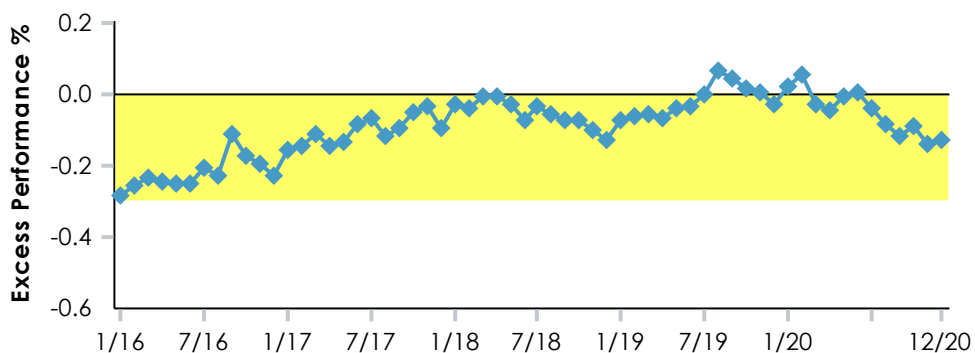


### Medium-Term Performance

Positive

Probationary Performance 0.70%

## Long-term (Rolling 60 Months Excess Performance)



### Long-Term Performance

Acceptable

Probationary Performance -0.30%

## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Emerging Markets Equity Index (actual)	19.3 (46)	17.9 (48)	5.9 (46)	12.7 (39)	6.0 (49)
MSCI Emerging Markets (Net)	19.7 (41)	18.3 (46)	6.2 (44)	12.8 (38)	6.2 (44)
IM Emerging Markets Equity (MF) Median	19.1	17.5	5.6	11.7	5.9

Monitoring Status

Acceptable

### TIAA-CREF Emerging Markets Equity Index | As of December 31, 2020

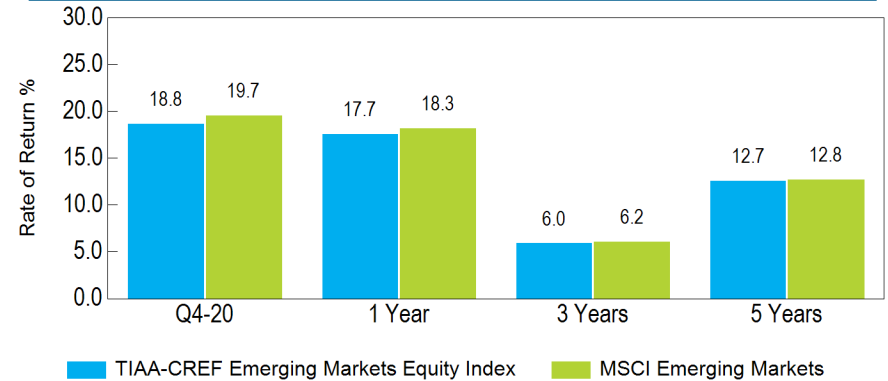
#### Description:

The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of emerging market equity investments based on a market index. Under normal circumstances, the fund invests at least 80% of its assets in equity securities that comprise its benchmark index, the MSCI Emerging Markets® Index ("MSCI EM Index"), or in instruments with economic characteristics similar to all or a portion of the MSCI EM Index. It buys most, but not necessarily all, of the stocks in its benchmark index, and the advisor will attempt to closely match the overall investment attributes of the fund's benchmark index.

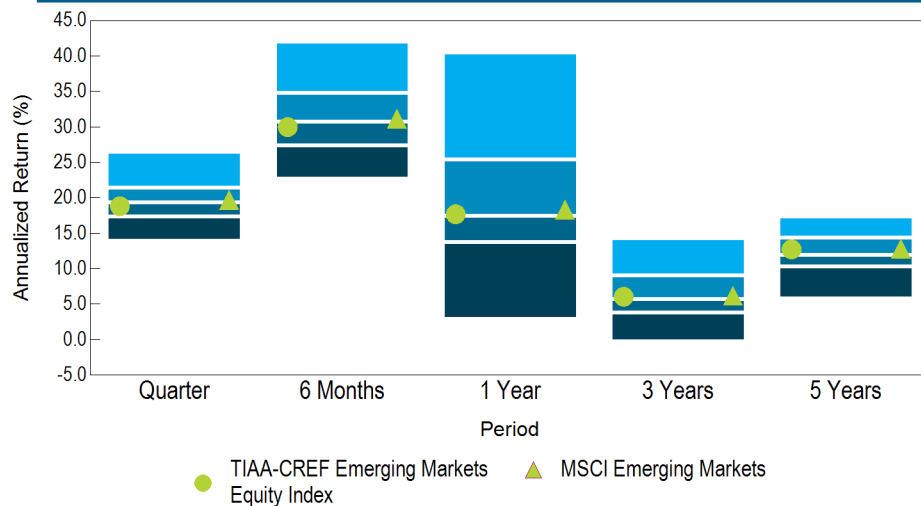
#### Portfolio Fund Information as of December 31, 2020

<b>Ticker</b>	TEQLX
<b>Morningstar Category</b>	Diversified Emerging Mkts
<b>Average Market Cap (\$mm)</b>	51,390.92
<b>Net Assets (\$mm)</b>	1,039.38
<b>% Assets in Top 10 Holdings</b>	27.87
<b>Total Number of Holdings</b>	1,390
<b>Manager Name</b>	Philip James (Jim) Campagna
<b>Manager Tenure</b>	10
<b>Expense Ratio</b>	0.20%
<b>Closed to New Investors</b>	No

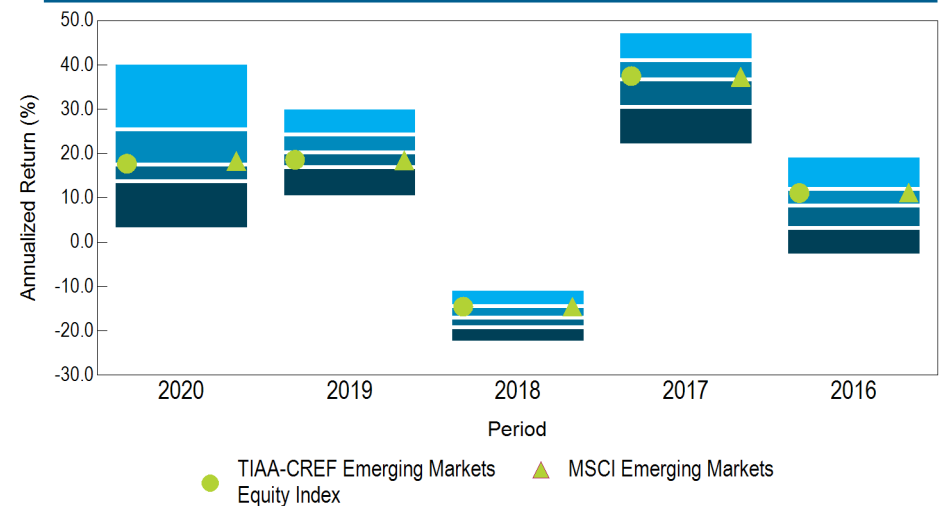
#### Return Summary



#### Diversified Emerging Mkts MStar MF Return Comparison

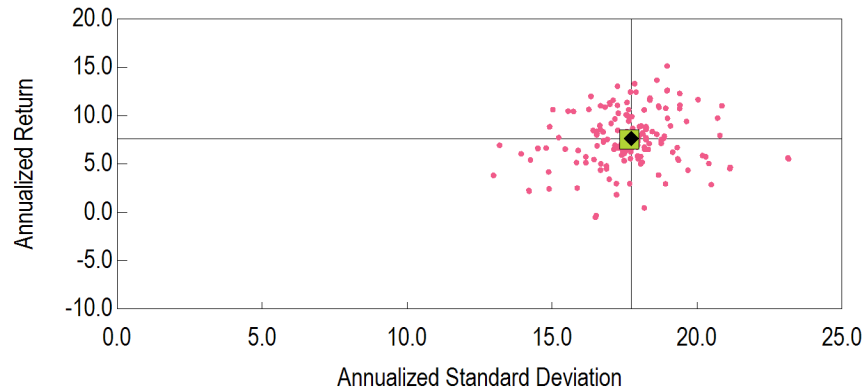


#### Diversified Emerging Mkts MStar MF Return Comparison

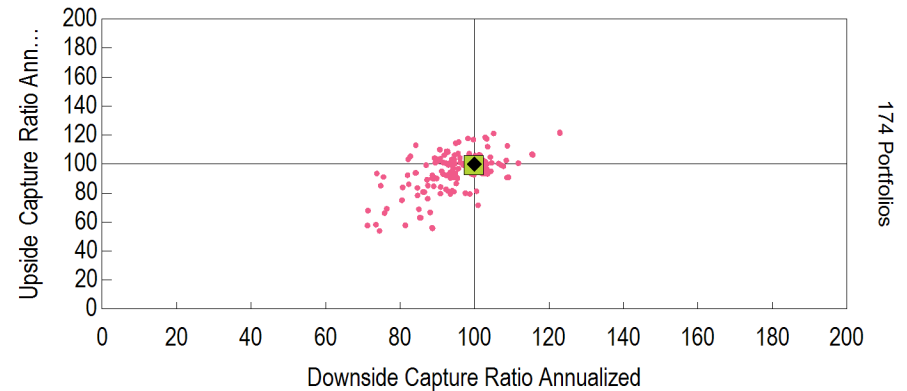


### TIAA-CREF Emerging Markets Equity Index | As of December 31, 2020

Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



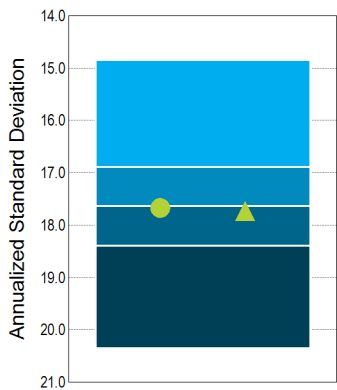
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



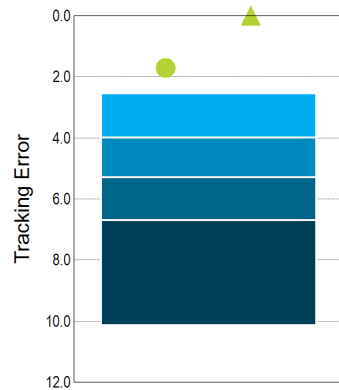
- TIAA-CREF Emerging Markets Equity Index
- ◆ MSCI Emerging Markets
- Diversified Emerging Mkts MStar MF

- TIAA-CREF Emerging Markets Equity Index
- ◆ MSCI Emerging Markets
- Diversified Emerging Mkts MStar MF

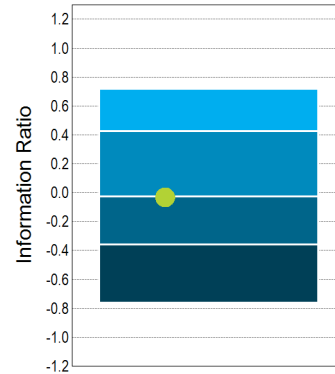
Annualized Standard Deviation



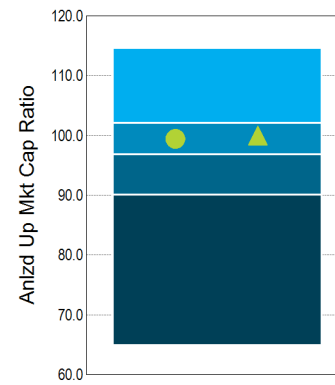
Tracking Error



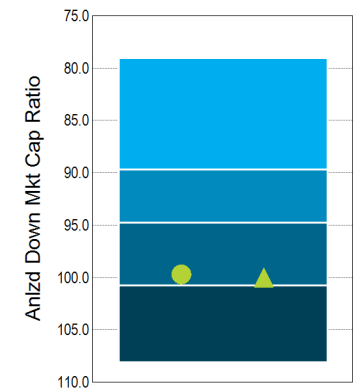
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- TIAA-CREF Emerging Markets Equity Index
- ▲ MSCI Emerging Markets
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

### TIAA-CREF Emerging Markets Equity Index | As of December 31, 2020

#### Fund Characteristics as of December 31, 2020

Sharpe Ratio (3 Year)	0.23
Average Market Cap (\$mm)	51,390.92
Price/Earnings	15.26
Price/Book	1.82
Price/Sales	1.62
Price/Cash Flow	9.39
Dividend Yield	2.27
Number of Equity Holdings	1,376
R-Squared (3 Year)	0.99
Alpha (3 Year)	-0.01%

#### Sector Allocation as of December 31, 2020

BASIC MATERIALS	7.66%
COMMUNICATION SERVICES	12.98%
CONSUMER CYCLICAL	16.54%
CONSUMER DEFENSIVE	6.40%
ENERGY	4.82%
FINANCIAL SERVICES	18.08%
HEALTHCARE	4.25%
INDUSTRIALS	4.26%
REAL ESTATE	2.25%
TECHNOLOGY	20.78%
UTILITIES	1.99%

#### Top Holdings as of December 31, 2020

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.90%
ALIBABA GROUP HOLDING LTD ADR	5.58%
TENCENT HOLDINGS LTD	5.24%
SAMSUNG ELECTRONICS CO LTD	4.51%
MEITUAN	1.72%
NASPERS LTD CLASS N	1.13%
RELIANCE INDUSTRIES LTD ORDINARY SHARES	0.98%
JD.COM INC ADR	0.96%
CHINA CONSTRUCTION BANK CORP CLASS H	0.92%
PING AN INSURANCE (GROUP) CO. OF CHINA LTD CLASS H	0.92%

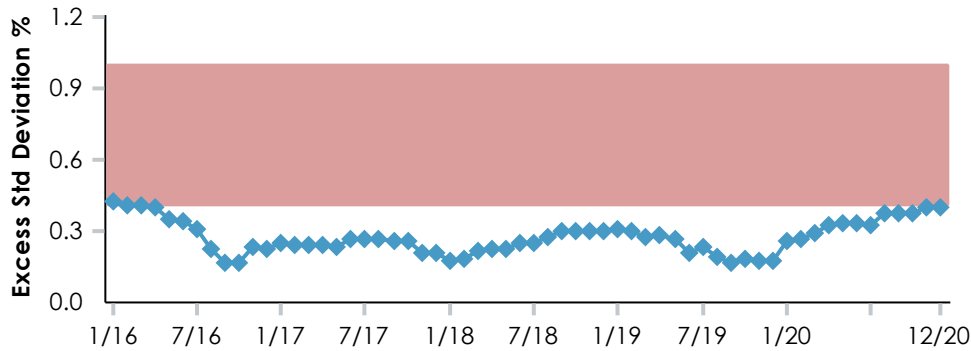
#### Top Countries as of December 31, 2020

China	37.98%
South Korea	13.65%
Taiwan	12.94%
India	9.39%
Brazil	5.15%
South Africa	3.44%
Russia	2.81%
Saudi Arabia	2.48%
Thailand	1.90%
Mexico	1.70%



# TIAA-CREF Bond Index I vs. BBg BC U.S. Aggregate Index

## Short-term (Rolling 12 Months Tracking Error)

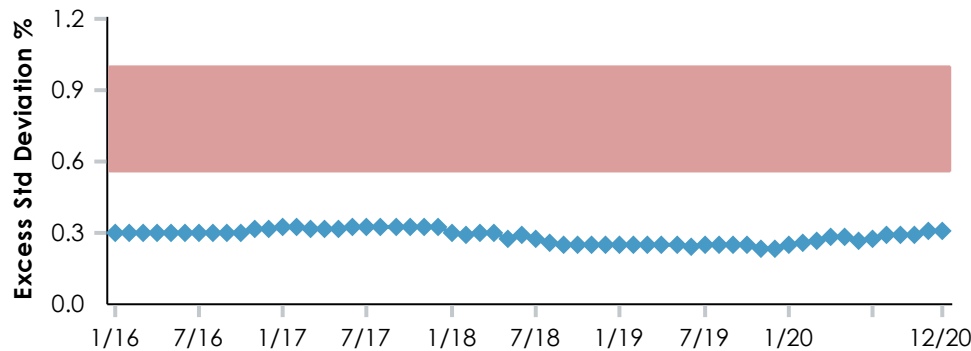


### Short-Term Performance

Positive

Probationary Performance 0.40%

## Medium-term (Rolling 36 Months Tracking Error)

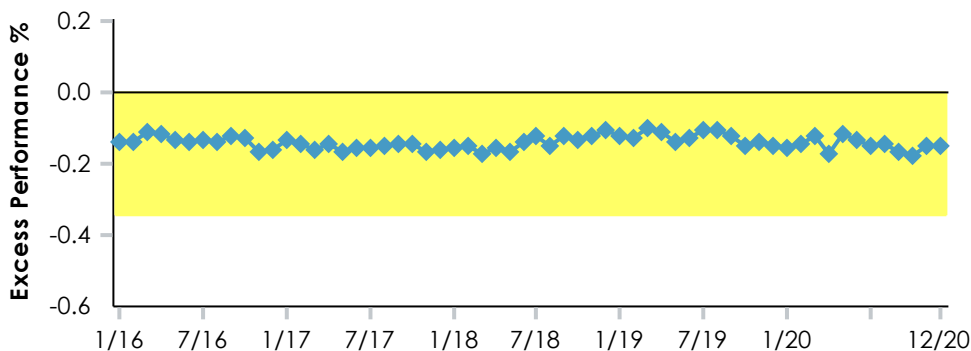


### Medium-Term Performance

Positive

Probationary Performance 0.55%

## Long-term (Rolling 60 Months Excess Performance)



### Long-Term Performance

Acceptable

Probationary Performance -0.35%

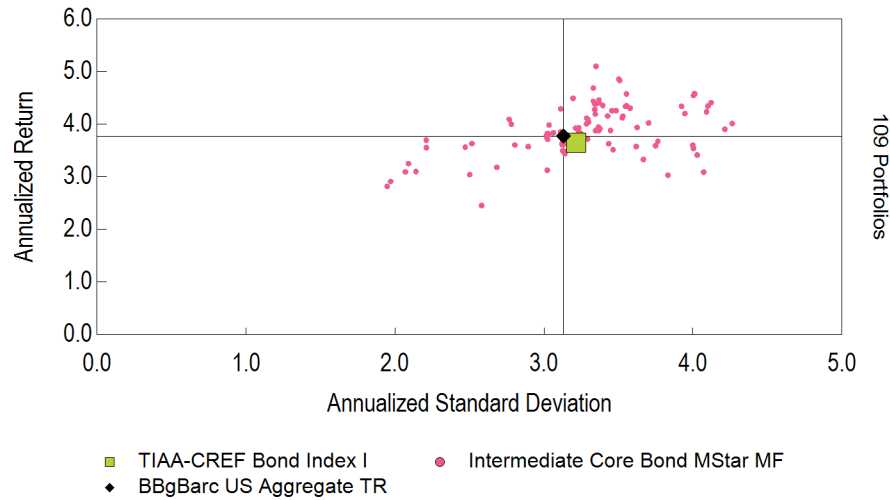
## Annualized Performance Results (Net of management fees)

	Qtr	1 Year	3 Years	5 Years	Inception (12/2011)
TIAA-CREF Bond Index I	0.7 (89)	7.5 (73)	5.2 (64)	4.3 (73)	3.3 (73)
BBg BC U.S. Aggregate Index	0.7 (88)	7.5 (72)	5.3 (53)	4.4 (61)	3.5 (63)
IM U.S. Broad Market Core Fixed Income (MF) Median	1.4	8.2	5.4	4.6	3.7

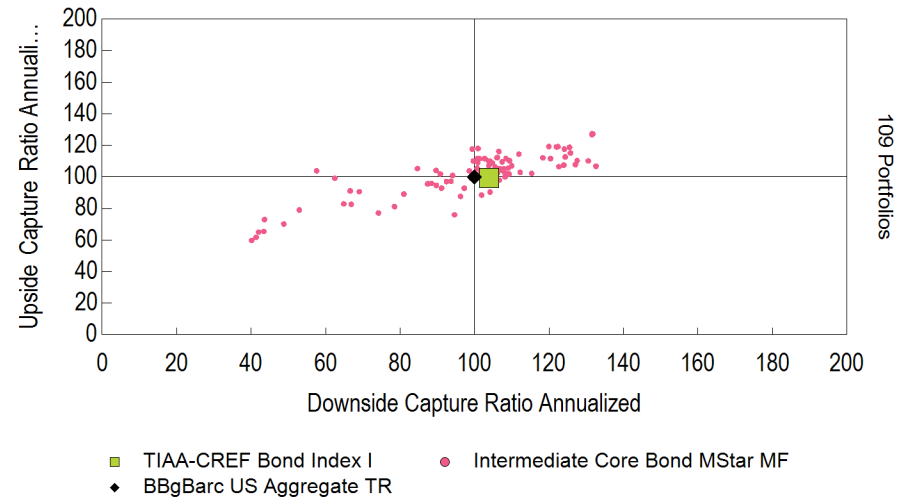
**Monitoring Status**

**Acceptable**

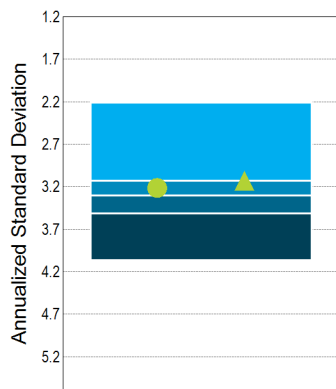
Annualized Return vs. Annualized Standard Deviation  
6 Years Ending December 31, 2020



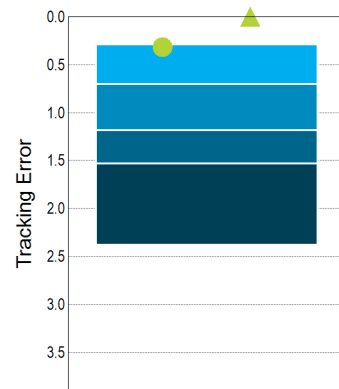
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
6 Years Ending December 31, 2020



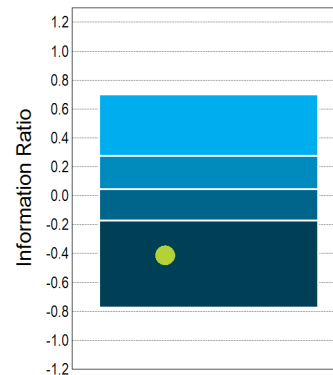
Annualized Standard Deviation



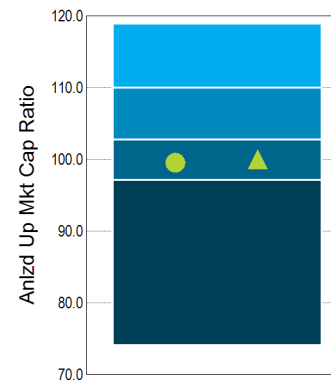
Tracking Error



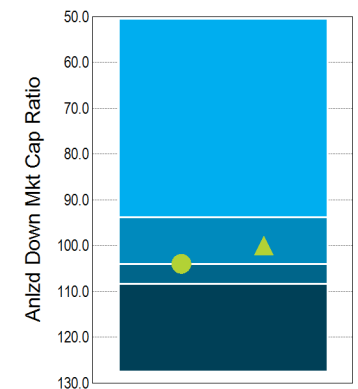
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● TIAA-CREF Bond Index I    ▲ BBgBarc US Aggregate TR    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

Fund Characteristics as of December 31, 2020		Top Holdings as of December 31, 2020		Fixed Income Sectors as of December 31, 2020	
Sharpe Ratio (3 Year)	1.09	UNITED STATES TREASURY NOTES 2.12%	1.80%	GOVERNMENT	41.57%
Average Duration	6.22	FEDERAL NATIONAL MORTGAGE ASSOCIATION	1.46%	MUNICIPAL	0.78%
Average Coupon	2.79%	2.5%		CORPORATE	26.84%
Average Effective Maturity	8.15	UNITED STATES TREASURY NOTES 0.38%	1.43%	SECURITIZED	29.14%
R-Squared (3 Year)	0.99	UNITED STATES TREASURY BONDS 3.5%	1.27%	CASH & EQUIVALENTS	1.66%
Alpha (3 Year)	-0.01%	UNITED STATES TREASURY NOTES 1.75%	1.17%	DERIVATIVE	0.00%
Beta (3 Year)	1.00	UNITED STATES TREASURY NOTES 2.25%	0.97%		
		UNITED STATES TREASURY NOTES 1.75%	0.83%		
		FEDERAL NATIONAL MORTGAGE ASSOCIATION	0.75%		
		2%			
		FEDERAL NATIONAL MORTGAGE ASSOCIATION	0.72%		
		2%			
		UNITED STATES TREASURY NOTES 2.5%	0.72%		

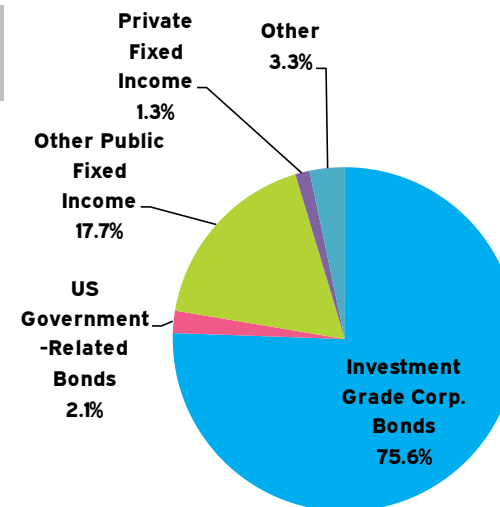
Credit Quality as of December 31, 2020		Maturities as of December 31, 2020		Top Countries as of December 31, 2020	
AAA	70.50%	1 to 3 Years	12.84%	United States	92.45%
AA	3.40%	3 to 5 Years	20.28%	Supranational	1.45%
A	11.79%	5 to 7 Years	6.87%	United Kingdom	0.97%
BBB	14.30%	7 to 10 Years	10.21%	Canada	0.92%
BB	0.01%	10 to 15 Years	4.38%	Japan	0.66%
B	0.00%	15 to 20 Years	6.24%	Germany	0.44%
Below B	0.00%	20 to 30 Years	35.14%	Netherlands	0.43%
Not Rated	0.00%	Greater than 30 Years	3.31%	Mexico	0.36%
				Belgium	0.31%
				Colombia	0.17%

## **Sensitivity Analyses: T-C Life Funding Agreements**

### T-C Life Funding Agreements (based on non-investment performance criteria)

Criteria	Status as of 9/30/2020	Status as of 6/30/2020	Status as of 3/31/2020	Status as of 12/31/2019
<b>Financial Strength</b>	Moody's = Aa1	Moody's = Aa1	Moody's = Aa1	Moody's = Aa1
	Standard & Poor's = AA+	Standard & Poor's = AA+	Standard & Poor's = AA+	Standard & Poor's = AA+
	A.M. Best = A++	A.M. Best = A++	A.M. Best = A++	A.M. Best = A++
	Fitch = AAA	Fitch = AAA	Fitch = AAA	Fitch = AAA
<b>Mortgage Portfolio</b>	100% in Good Standing*	100% in Good Standing*	100% in Good Standing*	100% in Good Standing*
<b>Bond Portfolio</b>	99.1% in Investment Grade (at least 90%)	99.4% in Investment Grade (at least 90%)	99.4% in Investment Grade (at least 90%)	99.7% in Investment Grade (at least 90%)
<b>Account Diversification</b>	Portfolio is diversified across asset classes and types (see chart below)	Portfolio is diversified across asset classes and types (see chart below)	Portfolio is diversified across asset classes and types (see chart below)	Portfolio is diversified across asset classes and types (see chart below)

\*Portfolio did not contain any commercial mortgages.  
Note, prior-period investment status will shift to the right.  
Source: TIAA-CREF



*Monitoring Status*

**Positive**

\*Status as of 9/30/20, 12/31/20 data not available at time of report generation

## Summary Points

## Summary Points

	Criteria Utilized for Performance Watch Status			
	On Watch	Short-term	Medium-term	Long-term
T. Rowe Price Instl Large Cap Growth	No	---	---	---
T. Rowe Price Instl Large Cap Value	No	---	---	---
TIAA-CREF Quant Small Cap Equity	Yes	✓	✓	---
TIAA-CREF Social Choice Equity	No	---	---	---
TIAA-CREF Real Estate Securities	No	---	---	---
DFA Large Cap International	No	---	---	---
DFA Emerging Markets Core Equity	Yes	---	✓	✓
Metropolitan West Total Return Bond	No	---	---	N/A
PIMCO Real Return	No	---	---	---
PIMCO Income	Yes	✓	✓	---
TIAA-CREF Inflation-Linked Bond	No	---	---	---
T. Rowe Price Instl Floating Rate	No	---	---	---
TIAA-CREF High Yield Bond	Yes	---	---	✓
TIAA-CREF Equity Index	No	---	---	---
TIAA-CREF S&P 500 Index	No	---	---	---
TIAA-CREF International Eq Index	No	---	---	---
TIAA-CREF Emerging Markets Eq Index	No	---	---	---
TIAA-CREF Bond Index	No	---	---	---
T-C Life Funding Agreements	No	N/A	N/A	N/A
<b>Total</b>	<b>4 of 19</b>	<b>2 of 18 eligible portfolios</b>	<b>3 of 18 eligible portfolios</b>	<b>2 of 17 eligible portfolios</b>

- Performance-based watch status criteria is on a relative basis
  - Absolute results may still be negative
- Criteria set up to evaluate managers over differing time periods

## **Enrollment Date Fund Analysis**

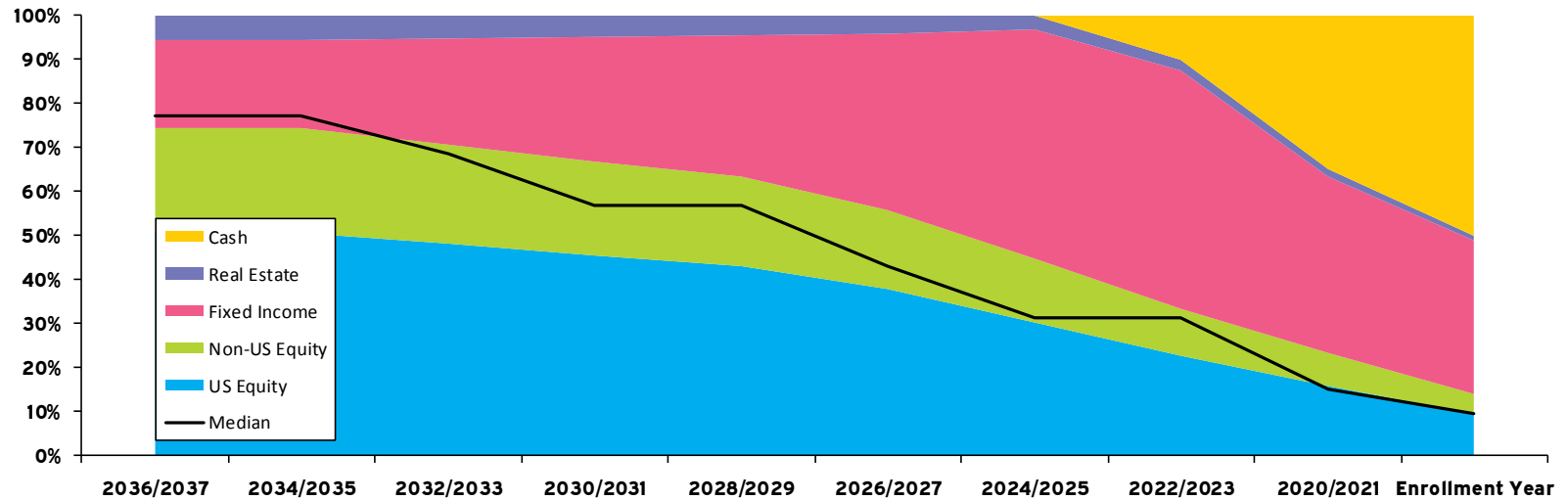


### Enrollment Date Portfolios Performance

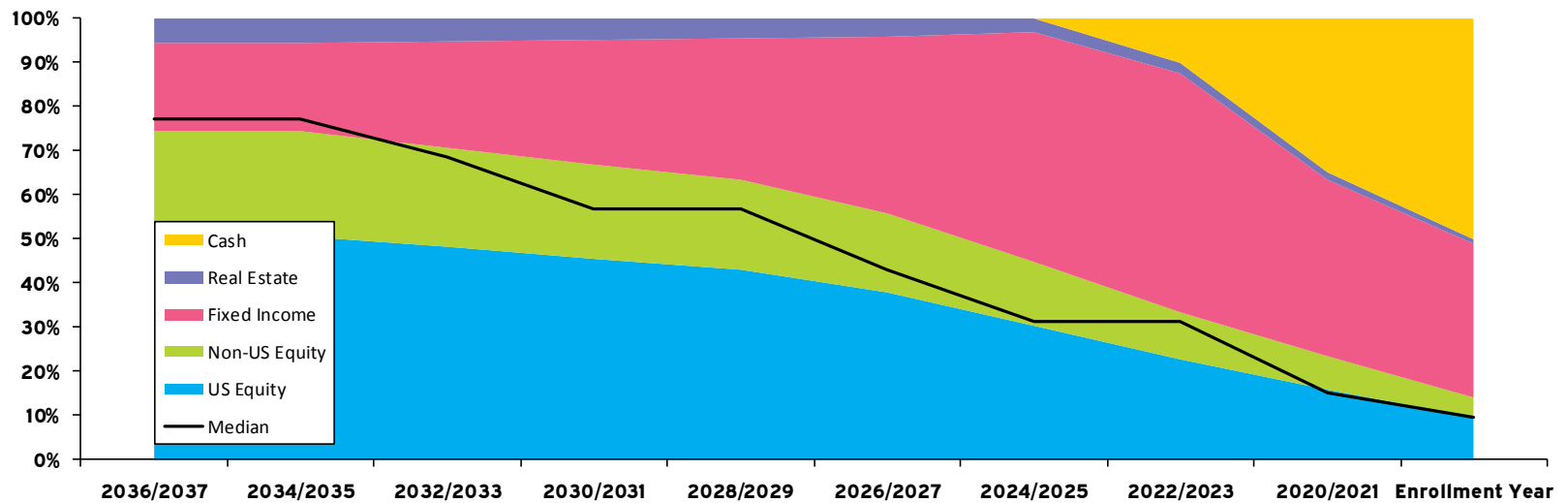
Trailing Period Performance Data not yet available for Enrollment Date portfolios.

#### Scholarshare Enrollment Date Glidepath

##### Active Enrollment Date Portfolio



##### Passive Enrollment Date Portfolio



# Appendix

### Glossary

**Annualized Return** – The average annual return of either the manager or its benchmark.

**Excess Performance** – Manager returns in excess of the benchmark returns.

**Standard Deviation** – A measure of dispersion of a set of data from its mean.

**Excess Standard Deviation** – A measure of the volatility of the average annual difference between the manager's return and the benchmark's return, same as tracking error.

**VRR – Value Relative Ratio** – Is calculated as:  $\text{Manager Cumulative Return} / \text{Benchmark Cumulative Return}$ .

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

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

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

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

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

## MEMORANDUM

**TO:** ScholarShare Investment Board (SIB)  
**FROM:** Eric White, Kay Ceserani, Kristen Chase  
 Meketa Investment Group  
**DATE:** March 24, 2021  
**RE:** Review of Underlying Funds Qualifying for “Watch” Status

### Summary

Meketa Investment Group (“Meketa”) has conducted a review of the underlying funds in the ScholarShare 529 Plan. The review included a quantitative analysis of the underlying funds based on specific performance criteria (as per the *Monitoring Procedures and Criteria*) as well as a qualitative analysis, including a review of organizational concerns, stability of personnel, changes in investment objectives, etc. This memo summarizes the period from October 1, 2020, through December 31, 2020.

At the end of the period, **four funds continue to qualify for “Watch” status and no new funds qualify.** The PIMCO Income fund, DFA Emerging Markets Core Equity fund, TIAA High Yield Bond fund, and TIAA Quant Small Cap Equity fund all continue to qualify for “Watch” status as of quarter end based on their respective monitoring criteria.

### Performance of Funds on Watch Status As of 12/31/2020

Funds on Watch Status	Board Action Date	Watch Status Start Date	No. Months Since Watch Began	Excess Perf. Since Watch Began
PIMCO Income	9/17/20	7/1/20	6	3.8
TIAA-CREF Quant Small Cap Equity	12/10/20	10/1/20	3	0.7
DFA Emerging Markets Core Equity	12/10/20	10/1/20	3	1.5
TIAA-CREF High Yield Bond	12/10/20	10/1/20	3	(0.3)

### Background

New Funds Qualifying for “Watch” Status: Meketa has conducted a review of the underlying funds in the ScholarShare College Savings Plan (see also the 4Q2020 ScholarShare 529 Plan Investment Performance Status Report) and determined that no new funds qualify for “Watch” status.

Funds Currently on “Watch” Status: the PIMCO Income Fund qualifies for “Watch” status based on its short- and medium-term performance. The DFA Emerging Markets Core Equity fund qualifies for “Watch” status based on its medium- and long-term monitoring criteria. The TIAA High Yield Bond fund qualifies for “Watch” status based on its long-term monitoring criteria. The TIAA Quant Small Cap Equity fund qualifies for “Watch” based on its short-and medium-term criteria.



## Dimensional Fund Advisors Emerging Markets Core Equity Fund

### Investment Role in Program

The fund is one of two emerging markets equity funds in the Program. The investment objective of the fund is to achieve long-term capital appreciation. The fund purchases a broad and diverse group of securities associated with emerging markets with an emphasis on small capitalization, value, and/or high profitability companies, which may include frontier markets (emerging market countries in an earlier stage of development) authorized by DFA's Investment Committee.

### History and Organizational Structure

Dimensional Fund Advisors LP is a private investment firm founded in 1981 with 85 funds. DFA is headquartered in Austin, TX and has 13 global offices in North America, Europe, Asia, and Australia. The Firm offers its clients broadly diversified funds for a range of equity and fixed income strategies.

### Investment Team

DFA LP serves as the investment advisor for the Emerging Market (EM) Core Equity fund while DFA Ltd. and DFA Australia Ltd. serve as sub-advisors for the fund. The following five individuals are responsible for coordinating the day to day management of the EM Core Equity fund:

Jed S. Fogdall is a Co-Head of Portfolio Management and Vice President of Dimensional and a member of Dimensional's Investment Committee. Mr. Fogdall has an MBA from the University of California, Los Angeles and a BS from Purdue University. Mr. Fogdall joined Dimensional as a Portfolio Manager in 2004 and has been responsible for international portfolios since 2010 and domestic portfolios since 2012.

Mr. Pu is a Senior Portfolio Manager and Vice President of Dimensional Fund Advisors LP. Mr. Pu has an MBA from the University of California, Los Angeles, an MS and PhD from Caltech, and a BS from Cooper Union for the Advancement of Science and Art. Mr. Pu joined Dimensional Fund Advisors LP as a portfolio manager in 2006 and has been responsible for the World Core Equity Portfolio since 2015.

Bhanu P. Singh is a Portfolio Manager and Vice President of Dimensional. Mr. Singh received his MBA from the University of Chicago and his BA from the University of California, Los Angeles. Mr. Singh joined Dimensional originally in 2003, has been a portfolio manager since 2012 and has been responsible for domestic portfolios since 2014.

Mary T. Phillips, CFA, Deputy Head of Portfolio Management, North America, Senior Portfolio Manager and Vice President of Dimensional, joined Dimensional in 2012 and has been a portfolio manager since 2014. Ms. Phillips began managing Dimensional's allocated portion of the Fund's portfolio in March 2018. Ms. Phillips earned an MBA with concentration in analytic finance, statistics and econometrics, and managerial and organizational behavior from the University of Chicago and a BA from the University of Puget Sound.

Will Collins-Dean is a Portfolio Manager and Vice President of the Sub-Adviser. Mr. Collins-Dean received his MBA from the University of Chicago and his bachelor's degree from Wake Forest University. Mr. Collins-Dean joined the Sub-Adviser in 2014 and has been a portfolio manager since 2016.

### Investment Philosophy and Approach

DFA's EM Core Equity Portfolio pursues size, value, and profitability premiums within emerging markets all cap stocks with broad diversification and low turnover. The fund focuses on multiple premiums to outperform over a full market cycle as the premiums targeted generally don't move in lockstep. Additionally, the portfolio excludes real estate investment trusts (REITs) from purchase to allow investors to customize their real estate exposure.

The fund starts with a broad universe of stocks from more than 20 emerging markets with market caps under \$50 million, not including REITs. The managers then sort the remaining stocks into various zones based on market cap, valuation, and profitability. They scale the market cap of stocks in each zone by a multiplier to determine final weights which allows each stock's weighting to change in proportion with its market cap, helping mitigate turnover. Lastly, managers use these multipliers to tilt the portfolio toward stocks with smaller market caps, lower valuations, and higher profitability.

DFA removed the country cap from this strategy in October 2019, which restricted the weight of stocks from a given country to 17.5% of the portfolio. The managers have allowed country weights to align with those in the MSCI EM Index to help curb the trading costs associated with maintaining the cap.

Traders play an important role in this strategy and managers provide them with more trades than needed to accommodate the fund's cash flow needs. Traders then pick the best deals from this eligible pool, which can also help lower execution costs.

The portfolio includes approximately 5,500 stocks of various sizes, with the 10 largest names accounting for 20% of its assets. It modestly tilts toward stocks with lower valuations and higher profitability. The fund's price/book ratio and return on invested capital run lower than the MSCI EM Index, but the disparities are not significant. Its emphasis on small-cap stocks is more pronounced, with an average market cap roughly one quarter that of the Diversified EM category index.

### Performance

The DFA EM Core Equity fund qualifies for "Watch" status by exhibiting a rolling 36-month excess return below (2.0%) for six or more consecutive months and for exhibiting a rolling 60-month VRR of less than (0.97) for six or more consecutive months. For the most recent 36-month period, the fund underperformed its MSCI EM benchmark by (2.4%) and ranked in the 70th percentile of its Diversified EM equity peer group. The fund's underperformance over the three-year period is due to its factor tilts, most notably toward value. We note that value has generally underperformed growth since the Great Financial Crisis and the fund's performance is consistent with this industry trend.

The fund's underperformance of (0.7%) and (2.4%) in 2018 and 2019, respectively, have driven the negative trailing 3-year results. The fund's underperformance over the three-year period is consistent with the broader industry trend of value-oriented managers generally underperforming growth managers going back to the Great Financial Crisis. More recently, growth outperformed value as



measured by the MSCI Ex USA Growth vs. MSCI Ex USA Value in 2017, 2018, and 2019 by 3.5%, 2.3%, and 9.5%, respectively. DFA's negative performance in 2018 was further compounded by its tilt toward small cap and the relative outperformance of large cap stocks as measured by MSCI EAFE Small Cap vs. MSCI EAFE Large Cap. For 2018, large cap outperformed small cap by 5.2%. As shown in Morningstar's Factor Profile, the fund's overweight vs. its benchmark exposure to value and small cap both worked against the fund in 2018.

Outperformance during the recent quarter is attributable to small-cap and value outperforming during the period.

### Trailing Performance Results, Net of Fees Ending December 31, 2020

Fund	Quarter	1 Year	3 Years	5 Years	Since Addition (12/2011)
DFA Emerging Markets Core Fund	21.2	13.9	3.8	11.4	5.6
<i>MSCI Emerging Markets (Net) Index</i>	19.7	18.3	6.2	12.8	6.2
<b>Difference</b>	<b>1.5</b>	<b>(4.4)</b>	<b>(2.4)</b>	<b>(1.4)</b>	<b>(0.6)</b>
Percentile Rank*	26	68	70	56	53

\*IM Emerging Markets Equity (MF) Universe. 1 = Best, 100 = Worst.

### Calendar Year Performance Results, Net of Fees Ending December 31, 2020

Fund	2015	2016	2017	2018	2019	2020
DFA Emerging Markets Core Fund	(14.9)	12.4	36.6	(15.2)	16.0	13.9
<i>MSCI Emerging Markets (Net) Index</i>	(14.9)	11.2	37.3	(14.6)	18.4	18.3
<b>Difference</b>	<b>0.0</b>	<b>1.2</b>	<b>(0.7)</b>	<b>(0.6)</b>	<b>(2.4)</b>	<b>(4.4)</b>
Percentile Rank*	63	21	45	40	77	68

\*IM Multi-Sector General Bond Universe. 1 = Best, 100 = Worst.

## Recommendation

Given the fund's investment biases (tilts towards value and small cap) have been out of favor over this period, Meketa maintains a somewhat low level of concern for the fund and therefore, recommends that the DFA Emerging Markets Core Equity fund remain on "Watch" status due to performance concerns.

## TIAA High Yield Bond Fund

### Investment Role in Program

The fund is one of two high yield fixed income funds in the Program. The fund seeks high current income with at least an 80% allocation (under normal circumstances) to lower-rated, higher-yielding fixed income securities including bonds from U.S. and non-U.S. issuers, bank loans, convertibles and preferred securities.

### History and Organizational Structure

Nuveen, the investment manager of TIAA, brings a legacy of service to our responsibility of managing \$957 billion in assets as of 31 March 2020. Operating in 16 countries across the globe, Nuveen's 2,900 professionals serve institutional and individual investors through award-winning capabilities spanning public and private asset classes.

Nuveen has been providing investment solutions and strategies to a wide range of clients worldwide, including institutional investors, intermediaries, plan sponsors, investment and pension consultants, financial advisors, and individual investors for the better part of a century. Nuveen literally helped build America's critical infrastructure when it was founded over 100 years ago by providing financing for the construction of schools, roads, hospitals and public utilities. The company was acquired by TIAA in 2014.

TIAA, the parent company of Nuveen, serves 5 million participants and more than 16,000 institutions, making it one of the world's largest retirement managers. Since its founding 100 years ago by Andrew Carnegie, who wanted to ensure that teachers retired with dignity, TIAA has paid out almost \$400 billion in benefits and helped millions of people achieve lifetime income in retirement.

### Investment Team

The fund is managed by Kevin Lorenz, CFA and Jean C. Lin, CFA. Mr. Lorenz has managed the fund since 2006 and Ms. Lin has managed the fund since 2011.

Each sector's portfolio management team is accountable for the portfolio construction within its sector. They collaborate with research analysts and traders to execute the strategy, following the direction of the lead portfolio managers on desired positions and risk budgeting.

A large team of dedicated analysts supports the sector teams and is responsible for fundamental and quantitative analysis. They maintain an in-depth understanding of issuers and sectors, assign proprietary ratings, recommend securities and assist portfolio managers in identifying relative value opportunities.

A dedicated team executes trades for each sector. Traders add value through assessing relative value, achieving best execution and serving as the frontline for counterparty and technical information. They review opportunities across primary/secondary markets, evaluate market technicals, add insight by evaluating the validity of "street views" and maintain our market presence.

## Investment Philosophy and Approach

The fund managers believe they can achieve solid risk-adjusted returns over time by combining deep sector expertise, an active approach and risk management.

These fundamental tenets underlie the fund managers' fixed income philosophy:

- *Leverage sector specialists* – the teams of portfolio managers, analysts and traders interconnect to develop top-down and bottom-up views by sector. We know and master the liquid in-benchmark sectors and also apply expertise to analyze and access less-efficient, out-of-benchmark segments.
- *Exploit market inefficiencies through active management* – inherent flaws in common market-based benchmarks and investor biases make active management critical to adding alpha
- *Consider risk at every decision point* – the manager's heritage of managing assets for institutional clients incorporates risk management at each stage of the investment process
- *Take a long-term view* – the manager strives for solid, long-term performance and aligns incentives with client objectives through long-term measurement periods and focus on compensation for risks taken.
- Price performance is asymmetric. Successful long-term investing in high-yield comes from protecting income returns while minimizing downside risk. The approach emphasizes high quality companies with a focus on yield over capital appreciation.
- Consistency and resiliency of cash flows best predict long-term return potential. Focus is placed on sufficiently capitalized companies that can continue to service their debt even if economic conditions weaken. This disciplined approach favors more predictable industries, higher quality sectors and issuers that are larger, well-established and more liquid than peers.
- BB and B rated credits generally provide better risk-adjusted returns relative to CCC rated credits, which can exhibit significantly higher default rates without offering sufficient upside potential to offset added risks. We emphasize higher-rated securities in our portfolio.

## Performance

The fund has underperformed its benchmark across all longer trailing periods measured and modestly underperformed its benchmark during the recent quarter. The most significant detractor from relative performance during the quarter was the fund's exposure to loans, which lagged their high yield bond counterparts. The fund's cash allocation was also a modest disadvantage to results.

Longer-term underperformance is largely due to the fund's poor relative performance during the first quarter, when the fund underperformed its benchmark by (2.4%). Although the fund qualifies for watch over the long term, the more recent performance is closer to expectations. It may take some time for the fund's long-term performance record to recover from its poor relative performance during the historic first quarter.



**Trailing Performance Results, Net of Fees  
Ending December 31, 2020**

Fund	Quarter	1 Year	3 Years	5 Years	Since Addition (12/2011)
TIAA-CREF High Yield	5.4	2.2	5.0	7.3	6.4
ICE BofAML HY BB-B Constrained Index	5.7	6.3	6.2	8.0	7.0
<b>Difference</b>	<b>(0.3)</b>	<b>(4.1)</b>	<b>(1.2)</b>	<b>(0.7)</b>	<b>(0.6)</b>
Percentile Rank*	71	92	51	37	38

\*IM Emerging Markets Equity (MF) Universe. 1 = Best, 100 = Worst.

**Calendar Year Performance Results, Net of Fees  
Ending December 31, 2020**

Fund	2015	2016	2017	2018	2019	2020
TIAA-CREF High Yield	(3.7)	16.4	5.7	(2.7)	16.2	2.2
ICE BofAML HY BB-B Constrained Index	(2.8)	14.7	7.0	(2.0)	15.1	6.3
<b>Difference</b>	<b>(0.9)</b>	<b>1.7</b>	<b>(1.3)</b>	<b>(0.7)</b>	<b>1.1</b>	<b>(4.1)</b>
Percentile Rank*	48	11	78	41	6	92

\*IM Emerging Markets Equity (MF) Universe. 1 = Best, 100 = Worst.

### Recommendation

The fund qualifies for “Watch” status due to a slight violation to its long-term criteria, which was affected by underperformance during the historic first quarter. Meketa maintains a somewhat low level of concern for the fund and believes that the long-term performance will recover over time but recommends that the TIAA-CREF High Yield fund remain on “Watch” status for continued monitoring.

## TIAA Quant Small Cap Equity

### Investment Role in Program

The fund is the only small cap fund and represents 0.85% of Program assets. The fund seeks a favorable long-term total return, mainly through capital appreciation, primarily from equity securities of smaller domestic companies. It normally invests at least 80% of its assets in small-cap equity securities across a wide range of sectors, growth rates and valuations that management believes appear to have favorable prospects for significant long-term capital appreciation. Management employs proprietary quantitative models that typically weigh many different variables, including the valuation of a stock versus the market or its peers, future earnings and sustainable growth prospects, and the price and volume trends of the stock. The fund seeks to generate a favorable long-term return while also managing its relative risk versus the index.

### History and Organizational Structure

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### Investment Team

The fund is managed by Pei Chen and Max Kozlov, CFA. Pei Chen is a managing director and quantitative portfolio manager with TIAA Investments. Ms. Chen manages quantitative US equity investments. She joined TIAA Investments in 2004. Ms. Chen has 27 years of investment experience. Prior to joining TIAA Investments, she was a manager of special project research at MSCI Barra. In this position, she evaluated the Barra Integrated Model and various research projects. Ms. Chen holds a B.S./B.A. in Computer Science and Math from San Francisco University and an M.A. in Math from Stanford University.

Max Kozlov is a senior director for Nuveen's Quantitative Strategies. Mr. Kozlov manages quantitative U.S. Global Equities Strategies. He joined the firm in 2015. Mr. Kozlov has 21 years of industry experience including positions at BlackRock, Inc. an asset management firm, and McKinsey & Company, a management consulting firm. Mr. Kozlov earned a bachelor's degree in economics from Lomonosov Moscow State University, a master's degree in development economics and international development

from Williams College and an M.B.A. from MIT, Sloan School of Management. He is a member of the CFA Institute

Adam Cao was a Portfolio Manager on the fund from October 2006 through October 2020.

### Investment Philosophy and Approach

The Small-Cap Equity strategy focuses on companies across a wide range of sectors, growth rates and valuations that it believes have favorable prospects for significant long-term capital appreciation. The strategy uses a variety of proprietary quantitative models based on financial and investment theories to build a portfolio of stocks that seeks to outperform its benchmark, the Russell 2000 Index, while also managing its relative risks. The strategy invests in securities within the capitalization range of companies included in the Russell 2000 Index at the time of purchase.

The team's scoring model generates the ideas that drive the process. The model is the outcome of years of experience analyzing factors that drive stock returns both from a risk and return perspective. The factors should have strong fundamental or economic rationale and persist over the medium to long horizon. The final outcome of the scoring model is to differentiate stocks that should outperform the benchmark.

Rather than simply using the model to screen the universe, the team combines the scoring model along with a risk and trading model through an optimization process to construct the portfolio. Combining different components allows the team to maximize the ideas from the team's scoring model while simultaneously controlling for risk and potential trading cost. It also makes the investment process very repeatable and consistent.

Evaluation of ideas is critical to the process. To that end, the team spends considerable time focusing on attribution of performance to understand the factors that drive performance and leverage that information to improve and evolve the process.

The investment process follows three primary steps:

1. Score the universe of stocks
2. Construct a portfolio that maximizes the team's best ideas that minimizes trading cost and any unintended risk
3. Analyze the outcome through attribution and gain key insights into enhancing the process.

### Scoring Model

The primary universe of stocks is all the companies in the Russell 2000 Index and also may include stocks of companies in the Russell Midcap Index. In defining the universe, we may exclude companies that may lack sufficient liquidity. The model ranks the attractiveness of each stock in the universe on an industry neutral basis after a thorough research into factor efficacy. The team has developed a multi-factor scoring model that evaluates stocks across several factors.

The model is unique for each sector. Research has shown that factors behave differently across sectors. The sector framework also allows the team to incorporate information that is unique and only available for a particular sector or industry. For example, in the banking industry, loan information (losses, reserves, etc.) is important to characterizing the companies.

## Portfolio Construction

The portfolio construction integrates the scoring model, risk model and expected trading to derive the portfolio's positions. A portfolio optimizer process is used to determine the weights of individual securities that will produce a portfolio that has risk characteristics within acceptable limits to the benchmark (Russell 2000 index). While many view risk control as a secondary (outside) control, the team views it as critical to integrate insight from the risk model in determining the positions. Utilizing the team's experience in building risk models, the team is able to customize their view on risk to better integrate the risk model with the scoring model. Typically, these key factors are kept in check:

*Sector/Industry* – The fund seeks to primarily drive performance through individual stock selection and keep sector/industry allocation close to the benchmark

*Beta* – The fund seeks to be beta neutral with respect to the benchmark.

Trading can be very costly in smaller capitalization stocks. In addition to traditional tools to capture market impact cost, we also employ higher frequency passive rebalancing to facilitate trades that take advantage of available liquidity.

## Attribution

The team reviews standard (typically Brinson) attribution reports but also generates custom internal attribution. While traditional attribution allows the team to view factor performance in the overall portfolio, custom attribution allows them to drill down performance to a specific industry and also in the presence (or absence) of other factors. Custom attribution may come from more sophisticated regression models or may simply be 2-dimensional sorting of data.

The philosophy is that most attribution provides only a bit of the story and only taken together can they provide a complete picture. Both the traditional and customized views are important. Attribution is not solely focused on the scoring model but may indicate a change in the portfolio construction. While we have up to the minute reports, we do take a longer-term perspective whether the attribution feedback suggests a change is needed.

## Performance

The fund has underperformed its benchmark across the longer trailing time periods. Over the recent quarter, the fund outperformed by 70 basis points. The fund's sentiment-based factors helped relative results for the period, while its fundamental signals detracted. The fund's allocation to stocks with higher liquidity also aided relative results. On a sector basis, consumer discretionary, information technology and health care contributed the most to the fund's relative results in the fourth quarter, reflecting strong stock selection within those sectors.

### Trailing Performance Results, Net of Fees Ending December 31, 2020

Fund	Quarter	1 Year	3 Years	5 Years	Since Addition (12/2011)
TIAA-CREF Quant Small Cap	32.1	12.8	7.1	11.2	12.5
<i>Russell 2000</i>	31.4	20.0	10.2	13.3	13.0
<b>Difference</b>	<b>0.7</b>	<b>(7.2)</b>	<b>(3.1)</b>	<b>(2.1)</b>	<b>(0.5)</b>
Percentile Rank*	6	50	51	45	28

\*IM US SMID Cap Core Equity (MF) Universe. 1 = Best, 100 = Worst.

On a calendar year basis, the fund has underperformed its benchmark over four of the past six years. As described above, this fund is managed quantitatively, which means the fund's portfolio construction is heavily dependent on various stock ranking computer models that tend to focus on value, momentum and market value factors to screen and select the portfolio's underlying stock holdings. We point this out, as quantitative funds can fall out of favor and experience an extended period of underperformance due to biases imbedded in the model, as they have over the last several years.

### Calendar Year Performance Results, Net of Fees Ending December 31, 2020

Fund	2015	2016	2017	2018	2019	2020
TIAA-CREF Quant Small Cap	0.1	20.0	15.0	(12.0)	23.9	12.8
<i>Russell 2000</i>	(4.4)	21.3	14.6	(11.0)	25.5	20.0
<b>Difference</b>	<b>4.5</b>	<b>(1.3)</b>	<b>0.4</b>	<b>(1.0)</b>	<b>(1.6)</b>	<b>(7.2)</b>
Percentile Rank*	2	34	57	50	68	50

\*IM US SMID Cap Core Equity (MF) Universe. 1 = Best, 100 = Worst.

### Recommendation

The fund qualifies for "Watch" status due to its short- and medium-term performance. Underperformance is somewhat reasonable given the fund's process (quantitative with valuation bias). Meketa recommends that the TIAA-CREF Quant Small Cap fund remain on "Watch" status for continued monitoring.



## PIMCO Income Fund

### Investment Role in Program

The fund is a portfolio of a broad range of intermediate-duration bonds that is actively managed to maximize current income while maintaining a relatively low risk profile. It also has a secondary goal of capital appreciation. The strategy utilizes multiple sectors of the bond market in an effort to generate a competitive and consistent distribution yield. Managed to pursue efficient income generation, the strategy also focuses on PIMCO total-return ideas in an effort to maximize capital appreciation and risk-adjusted returns relative to its peers. This approach seeks to provide consistent income over the long term.

### History and Organizational Structure

PIMCO (Pacific Investment Management Company) was founded in 1971 and started as a subsidiary of Pacific Life Insurance Company to manage separate accounts for institutional clients. In 2000, PIMCO was acquired by Allianz, a large global financial services company based in Germany. PIMCO currently operates as a separate and autonomous subsidiary of Allianz. PIMCO is currently one of the world's largest fixed income managers with offices around the globe.

### Investment Team

Daniel Ivascyn has been the lead portfolio manager of the fund since its inception in 2007. Mr. Ivascyn was named Group Chief Investment Officer in October 2014 upon the departure of the firm's former CIO and founder, Bill Gross. He is also the head of the mortgage credit portfolio management team and a lead portfolio manager for PIMCO's credit hedge fund and mortgage opportunistic strategies. Mr. Ivascyn is a member of PIMCO's Executive Committee and a member of the Investment Committee. Morningstar named him Fixed-Income Fund Manager of the Year (US) for 2013.

Mr. Ivascyn is supported by Alfred Murata and Josh Anderson. Mr. Ivascyn who has been co-portfolio manager on the fund since March 2013 and is a Managing Director of PIMCO. Mr. Murata joined PIMCO in 2001. Mr. Anderson has managed the fund since July 2018 and is also a Managing Director of PIMCO.

### Investment Philosophy and Approach

PIMCO's investment philosophy for the Income strategy revolves around the principle of diversification. By diversifying strategies, or relying on multiple sources of value, they are confident that they will be able to generate a solid track record with a high degree of consistency. They seek to add value through the use of "top-down" strategies such as exposure to interest rates, or duration, changing volatility, yield curve positioning and sector rotation. These strategies are deployed from a macro view of the portfolio that are driven by PIMCO's secular outlook of the forces likely to influence the economy and financial markets over the next three to five years and their cyclical views of two-to-four quarter trends. "Bottom-up" strategies drive PIMCO's security-selection process and help identify and analyze undervalued securities and securities that pay high income. Here, they employ advanced proprietary analytics and expertise in all major fixed-income sectors. By combining perspectives from both the portfolio and security levels, they attempt to add value consistently over time within acceptable levels of portfolio risk.

PIMCO's investment process starts with an annual Secular Forum at which their investment professionals from around the globe gather with industry experts for a discussion about the future of the global economy and financial markets. The goal of this Forum is to look beyond the current business cycle and determine how secular forces will play out over the next three to five years. Quarterly, PIMCO holds Economic Forums to evaluate growth and inflation over the next six to nine months.

Following the Secular and Economic Forums, the Investment Committee, comprised of senior portfolio managers as well as PIMCO's Chief Economist and headed by PIMCO's Group Chief Investment Officer and CIOs, develops key portfolio strategies. They consider both the "top-down" conclusions emanating from the Forum, as well as the "bottom-up" market intelligence provided by teams of sector specialist portfolio managers. Through an interactive series of meetings, the Investment Committee defines a set of consistent strategies that are then implemented across all PIMCO strategies.

Portfolios are then continuously monitored for adherence to the current model portfolio structure, and historical measures such as volatility (close to benchmark) and tracking error (moderate) affirm PIMCO's adherence to a diversified, moderate risk style.

Buy and sell decisions are executed in order to optimize the risk/return and the relative value characteristics of the portfolio. PIMCO does not employ automated or mechanical selling procedures. Securities are sold when the credit analysis indicates that a company or a particular issue will become fundamentally flawed. Current holdings are constantly re-evaluated for their relative attractiveness versus investments available in the marketplace. Securities are sold when they individually no longer represent good value, when superior risk/return potential exists in substitute positions (factoring in transaction costs), or when they no longer fit with the macroeconomic or structural strategies in the portfolio.

## Performance

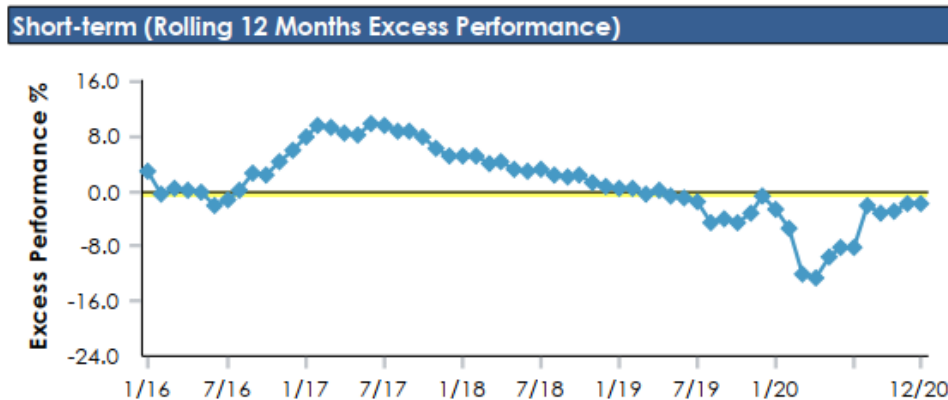
The fund outperformed the Bloomberg Barclays US Aggregate index over the most recent quarter by 3.8% but underperformed over the trailing 1- and 3-year periods by (1.7%) and (0.5%), respectively. On a peer-relative basis the fund outperformed the Multi-Sector General Bond universe median over the majority of time periods measured. Over the recent quarter the higher quality portion of the portfolio contributed to results, driven by exposure to inflation-linked securities. Additionally, high yield holdings contributed as securitized credit, Emerging Markets, and corporate debt were positive over the quarter.

### Trailing Performance Results, Net of Fees Ending December 31, 2020

Fund	Quarter	1 Year	3 Years	5 Years	Since Addition (12/2011)
PIMCO Income Fund	4.5	5.8	4.8	6.3	7.6
<i>BBg BC US Aggregate Bond</i>	0.7	7.5	5.3	4.4	3.5
<b>Difference</b>	<b>3.8</b>	<b>(1.7)</b>	<b>(0.5)</b>	<b>1.9</b>	<b>4.1</b>
Percentile Rank*	43	59	52	20	2

\*IM US Multi-Sector General Bond Universe. 1 = Best, 100 = Worst.

The fund was placed on “Watch” status due to its rolling 12-month excess performance falling below the -1.0% threshold for more than six consecutive months. The deterioration of short-term performance can be attributed to the fund’s performance in the second half of 2019 and in the first quarter of 2020, as highlighted in the chart below. In 2019, exposure to emerging market debt and currency, a long US dollar bias versus the Japanese yen and short exposure to Eurozone and U.K. duration detracted from results. During the first quarter of 2020, performance was hurt by holdings of corporate credit, exposure to a basket of emerging market currencies, holdings of emerging market debt, and short exposure to non-US developed market duration. The fund produced positive relative results for the second, third, and fourth quarters of 2020.



On a calendar year basis, the fund has outperformed its benchmark over four of the six years. The portfolio generated positive returns and ranked in the top 25 percent of the peer group from 2013 through 2018. In 2019, the fund underperformed the benchmark by (60) basis points and underperformed the peer group median. 2020 represents the fund’s weakest relative performance in the fund’s history with the Program. First quarter relative results caused the fund to underperform by (1.7%).



**Calendar Year Performance Results, Net of Fees  
Ending December 31, 2020**

Fund	2015	2016	2017	2018	2019	2020
PIMCO Income Fund	2.6	8.7	8.6	0.6	8.1	5.8
<i>BBg BC US Aggregate Bond</i>	<i>0.5</i>	<i>2.6</i>	<i>3.5</i>	<i>0.0</i>	<i>8.7</i>	<i>7.5</i>
<b>Difference</b>	<b>2.1</b>	<b>6.1</b>	<b>5.1</b>	<b>0.6</b>	<b>(0.6)</b>	<b>(1.7)</b>
Percentile Rank*	3	25	12	17	74	59

\*IM Multi-Sector General Bond Universe. 1 = Best, 100 = Worst.

### Recommendation

Although the PIMCO Income fund performed well over the three recent quarters, Meketa recommends that the fund remain on “Watch” status as it has continued to underperform the Short- and Medium-Term monitoring criteria.



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