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**DECEMBER 14, 2022**

**AGENDA ITEM 6  
INFORMATION ITEM**

**SCHOLARSHARE INVESTMENT BOARD**

*Review and Analysis of Investment Performance for ScholarShare 529*

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***Background***

The ScholarShare Investment Board (SIB or Board) and its investment consultant, Meketa Investment Group (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 third quarter 2022, provided by TIAA-CREF Tuition Financing, Inc., and the “Investment Performance Status Report” (Exhibit B) for third quarter 2022, 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,” or “caution.”

For the third quarter of 2022:

- Nine (9) underlying funds were in the “positive” status,
- 12 underlying funds were in the “acceptable” status, and
- Two (2) underlying funds were in the “caution” status (one of which is on “watch” status).

As outlined in Meketa’s memo (Exhibit C),

- One (1) fund, the T. Rowe Price Institutional Large Cap Growth Fund (“Fund”), remains on “watch” status;
- One (1) fund, the TIAA-CREF Emerging Markets Equity Index Fund, qualifies for “watch” status, however, Meketa is not recommending it be placed on “watch” status due to explanation included in its memo dated March 16, 2022, and presented at the March 23, 2022 Board meeting; and
- No new funds qualify for “watch” status.

***Presenters***

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

Eric White, Principal, Meketa Investment Group



# Quarterly Investment Performance Report

3rd Quarter 2022

**For Institutional client use only. Not for distribution.**

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.



# Market Overview: Q3 2022

## Key Themes

- In July and August U.S. equity markets rebounded as investor concerns eased. However, interest rate hikes in September caused both stock and bond markets to fall. Higher inflation, Ukraine War, and supply chain disruptions remain as contributors to a slow growth economy.

## Equities

- All eleven GIC sectors lost ground in the third quarter of 2022. Consumer Discretionary was the highest returning sector losing -3.89%, while Communication Services experienced a loss of -11.58% as the lowest returning sector. Volatility remained high for both U.S. and global markets.

## Fixed Income

- The U.S. Federal Reserve raised interest rates by 75 basis points in September continuing its effort to cool inflation. The markets reflect an expectation that the Fed Funds target will trend higher at the next FOMC meeting. Core bond markets continued its move toward lower levels, while Inflation-linked products proved modestly safer in this higher inflation era.

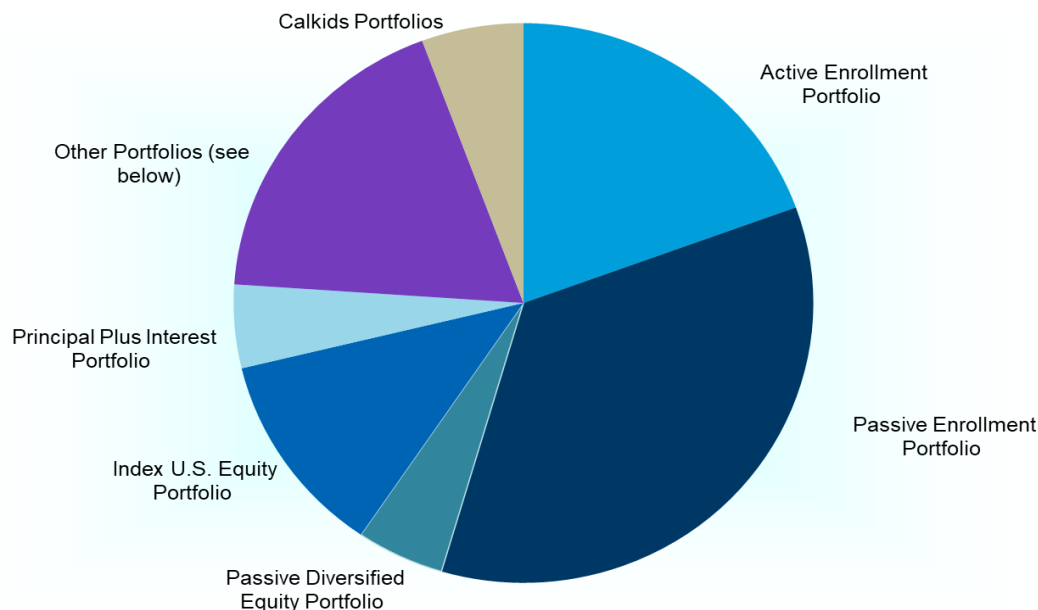
Past performance is not indicative of future results. You can not invest directly in an index. U.S. Equities – Russell 3000 Index; U.S. Growth Stocks – Russell 1000 Growth Index; U.S. Value Stocks – Russell 1000 Value Index; U.S. Mid Cap Stocks – Russell Midcap Index; U.S. Small-Cap Stocks – Russell 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; 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

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Asset Class	3 Month	1 Year	3 Year	5 Year
U.S. Equities	-4.46	-17.63	7.70	8.62
U.S. Growth Stocks	-3.60	-22.59	10.67	12.17
U.S. Value Stocks	-5.62	-11.36	4.36	5.29
U.S. Mid-Cap Stocks	-3.44	-19.39	5.19	6.48
U.S. Small-Cap Stocks	-2.19	-23.50	4.29	3.55
Int'l Developed Stocks	-9.36	-25.13	-1.83	-0.84
Emerging Markets Stocks	-11.57	-28.11	-2.07	-1.81
Real Estate Stocks	-10.83	-16.27	-1.10	4.10
U.S. Investment Grade Bonds	-4.75	-14.60	-3.26	-0.27
Inflation-Linked Bonds	-3.94	-7.44	1.79	2.27
High Yield Bonds	-0.75	-13.66	-0.76	1.52
Commodities	-4.11	11.80	13.45	6.96
Cash	0.46	0.62	0.60	1.16
<b>Annualized Tuition Inflation Ending as of 2022-2023 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	1.77	1.57	1.85	
National Average Private Nonprofit 4-Year	3.49	2.23	2.57	
Consumer Price Index, September 2022	8.20	4.95	3.76	

\*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 2021 and U.S. Department of Labor: Bureau of Labor Statistics

# Asset Overview by Portfolio as of Q3 2022 - Total Assets: \$11.6 Billion



Portfolio	% of Assets	\$ Millions	Portfolio	% of Assets	\$ Millions
Passive Enrollment Portfolio	37.23%	\$4,332	Passive Diversified Equity Portfolio	5.21%	\$606
Active Enrollment Portfolio	20.63%	\$2,400	Principal Plus Interest Portfolio	5.10%	\$594
Index U.S. Equity Portfolio	12.48%	\$1,452	Other Portfolios (see below)	18.26%	\$2,252

## Other Portfolios

Active Diversified Equity Portfolio	2.97%	\$345	Index Bond Portfolio	0.68%	\$79
Active Growth Portfolio	2.71%	\$315	Active Conservative Portfolio	0.67%	\$78
Passive Growth Portfolio	2.24%	\$260	Active International Equity Portfolio	0.28%	\$33
Social Choice Equity Portfolio	1.91%	\$222	ESG Enrollment Portfolio	0.05%	\$6
Index International Equity Portfolio	1.02%	\$118	ESG Bond Portfolio	0.01%	\$1.3
Passive Conservative Portfolio	0.79%	\$92	ESG International Equity Portfolio	0.00%	\$0.5

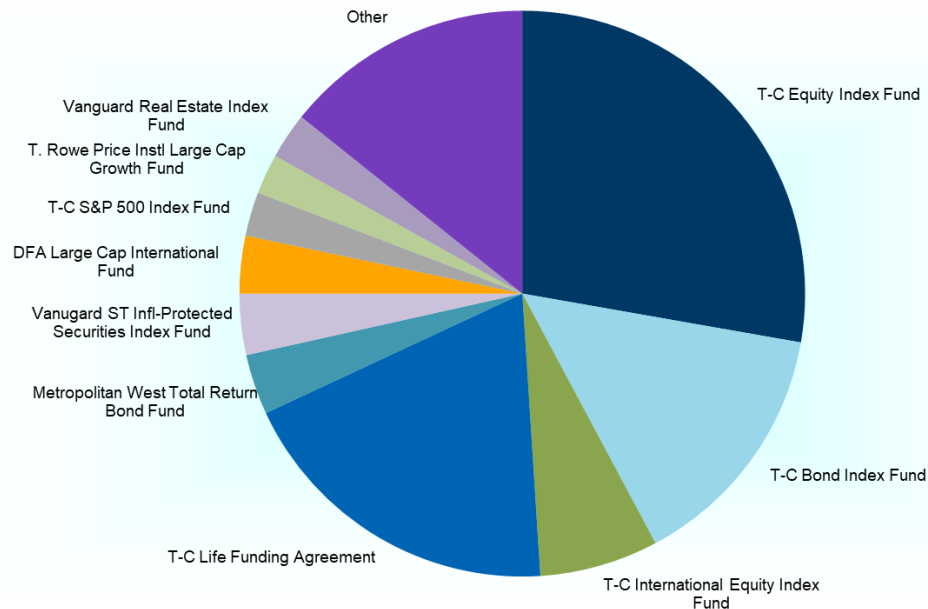
## CalKids Portfolios

Passive Enrollment Portfolio	5.90%	\$687	Principal Plus Interest Portfolio	0.12%	\$14
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\* CalKIDS AUM are included in the total assets of \$11.6 billion



# Asset Overview by Underlying Fund as of Q3 2022



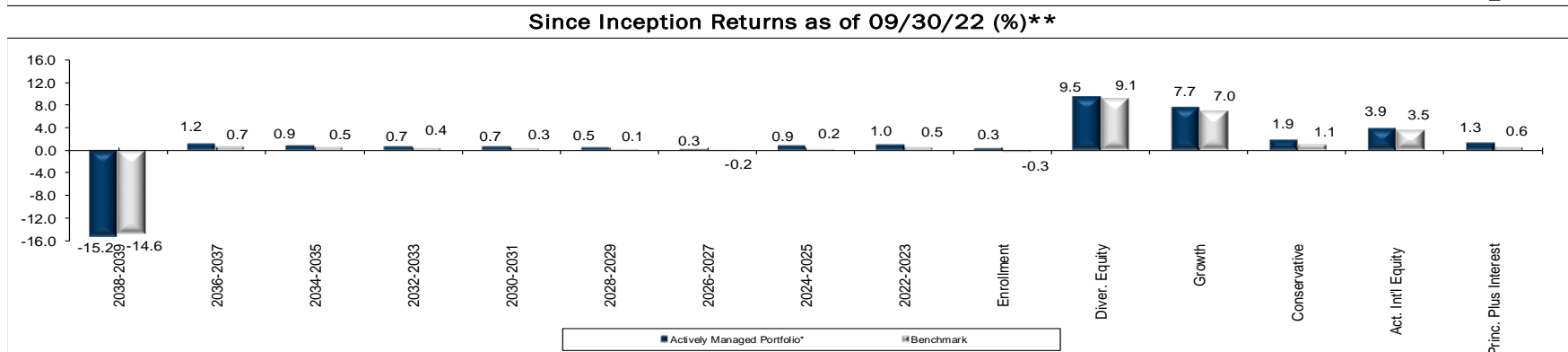
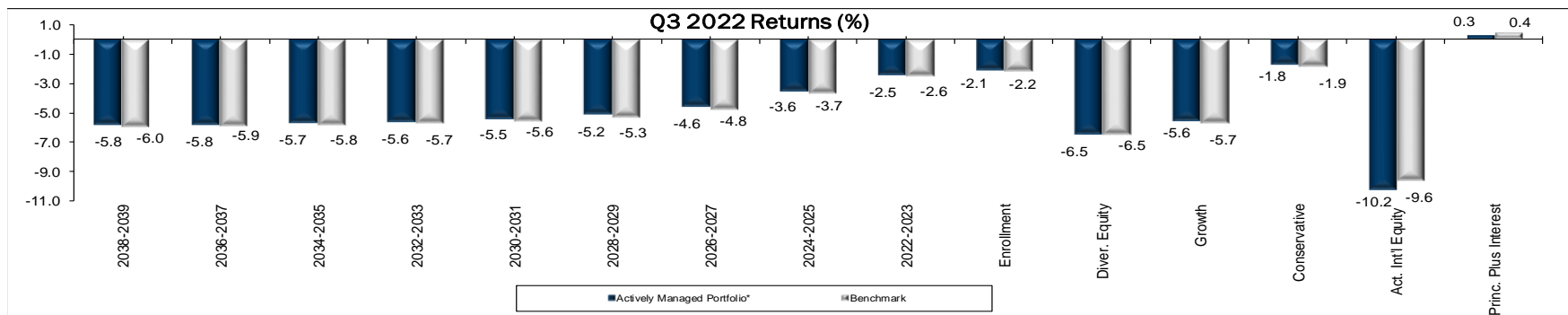
Fund	% of Assets	\$ Millions	Fund	% of Assets	\$ Millions
T-C Equity Index Fund	27.75%	\$3,229	DFA Large Cap International Fund	3.19%	\$372
T-C Life Funding Agreement	19.66%	\$2,288	Vanguard Real Estate Index Fund	2.53%	\$295
T-C Bond Index Fund	14.42%	\$1,678	T-C S&P 500 Index Fund	2.47%	\$287
T-C International Equity Index Fund	6.64%	\$772	T. Rowe Price Instl Large Cap Growth Fund	2.27%	\$265
Vanugard ST Infi-Protected Securities Index Fund	3.53%	\$411	Other	14.10%	\$1,642
Metropolitan West Total Return Bond Fund	3.44%	\$400			

## Other Funds

T. Rowe Price Instl Large Cap Value Fund	2.27%	\$265	T-C Quant Small Cap Equity Fund	0.79%	\$92
PIMCO Income Fund	1.97%	\$229	DFA Emerging Markets Core Equity Portfolio	0.78%	\$91
PIMCO Real Return Fund	1.94%	\$226	Nuveen ESG US Agg Bond ETF	0.03%	\$3
T-C Social Choice Equity Fund	1.93%	\$224	T-C Social Choice Int'l Equity Fund	0.01%	\$1.1
Vanguard High-Yield Corporate Fund	1.74%	\$203	Nuveen ESG HY Corp Bond ETF	0.00%	\$0.2
T-C Emerging Markets Equity Index Fund	1.64%	\$191	Nuveen ESG EM Equity ETF	0.00%	\$0.2
T. Rowe Price Instl Floating Rate Fund	1.00%	\$116			

\* CalKIDS AUM are included in the total assets of \$11.6 billion

# Active Portfolios vs. Composite Benchmarks



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

\*\* Inception for the Multi-Fund and Single-Fund Portfolios was 11/4/11 - 11/10/11. Inception for most Enrollment Year Portfolios was 1/24/20 (inception for 2038-2039 was 6/11/21).

- The U.S. economy gained 263,000 jobs in September and the unemployment rate fell to 3.5 percent. Health care, leisure and hospitality business services continued to add jobs. Despite the slowdown in housing market, construction jobs continue to increase.
- Real average hourly earnings of all employees on private nonfarm payrolls decreased 3.0% year-over-year from last September, seasonally adjusted.
- Home prices decreased -0.24% on a month-over-month basis and increased 15.8% year-over-year in July, based on the Case-Shiller 20-City Composite Home Price Index.
- The Active Enrollment Year Portfolios generated negative absolute returns in Q3, with more aggressive portfolios posting lower returns than conservative ones. Portfolios performed in line with their blended benchmarks.
- Nearly all underlying funds saw negative returns in Q3. The Vanguard Real Estate Index Fund led the decline with returns down more than 11%. The T. Rowe Price Floating Rate Fund returned 1.51% in the quarter and helped mitigate losses.

# Active Portfolios vs. Composite Benchmarks –Return (%)

Investment Portfolios*	3 Month	YTD	Average Annual Total Return				Inception Date
			1 Year	3 Year	5 Year	Since Inception	
<b>Active Enrollment Year Portfolios</b>							
2038/2039 Enrollment Portfolio Active	-5.83%	-22.63%	-18.81%	-	-	-15.18%	06/11/21
Blended Benchmark Returns	-5.99%	-22.84%	-18.17%	-	-	-14.62%	
Difference	0.16%	0.21%	-0.64%	-	-	-0.56%	
2036/2037 Enrollment Portfolio Active	-5.83%	-22.51%	-18.79%	-	-	1.22%	01/24/20
Blended Benchmark Returns	-5.92%	-22.65%	-18.00%	-	-	0.65%	
Difference	0.09%	0.14%	-0.79%	-	-	0.57%	
2034/2035 Enrollment Portfolio Active	-5.71%	-22.07%	-18.54%	-	-	0.89%	01/24/20
Blended Benchmark Returns	-5.83%	-22.18%	-17.72%	-	-	0.48%	
Difference	0.12%	0.11%	-0.82%	-	-	0.41%	
2032/2033 Enrollment Portfolio Active	-5.64%	-21.60%	-18.20%	-	-	0.74%	01/24/20
Blended Benchmark Returns	-5.74%	-21.71%	-17.43%	-	-	0.37%	
Difference	0.10%	0.11%	-0.77%	-	-	0.37%	
2030/2031 Enrollment Portfolio Active	-5.47%	-20.95%	-17.69%	-	-	0.70%	01/24/20
Blended Benchmark Returns	-5.59%	-21.05%	-16.99%	-	-	0.31%	
Difference	0.12%	0.10%	-0.70%	-	-	0.39%	
2028/2029 Enrollment Portfolio Active	-5.15%	-19.79%	-16.90%	-	-	0.48%	01/24/20
Blended Benchmark Returns	-5.35%	-19.91%	-16.27%	-	-	0.08%	
Difference	0.20%	0.12%	-0.63%	-	-	0.40%	
2026/2027 Enrollment Portfolio Active	-4.64%	-17.93%	-15.52%	-	-	0.26%	01/24/20
Blended Benchmark Returns	-4.81%	-17.97%	-14.93%	-	-	-0.16%	
Difference	0.17%	0.04%	-0.59%	-	-	0.42%	
2024/2025 Enrollment Portfolio Active	-3.58%	-14.38%	-12.48%	-	-	0.89%	01/24/20
Blended Benchmark Returns	-3.69%	-14.50%	-12.08%	-	-	0.18%	
Difference	0.11%	0.12%	-0.40%	-	-	0.71%	
2022/2023 Enrollment Portfolio Active	-2.47%	-10.31%	-8.87%	-	-	1.00%	01/24/20
Blended Benchmark Returns	-2.56%	-10.43%	-8.73%	-	-	0.49%	
Difference	0.09%	0.12%	-0.14%	-	-	0.51%	
Enrollment Year Portfolio Active	-2.14%	-8.28%	-7.18%	-	-	0.30%	01/24/20
Blended Benchmark Returns	-2.19%	-8.45%	-7.25%	-	-	-0.32%	
Difference	0.05%	0.17%	0.07%	-	-	0.62%	

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

# Active Portfolios vs. Composite Benchmarks –Return (%)

Investment Portfolios*	Average Annual Total Return					
	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception
<b>Active Multi-Fund Investment Portfolios</b>						
Active Diversified Equity Portfolio	-6.48%	-25.00%	-20.54%	4.29%	5.46%	9.54%
Blended Benchmark Returns	-6.46%	-25.17%	-19.62%	4.23%	5.40%	9.08%
Difference	-0.02%	0.17%	-0.92%	0.06%	0.06%	0.46%
Active Growth Portfolio	-5.60%	-21.35%	-17.98%	3.06%	4.36%	7.69%
Blended Benchmark Returns	-5.69%	-21.45%	-17.23%	2.77%	4.24%	6.99%
Difference	0.09%	0.10%	-0.75%	0.29%	0.12%	0.70%
Active Conservative Portfolio	-1.76%	-6.46%	-6.11%	0.05%	1.14%	1.92%
Blended Benchmark Returns	-1.87%	-6.53%	-6.26%	-0.61%	0.86%	1.11%
Difference	0.11%	0.07%	0.15%	0.66%	0.28%	0.81%
Active International Equity Portfolio	-10.22%	-25.50%	-23.40%	-0.54%	-0.38%	3.91%
Blended Benchmark Returns	-9.63%	-26.36%	-24.71%	-1.28%	-0.60%	3.51%
Difference	-0.59%	0.86%	1.31%	0.74%	0.22%	0.40%
<b>Active Single Fund Investment Portfolios</b>						
Principal Plus Interest Portfolio**	0.26%	0.78%	1.05%	1.33%	1.41%	1.34%
Benchmark Returns	0.45%	0.62%	0.63%	0.57%	1.13%	0.06%
Difference	-0.19%	0.16%	0.42%	0.76%	0.28%	1.28%

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

\*\*The crediting rate of 1.00% for the TC Life Funding Agreement in the Principal Plus Interest Portfolio is guaranteed through 12/31/22.

# Active Portfolios: 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	TIAA-CREF Quant Small Cap Equity Fund	TIAA-CREF S&P 500 Index Fund	DFA Large Cap Int'l Portfolio	DFA Emerging Markets Core Equity I Portfolio	Vanguard Real Estate Index Fund	MetWest Total Return Bond Fund	TIAA-CREF Bond Index Fund	PIMCO Real Return Fund	PIMCO Income Fund	T. Rowe Price Instl Floating Rate Fund	T-C Life Funding Agreement
<b>Underlying Fund Expenses (bp)</b>		<b>55</b>	<b>55</b>	<b>41</b>	<b>5</b>	<b>18</b>	<b>39</b>	<b>10</b>	<b>36</b>	<b>8</b>	<b>47</b>	<b>51</b>	<b>57</b>	<b>N/A</b>
2038-2039	39	14.80%	14.80%	5.00%	15.80%	19.20%	4.80%	5.60%	7.00%	3.00%	4.00%	4.00%	2.00%	
2036-2037	39	14.50%	14.50%	4.90%	15.60%	18.80%	4.70%	5.50%	7.50%	3.20%	4.30%	4.30%	2.20%	
2034-2035	39	13.70%	13.70%	4.70%	14.80%	17.80%	4.50%	5.20%	9.10%	3.80%	5.10%	5.10%	2.50%	
2032-2033	40	13.00%	13.00%	4.40%	14.00%	16.90%	4.20%	5.00%	10.30%	4.40%	5.90%	5.90%	3.00%	
2030-2031	40	11.90%	11.90%	4.10%	12.90%	15.60%	3.90%	4.60%	12.30%	5.30%	7.00%	7.00%	3.50%	
2028-2029	41	10.20%	10.20%	3.50%	11.00%	13.30%	3.30%	3.90%	15.60%	6.70%	8.90%	8.90%	4.50%	
2026-2027	40	8.00%	8.00%	2.70%	8.70%	10.40%	2.60%	3.10%	18.30%	7.90%	10.60%	10.60%	5.30%	3.80%
2024-2025	35	5.80%	5.80%	2.00%	6.40%	7.60%	1.90%	2.20%	17.10%	7.30%	9.80%	9.80%	4.90%	19.40%
2022-2023	28	3.90%	3.90%	1.30%	4.30%	5.10%	1.30%	1.50%	13.40%	5.70%	7.60%	7.60%	3.80%	40.60%
Enrollment	24	2.70%	2.70%	1.00%	3.00%	3.60%	0.90%	1.10%	12.25%	5.25%	7.00%	7.00%	3.50%	50.00%

## Active Multi-Fund Investment Portfolios

Active Diversified Equity Portfolio	37	18.40%	18.40%	6.30%	19.90%	24.00%	6.00%	7.00%						
Active Growth Portfolio	40	12.50%	12.50%	4.30%	13.60%	16.30%	4.00%	4.80%	11.20%	4.80%	6.40%	6.40%	3.20%	
Active Conservative Portfolio	26								17.50%	7.50%	10.00%	10.00%	5.00%	50.00%
Active International Equity Portfolio	28					80.00%	20.00%							
<b>Fund's Performance vs Benchmk Q2 2022 (bp)</b>		<b>71</b>	<b>(10)</b>	<b>139</b>	<b>(1)</b>	<b>(85)</b>	<b>69</b>	<b>(3)</b>	<b>(47)</b>	<b>(1)</b>	<b>(28)</b>	<b>289</b>	<b>14</b>	<b>(19)</b>

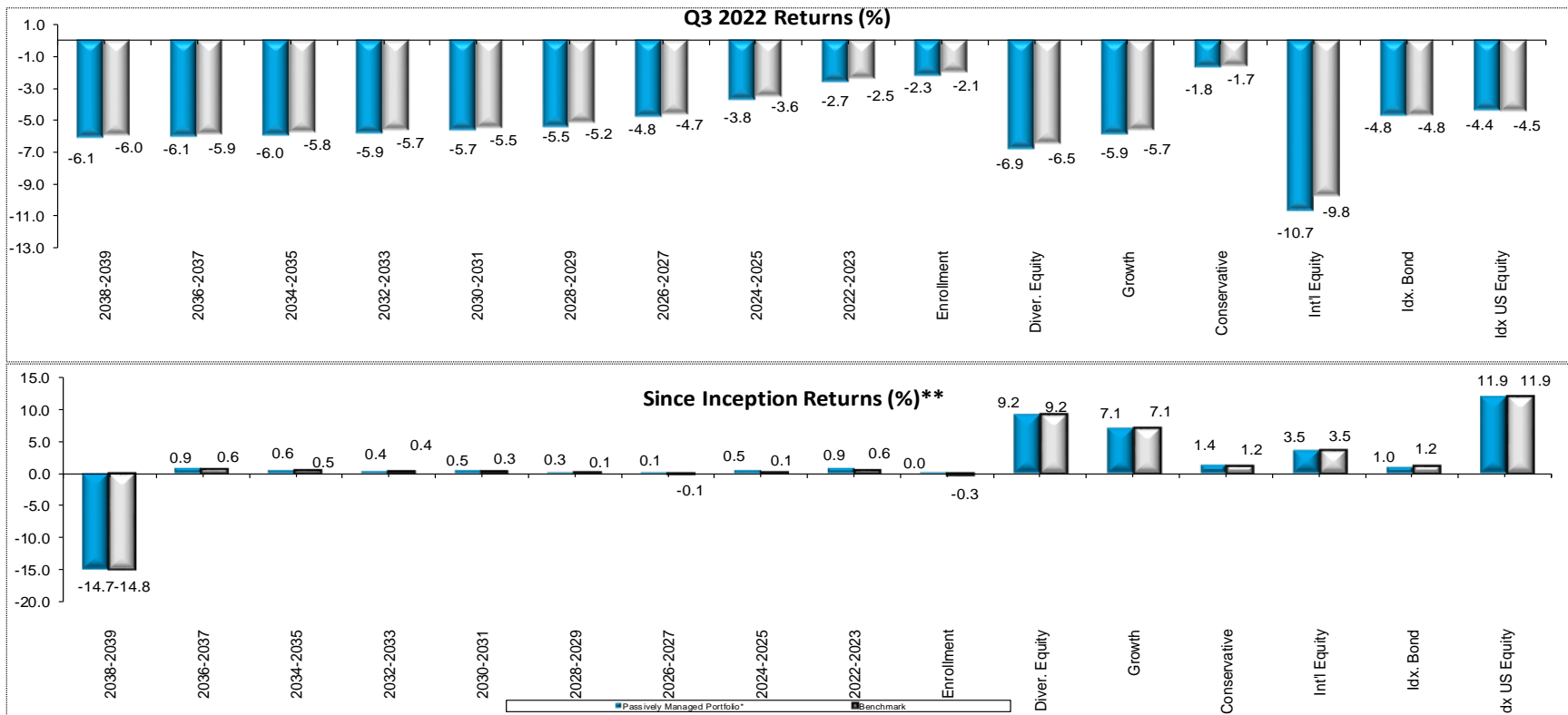
Glide Path asset allocations are as reflected in the Plan Description.

## Active Single Fund Investment Portfolios

Investment Portfolios	Annual Asset Based Fees (bp)*	Percent Allocation	Underlying Mutual Fund	Fund's Performance vs Benchmk Q2 2022 (bp)
Principal Plus Interest Portfolio	N/A	100.00%	TIAA-CREF Life Co. Funding Agreement	(19)

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

# Passive Portfolios vs Composite Benchmarks



\* 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 most Enrollment Year Portfolios was 1/24/20 (inception for 2038-2039 was 6/11/21).

- U.S. equity returns were further declined due to the concerns about inflation and the Fed's pace for interest rate hikes. The Russell 3000 Index lost 4.46% in the third quarter.
- Treasury yields rose continuously across the curve. The Bloomberg U.S. Aggregate Bond Index of intermediate-term investment grade U.S. bonds returned -4.75% in another challenging quarter for fixed income investors.
- Based on respective Russell indexes, small cap companies outperformed the broad large cap market. Both Growth stocks and Value stocks losing 3.6% and 5.62% respectively.
- Similar to the Active lineup, the Passive Enrollment Year Portfolios posted negative absolute returns in Q3.
- More conservative allocations in the Enrollment Year Portfolios had higher returns than more aggressive portfolios.
- The TIAA-CREF Life Funding Agreement continued to credit a guaranteed crediting rate of return and benefited investors.

# Passive Portfolios vs. Composite Benchmarks

Investment Portfolios*	Average Annual Total Return						Inception Date
	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception	
<b>Passive Enrollment Year Portfolios</b>							
2038/2039 Enrollment Portfolio Passive	-6.12%	-22.94%	-18.21%	-	-	-14.69%	06/11/21
Blended Benchmark Returns	-5.97%	-23.11%	-18.43%	-	-	-14.75%	
Difference	-0.15%	0.17%	0.22%	-	-	0.06%	
2036/2037 Enrollment Portfolio Passive	-6.06%	-22.79%	-18.16%	-	-	0.85%	01/24/20
Blended Benchmark Returns	-5.90%	-22.90%	-18.24%	-	-	0.63%	
Difference	-0.16%	0.11%	0.08%	-	-	0.22%	
2034/2035 Enrollment Portfolio Passive	-6.02%	-22.34%	-17.88%	-	-	0.56%	01/24/20
Blended Benchmark Returns	-5.79%	-22.39%	-17.93%	-	-	0.47%	
Difference	-0.23%	0.05%	0.05%	-	-	0.09%	
2032/2033 Enrollment Portfolio Passive	-5.87%	-21.81%	-17.60%	-	-	0.41%	01/24/20
Blended Benchmark Returns	-5.69%	-21.89%	-17.62%	-	-	0.37%	
Difference	-0.18%	0.08%	0.02%	-	-	0.04%	
2030/2031 Enrollment Portfolio Passive	-5.68%	-21.11%	-17.10%	-	-	0.48%	01/24/20
Blended Benchmark Returns	-5.51%	-21.18%	-17.13%	-	-	0.33%	
Difference	-0.17%	0.07%	0.03%	-	-	0.15%	
2028/2029 Enrollment Portfolio Passive	-5.45%	-19.89%	-16.29%	-	-	0.26%	01/24/20
Blended Benchmark Returns	-5.23%	-19.95%	-16.33%	-	-	0.13%	
Difference	-0.22%	0.06%	0.04%	-	-	0.13%	
2026/2027 Enrollment Portfolio Passive	-4.84%	-17.80%	-14.87%	-	-	0.07%	01/24/20
Blended Benchmark Returns	-4.67%	-17.92%	-14.91%	-	-	-0.07%	
Difference	-0.17%	0.12%	0.04%	-	-	0.14%	
2024/2025 Enrollment Portfolio Passive	-3.80%	-14.38%	-12.00%	-	-	0.45%	01/24/20
Blended Benchmark Returns	-3.56%	-14.43%	-12.06%	-	-	0.15%	
Difference	-0.24%	0.05%	0.06%	-	-	0.30%	
2022/2023 Enrollment Portfolio Passive	-2.66%	-10.25%	-8.48%	-	-	0.92%	01/24/20
Blended Benchmark Returns	-2.46%	-10.35%	-8.64%	-	-	0.58%	
Difference	-0.20%	0.10%	0.16%	-	-	0.34%	
Enrollment Year Portfolio Passive	-2.25%	-8.17%	-6.88%	-	-	0.04%	01/24/20
Blended Benchmark Returns	-2.09%	-8.34%	-7.18%	-	-	-0.29%	
Difference	-0.16%	0.17%	0.30%	-	-	0.33%	

\* Returns are net of most recent weighted average Underlying Fund Fees and Program Management Fees for the quarter.

# Passive Portfolios vs. Composite Benchmarks

## Average Annual Total Return

Investment Portfolios*	3 Month	YTD	1 Year	3 Year	5 Year	Since Inception	Inception Date
<b>Passive Multi-Fund Investment Portfolios</b>							
Passive Diversified Equity Portfolio	-6.85%	-25.70%	-20.06%	4.29%	5.50%	9.20%	11/04/11
Blended Benchmark Returns	-6.52%	-25.60%	-20.02%	4.21%	5.43%	9.17%	
Difference	-0.33%	-0.10%	-0.04%	0.08%	0.07%	0.03%	
Passive Growth Portfolio	-5.90%	-21.77%	-17.61%	2.76%	4.23%	7.07%	11/04/11
Blended Benchmark Returns	-5.68%	-21.83%	-17.62%	2.70%	4.22%	7.06%	
Difference	-0.22%	0.06%	0.01%	0.06%	0.01%	0.01%	
Passive Conservative Portfolio	-1.78%	-6.08%	-5.78%	-0.26%	0.94%	1.35%	11/04/11
Blended Benchmark Returns	-1.72%	-6.26%	-6.07%	-0.55%	0.89%	1.16%	
Difference	-0.06%	0.18%	0.29%	0.29%	0.05%	0.19%	
Index International Equity Portfolio	-10.70%	-27.31%	-25.65%	-1.99%	-1.02%	3.54%	11/04/11
Blended Benchmark Returns	-9.76%	-27.05%	-25.68%	-1.78%	-0.95%	3.53%	
Difference	-0.94%	-0.26%	0.03%	-0.21%	-0.07%	0.01%	
<b>Passive Single Fund Investment Portfolios</b>							
Index Bond Portfolio	-4.77%	-14.59%	-14.79%	-3.42%	-0.44%	1.03%	11/04/11
Benchmark Returns	-4.75%	-14.61%	-14.60%	-3.26%	-0.27%	1.23%	
Difference	-0.02%	0.02%	-0.19%	-0.16%	-0.17%	-0.20%	
Index U.S. Equity Portfolio	-4.44%	-24.57%	-17.60%	7.67%	8.57%	11.87%	11/04/11
Benchmark Returns	-4.46%	-24.62%	-17.63%	7.70%	8.62%	11.91%	
Difference	0.02%	0.05%	0.03%	-0.03%	-0.05%	-0.04%	

\* 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.



# Passive Portfolios: 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	Vanguard Real Estate Index Fund	TIAA-CREF Bond Index Fund	Vanguard Shrt-Term Infl-Prot Sec Index Fund	Vanguard High-Yield Corporate Fund	T-C Life Funding Agreement
<b>Underlying Fund Expenses (bp)</b>		<b>5</b>	<b>5</b>	<b>18</b>	<b>10</b>	<b>7</b>	<b>4</b>	<b>13</b>	<b>N/A</b>
<b>2038-2039</b>	<b>7</b>	50.40%	19.20%	4.80%	5.60%	14.00%	4.00%	2.00%	
<b>2036-2037</b>	<b>7</b>	49.40%	18.80%	4.70%	5.50%	15.10%	4.30%	2.20%	
<b>2034-2035</b>	<b>7</b>	47.00%	17.80%	4.50%	5.20%	17.80%	5.10%	2.60%	
<b>2032-2033</b>	<b>7</b>	44.40%	16.90%	4.20%	4.90%	20.70%	5.90%	3.00%	
<b>2030-2031</b>	<b>7</b>	40.90%	15.60%	3.90%	4.60%	24.50%	7.00%	3.50%	
<b>2028-2029</b>	<b>8</b>	35.00%	13.20%	3.30%	3.90%	31.20%	8.90%	4.50%	
<b>2026-2027</b>	<b>7</b>	27.30%	10.40%	2.60%	3.10%	36.90%	10.60%	5.30%	3.80%
<b>2024-2025</b>	<b>6</b>	20.10%	7.60%	1.90%	2.20%	34.10%	9.80%	4.90%	19.40%
<b>2022-2023</b>	<b>5</b>	13.30%	5.20%	1.30%	1.50%	26.70%	7.60%	3.80%	40.60%
<b>Enrollment</b>	<b>4</b>	9.40%	3.60%	0.90%	1.10%	24.50%	7.00%	3.50%	50.00%

## Passive Multi-Fund Investment Portfolios

<b>Passive Diversified Equity Portfolio</b>	<b>7</b>	63.00%	24.00%	6.00%	7.00%				
<b>Passive Growth Portfolio</b>	<b>7</b>	44.10%	16.80%	4.20%	4.90%	21.00%	6.00%	3.00%	
<b>Passive Conservative Portfolio</b>	<b>5</b>					35.00%	10.00%	5.00%	50.00%
<b>Index International Equity Portfolio</b>	<b>9</b>		80.00%	20.00%					
<b>Fund's Performance vs Benchmk Q2 2022 (bp)</b>		<b>1</b>	<b>(95)</b>	<b>(86)</b>	<b>(3)</b>	<b>(1)</b>	<b>(2)</b>	<b>(17)</b>	<b>(19)</b>

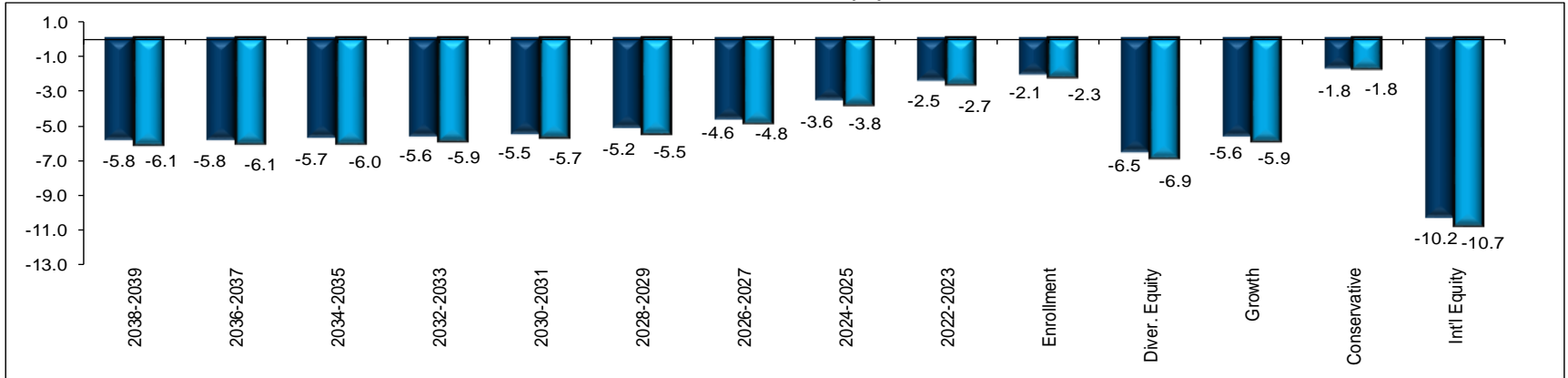
Glide Path asset allocations are as reflected in the Plan Description.

Passive Investment Portfolios	Annual Asset Based Fees (bp)*	Percent Allocation	Underlying Mutual Fund	Fund's Performance vs Benchmk Q2 2022 (bp)
<b>Index Bond Portfolio</b>	<b>9</b>	100.00%	TIAA-CREF Bond Index Fund	<b>(1)</b>
<b>Index U.S. Equity Portfolio</b>	<b>6</b>	100.00%	TIAA-CREF Equity Index Fund	<b>1</b>

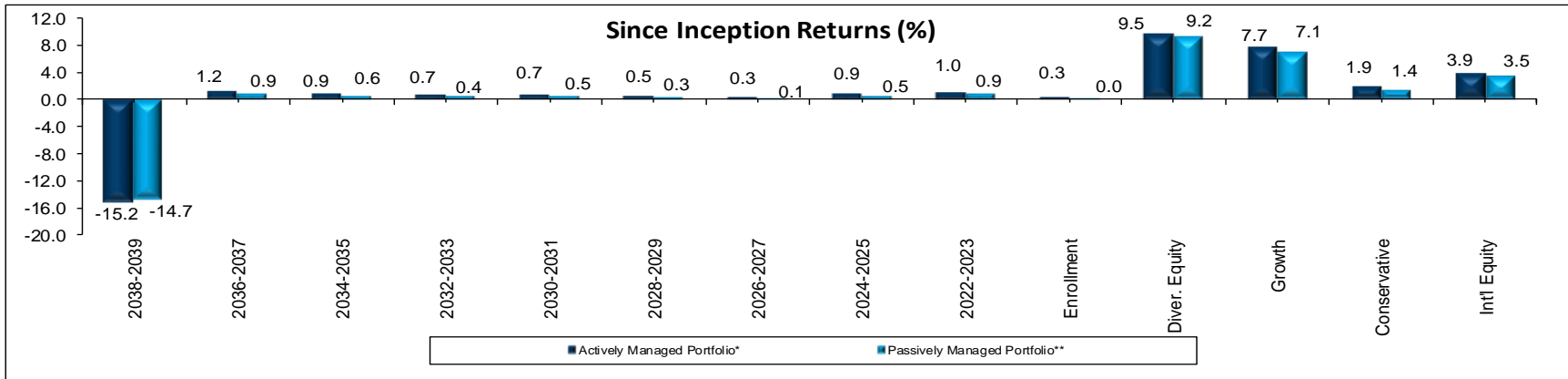
\* Asset Based Fees include most recent weighted average Underlying Fund Fees and Program Management Fees.

# Active Portfolios vs Passive Portfolios

Q3 2022 Returns (%)



Since Inception Returns (%)



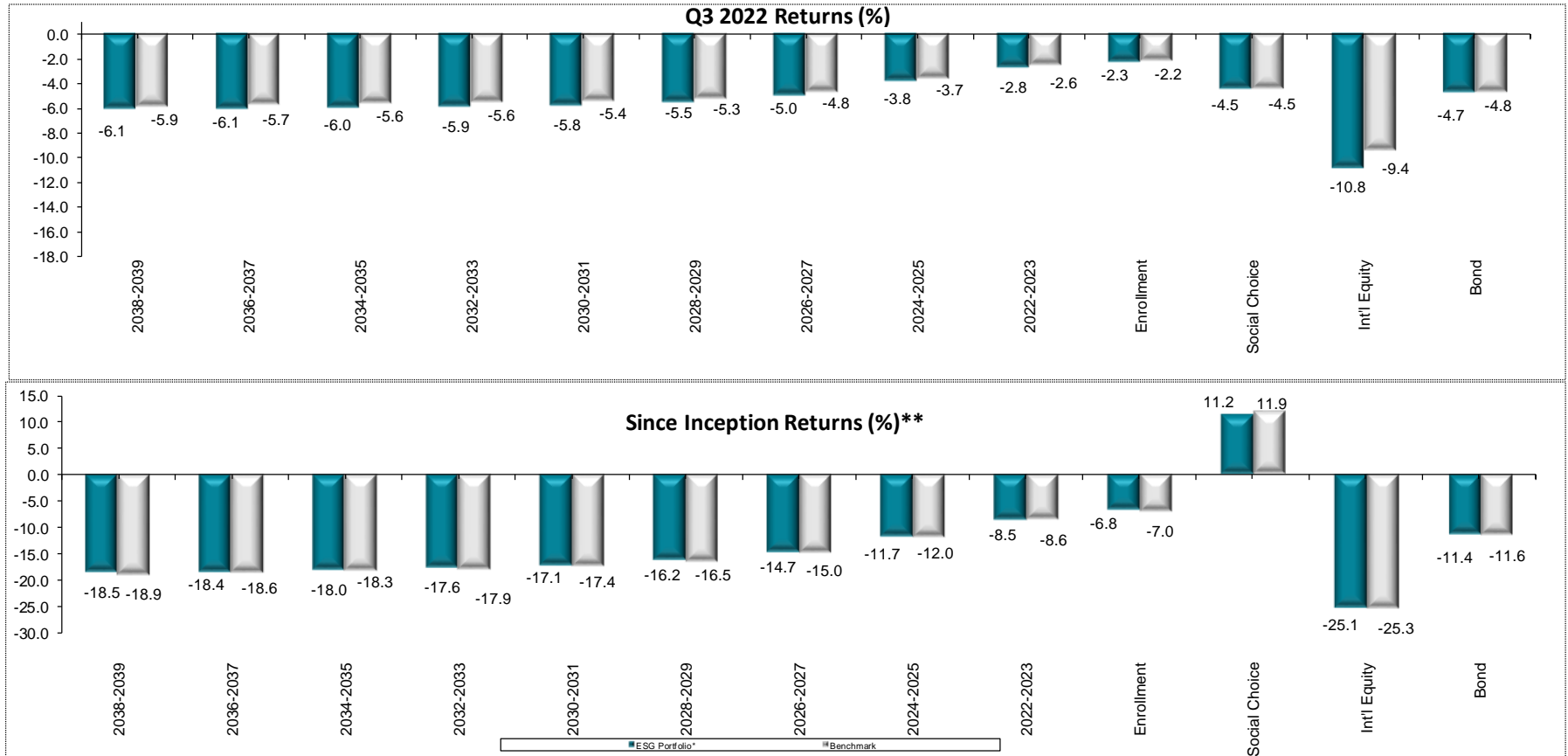
\* Returns are net of most recent weighted average Underlying Fund Fees, Program Management Fees, and State Administrative Fees (5 bps).

\*\* 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 most Enrollment Year Portfolios was 1/24/20 (2038-2039 was inception 6/11/21).

- In Q3, Active Portfolios outperformed Passive Portfolios.
- The primary reason for outperformance in the Active Portfolios was the T. Rowe Price Large Cap Growth Fund, which contains larger allocations across the portfolios and exceeded its benchmark by 71 basis points and the PIMCO income Fund, which outperformed its benchmark by 289 basis points
- Since inception, most Active Portfolios modestly outperformed their Passive counterparts for portfolios with longer history.

# ESG Portfolios vs Composite Benchmarks



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

\*\* Inception for most ESG Portfolios was 2/11/22 (inception for the Social Choice Equity Portfolio was 11/04/11).

- Returns for the ESG Portfolios were roughly in line with those of the Passive Portfolios as they include many of the same asset classes.
- Since inception on February 11, 2022, returns for the ESG Enrollment Year Investment Portfolios reflect the broad market downturns that investors have experienced during this time.

# ESG Portfolios vs. Composite Benchmarks

Investment Portfolios*	3 Month	YTD	Average Annual Total Return				Inception Date
			1 Year	3 Year	5 Year	Since Inception	
<b>ESG Enrollment Year Portfolios</b>							
2038/2039 Enrollment Portfolio ESG	-6.11%	-	-	-	-	-18.50%	02/11/22
Blended Benchmark Returns	-5.92%	-	-	-	-	-18.94%	
Difference	-0.19%	-	-	-	-	0.44%	
2036/2037 Enrollment Portfolio ESG	-6.10%	-	-	-	-	-18.40%	02/11/22
Blended Benchmark Returns	-5.70%	-	-	-	-	-18.64%	
Difference	-0.40%	-	-	-	-	0.24%	
2034/2035 Enrollment Portfolio ESG	-5.96%	-	-	-	-	-18.00%	02/11/22
Blended Benchmark Returns	-5.63%	-	-	-	-	-18.28%	
Difference	-0.33%	-	-	-	-	0.28%	
2032/2033 Enrollment Portfolio ESG	-5.94%	-	-	-	-	-17.60%	02/11/22
Blended Benchmark Returns	-5.56%	-	-	-	-	-17.92%	
Difference	-0.38%	-	-	-	-	0.32%	
2030/2031 Enrollment Portfolio ESG	-5.80%	-	-	-	-	-17.10%	02/11/22
Blended Benchmark Returns	-5.44%	-	-	-	-	-17.41%	
Difference	-0.36%	-	-	-	-	0.31%	
2028/2029 Enrollment Portfolio ESG	-5.52%	-	-	-	-	-16.20%	02/11/22
Blended Benchmark Returns	-5.25%	-	-	-	-	-16.53%	
Difference	-0.27%	-	-	-	-	0.33%	
2026/2027 Enrollment Portfolio ESG	-5.01%	-	-	-	-	-14.70%	02/11/22
Blended Benchmark Returns	-4.77%	-	-	-	-	-14.95%	
Difference	-0.24%	-	-	-	-	0.25%	
2024/2025 Enrollment Portfolio ESG	-3.81%	-	-	-	-	-11.70%	02/11/22
Blended Benchmark Returns	-3.68%	-	-	-	-	-11.98%	
Difference	-0.13%	-	-	-	-	0.28%	
2022/2023 Enrollment Portfolio ESG	-2.76%	-	-	-	-	-8.50%	02/11/22
Blended Benchmark Returns	-2.56%	-	-	-	-	-8.58%	
Difference	-0.20%	-	-	-	-	0.08%	
Enrollment Year Portfolio ESG	-2.31%	-	-	-	-	-6.80%	02/11/22
Blended Benchmark Returns	-2.20%	-	-	-	-	-7.03%	
Difference	-0.11%	-	-	-	-	0.23%	
<b>ESG Single Fund Investment Portfolios</b>							
Social Choice Equity Portfolio	-4.49%	-25.11%	-18.04%	7.46%	8.43%	11.22%	11/04/11
Benchmark Returns	-4.46%	-24.62%	-17.63%	7.70%	8.62%	11.91%	
Difference	-0.03%	-0.49%	-0.41%	-0.24%	-0.19%	-0.69%	
ESG International Equity Portfolio	-10.83%	-	-	-	-	-25.10%	02/11/22
Benchmark Returns	-9.36%	-	-	-	-	-25.32%	
Difference	-1.47%	-	-	-	-	0.22%	
ESG Bond Portfolio	-4.73%	-	-	-	-	-11.40%	02/11/22
Benchmark Returns	-4.75%	-	-	-	-	-11.56%	
Difference	0.02%	-	-	-	-	0.16%	

\* Returns are net of most recent weighted average Underlying Fund Fees, Program Management Fees, and State Administrative Fees. The crediting rate of 1.00% for the TC Life Funding Agreement in the ESG Enrollment Year Portfolios is guaranteed through 12/31/22.

# ESG Portfolios: Asset Allocation Fees, and Performance

ESG Enrollment Year Portfolios	Annual Asset Based Fees (bp)*	TIAA-CREF Social Choice Equity Fund	TIAA-CREF Social Choice International Equity Fund	Nuveen ESG Emerging Markets Equity ETF	Nuveen ESG US Aggregate Bond ETF	Nuveen ESG High Yield Corporate Bond ETF	TIAA-CREF Life Funding Agreement
<b>Underlying Fund Expenses (bp)</b>		<b>17</b>	<b>36</b>	<b>35</b>	<b>15</b>	<b>30</b>	<b>N/A</b>
<b>2038-2039</b>	<b>27</b>	56.00%	19.20%	4.80%	18.00%	2.00%	
<b>2036-2037</b>	<b>27</b>	55.00%	18.80%	4.70%	19.30%	2.20%	
<b>2034-2035</b>	<b>27</b>	52.20%	17.80%	4.50%	22.90%	2.60%	
<b>2032-2033</b>	<b>27</b>	49.40%	16.90%	4.20%	26.50%	3.00%	
<b>2030-2031</b>	<b>26</b>	45.60%	15.60%	3.90%	31.50%	3.40%	
<b>2028-2029</b>	<b>26</b>	38.90%	13.30%	3.30%	40.10%	4.40%	
<b>2026-2027</b>	<b>25</b>	30.50%	10.40%	2.60%	47.50%	5.20%	3.80%
<b>2024-2025</b>	<b>21</b>	22.30%	7.60%	1.90%	43.90%	4.90%	19.40%
<b>2022-2023</b>	<b>17</b>	14.90%	5.10%	1.30%	34.30%	3.80%	40.60%
<b>Enrollment</b>	<b>15</b>	10.50%	3.60%	0.90%	31.50%	3.50%	50.00%
<b>Fund's Performance vs Benchmk Q2 2022 (bp)</b>		<b>(3)</b>	<b>(151)</b>	<b>(21)</b>	<b>10</b>	<b>15</b>	<b>(19)</b>

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

ESG Single Fund Investment Portfolios	Annual Asset Based Fees (bp)*	Percent Allocation	Underlying Fund	Fund's Performance vs Benchmk Q2 2022 (bp)
<b>Social Choice Equity Portfolio</b>	<b>23</b>	100.00%	TIAA-CREF Social Choice Equity Fund	<b>(3)</b>
<b>ESG International Equity Portfolio</b>	<b>42</b>	100.00%	TIAA-CREF Social Choice International Equity Fund	<b>(1)</b>
<b>ESG Bond Portfolio</b>	<b>21</b>	100.00%	Nuveen ESG US Aggregate Bond ETF	<b>1</b>

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

# Underlying Funds vs. Benchmarks

TIAA-CREF FUNDS	Average Annual Total Return						3-Year Standard Deviation	Fund Incept. Date
	3 Month	YTD	1 Year	3 Year	5 Year	Life		
T-C Bond Index Fund	-4.76%	-14.60%	-14.75%	-3.40%	-0.42%	1.95%	5.38%	09/14/2009
Bloomberg U.S. Aggregate Bond Index	-4.75%	-14.61%	-14.60%	-3.25%	-0.27%	2.13%	5.36%	
Difference	<b>-0.01%</b>	<b>0.01%</b>	<b>-0.15%</b>	<b>-0.15%</b>	<b>-0.15%</b>	<b>-0.18%</b>		
T-C Emerging Markets Equity Index Fund*	-12.43%	-27.30%	-28.23%	-2.50%	-2.15%	1.24%	19.13%	08/31/2010
MSCI Emerging Markets® Index	-11.57%	-27.16%	-28.11%	-2.07%	-1.81%	1.58%	19.18%	
Difference	<b>-0.86%</b>	<b>-0.14%</b>	<b>-0.12%</b>	<b>-0.43%</b>	<b>-0.34%</b>	<b>-0.34%</b>		
T-C Equity Index Fund	-4.45%	-24.57%	-17.60%	7.68%	8.58%	6.37%	20.91%	07/01/1999
Russell 3000 Index	-4.46%	-24.62%	-17.63%	7.70%	8.62%	6.44%	20.96%	
Difference	<b>0.01%</b>	<b>0.05%</b>	<b>0.03%</b>	<b>-0.02%</b>	<b>-0.04%</b>	<b>-0.07%</b>		
T-C International Equity Index Fund*	-10.31%	-27.36%	-25.06%	-1.93%	-0.85%	5.94%	19.17%	10/01/2002
MSCI EAFE Index	-9.36%	-27.09%	-25.13%	-1.83%	-0.84%	5.90%	19.12%	
Difference	<b>-0.95%</b>	<b>-0.27%</b>	<b>0.07%</b>	<b>-0.10%</b>	<b>-0.01%</b>	<b>0.04%</b>		
T-C S&P 500 Index Fund	-4.89%	-23.86%	-15.49%	8.12%	9.19%	9.55%	20.29%	10/01/2002
S&P 500 Index	-4.88%	-23.87%	-15.47%	8.16%	9.24%	9.63%	20.30%	
Difference	<b>-0.01%</b>	<b>0.01%</b>	<b>-0.02%</b>	<b>-0.04%</b>	<b>-0.05%</b>	<b>-0.08%</b>		
T-C Quant Small Cap Equity Fund	-0.80%	-21.83%	-18.05%	5.87%	4.58%	9.68%	26.09%	10/01/2002
Russell 2000 Index	-2.19%	-25.10%	-23.50%	4.29%	3.56%	9.27%	25.47%	
Difference	<b>1.39%</b>	<b>3.27%</b>	<b>5.45%</b>	<b>1.58%</b>	<b>1.02%</b>	<b>0.41%</b>		
T-C Social Choice Equity Fund	-4.49%	-25.08%	-17.98%	7.53%	8.51%	6.20%	20.68%	07/01/1999
Russell 3000 Index	-4.46%	-24.62%	-17.63%	7.70%	8.62%	6.44%	20.96%	
Difference	<b>-0.03%</b>	<b>-0.46%</b>	<b>-0.35%</b>	<b>-0.17%</b>	<b>-0.11%</b>	<b>-0.24%</b>		
T-C Social Choice International Equity Fund*	-10.87%	-27.92%	-25.24%	-1.36%	-0.46%	1.52%	19.41%	12/04/2015
MSCI EAFE Index	-9.36%	-27.09%	-25.13%	-1.83%	-0.84%	1.02%	19.12%	
Difference	<b>-1.51%</b>	<b>-0.83%</b>	<b>-0.11%</b>	<b>0.47%</b>	<b>0.38%</b>	<b>0.50%</b>		
Nuveen ESG Emerging Markets Equity ETF	-12.83%	-26.39%	-28.26%	0.48%	-0.80%	0.57%	19.24%	06/06/2017
TIAA ESG Emerging Markets Equity Index	-12.62%	-26.12%	-27.93%	1.28%	-0.07%	1.33%	19.39%	
Difference	<b>-0.21%</b>	<b>-0.27%</b>	<b>-0.33%</b>	<b>-0.80%</b>	<b>-0.73%</b>	<b>-0.76%</b>		
Nuveen ESG US Aggregate Bond ETF	-4.66%	-14.49%	-14.55%	-3.47%	-	-0.50%	5.34%	09/29/2017
Bloomberg MSCI US Aggregate ESG Select Index	-4.76%	-14.64%	-14.62%	-3.21%	-	-	5.36%	
Difference	<b>0.10%</b>	<b>0.15%</b>	<b>0.07%</b>	<b>-0.26%</b>	<b>-</b>	<b>-</b>		
Nuveen ESG High Yield Corporate Bond ETF	-1.22%	-15.91%	-15.64%	-	-	-	-	09/25/2019
Bloomberg MSCI U.S. HY Very Liquid ESG Select Index	-1.37%	-16.00%	-15.34%	-	-	-	-	
Difference	<b>0.15%</b>	<b>0.09%</b>	<b>-0.30%</b>	<b>-</b>	<b>-</b>	<b>-</b>		

# Underlying Funds vs. Benchmarks

## Average Annual Total Return

DFA FUNDS	3 Month	YTD	1 Year	3 Year	5 Year	Life	3-Year Standard Deviation	Fund Incept. Date
DFA Emerging Markets Core Equity Portfolio*	-10.88%	-24.36%	-23.70%	0.26%	-0.70%	5.79%	20.58%	04/05/2005
MSCI Emerging Markets® Index	-11.57%	-27.16%	-28.11%	-2.07%	-1.81%	5.19%	19.18%	
Difference	<b>0.69%</b>	<b>2.80%</b>	<b>4.41%</b>	<b>2.33%</b>	<b>1.11%</b>	<b>0.60%</b>		
DFA Large Cap International Portfolio*	-10.05%	-25.80%	-23.33%	-0.75%	-0.26%	4.88%	19.62%	07/17/1991
MSCI World Ex US Index	-9.20%	-26.23%	-23.91%	-1.21%	-0.39%	4.91%	19.32%	
Difference	<b>-0.85%</b>	<b>0.43%</b>	<b>0.58%</b>	<b>0.46%</b>	<b>0.13%</b>	<b>-0.03%</b>		
<b>METWEST FUNDS</b>								
MetWest Total Return Bond Fund	-5.22%	-16.20%	-16.28%	-3.19%	-0.10%	2.14%	5.91%	07/01/1999
Bloomberg U.S. Aggregate Bond Index	-4.75%	-14.61%	-14.60%	-3.25%	-0.27%	1.45%	5.36%	
Difference	<b>-0.47%</b>	<b>-1.59%</b>	<b>-1.68%</b>	<b>0.06%</b>	<b>0.17%</b>	<b>0.69%</b>		
<b>PIMCO FUNDS</b>								
PIMCO Income Fund	-1.86%	-10.85%	-10.70%	-0.26%	1.24%	6.50%	7.14%	03/30/2007
Bloomberg U.S. Aggregate Bond Index	-4.75%	-14.61%	-14.60%	-3.25%	-0.27%	2.80%	5.36%	
Difference	<b>2.89%</b>	<b>3.76%</b>	<b>3.90%</b>	<b>2.99%</b>	<b>1.51%</b>	<b>3.70%</b>		
PIMCO Real Return Fund	-5.42%	-14.18%	-12.34%	0.86%	1.85%	5.11%	7.20%	01/29/1997
Bloomberg U.S. TIPS Index	-5.14%	-13.61%	-11.57%	0.79%	1.95%	-	6.87%	
Difference	<b>-0.28%</b>	<b>-0.57%</b>	<b>-0.77%</b>	<b>0.07%</b>	<b>-0.10%</b>	<b>-</b>		
<b>T. ROWE PRICE FUNDS</b>								
T. Rowe Price Instl Floating Rate Fund	1.51%	-3.50%	-2.72%	1.71%	2.68%	4.40%	7.79%	01/31/2008
S&P/LSTA Performing Loan Index	1.37%	-3.35%	-2.61%	2.41%	3.14%	4.68%	9.31%	
Difference	<b>0.14%</b>	<b>-0.15%</b>	<b>-0.11%</b>	<b>-0.70%</b>	<b>-0.46%</b>	<b>-0.28%</b>		
T. Rowe Price Large Cap Growth Fund	-2.89%	-35.07%	-31.08%	7.08%	9.93%	10.00%	23.20%	10/31/2001
Russell 1000 Growth Index	-3.60%	-30.66%	-22.59%	10.67%	12.17%	8.91%	23.13%	
Difference	<b>0.71%</b>	<b>-4.41%</b>	<b>-8.49%</b>	<b>-3.59%</b>	<b>-2.24%</b>	<b>1.09%</b>		
T. Rowe Price Large Cap Value Fund	-5.72%	-15.05%	-9.20%	5.55%	5.94%	7.81%	20.89%	3/31/2000
Russell 1000 Value Index	-5.62%	-17.75%	-11.36%	4.36%	5.29%	6.47%	20.45%	
Difference	<b>-0.10%</b>	<b>2.70%</b>	<b>2.16%</b>	<b>1.19%</b>	<b>0.65%</b>	<b>1.34%</b>		
<b>VANGUARD FUNDS</b>								
Vananguard ST Infl-Protected Securities Index Fund	-2.64%	-4.02%	-2.94%	2.35%	2.31%	1.26%	3.17%	10/16/2012
Bloomberg US TIPS 0-5 Year Index	-2.62%	-3.98%	-2.86%	2.43%	2.35%	1.27%	3.22%	
Difference	<b>-0.02%</b>	<b>-0.04%</b>	<b>-0.08%</b>	<b>-0.08%</b>	<b>-0.04%</b>	<b>-0.01%</b>		
Vanguard Real Estate Index Fund	-11.01%	-29.25%	-18.70%	-1.59%	3.11%	7.74%	22.31%	12/2/2003
MSCI US Investable Market Real Estate 25/50 Index	-10.98%	-29.20%	-18.62%	-1.49%	-	-	22.30%	
Difference	<b>-0.03%</b>	<b>-0.05%</b>	<b>-0.08%</b>	<b>-0.10%</b>	<b>-</b>	<b>-</b>		
Vanguard High-Yield Corporate Fund	-0.85%	-13.20%	-12.74%	-0.90%	1.36%	5.57%	10.06%	11/12/2001
Bloomberg US HY Ba/B 2% Issuer Cap TR USD	-0.68%	-14.47%	-13.83%	-0.40%	1.80%	6.43%	10.62%	
Bloomberg US Corporate High Yield Index	-0.65%	-14.74%	-14.14%	-0.45%	1.57%	-	11.01%	
Difference	<b>-0.17%</b>	<b>1.27%</b>	<b>1.09%</b>	<b>-0.50%</b>	<b>-0.44%</b>	<b>-0.86%</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.



# ScholarShare 529 College Savings Plan

December 14, 2022

3Q 2022 Investment Performance  
Status Report

1. Economic and Market Update
2. Review of ScholarShare Policy
3. Sensitivity Analyses
4. Summary Points
5. Enrollment Date Fund Performance
6. Appendix

### Takeaways

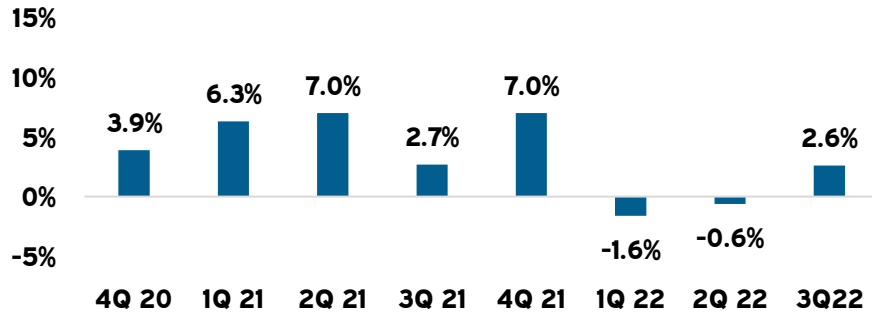
- Markets saw continued volatility through the third quarter of 2022 as both stocks and bonds have seen significant declines. After a brief reprieve in July, the Fed's hawkish rhetoric in August reinvigorated concerns about additional rate hikes. Year to Date both Equities and Fixed Income markets have struggled as this shapes up to be one of the worst calendar year starts on record.
- Equities continued to struggle, posting negative returns over the quarter. Domestically, US Small Cap outperformed US Large Cap while growth outperformed value for the quarter. TIAA-CREF Quant Small Cap Equity was the top performing actively managed equity fund for the quarter, returning -0.8%. Foreign equities trailed the US as the ongoing war and rising energy prices served as major headwinds in Non-US Developed markets, whereas China's on-going property market issues and strict COVID-19 policies hurt emerging markets. DFA Large Cap International returned -10.1%, whereas the DFA Emerging Markets Core Equity returned -10.9%.
- TIAA-CREF Quant Small Cap Equity was the top performing actively managed equity fund for the quarter, returning -0.8%, outpacing its benchmark by 1.4%
- Most actively managed fixed income funds posted negative returns for the quarter, with the exception of the T. Rowe Price Floating Rate fund, which returned 1.5% for the quarter.
- 6 of the 12 active managers in the ScholarShare plan outperformed or met their benchmark returns

# **Economic and Market Update**

## Data as of September 30, 2022

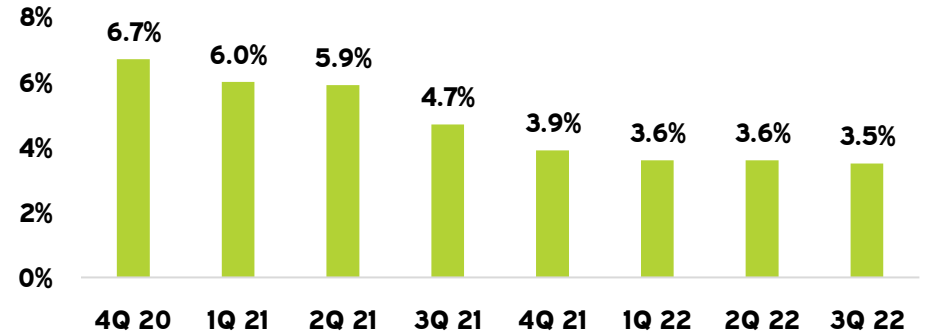
### Economic and Market Update

#### Quarterly Real GDP (Annualized)



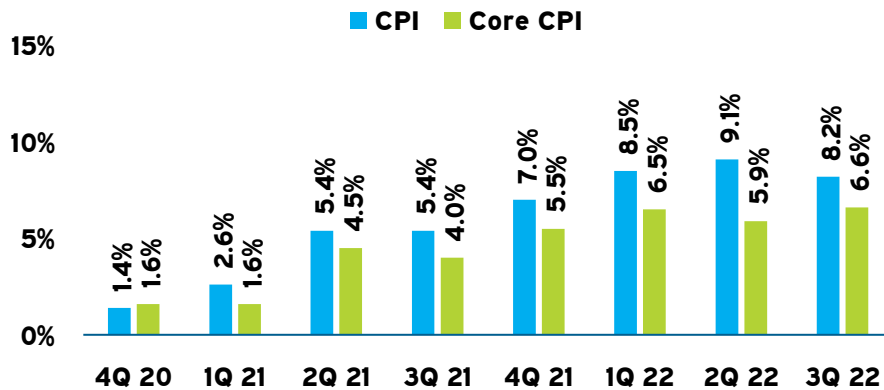
Source: Bureau of Economic Analysis. Data as of Q3 2022 representing the "advance" estimate. The "second" estimate for the third quarter, based on more complete data, will be released on November 30, 2022.

#### US Unemployment



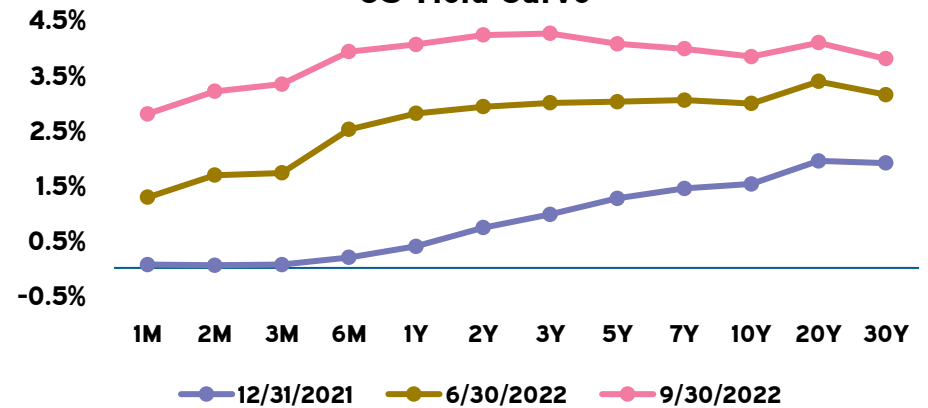
Source: Bureau of Labor Statistics. Data as of September 30, 2022. Seasonally adjusted.

#### US Inflation Trailing 12 Months



Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data as of September 30, 2022.

#### US Yield Curve



Source: US Department of the Treasury.

### Index Returns

	QTR (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>						
S&P 500	(4.9)	(23.9)	(15.5)	8.1	9.2	11.7
Russell 3000	(4.5)	(24.6)	(17.6)	7.7	8.6	11.4
Russell 1000	(4.6)	(24.6)	(17.2)	7.9	9.0	11.6
Russell 1000 Growth	(3.6)	(30.7)	(22.6)	10.6	12.2	13.7
Russell 1000 Value	(5.6)	(17.8)	(11.4)	4.4	5.3	9.2
Russell MidCap	(3.4)	(24.3)	(19.4)	5.2	6.5	10.3
Russell MidCap Growth	(0.7)	(31.5)	(29.5)	4.3	7.6	10.8
Russell MidCap Value	(4.9)	(20.4)	(13.6)	4.5	4.8	9.4
Russell 2000	(2.2)	(25.1)	(23.5)	4.3	3.6	8.6
Russell 2000 Growth	0.2	(29.3)	(29.3)	2.9	3.6	8.8
Russell 2000 Value	(4.6)	(21.1)	(17.7)	4.7	2.9	7.9
<b>Non-US Equity</b>						
MSCI ACWI (ex. US)	(9.9)	(26.5)	(25.2)	(1.5)	(0.8)	3.0
MSCI EAFE	(9.4)	(27.1)	(25.1)	(1.8)	(0.8)	3.7
MSCI EAFE Growth	(8.5)	(33.0)	(30.3)	(1.5)	0.7	4.7
MSCI EAFE Value	(10.2)	(21.1)	(20.2)	(2.8)	(2.7)	2.4
MSCI EAFE (Local Currency)	(3.6)	(14.5)	(11.1)	2.5	2.8	7.4
MSCI EAFE Small Cap	(9.8)	(32.1)	(32.1)	(2.2)	(1.8)	5.3
MSCI Emerging Markets	(11.6)	(27.2)	(28.1)	(2.1)	(1.8)	1.1
MSCI Emg Mkts (Local Currency)	(8.2)	(20.8)	(21.5)	1.1	1.1	4.5
MSCI China	(22.5)	(31.2)	(35.4)	(7.2)	(5.6)	2.4
<b>Fixed Income</b>						
Bloomberg Universal	(4.5)	(14.9)	(14.9)	(3.1)	(0.2)	1.2
Bloomberg Aggregate	(4.8)	(14.6)	(14.6)	(3.3)	(0.3)	0.9
Bloomberg US TIPS	(5.1)	(13.6)	(11.6)	0.8	2.0	1.0
Bloomberg High Yield	(0.7)	(14.7)	(14.1)	(0.5)	1.6	3.9
JPM GBI-EM Global Diversified	(4.7)	(18.6)	(20.6)	(7.0)	(3.9)	(2.4)
<b>Other</b>						
FTSE NAREIT Equity	(9.9)	(28.1)	(16.4)	(2.0)	2.9	6.3
Bloomberg Commodity Index	(4.1)	13.6	11.8	13.4	7.0	(2.1)

### During the Quarter:

→ Historically high inflation, rising rates, the strength of the US dollar and the war in Ukraine continued to weigh on results.

→ US and Non-US equity continued to experience declines.

- US equities outperformed non-US equities.
- US Small Caps outpaced US Large Caps.
- The Russell 2000 Growth Index was slightly positive returning +0.2%.
- US Growth outpaced US Value across all market caps.
- Within Non-US, Developed Markets outperformed Emerging Markets. China was the main detractor for Emerging Markets during the quarter, falling (22.5%).

→ Broad fixed income returns were negative.

- The FOMC raised rates by 75 bps for a third consecutive time in September to combat surging inflation, driving interest rates higher and bond prices to go lower.

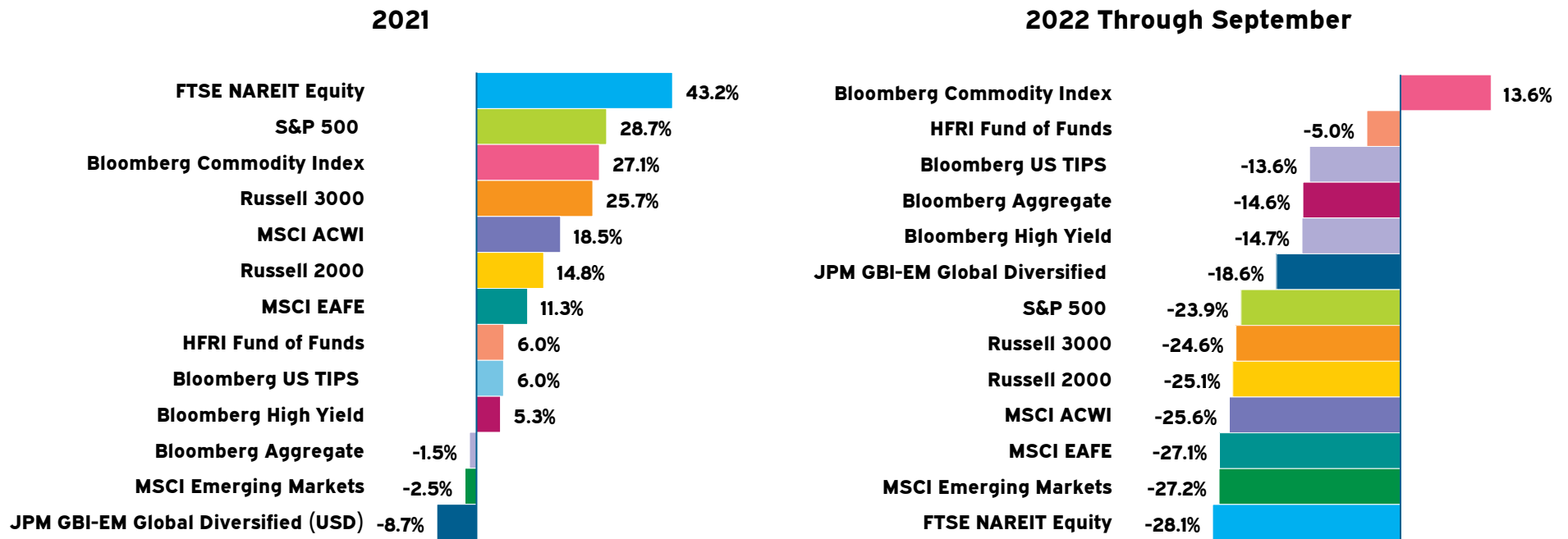
→ Diversifying asset classes produced negative results.

- Commodities were down (4.1%).
- REITs were down (9.9%).

### Commentary

- After a strong July, global markets sold off in August and September, leading to quarterly declines as slower growth and higher inflation weighed on sentiment.
- The Federal Reserve maintained its aggressive tightening campaign with future hikes expected as US inflation continues to surprise to the upside and labor markets remain tight.
  - In Europe, inflation hit a multi-decade high on energy prices. In the UK, Liz Truss became the new prime minister with her government quickly announcing a fiscal package in September. The proposal was poorly received by markets, as it undermined efforts of the central bank to lower inflation.
  - Equity markets significantly declined for the month leading to quarterly losses with international markets declining the most. The war in Ukraine has elevated prices in Europe, while tight COVID-19 policies, slowing growth, and property market issues have weighed on China. Continued US dollar strength has been a further headwind.
  - For the quarter, in a reversal of the prior trend, growth outpaced value across the capitalization spectrum but continued to trail year-to-date.
  - Interest rates rose significantly across the US yield curve for the month and quarter with the curve remaining inverted (ten-year yield minus the two-year yield) by 44 basis points. This is by far the worst start to a calendar year for bond investors.
- Persistently high inflation and the likely increased pace of the policy response, the war in Ukraine, lingering COVID-19 issues, and lockdowns in China will all have considerable consequences for the global economy.

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



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

→ After a brief rally in July most asset classes declined significantly in August and September as it became clear further policy tightening would be taken to try to control inflation. Except for commodities, all major assets classes have experienced significant declines year-to-date.

<sup>1</sup> Source: Bloomberg and FactSet. Data is as of September 30, 2022.



### Domestic Equity Returns<sup>1</sup>

Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-9.2	-4.9	-23.9	-15.5	8.2	9.2	11.7
Russell 3000	-9.3	-4.5	-24.6	-17.6	7.7	8.6	11.4
Russell 1000	-9.3	-4.6	-24.6	-17.2	7.9	9.0	11.6
Russell 1000 Growth	-9.7	-3.6	-30.7	-22.6	10.7	12.2	13.7
Russell 1000 Value	-8.8	-5.6	-17.8	-11.4	4.4	5.3	9.2
Russell MidCap	-9.3	-3.4	-24.3	-19.4	5.2	6.5	10.3
Russell MidCap Growth	-8.5	-0.7	-31.5	-29.5	4.3	7.6	10.8
Russell MidCap Value	-9.7	-4.9	-20.4	-13.6	4.5	4.7	9.4
Russell 2000	-9.6	-2.2	-25.1	-23.5	4.3	3.6	8.5
Russell 2000 Growth	-9.0	0.2	-29.3	-29.3	2.9	3.6	8.8
Russell 2000 Value	-10.2	-4.6	-21.1	-17.7	4.7	2.9	7.9

#### US Equities: Russell 3000 Index fell 9.3% for September and 4.5% for the quarter.

- US stocks fell sharply during September and finished down for the third quarter.
- Each of the 11 sectors declined in September with six sectors (Real Estate, Communication Services, Technology, Utilities, Materials, and Industrials) falling by 10% or more. Health Care stocks fared best and declined 3.1%. For the quarter all sectors were down except for consumer discretionary and energy.
- For the second straight month, value stocks outperformed growth stocks in the large cap segment of the market, while the reverse was true in the small cap segment. The underperformance of technology stocks, which account for 43% of the large cap growth market, drove this dynamic.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2022.

### Foreign Equity Returns<sup>1</sup>

Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-10.0	-9.9	-26.5	-25.2	-1.5	-0.8	3.0
MSCI EAFE	-9.4	-9.4	-27.1	-25.1	-1.8	-0.8	3.7
MSCI EAFE (Local Currency)	-6.2	-3.6	-14.5	-11.1	2.5	2.8	7.4
MSCI EAFE Small Cap	-11.5	-9.8	-32.1	-32.1	-2.2	-1.8	5.3
MSCI Emerging Markets	-11.7	-11.6	-27.2	-28.1	-2.1	-1.8	1.0
MSCI Emerging Markets (Local Currency)	-9.4	-8.2	-20.8	-21.5	1.1	1.1	4.5
MSCI China	-14.6	-22.5	-31.2	-35.4	-7.2	-5.5	2.4

**International equities (MSCI EAFE) fell 9.4%, while emerging markets (MSCI EM) returned -11.7% in September leading to quarterly declines of similar amounts.**

- Non-US developed market stocks again broadly trailed the US for the month, leading to the steepest declines year-to-date. High inflation in Europe, particularly related to gas and electricity, the ongoing war in Ukraine, and relatively slower growth globally continue to weigh on sentiment.
- Emerging market equities were deep in the red for the month, driven by China’s (-14.6%) on-going property market issues and strict COVID-19 policies. The upcoming National Communist Party Congress in China in October is highly anticipated.
- The strength of the US dollar continued as a headwind to international equities for the month and year-to-date, both in developed and emerging markets.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2022.

### Fixed Income Returns<sup>1</sup>

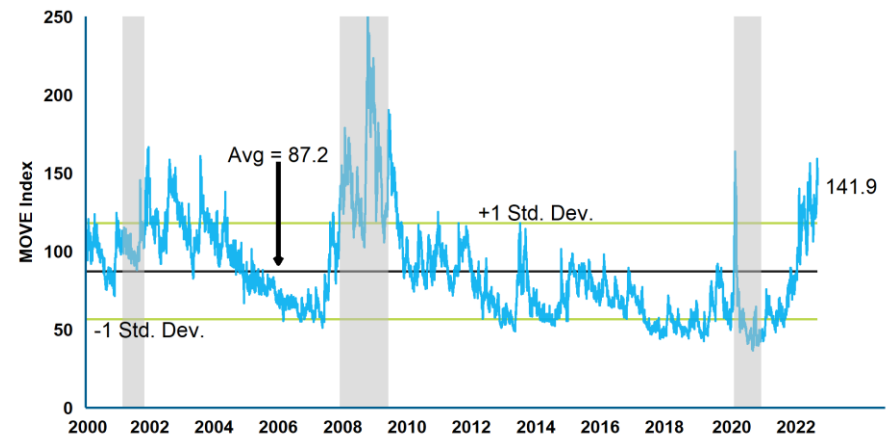
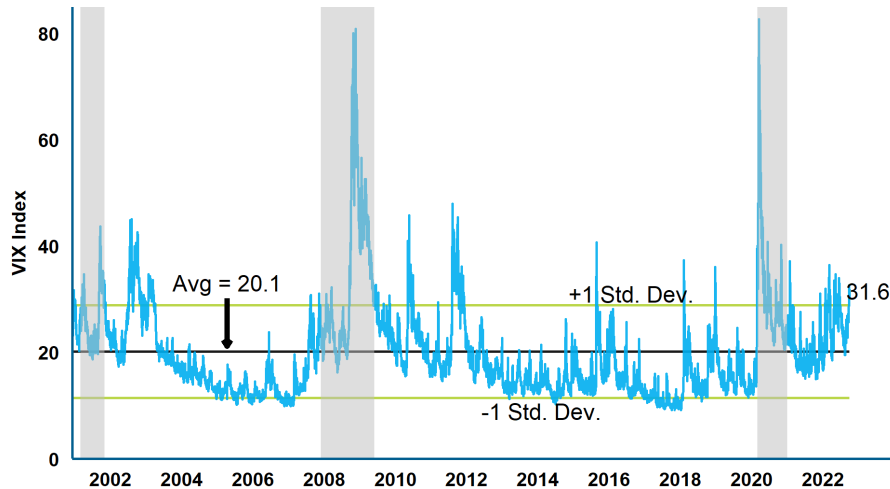
Fixed Income	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-4.3	-4.5	-14.9	-14.9	-3.1	-0.2	1.2	5.2	6.2
Bloomberg Aggregate	-4.3	-4.8	-14.6	-14.6	-3.3	-0.3	0.9	4.8	6.4
Bloomberg US TIPS	-6.6	-5.1	-13.6	-11.6	0.8	1.9	1.0	4.3	6.9
Bloomberg High Yield	-4.0	-0.6	-14.7	-14.1	-0.5	1.6	3.9	9.7	4.6
JPM GBI-EM Global Diversified (USD)	-4.9	-4.7	-18.6	-20.6	-7.1	-3.9	-2.4	7.6	4.8

#### Fixed Income: The Bloomberg Universal declined 4.3% in September and 4.5% for the quarter.

- A sharp rise in bond yields driven by central banks confirming commitments to fight inflation weighed on fixed income in September leading to declines for the quarter as well. Year-to-date the US bond market is off by far to its worst calendar year start on record.
- TIPS declined the most for the month and quarter as investors' confidence grew that tighter monetary policy would ultimately get inflation under control.
- Riskier US bonds declined the least with the high yield index falling slightly less than the broad US bond market (-4.0% versus -4.3%). Emerging market bonds finished down close to 5% for the month with significant declines year-to-date.

<sup>1</sup> Source: Bloomberg. JPM GBI-EM is from InvestorForce. Data is as of September 30, 2022.

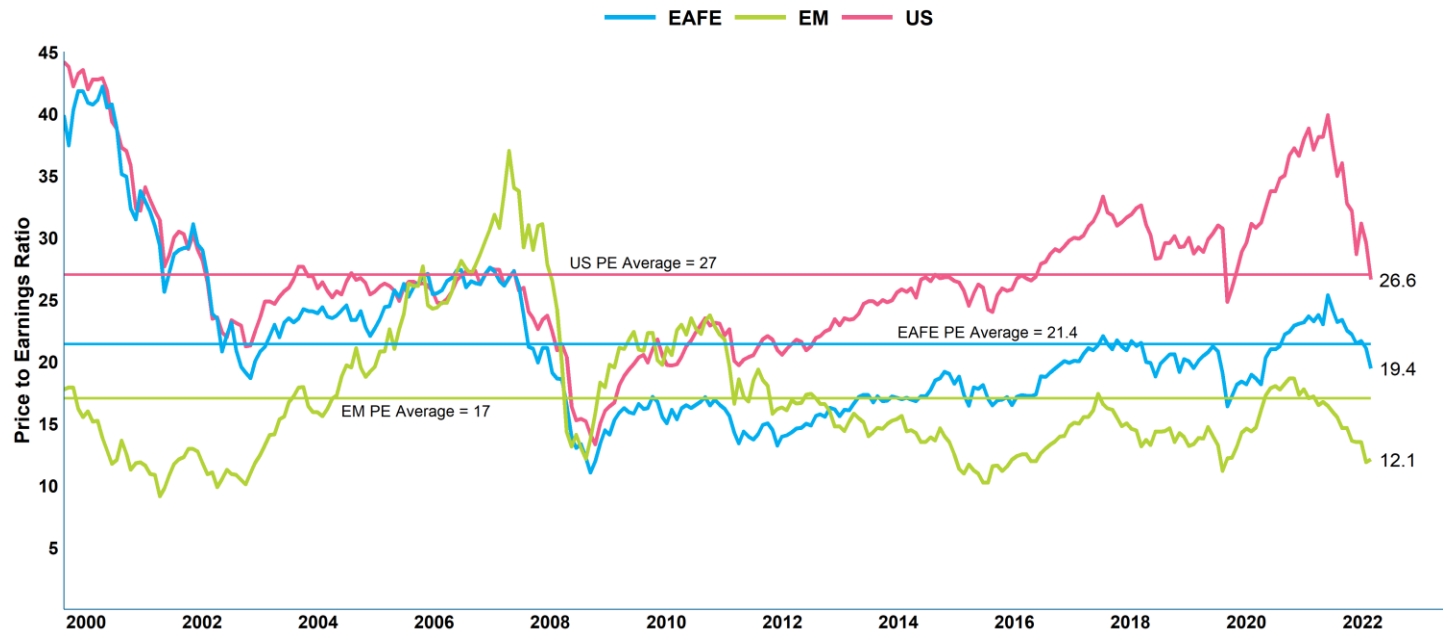
### Equity and Fixed Income Volatility<sup>1</sup>



- Volatility in equities (VIX) and fixed income (MOVE) rose in September and finished higher overall for the quarter as the Federal Reserve and other central banks made it clear that they were committed to aggressively tightening monetary policy to fight high inflation.
- Fixed income volatility remains particularly high due to the uncertain path of short-term interest rates given stubbornly high inflation. Issues related to the UK's announcement to offer tax breaks despite the central bank's efforts to fight inflation also contributed to volatility in fixed income markets.

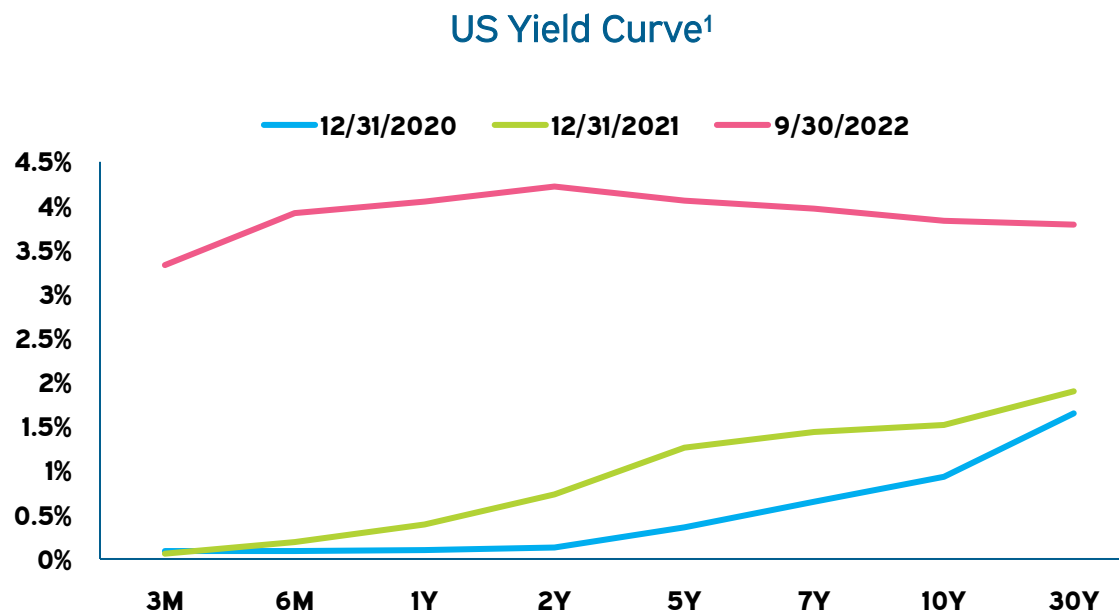
<sup>1</sup> Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of September 2022. The average line indicated is the average of the VIX and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

**Equity Cyclically Adjusted P/E Ratios<sup>1</sup>**



- September price declines brought US equity price-to-earnings ratios slightly below the long-term (21<sup>st</sup> Century) average.
- International developed market valuations remain below the US and are below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

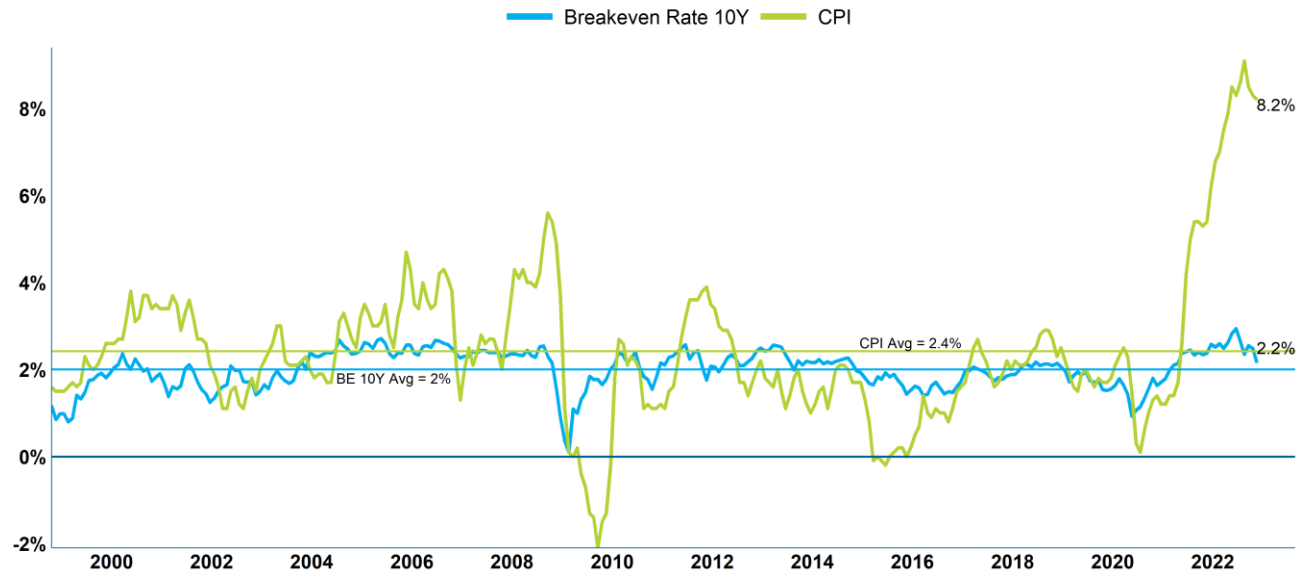
<sup>1</sup> US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of September 30, 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.



- Rates across the yield curve remain far higher than at the start of the year.
- In September, rates rose across the yield curve, finishing the quarter significantly higher. Yields on two-year Treasuries increased 0.79% just in the month of September bring the quarterly increase to 1.32%, while ten-year Treasuries rose 0.64% for the month and 0.82% for the quarter.
- The Fed remains strongly committed to fighting inflation, as it increased rates another 75 basis points to a range of 3.0% and 3.25%. This was the fifth increase this year and the third consecutive increase of this amount.
- The yield spread between two-year and ten-year Treasuries remained negative, finishing September at -0.44%. Inversions in the yield curve have historically often preceded recessions.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2022.

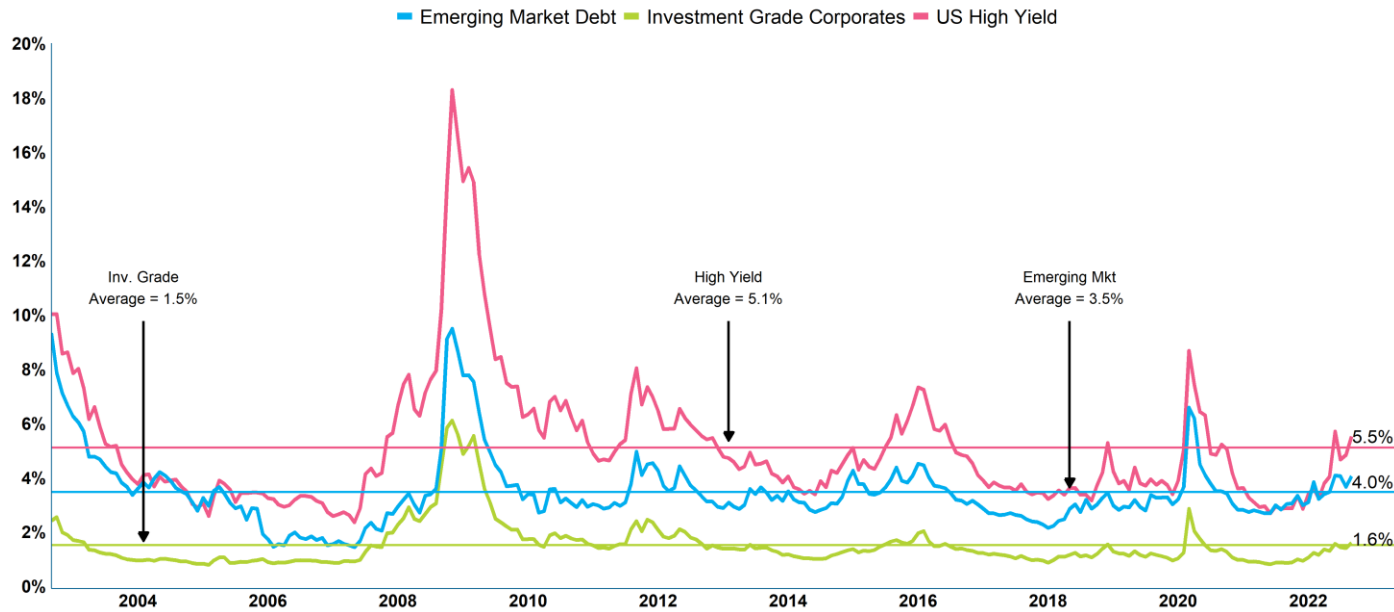
**Ten-Year Breakeven Inflation and CPI<sup>1</sup>**



- Inflation expectations (breakevens) declined for the month and finished the quarter slightly below the long-run average on the belief that tighter monetary policy would lower long-run inflation.
- Trailing twelve-month CPI declined in September (8.2% versus 8.3%) but surprised markets by coming in above expectations.
- Over the last year rising prices for energy (particularly oil), food, housing, and for new and used cars remain key drivers of inflation.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

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



- Credit spreads (the spread above a comparable maturity Treasury) widened in September, finishing the quarter above long-term averages. Fears related to the impact of tighter monetary policy on economic growth was a key driver of wider spreads.
- In the US, spreads for high yield increased sharply (5.5% versus 4.8%), with investment grade spreads rising more modestly (1.6% versus 1.4%). Emerging market spreads also increased (4.0% versus 3.6%).

<sup>1</sup> Sources: Bloomberg. Data is as of September 30, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.



### Global Economic Outlook

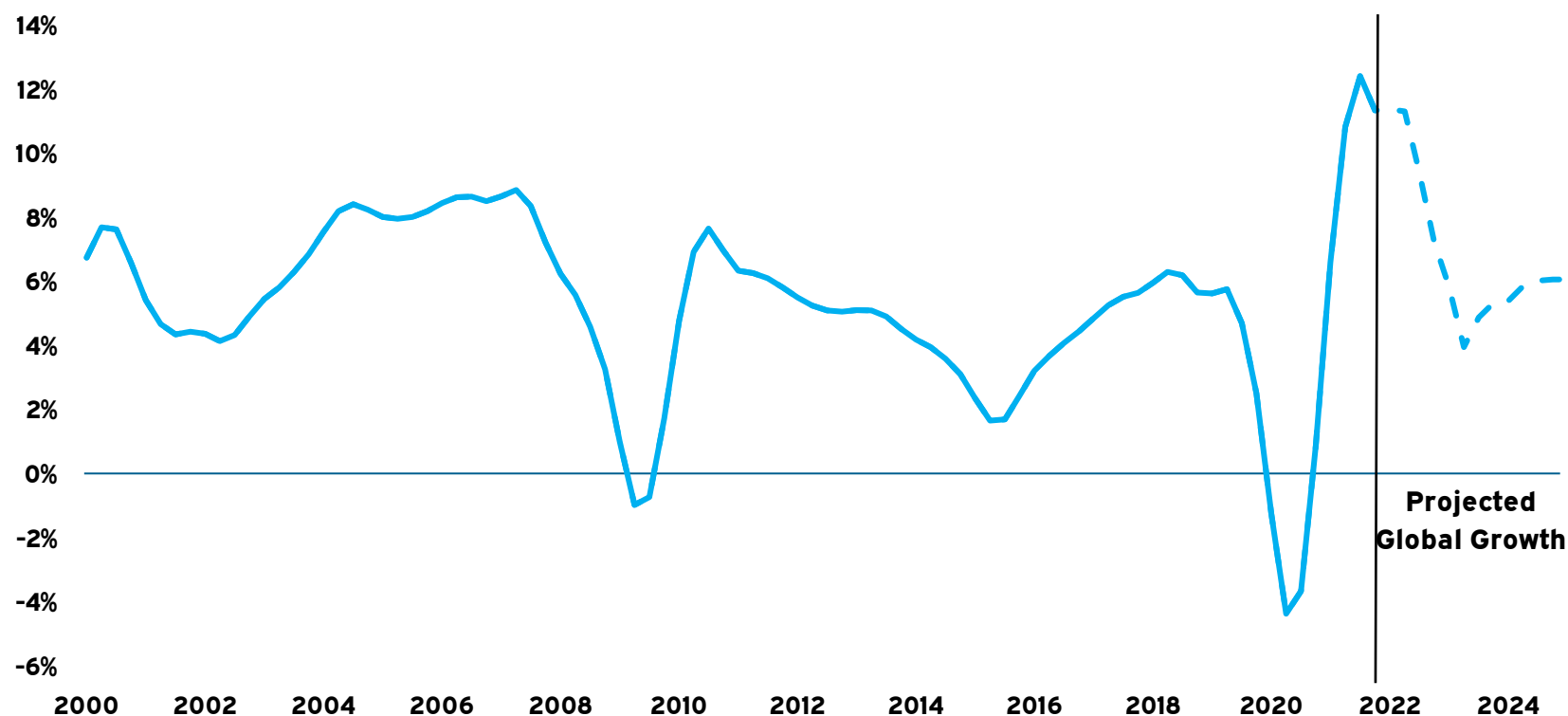
In their October update, the IMF maintained lowered global growth forecasts, driven by the economic impacts of persistent inflation and corresponding tighter policy, as well as issues related to the war in Ukraine and the lingering pandemic.

- The IMF forecasts global GDP growth to come in at 3.2% in 2022 (like the July estimate) and 2.7% in 2023 (0.2% below the prior estimate).
- In advanced economies, GDP is projected to grow 2.4% in 2022 and 1.1% in 2023. The US saw another downgrade in the 2022 (1.6% versus 2.3%) forecast largely due to accelerated policy tightening, given persistently high inflation. The euro area saw an upgrade in expected growth (3.1% versus 2.6%) on substantial fiscal stimulus in 2022 but a downgrade in 2023 (0.5% versus 1.2%) as rising energy prices weigh on the region that is a net importer of energy. The Japanese economy is expected to grow 1.7% this year and 1.6% in 2023.
- Growth projections for emerging markets are higher than developed markets, at 3.7% in 2022 and 2023. China's growth was downgraded for 2022 (3.2% versus 3.3%) and 2023 (4.4% versus 4.6%) given tight COVID-19 restrictions and continued property sector problems.
- The global inflation forecast was significantly increased for 2022 (8.8% versus 7.4%).

	Real GDP (%) <sup>1</sup>			Inflation (%) <sup>1</sup>		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	3.2	2.7	3.2	8.8	6.5	3.6
Advanced Economies	2.4	1.1	1.6	7.2	4.3	1.6
US	1.6	1.0	2.1	8.1	3.5	2.0
Euro Area	3.1	0.5	1.0	8.3	5.7	1.3
Japan	1.7	1.6	0.8	2.0	1.4	0.4
Emerging Economies	3.7	3.7	4.4	9.9	8.1	5.3
China	3.2	4.4	7.3	2.2	2.2	2.4

<sup>1</sup> Source: IMF World Economic Outlook. Real GDP and Inflation forecasts from October 2022 Update. "Actual 10 Year Average" represents data from 2012 to 2021.

### Global Nominal Gross Domestic Product (GDP) Growth<sup>1</sup>



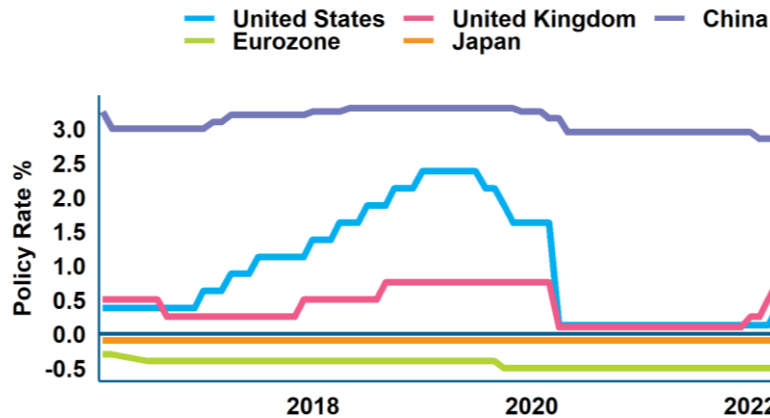
→ Global economies are expected to slow in 2022 compared to 2021, with risks of recession increasing given persistently high inflation and related tighter monetary policy.

→ The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

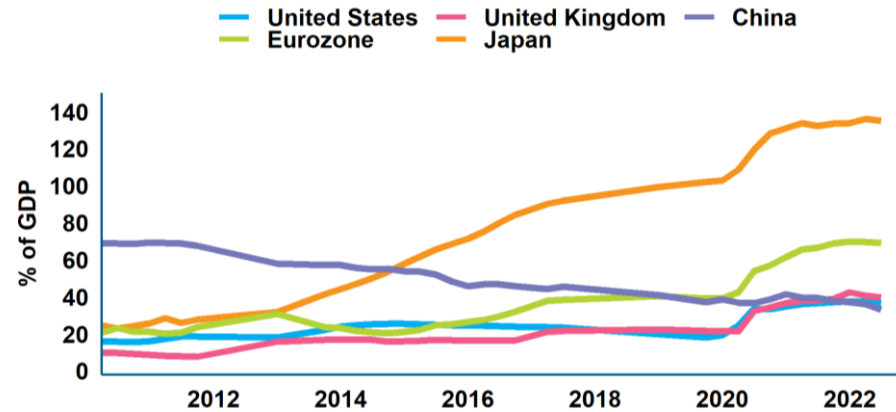
<sup>1</sup> Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, nominal, % change YoY). Updated September 2022. Nominal expectations for GDP remain much higher than real GDP expectations given the elevated inflation levels.

### Central Bank Response<sup>1</sup>

**Policy Rates**



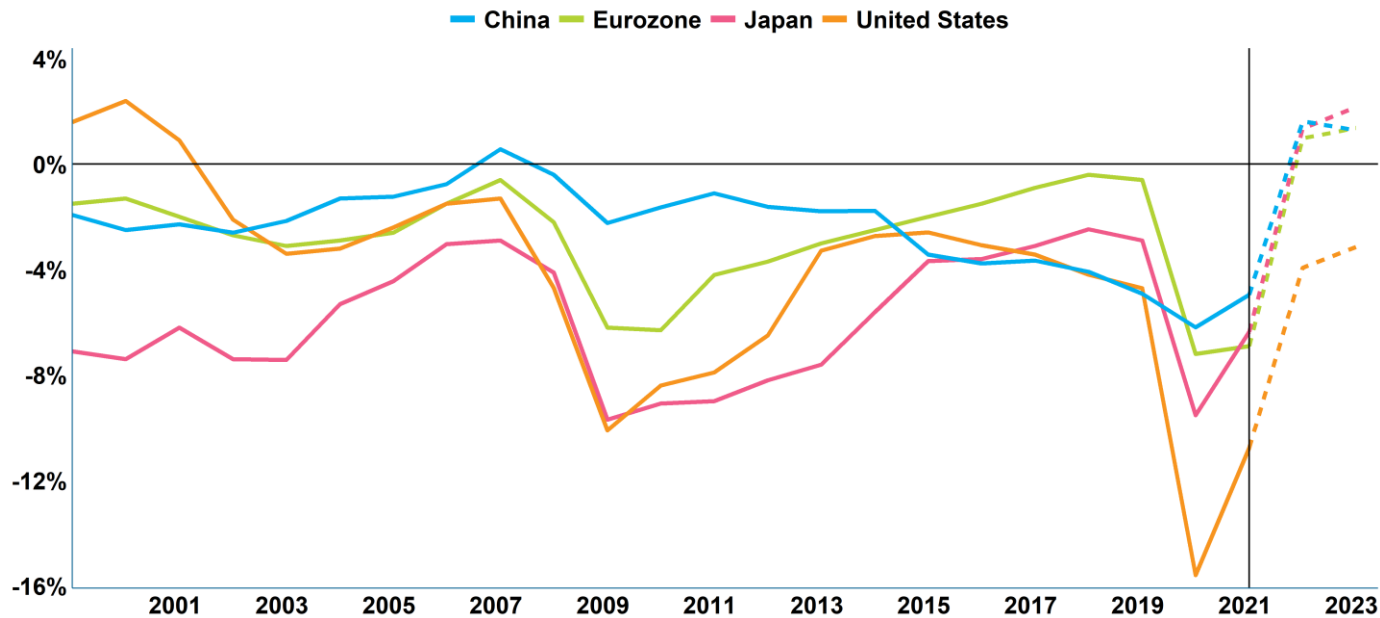
**Balance Sheet as % of GDP**



- After global central banks took extraordinary action to support economies during the pandemic, including policy rate cuts and emergency stimulus through quantitative easing (QE), many are now aggressively reducing support in the face of high inflation.
- The pace of withdrawing support varies across central banks with the US taking a more aggressive approach. The UK is also aggressively increasing rates, but recent talks of easing fiscal policy (this ultimately did not happen) created significant volatility that spilled over into other markets.
- The one notable central bank outlier is China, where the central bank has lowered rates and reserve requirements in response to slowing growth.
- The risk remains for a policy error, particularly overtightening, as record inflation, the war in Ukraine, and a tough COVID-19 policy in China could suppress global growth.

<sup>1</sup> Source: Bloomberg. Policy rate data is as of September 30, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2022.

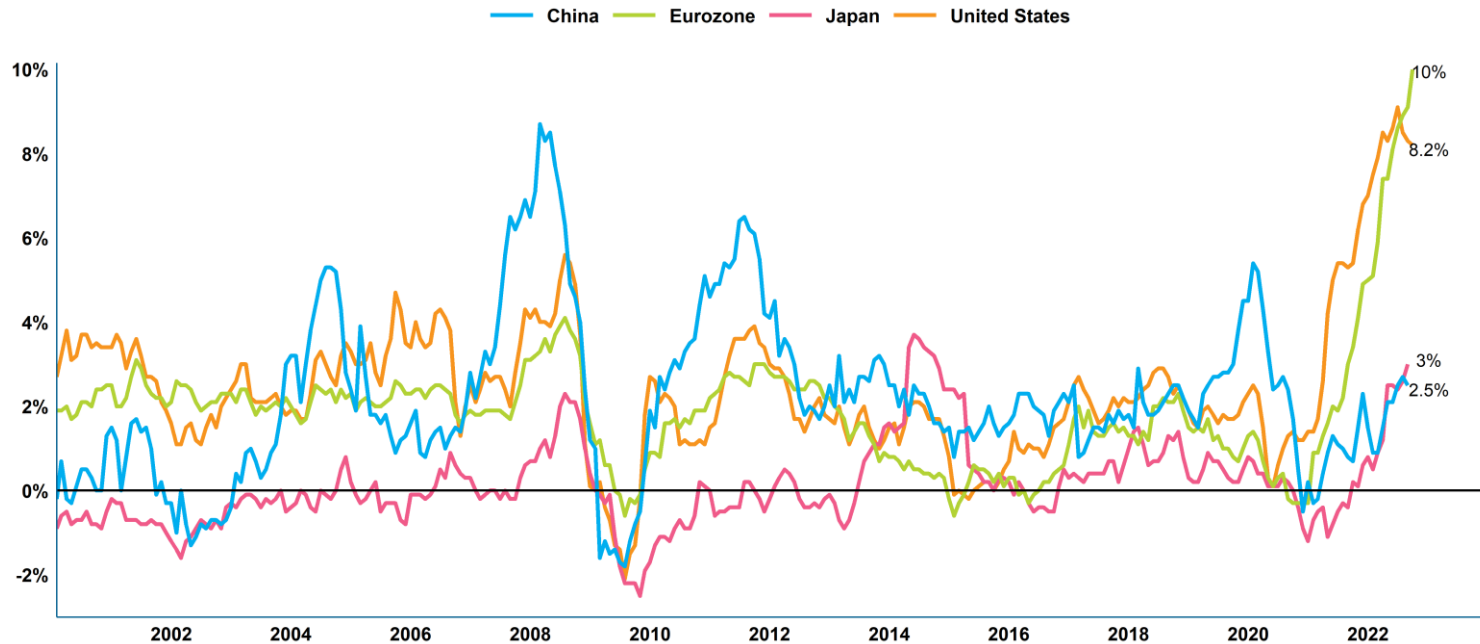
**Budget Surplus / Deficit as a Percentage of GDP<sup>1</sup>**



- Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction’s effect on tax revenue in 2020 and 2021.
- As fiscal stimulus programs end, and economic recoveries continue, deficits should improve.
- Questions remain about how some countries will respond fiscally as inflation, particularly energy prices, weigh on consumers. Policies that undermine central banks’ efforts to fight inflation could lead to additional market volatility like was seen in the UK.

<sup>1</sup> Source: Bloomberg. Data is as of September 30, 2022. Projections via IMF Forecasts from October 2022 Report. Dotted lines represent 2022 and 2023 forecasts.

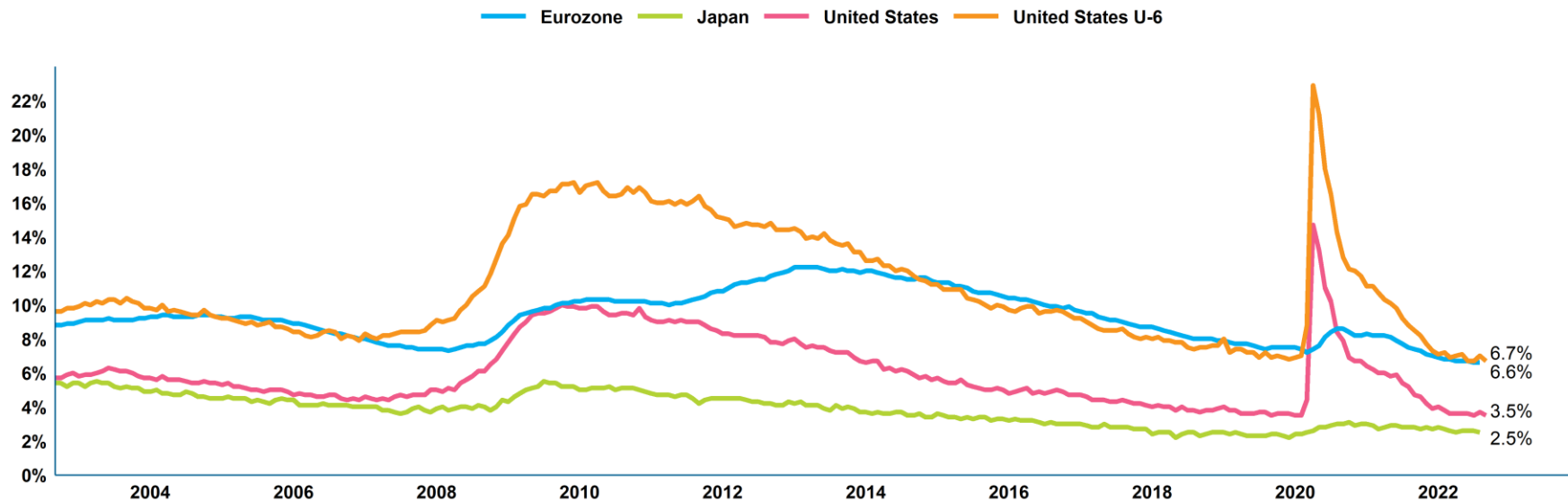
**Inflation (CPI Trailing Twelve Months)<sup>1</sup>**



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher prices in many commodities driven by the war in Ukraine have been key global drivers of inflation.

<sup>1</sup> Source: Bloomberg. Data is as of September 2022. The most recent data for Japan and China is as of August 31, 2022.

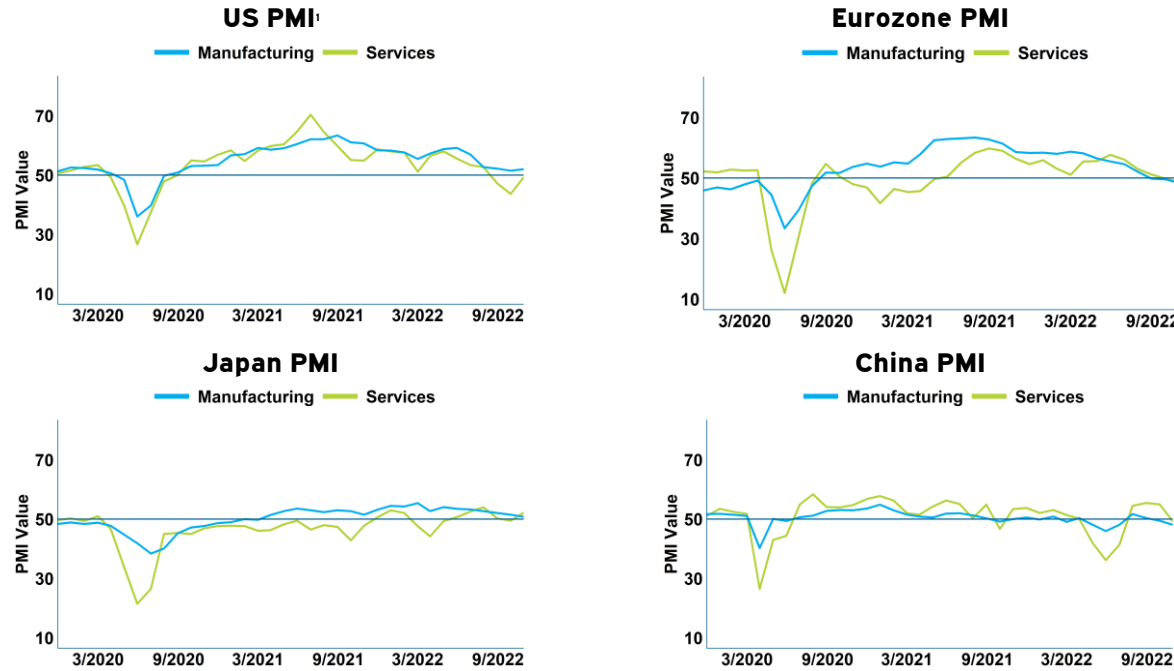
### Unemployment<sup>1</sup>



- As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- Despite slowing growth and high inflation the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, declined to pre-pandemic (3.5%) levels. The broader measure (U-6) that includes discouraged and underemployed workers declined but is much higher at 6.7%.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed’s efforts to fight inflation, likely leading to eventually higher unemployment.

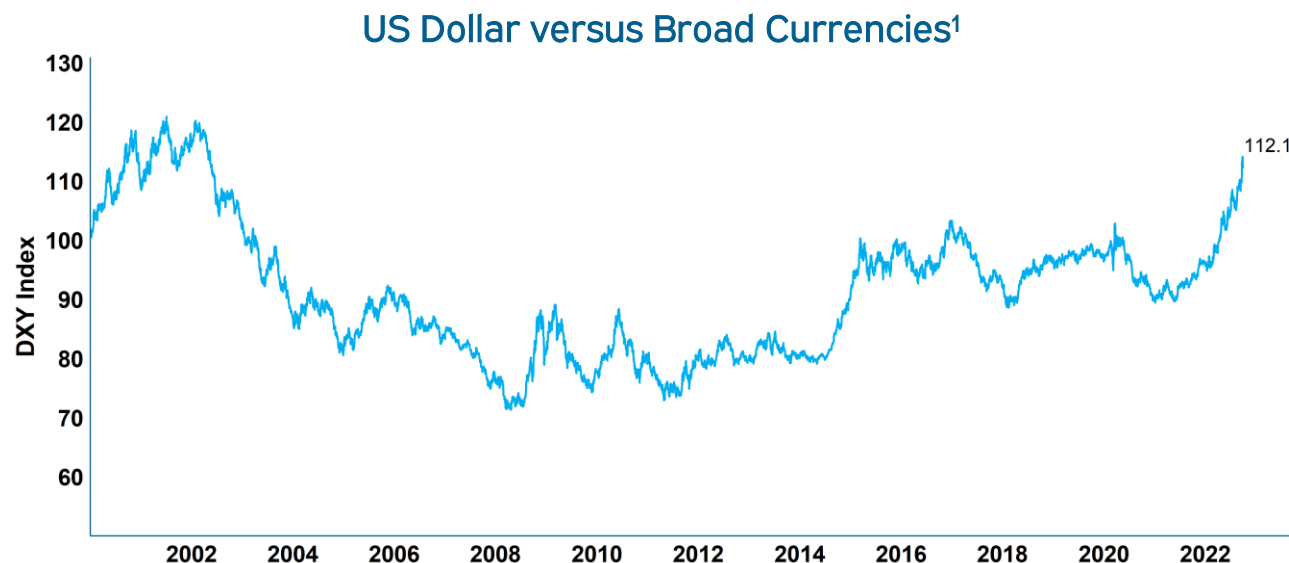
<sup>1</sup> Source: Bloomberg. Data is as of September 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of August 31, 2022.

### Global PMIs



- After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have largely experienced downward pressure recently.
- Service sector PMIs, except Japan, are all in contraction territory. The US service sector recovered somewhat but remains in negative territory due to weak demand, a sharp decline in new orders, and softening employment.
- Manufacturing PMIs are also slowing across China and developed markets given declines in demand and inflationary pressures with the Eurozone and China in contraction territory.

<sup>1</sup> Source: Bloomberg. US Markit Services and Manufacturing PMI, Caixin Services and Manufacturing PMI, Eurozone Markit Services and Manufacturing PMI, Jibun Bank Services and Manufacturing PMI. Data is as of September 2022. Readings below 50 represent economic contractions.



- The US dollar continued to strengthen in September, increasing 7.1% overall for the quarter and reaching levels not seen in two decades.
- The increased pace of policy tightening, stronger relative growth, and safe-haven flows all contributed to the dollar's strength this year.
- The euro, yen, pound, and yuan have all experienced significant declines versus the dollar this year, adding to inflation.

<sup>1</sup> Source: Bloomberg. Data as of September 30, 2022.



## Summary

### Key Trends in 2022:

- The impacts of record high inflation will remain key, with market volatility likely to remain high.
- The pace of monetary tightening globally will be faster than previously expected, with the risk of overtightening.
- Expect growth to slow globally in 2022 and into 2023 to the long-term trend or below. Inflation, monetary policy, and the war will all be key.
- In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices will depress consumers' spending in other areas.
- Valuations have significantly declined in the US to below long-term averages.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but major risks remain, including continued strength in the US dollar, higher inflation particularly weighing on Europe, and China maintaining its restrictive COVID-19 policies.

## **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
DFA Large Cap International	International Equity	MSCI World ex US NR USD
TIAA-CREF Social Choice International Equity	International Equity	MSCI EAFE
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
Vanguard High-Yield Corp Adm	High Yield	Bloomberg US Corporate High Yield TR
T. Rowe Price Institutional Floating Rate	High Yield	S&P/LSTA Performing Loan 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
Nuveen ESG Emerging Markets Equity ETF	International Equity	TIAA ESG Emerging Markets Index
Vanguard Short Term Infl-Protected Securities	Fixed Income	BBg US TIPS 0-5 Years
TIAA-CREF Bond Index	Fixed Income	BBg BarCap US Agg Bond TR USD
Nuveen ESG US Aggregate Bond Index	Fixed Income	BBg MSCI US Agg ESG Select
Nuveen ESG High Yield Corporate Bond ETF	High Yield	BBg MSCI US High Yield Very Liquid ESG Select
Vanguard Real Estate Index	Real Estate	MSCI US IMI Real Estate 25/50 GR USD

**T-C Life Funding Agreements**

T-C Life Funding Agreements <sup>1</sup>	---	---
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<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 <sup>5</sup> (> 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 <sup>5</sup> (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

<sup>1</sup> Return discounts from a benchmark return based on 2/3rds of the typical tracking error estimates of the specified type of fund manager.

<sup>2</sup> Annualized return is the average annual return of either the manager or its benchmark.

<sup>3</sup> VRR – Value Relative Ratio – is calculated as: Manager Cumulative Return / Benchmark Cumulative Return.

<sup>4</sup> Tracking error is a measure of the volatility of the average annual difference between the manager's return and the benchmark's return.

<sup>5</sup> Long-term analysis is presented for informational value to provide context but is not a factor used to determine an Underlying Investment's status.

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

ESG Funds  
(based on net-of-fee asset class performance)

Asset Class	Short-Term (rolling 12-month periods)	Medium-Term (rolling 36-month periods)	Long-Term (rolling 60-month periods)
International Equity <sup>2</sup>	Tracking Error > 1.00% for 6 consecutive months	Tracking Error > 0.75% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.50% for 6 consecutive months
Fixed Income	Tracking Error > 0.70% for 6 consecutive months	Tracking Error > 0.60% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.50% for 6 consecutive months
High Yield	Tracking Error > 0.75% for 6 consecutive months	Tracking Error > 0.65% for 6 consecutive months	Fd annlzd return < bench annlzd return -0.55% for 6 consecutive months

<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.

<sup>2</sup> Nuveen utilizes "fair market value" adjustment procedures for the Nuveen ESG Emerging Markets Equity ETF (the ETF). This adjustment increases or decreases the ETF's actual closing price to compensate for pricing differences between international markets. This procedure can create an artificially high tracking error. Monitoring of the ETF takes this into account and corrects for it where data is available.

### Investment Status Schedule

Performance Category <sup>1</sup>	Actively Managed Portfolios	Passively Managed Portfolios
Positive	→ Performance exceeds the benchmark.	→ Performance exceeds the benchmark (first 1-12 month period), or → Tracking error is within the allowable range <sup>1</sup> (short, medium, and long time periods).
Acceptable	→ Performance meets or is under the benchmark and is within the allowable range.	→ Performance does not exceed the benchmark but is within the allowable range (first 1-12 month period only).
Caution	→ Performance is below allowable range but either: i) for less than six consecutive months, or ii) 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.	→ Tracking error falls outside of the allowable range but either i) for less than six consecutive months, or ii) the Board has not voted to place the asset class or stand alone fund on Watch
Watch <sup>2</sup>	→ 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.	→ 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.

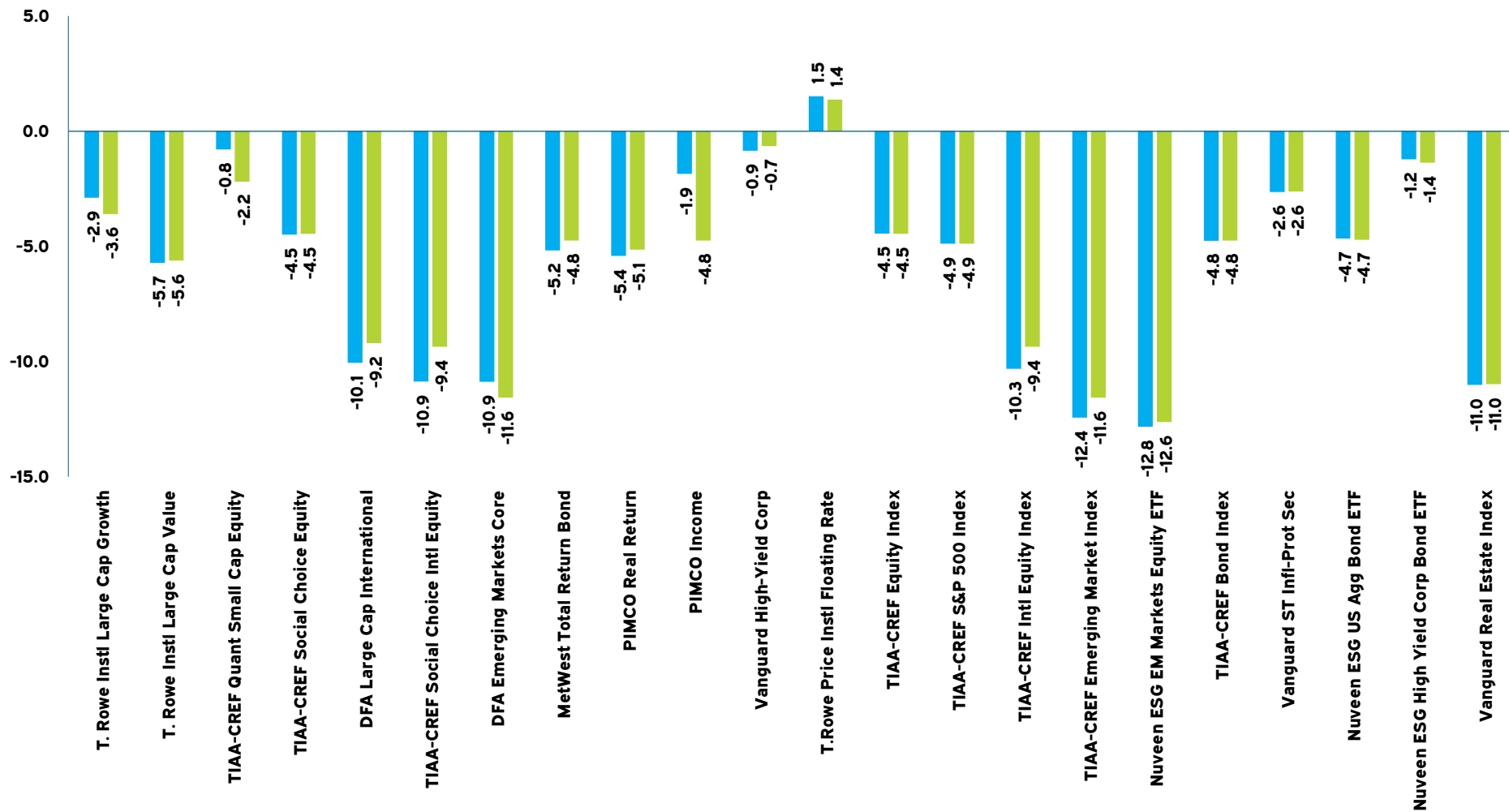
<sup>1</sup> Ranges are shown in the Investment Performance Criteria Schedules.

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

Summary of Fund Performance 9/30/22

Quarter

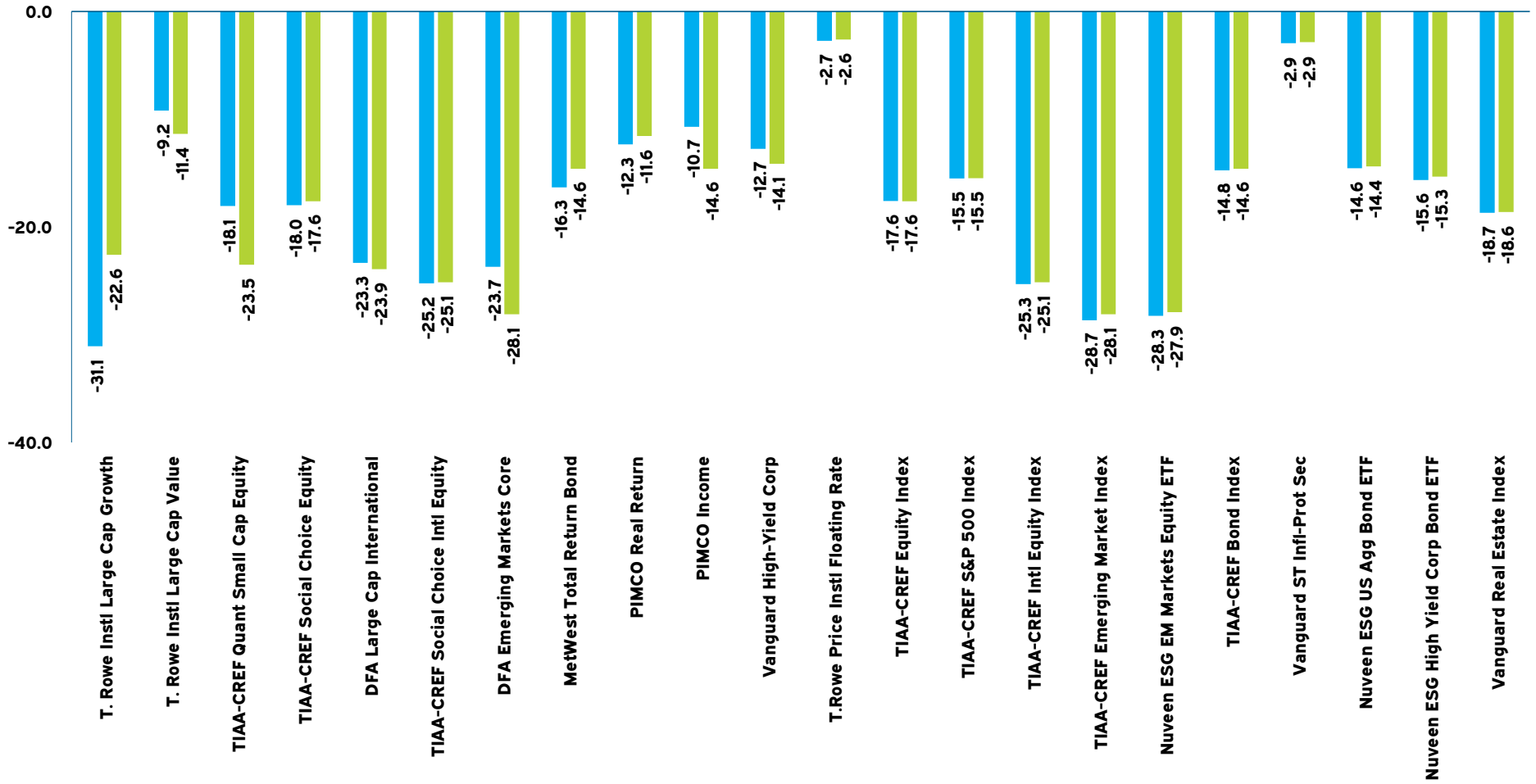
Fund Index



Summary of Fund Performance 9/30/22

1 Year

Fund Index





### Summary of Fund Performance Status

Program	Total Funds	Positive	Acceptable	Caution	Watch <sup>2</sup>
Number of Funds <sup>1</sup>	23	9	12	2	1
% of Funds	100%	39%	52%	9%	4%
% of Program Assets	100%	39%	57%	4%	2%
Fund Status ↑	1	1	—	—	—
Fund Status ↓	3	—	3	—	—
Domestic Equity Funds	6	2	3	1	1
Intl Equity Funds	6	3	2	1	—
Fixed Income Funds	7	1	6	—	—
High Yield Funds	2	2	—	—	—
Real Estate	1	—	1	—	—
Funding Agreement	1	1	—	—	—

<sup>1</sup> Total number of funds does not include funds added to the program in 2/11/2022. New to program funds' performance statuses are based on excess performance since addition to portfolio

<sup>2</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.

- Ninety-one percent of the Program's funds have either a Positive or Acceptable performance status.
- One fund improved to Positive status over the quarter:
  - Nuveen ESG High Yield
- Three funds declined to Acceptable status over the quarter:
  - TIAA-CREF Social Choice Intl Equity
  - Nuveen ESG EM Market Equity
  - TIAA-CREF Bond Index
- The T. Rowe Price Instl Large Cap Growth fund continues to qualify for "Watch" status.
- The TIAA-CREF Emerging Markets Index qualifies for watch, but we recommend keeping it off watch for reasons detailed in the watch memo.

### 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	Cautious	Yes	Cautious	Yes
T. Rowe Price Instl Large Cap Value	Positive	No	Positive	No
TIAA-CREF Quant Small Cap Equity	Positive	No	Positive	No
TIAA-CREF Social Choice Equity	Acceptable	No	Acceptable	No
DFA Large Cap International	Positive	No	Positive	No
TIAA-CREF Social Choice Intl Equity <sup>1,2</sup>	Positive	N/A	Acceptable	N/A
DFA Emerging Markets Core Equity	Positive	No	Positive	No
Metropolitan West Total Return Bond	Acceptable	No	Acceptable	No
PIMCO Real Return	Acceptable	No	Acceptable	No
PIMCO Income	Positive	No	Positive	No
Vanguard High-Yield Corp Adm <sup>2</sup>	Positive	N/A	Positive	N/A
T. Rowe Price Instl Floating Rate	Acceptable	No	Acceptable	No
<b>Passive Funds</b>				
TIAA-CREF Equity Index	Acceptable	No	Acceptable	No
TIAA-CREF S&P 500 Index	Acceptable	No	Acceptable	No
TIAA-CREF International Equity Index <sup>1</sup>	Positive	No	Positive	No
TIAA-CREF Emerging Markets Index <sup>1</sup>	Cautious	No	Cautious	No
Nuveen ESG EM Market Equity <sup>1,2</sup>	Positive	N/A	Acceptable	N/A
Vanguard ST Infl-Prot Sec Idx <sup>2</sup>	Acceptable	N/A	Acceptable	N/A
TIAA-CREF Bond Index	Positive	No	Acceptable	No
Nuveen ESG US Agg Bond <sup>2</sup>	Acceptable	N/A	Acceptable	N/A
Nuveen ESG High Yield <sup>2</sup>	Acceptable	N/A	Positive	N/A
Vanguard REIT Index <sup>2</sup>	Acceptable	N/A	Acceptable	N/A
<b>T-C Life Funding Agreements</b>				
T-C Life Funding Agreements	Positive	No	Positive	No

→ Current status is based on Short-Term (rolling 12-month) and Medium-Term (rolling 36-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 Index, Emerging Markets Index, and Social Choice International Equity funds' returns have been adjusted to include Fair Value impact for the purpose of monitoring.

<sup>2</sup> Funds added to the program as of 2/11/2022. New to program funds' performance statuses are based on excess performance since addition to portfolio

Summary of Fund Assets as of 9/30/22

	Assets (\$MM)	% of Total
<b>Active Funds</b>		
T. Rowe Price Instl Large Cap Growth Fund	265	2.27%
T. Rowe Price Instl Large Cap Value Fund	265	2.27%
TIAA-CREF Quant Small-Cap Equity Fund	92	0.79%
TIAA-CREF Social Choice Equity Fund	224	1.93%
DFA Large Cap International	372	3.19%
TIAA-CREF Social Choice International Equity Fund <sup>1</sup>	1.1	0.01%
DFA Emerging Markets Core Equity Fund	91	0.78%
Metropolitan West Total Return Bond	400	3.44%
PIMCO Real Return	226	1.94%
PIMCO Income	229	1.97%
Vanguard High-Yield Corporate Adm <sup>1</sup>	203	1.74%
T. Rowe Price Instl Floating Rate Fund	116	1.00%
<b>Active Funds Total</b>	<b>2,484</b>	<b>21.33%</b>
<b>Passive Funds</b>		
TIAA-CREF Equity Index Fund	3,229	27.75%
TIAA-CREF S&P 500 Index Fund	287	2.47%
TIAA-CREF International Equity Index Fund	772	6.64%
TIAA-CREF Emerging Markets Equity Index Fund	191	1.64%
Nuveen ESG EM Market Equity <sup>1</sup>	0.2	0.00%
TIAA-CREF Bond Index Fund	1,678	14.42%
Nuveen ESG US Agg Bond <sup>1</sup>	3	0.03%
Nuveen ESG High Yield <sup>1</sup>	0.2	0.00%
Vanguard Shrt-Term Infl-Prot Sec Idx Ins <sup>1</sup>	411	3.53%
Vanguard REIT Index I <sup>1</sup>	295	2.53%
<b>Passive Funds Total</b>	<b>6,866</b>	<b>59.01%</b>
<b>TIAA-CREF Life Funding Agreements</b>		
T-C Life Funding Agreements	2,288	19.66%
<b>TOTAL<sup>2</sup></b>	<b>11,639</b>	<b>100.00%</b>

<sup>1</sup> Funds added to the program as of 2/11/2022.

<sup>2</sup> CalKIDS AUM are included in the total.

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- 10/01/2021-	John D. Linehan Mark S. Finn Gabriel Solomon	01/01/2015 – 05/01/2022	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- 05/01/2022-	Philip James Campagna Lei Liao Darren Tran		
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
TIAA-CREF Social Choice Intl Equity	TSOX	08/07/2015 – 08/07/2015 – 05/01/2022 -	Lei Liao Philip James Campagna Darren Tran		
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
Nuveen ESG EM Market Equity	NUEM	06/06/2017 – 06/06/2017 –	Lei Liao Philip James Campagna		

<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>	
Metropolitan West Total Return Bond	MWTIX	03/31/1997- 03/31/1997- 12/31/2004-	Stephen M. Kane Laird R. Landman Bryan T. Whalen	03/31/1997-12/31/2021	Tad Rivelle
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		
Vanguard High-Yield Corp Adm	VWEAX	02/14/2008 -	Michael L. Hong		
Nuveen ESG High Yield	NUHY	09/29/2017 - 11/30/2021 - 11/30/2021 -	Lijun (Kevin) Chen James Tsang Rui (Vivian) Liu	09/25/2019 - 11/30/2021	Yong (Mark) Zheng
T.Rowe Price Floating Rate	RPIFX	05/01/2009-	Paul M. Massaro		T.Rowe Price Floating Rate
Nuveen ESG US Agg Bond	NUBD	09/29/2017 - 11/30/2021 - 11/30/2021 -	Lijun (Kevin) Chen James Tsang Rui (Vivian) Liu	06/26/2018 - 11/30/2021	Yong (Mark) Zheng
TIAA-CREF Equity Index	TIEIX	12/31/2005- 05/30/2014- 03/01/2019-	Philip James Campagna Lei Liao Darren Tran		
TIAA-CREF S&P 500 Index	TISPX	12/31/2005- 05/30/2014- 03/01/2019-	Philip James Campagna Lei Liao Darren Tran		

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

Portfolio Management Overview (continued)

Fund	Ticker	Current PM Team	Recent PM Departures <sup>1</sup>
TIAA-CREF International Equity Index	TCIEX	08/01/2005- 05/30/2014- 03/01/2019- Philip James Campagna Lei Liao Darren Tran	
TIAA-CREF Emerging Markets Equity Index	TEQLX	08/31/2010- 05/30/2014- 03/01/2019- Philip James Campagna Lei Liao Darren Tran	
Vanguard REIT Index	VGSLX	05/13/1996 – 05/25/2016 – Gerard C. O’Reilly Walter Nejman	
Vanguard ST Infl-Prot Sec Index	VTSPX	10/12/2012 - Joshua C. Barrickman	
TIAA-CREF Bond Index	TBIIX	12/31/2009- 08/24/2011- Lijun (Kevin) Chen James Tsang	

Observations:

→ There were no significant portfolio manager changes over the quarter.

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

## **Sensitivity Analyses**

	QTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
<b>Active Funds</b>										
TRowe Price Large Cap Growth I	-2.9	20	-31.1	70	7.1	49	9.9	35	13.8	8
<i>Russell 1000 Growth</i>	-3.6	33	-22.6	32	10.7	9	12.2	9	13.7	8
<i>Large Growth MStar MF Median</i>	-4.2		-26.6		6.9		9.3		11.8	
TRowe Price Large Cap Value I	-5.7	56	-9.2	49	5.6	52	5.9	55	9.9	29
<i>Russell 1000 Value</i>	-5.6	53	-11.4	72	4.4	78	5.3	71	9.2	61
<i>Large Value MStar MF Median</i>	-5.5		-9.3		5.7		6.1		9.4	
TIAA-CREF Quant Small Cap Equity I	-0.8	18	-18.1	39	5.9	39	4.6	51	9.7	33
<i>Russell 2000</i>	-2.2	33	-23.5	62	4.3	63	3.6	66	8.6	65
<i>Small Cap MStar MF Median</i>	-3.2		-20.3		5.1		4.6		8.9	
TIAA-CREF Social Choice Equity I	-4.5	31	-18.0	74	7.5	51	8.5	49	11.2	47
<i>Russell 3000</i>	-4.5	30	-17.6	70	7.7	45	8.6	42	11.4	37
<i>Large Blend MStar MF Median</i>	-4.9		-16.0		7.6		8.4		11.1	
DFA Large Cap International I	-10.1	36	-23.3	18	-0.8	27	-0.3	25	3.8	31
<i>MSCI World ex USA</i>	-9.2	17	-23.9	22	-1.2	37	-0.4	32	3.6	38
<i>Foreign Large Blend MStar MF Median</i>	-10.4		-26.0		-1.6		-0.9		3.4	
TIAA-CREF Social Choice Intl Equity	-10.9	70	-25.2	36	-1.4	43	-0.5	33	--	--
<i>MSCI EAFE</i>	-9.4	19	-25.1	32	-1.8	57	-0.8	46	3.7	37
<i>Foreign Large Blend MStar MF Median</i>	-10.4		-26.0		-1.6		-0.9		3.4	
DFA Emerging Markets Core Equity I	-10.9	50	-23.7	16	0.3	25	-0.7	29	1.9	28
<i>MSCI Emerging Markets</i>	-11.6	62	-28.1	35	-2.1	48	-1.8	43	1.0	56
<i>Diversified Emerging Mkts MStar MF Median</i>	-10.9		-29.6		-2.4		-2.2		1.4	
Metropolitan West Total Return Bond I	-5.2	88	-16.3	82	-3.3	78	-0.2	66	--	--
<i>Bloomberg US Aggregate TR</i>	-4.8	73	-14.6	35	-3.3	78	-0.3	72	0.9	92
<i>Intermediate Core Plus Bond MStar MF Median</i>	-4.4		-15.1		-2.7		0.0		1.3	

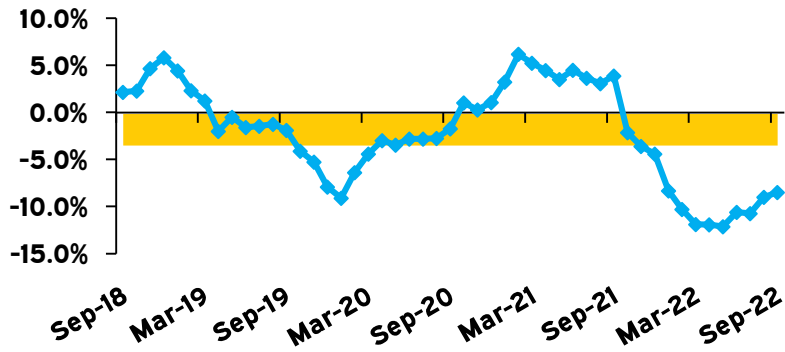


	QTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
PIMCO Real Return	-5.4	78	-12.3	74	0.9	49	1.8	53	0.9	42
<i>Bloomberg US TIPS TR</i>	-5.1	56	-11.6	54	0.8	53	2.0	39	1.0	29
<i>Inflation-Protected Bond MStar MF Median</i>	-5.0		-11.5		0.9		1.9		0.8	
PIMCO Income I	-1.9	37	-10.7	35	-0.3	30	1.2	37	4.0	1
<i>Bloomberg US Aggregate TR</i>	-4.8	99	-14.6	84	-3.3	93	-0.3	89	0.9	99
<i>Multisector Bond MStar MF Median</i>	-2.2		-12.1		-1.0		0.9		2.4	
Vanguard High-Yield Corp Adm	-0.9	64	-12.7	34	-0.9	60	1.4	43	3.6	42
<i>Bloomberg US Corporate High Yield TR</i>	-0.6	48	-14.1	63	-0.5	42	1.6	33	3.9	23
<i>High Yield Bond MStar MF Median</i>	-0.7		-13.5		-0.7		1.3		3.4	
TRowe Price Floating Rate I	1.5	25	-2.7	19	1.7	16	2.7	9	3.4	11
<i>Morningstar LSTA US Performing Loans Index</i>	1.4	33	-2.6	17	2.4	1	3.1	3	3.8	1
<i>Bank Loan MStar MF Median</i>	1.2		-3.9		1.1		2.1		3.0	
<b>Passive Funds</b>										
TIAA-CREF Equity Index I	-4.4	28	-17.6	70	7.7	46	8.6	44	11.4	39
<i>Russell 3000</i>	-4.5	30	-17.6	70	7.7	45	8.6	42	11.4	37
<i>Large Blend MStar MF Median</i>	-4.9		-16.0		7.6		8.4		11.1	
TIAA-CREF S&P 500 Index I	-4.9	47	-15.5	37	8.1	27	9.2	21	11.6	18
<i>S&amp;P 500</i>	-4.9	44	-15.5	36	8.2	25	9.2	19	11.7	16
<i>Large Blend MStar MF Median</i>	-4.9		-16.0		7.6		8.4		11.1	
Vanguard Real Estate Index	-11.0	70	-18.7	69	-1.6	71	3.1	71	6.3	52
<i>MSCI US IMI Real Estate 25/50 GR USD</i>	-11.0	64	-18.6	67	-1.5	68	3.1	77	5.6	80
<i>Real Estate MStar MF Median</i>	-10.6		-17.4		-0.7		3.8		6.3	
TIAA-CREF International Equity Index	-9.6	23	-24.7	27	-1.6	50	-0.6	39	3.9	30
<i>MSCI EAFE</i>	-9.4	19	-25.1	32	-1.8	57	-0.8	46	3.7	37
<i>Foreign Large Blend MStar MF Median</i>	-10.4		-26.0		-1.6		-0.9		3.4	

	QTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
TIAA-CREF Emerging Markets Equity Index	-11.8	68	-28.1	35	-2.4	51	-2.0	48	0.9	60
<i>MSCI Emerging Markets</i>	-11.6	62	-28.1	35	-2.1	48	-1.8	43	1.0	56
<i>Diversified Emerging Mkts MStar MF Median</i>	-10.9		-29.6		-2.4		-2.2		1.4	
Nuveen ESG Emerging Markets Equity ETF	-12.8	83	-28.3	36	0.5	22	-0.8	32	--	--
<i>TIAA ESG Emerging Markets Index</i>	-12.6	82	-27.9	35	1.3	18	-0.1	22	--	--
<i>Diversified Emerging Mkts MStar MF Median</i>	-10.9		-29.6		-2.4		-2.2		1.4	
TIAA-CREF Bond Index I	-4.8	64	-14.7	42	-3.4	78	-0.4	79	0.7	81
<i>Bloomberg US Aggregate TR</i>	-4.8	61	-14.6	35	-3.3	65	-0.3	64	0.9	62
<i>Intermediate Core Bond MStar MF Median</i>	-4.7		-14.9		-3.1		-0.2		1.0	
Vanguard Short Term Infl-Prot Securities	-2.6	9	-2.9	3	2.4	11	2.3	12	--	--
<i>BBg U.S. TIPS 0-5 Years</i>	-2.6	5	-2.9	1	2.4	7	2.3	10	1.3	9
<i>Inflation-Protected Bond MStar MF Median</i>	-5.0		-11.5		0.9		1.9		0.8	
Nuveen ESG US Aggregate Bond ETF	-4.7	48	-14.5	32	-3.5	83	-0.5	85	--	--
<i>BBg MSCI US Agg ESG Select</i>	-4.7	57	-14.4	28	-3.2	57	-0.2	57	--	--
<i>Intermediate Core Bond MStar MF Median</i>	-4.7		-14.9		-3.1		-0.2		1.0	
Nuveen ESG High Yield Corp Bond ETF	-1.2	81	-15.6	87	-2.8	99	--	--	--	--
<i>BBg MSCI US High Yield Very Liquid ESG Select</i>	-1.4	85	-15.3	85	-2.5	98	--	--	--	--
<i>High Yield Bond MStar MF Median</i>	-0.7		-13.5		-0.7		1.3		3.4	

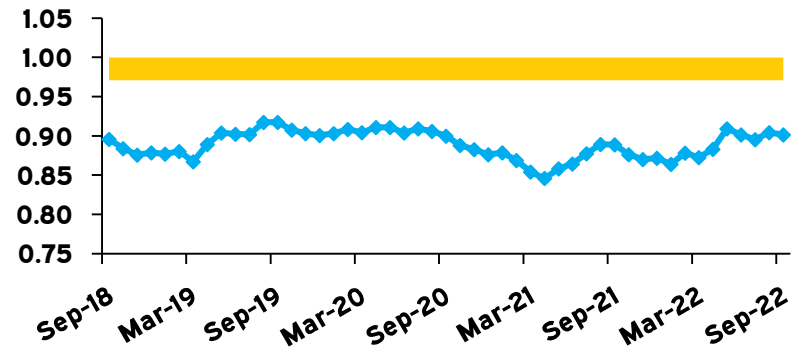
## Sensitivity Analyses: Active Funds

#### Short Term – Rolling 12-Month Excess Return



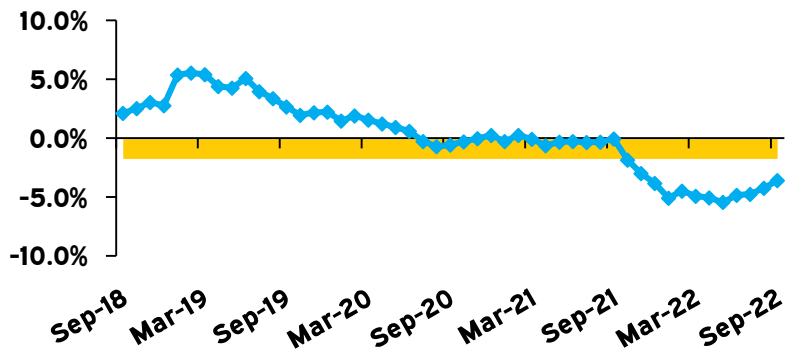
Results fall in the caution range.  
Probationary Threshold -3.50%

#### Long Term – VRR



Results fall in the caution range.  
Probationary Threshold <0.97

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the caution range.  
Probationary Threshold -1.75%

Benchmark: Russell 1000 Growth

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TRowe Price Large Cap Growth I	-2.9	-31.1	7.1	9.9	14.0	11/20/2011
Russell 1000 Growth	-3.6	-22.6	10.7	12.2	14.1	

#### Monitoring Status

Caution, On Watch

### TRowe Price Large Cap Growth I | As of September 30, 2022

#### Description:

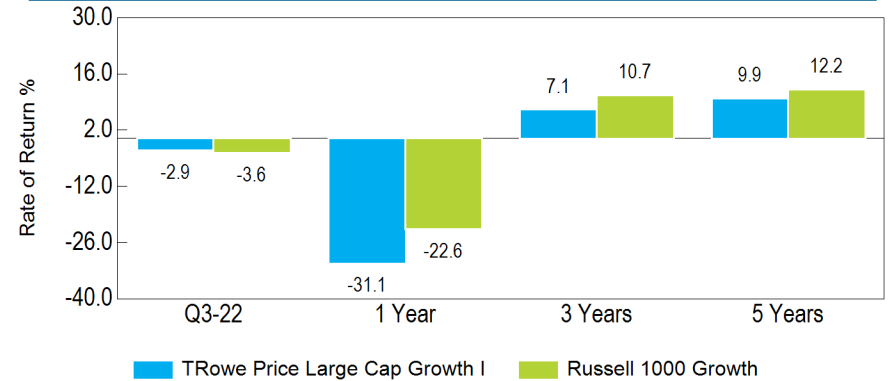
The investment seeks to provide long-term capital appreciation through investments in common stocks of growth companies.

The fund will normally invest at least 80% of its net assets (including any borrowings for investment purposes) in the securities 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.

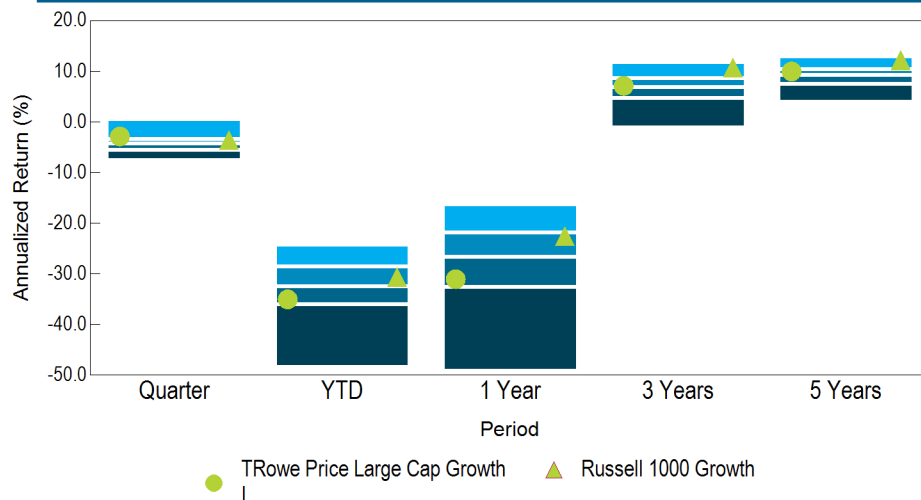
#### Portfolio Fund Information as of September 30, 2022

<b>Ticker</b>	TRLGX
<b>Morningstar Category</b>	Large Growth
<b>Average Market Cap (\$mm)</b>	245,185.82
<b>Net Assets (\$mm)</b>	14,580.08
<b>% Assets in Top 10 Holdings</b>	56.25
<b>Total Number of Holdings</b>	60
<b>Manager Name</b>	Taymour R. Tamaddon
<b>Manager Tenure</b>	6
<b>Expense Ratio</b>	0.55%
<b>Closed to New Investors</b>	No

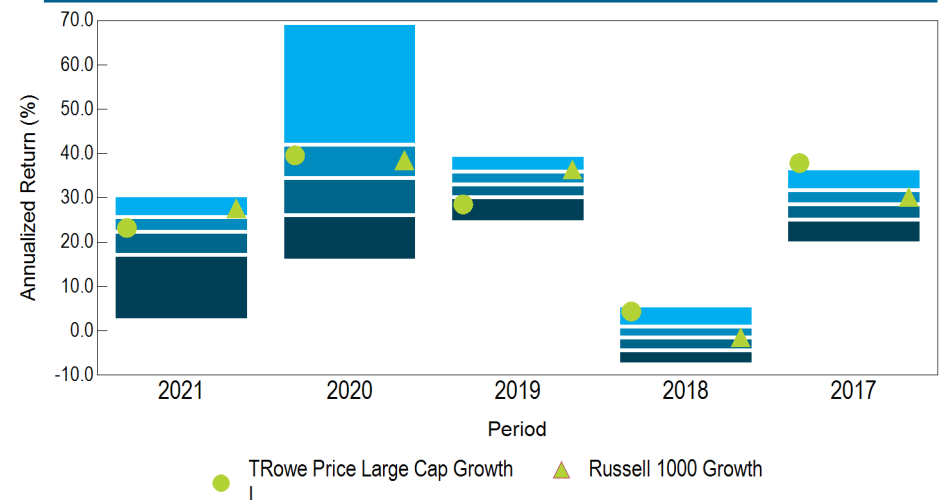
#### Return Summary



#### Large Growth MStar MF Return Comparison

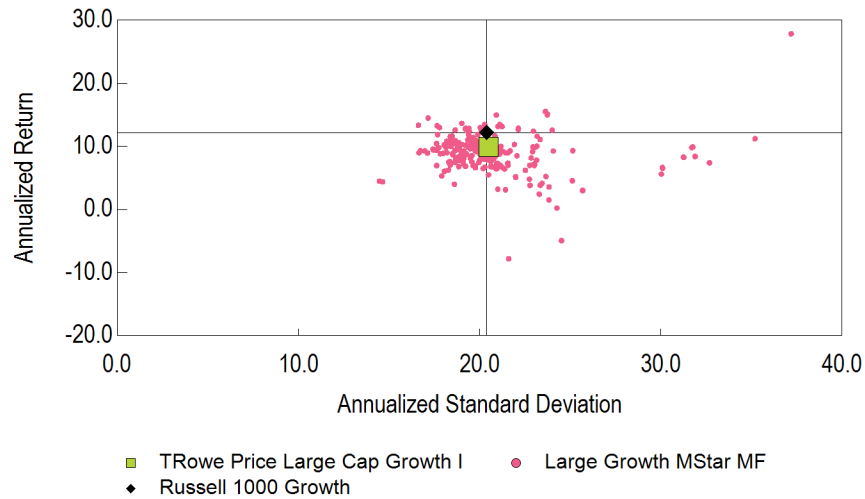


#### Large Growth MStar MF Return Comparison

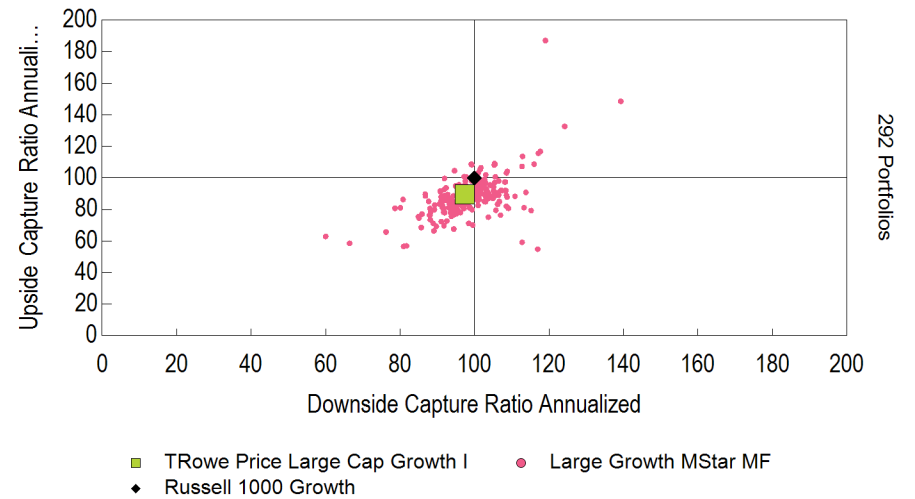


### TRowe Price Large Cap Growth I | As of September 30, 2022

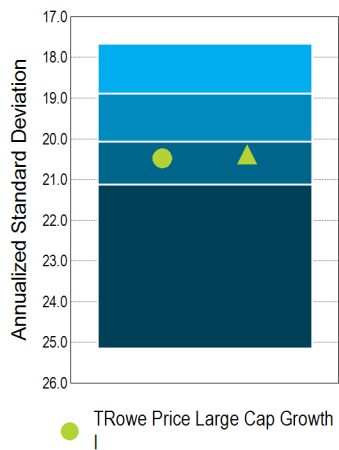
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



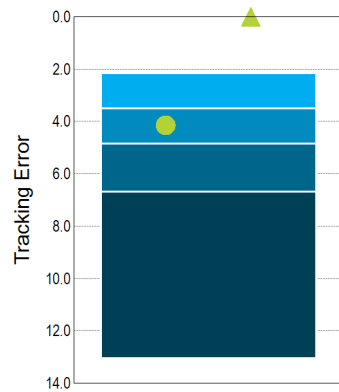
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



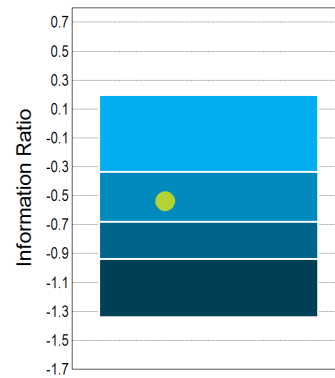
Annualized Standard Deviation



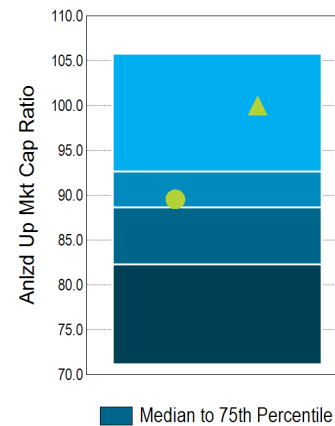
Tracking Error



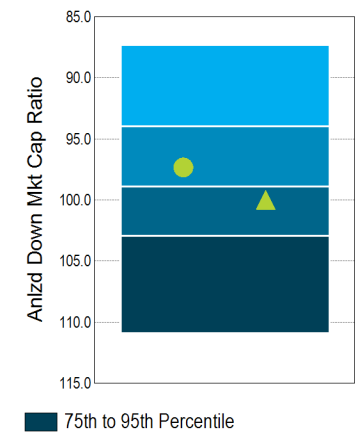
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### TRowe Price Large Cap Growth I | As of September 30, 2022

#### Fund Characteristics as of September 30, 2022

Sharpe Ratio (3 Year)	0.28
Average Market Cap (\$mm)	245,185.82
Price/Earnings	21.56
Price/Book	4.49
Price/Sales	2.32
Price/Cash Flow	15.06
Dividend Yield	0.86
Number of Equity Holdings	59
R-Squared (3 Year)	0.97
Alpha (3 Year)	-0.26%

#### Sector Allocation as of September 30, 2022

BASIC MATERIALS	0.72%
COMMUNICATION SERVICES	13.10%
CONSUMER CYCLICAL	19.29%
CONSUMER DEFENSIVE	2.19%
ENERGY	0.00%
FINANCIAL SERVICES	3.99%
HEALTHCARE	18.37%
INDUSTRIALS	2.93%
REAL ESTATE	0.00%
TECHNOLOGY	39.41%
UTILITIES	0.00%

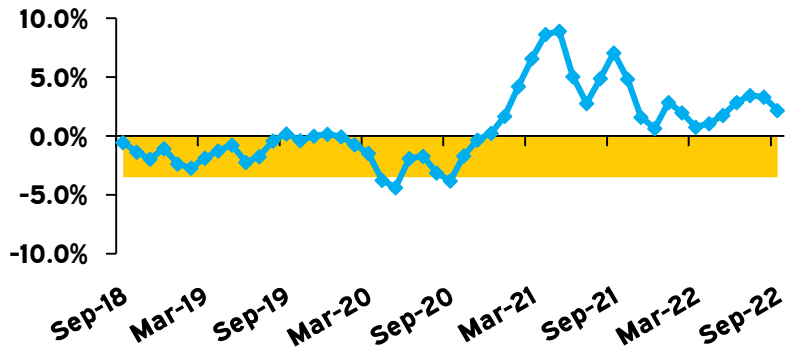
#### Top Holdings as of September 30, 2022

MICROSOFT CORP	11.53%
AMAZON.COM INC	9.81%
ALPHABET INC CLASS A	8.01%
APPLE INC	7.23%
UNITEDHEALTH GROUP INC	4.70%
INTUIT INC	3.53%
CIGNA CORP	3.49%
RIVIAN AUTOMOTIVE INC CLASS A	3.03%
FISERV INC	2.80%
VISA INC CLASS A	2.13%

#### Top Countries as of September 30, 2022

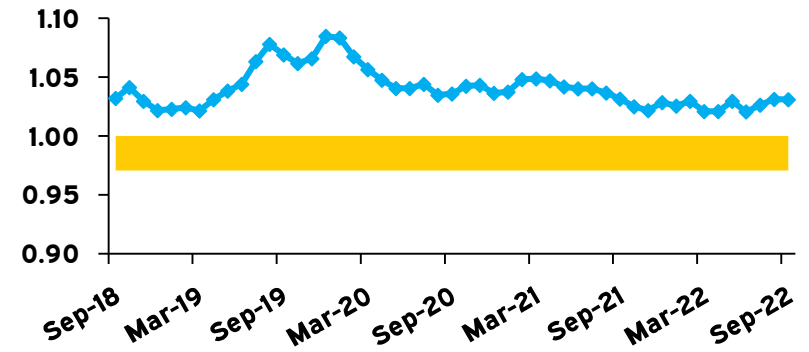
United States	97.57%
Netherlands	1.41%
South Korea	0.56%
Japan	0.46%

#### Short Term – Rolling 12-Month Excess Return



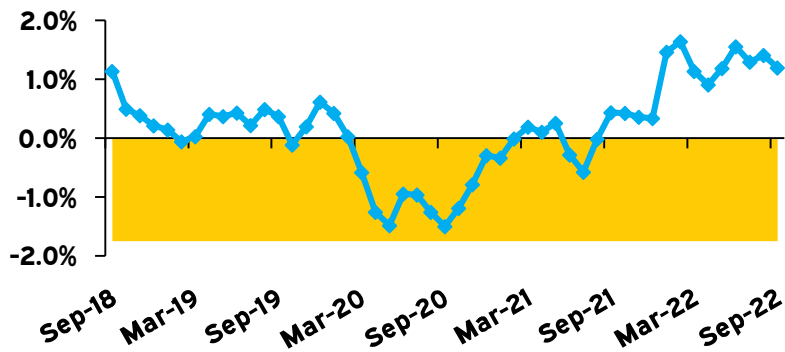
Results fall in the positive range.  
Probationary Threshold -3.50%

#### Long Term – VRR



Results fall in the positive range.  
Probationary Threshold <0.97

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -1.75%

Benchmark: Russell 1000 Value

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TRowe Price Large Cap Value I	-5.7	-9.2	5.6	5.9	10.6	11/20/2011
Russell 1000 Value	-5.6	-11.4	4.4	5.3	10.0	

#### Monitoring Status

Positive



### TRowe Price Large Cap Value I | As of September 30, 2022

#### Description:

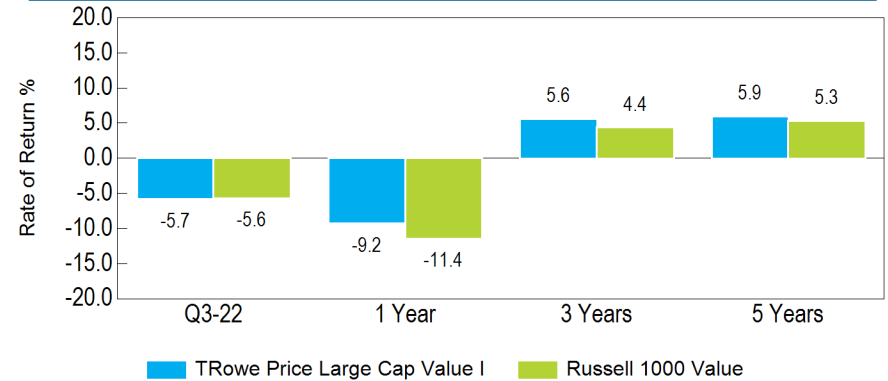
The investment seeks long-term capital appreciation; income is a secondary objective.

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 September 30, 2022

<b>Ticker</b>	TILCX
<b>Morningstar Category</b>	Large Value
<b>Average Market Cap (\$mm)</b>	68,960.85
<b>Net Assets (\$mm)</b>	2,958.12
<b>% Assets in Top 10 Holdings</b>	25.58
<b>Total Number of Holdings</b>	80
<b>Manager Name</b>	John D. Linehan
<b>Manager Tenure</b>	23
<b>Expense Ratio</b>	0.55%
<b>Closed to New Investors</b>	No

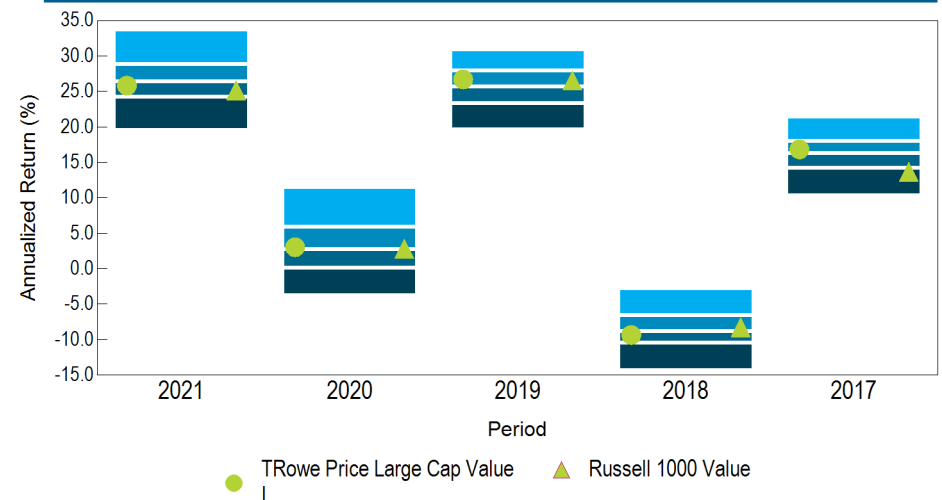
#### Return Summary



#### Large Value MStar MF Return Comparison

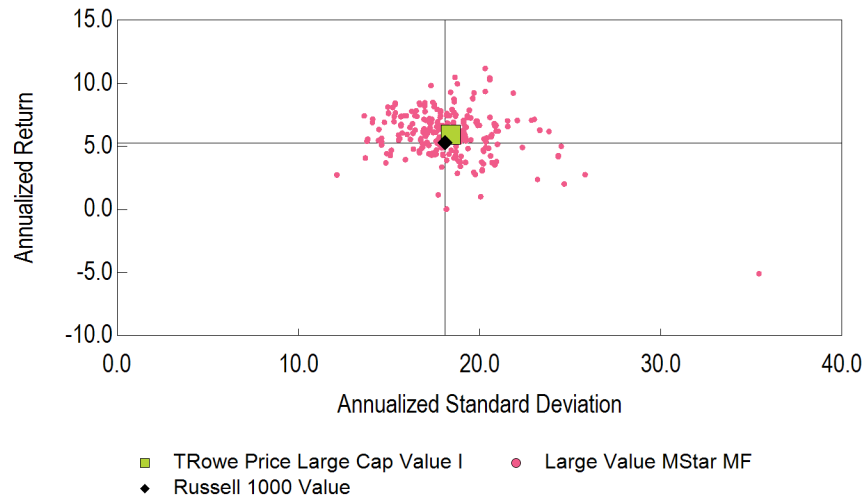


#### Large Value MStar MF Return Comparison

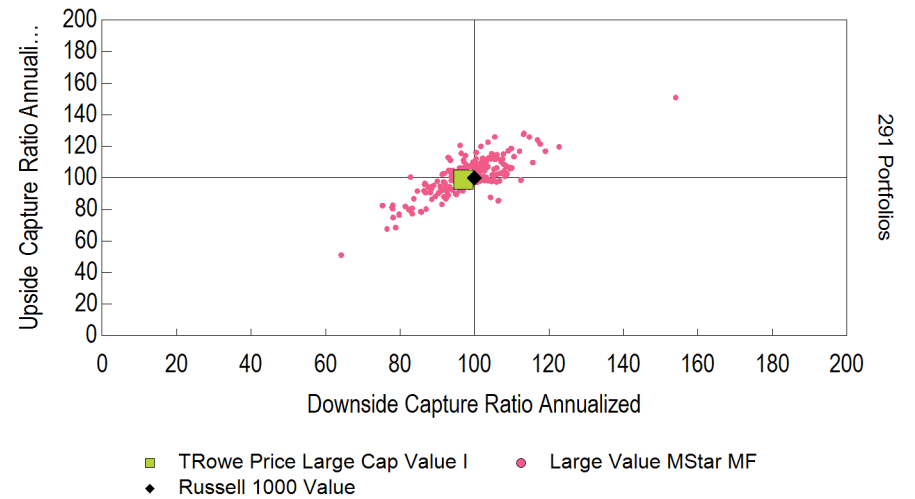


### TRowe Price Large Cap Value I | As of September 30, 2022

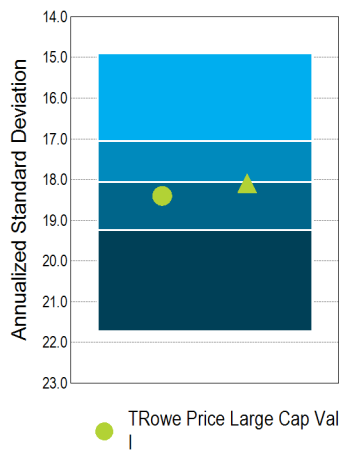
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



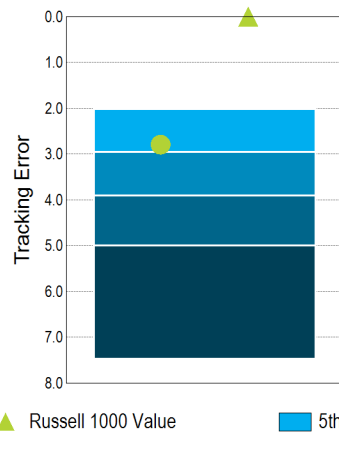
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



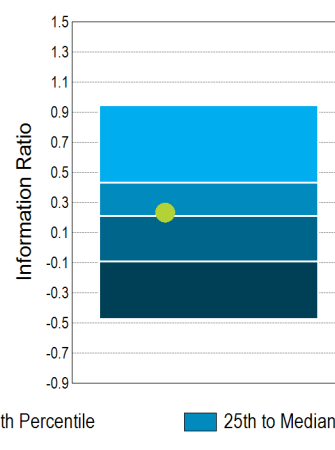
Annualized Standard Deviation



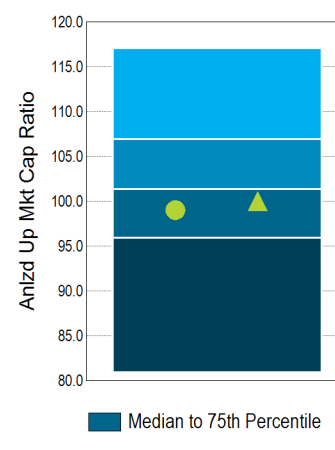
Tracking Error



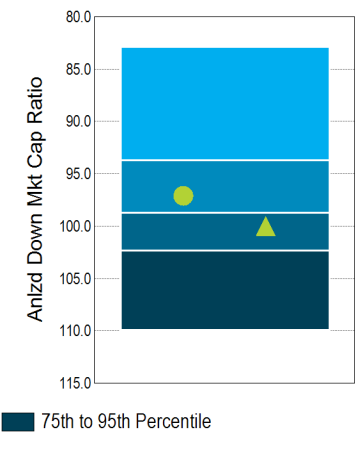
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### TRowe Price Large Cap Value I | As of September 30, 2022

#### Fund Characteristics as of September 30, 2022

Sharpe Ratio (3 Year)	0.24
Average Market Cap (\$mm)	68,960.85
Price/Earnings	11.27
Price/Book	1.88
Price/Sales	1.25
Price/Cash Flow	7.45
Dividend Yield	3.06
Number of Equity Holdings	78
R-Squared (3 Year)	0.98
Alpha (3 Year)	0.10%

#### Sector Allocation as of September 30, 2022

BASIC MATERIALS	3.10%
COMMUNICATION SERVICES	5.72%
CONSUMER CYCLICAL	5.30%
CONSUMER DEFENSIVE	8.52%
ENERGY	7.89%
FINANCIAL SERVICES	15.03%
HEALTHCARE	19.90%
INDUSTRIALS	11.22%
REAL ESTATE	5.37%
TECHNOLOGY	9.54%
UTILITIES	8.42%

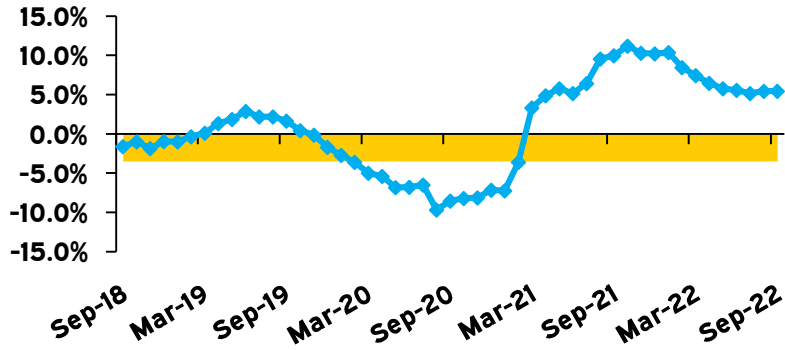
#### Top Holdings as of September 30, 2022

SOUTHERN CO	3.38%
WELLS FARGO & CO	3.14%
TOTALENERGIES SE ADR	2.79%
GENERAL ELECTRIC CO	2.59%
JOHNSON & JOHNSON	2.43%
AVALONBAY COMMUNITIES INC	2.36%
WALMART INC	2.29%
CHUBB LTD	2.24%
QUALCOMM INC	2.20%
SEMPRA ENERGY	2.16%

#### Top Countries as of September 30, 2022

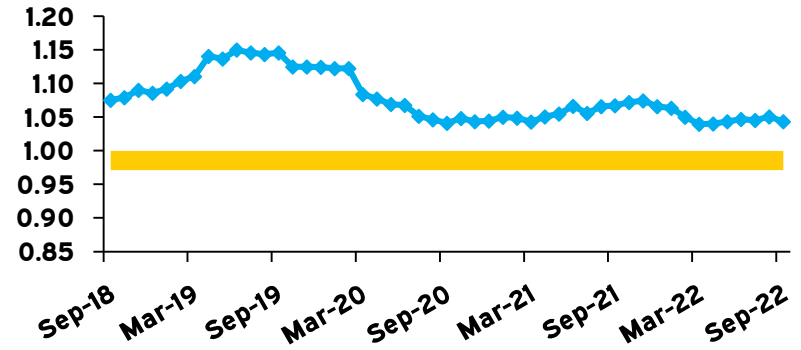
United States	91.42%
France	2.85%
Switzerland	2.29%
Canada	2.02%
Germany	1.21%
Netherlands	0.20%

#### Short Term – Rolling 12-Month Excess Return



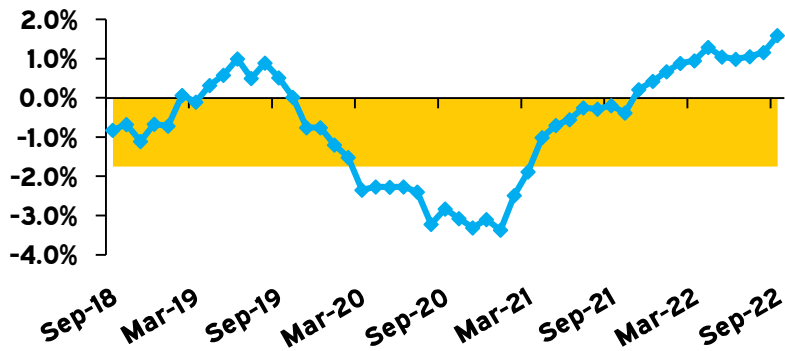
Results fall in the positive range.  
Probationary Threshold -3.50%

#### Long Term – VRR



Results fall in the positive range.  
Probationary Threshold <0.97

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -1.75%

Benchmark: Russell 2000

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF Quant Small Cap Equity I	-0.8	-18.1	5.9	4.6	10.0	11/20/2011
Russell 2000	-2.2	-23.5	4.3	3.6	9.2	

#### Monitoring Status

Positive

### TIAA-CREF Quant Small Cap Equity I | As of September 30, 2022

#### Description:

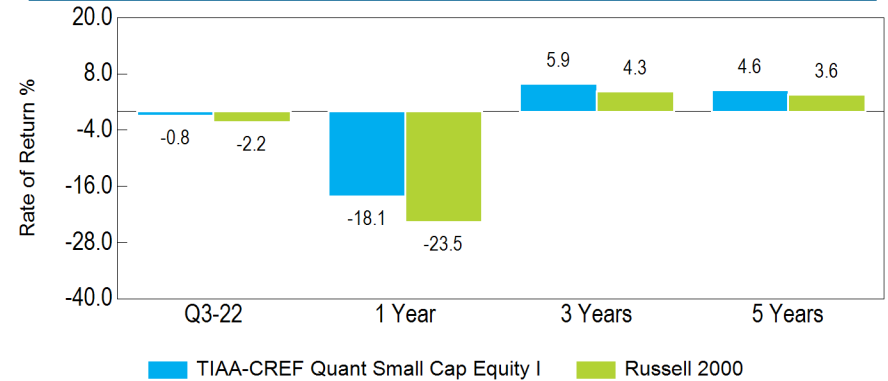
The investment seeks a favorable long-term total return, mainly through capital appreciation, primarily from equity securities of smaller domestic companies.

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.

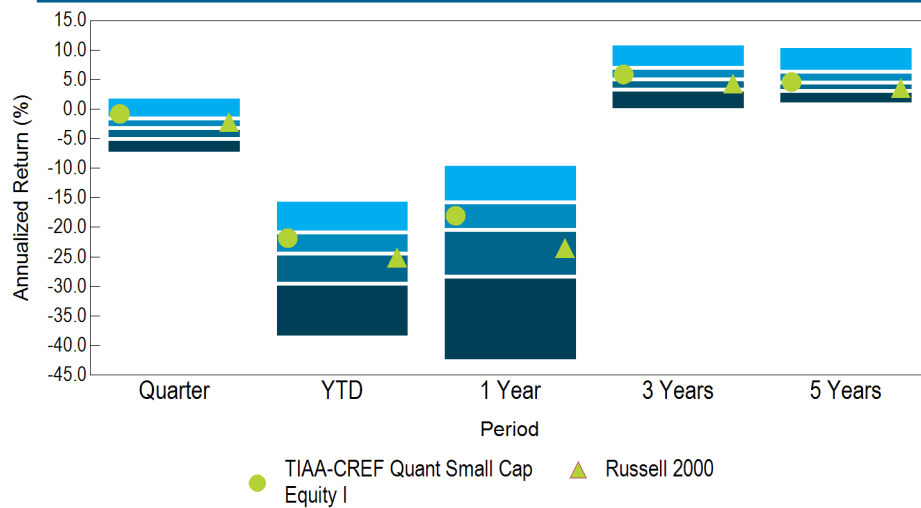
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TISEX
<b>Morningstar Category</b>	Small Blend
<b>Average Market Cap (\$mm)</b>	2,302.09
<b>Net Assets (\$mm)</b>	1,511.63
<b>% Assets in Top 10 Holdings</b>	6.59
<b>Total Number of Holdings</b>	429
<b>Manager Name</b>	Pei Chen
<b>Manager Tenure</b>	7
<b>Expense Ratio</b>	0.41%
<b>Closed to New Investors</b>	No

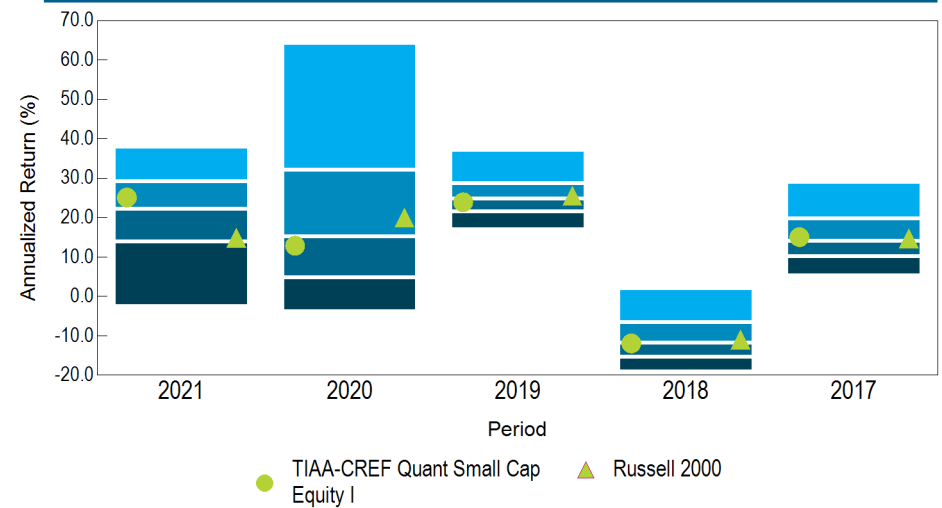
#### Return Summary



#### Small Cap MStar MF Return Comparison

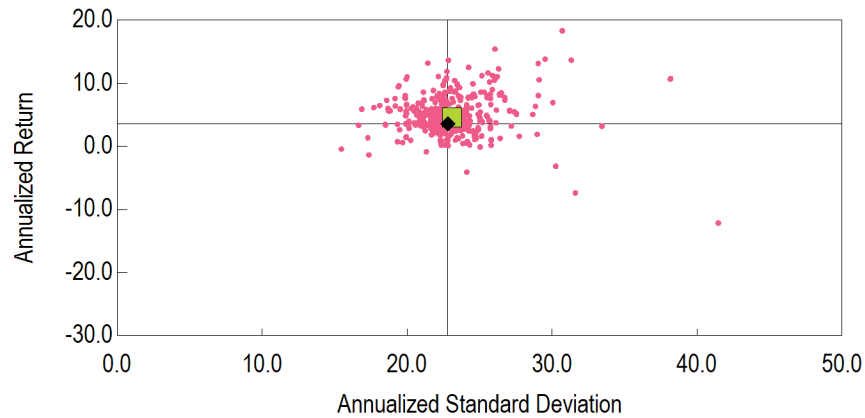


#### Small Cap MStar MF Return Comparison



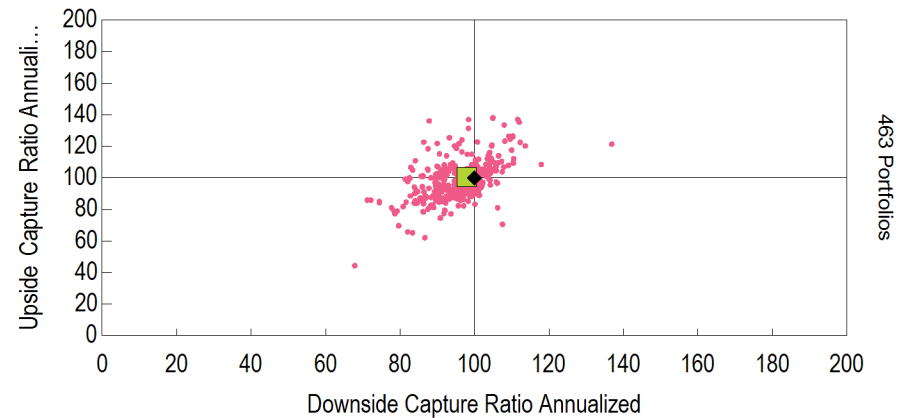
### TIAA-CREF Quant Small Cap Equity I | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



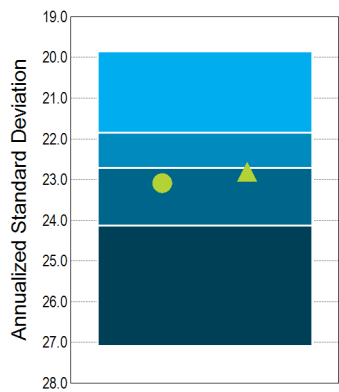
- TIAA-CREF Quant Small Cap Equity I
- Small Cap MStar MF
- ◆ Russell 2000

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

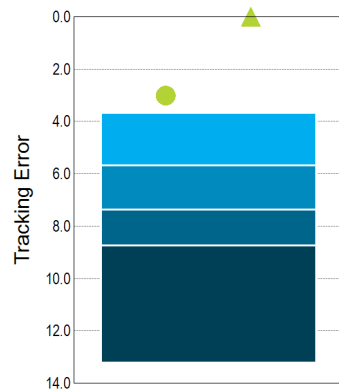


- TIAA-CREF Quant Small Cap Equity I
- Small Cap MStar MF
- ◆ Russell 2000

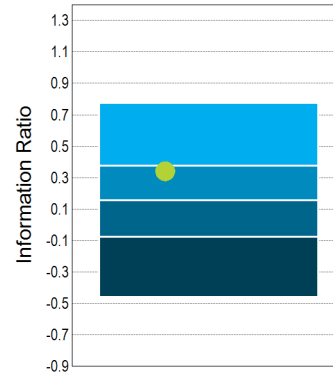
Annualized Standard Deviation



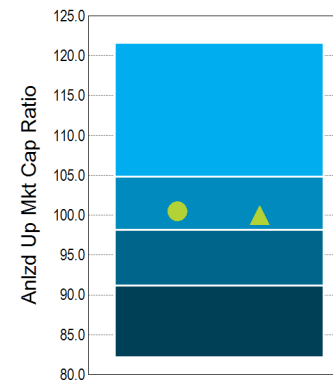
Tracking Error



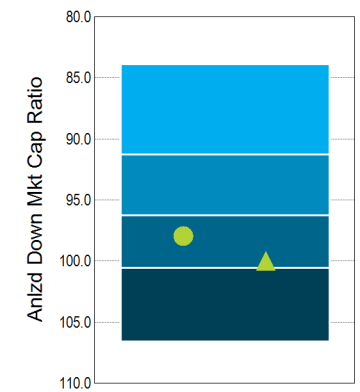
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- TIAA-CREF Quant Small Cap Equity I
- ▲ Russell 2000
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

**Fund Characteristics as of August 31, 2022**

Sharpe Ratio (3 Year)	0.36
Average Market Cap (\$mm)	2,302.09
Price/Earnings	10.10
Price/Book	1.66
Price/Sales	0.82
Price/Cash Flow	4.33
Dividend Yield	1.28
Number of Equity Holdings	426
R-Squared (3 Year)	0.98
Alpha (3 Year)	0.09%

**Sector Allocation as of August 31, 2022**

<b>BASIC MATERIALS</b>	3.87%
<b>COMMUNICATION SERVICES</b>	3.01%
<b>CONSUMER CYCLICAL</b>	7.76%
<b>CONSUMER DEFENSIVE</b>	4.57%
<b>ENERGY</b>	6.79%
<b>FINANCIAL SERVICES</b>	15.82%
<b>HEALTHCARE</b>	18.01%
<b>INDUSTRIALS</b>	15.22%
<b>REAL ESTATE</b>	6.39%
<b>TECHNOLOGY</b>	14.34%
<b>UTILITIES</b>	4.21%

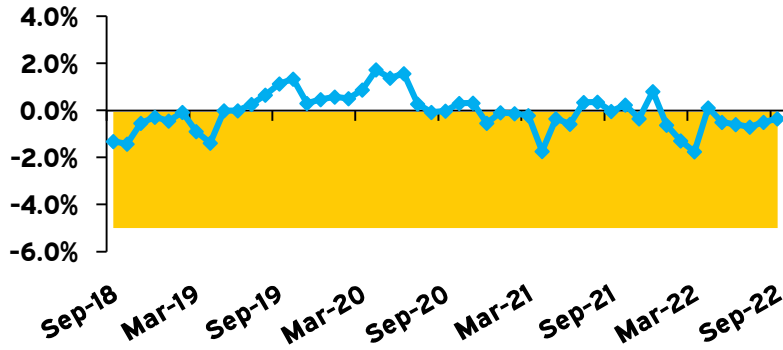
**Top Holdings as of August 31, 2022**

<b>COMFORT SYSTEMS USA INC</b>	0.86%
<b>PBF ENERGY INC CLASS A</b>	0.81%
<b>LANTHEUS HOLDINGS INC</b>	0.73%
<b>SANMINA CORP</b>	0.67%
<b>CHESAPEAKE ENERGY CORP ORDINARY SHARES - NEW</b>	0.66%
<b>GLOBAL BLOOD THERAPEUTICS INC</b>	0.61%
<b>EXLSERVICE HOLDINGS INC</b>	0.60%
<b>QUALYS INC</b>	0.57%
<b>RADIAN GROUP INC</b>	0.55%
<b>CADENCE BANK</b>	0.53%

**Top Countries as of August 31, 2022**

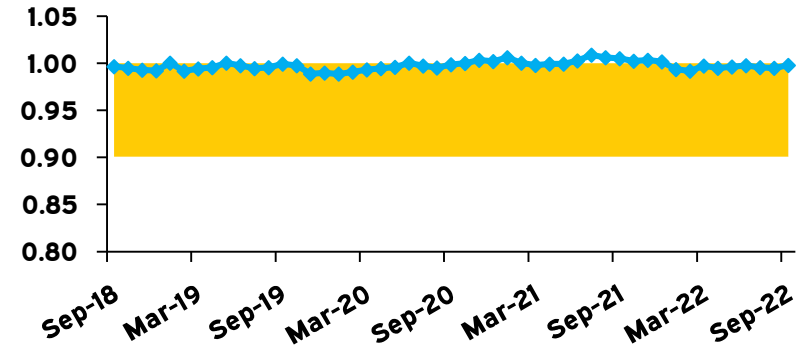
<b>United States</b>	98.72%
<b>Brazil</b>	0.48%
<b>Puerto Rico</b>	0.45%
<b>Canada</b>	0.24%
<b>Marshall Islands</b>	0.07%
<b>Ireland</b>	0.03%

#### Short Term – Rolling 12-Month Excess Return



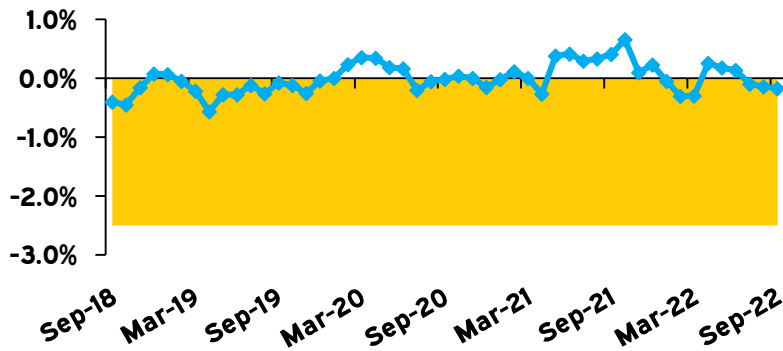
Results fall in the acceptable range.  
Probationary Threshold -5.00%

#### Long Term – VRR



Results fall in the acceptable range.  
Probationary Threshold <0.90

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the acceptable range.  
Probationary Threshold -2.50%

Benchmark: Russell 3000

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF Social Choice Equity I	-4.5	-18.0	7.5	8.5	11.3	11/20/2011
Russell 3000	-4.5	-17.6	7.7	8.6	12.0	

#### Monitoring Status

Acceptable



### TIAA-CREF Social Choice Equity I | As of September 30, 2022

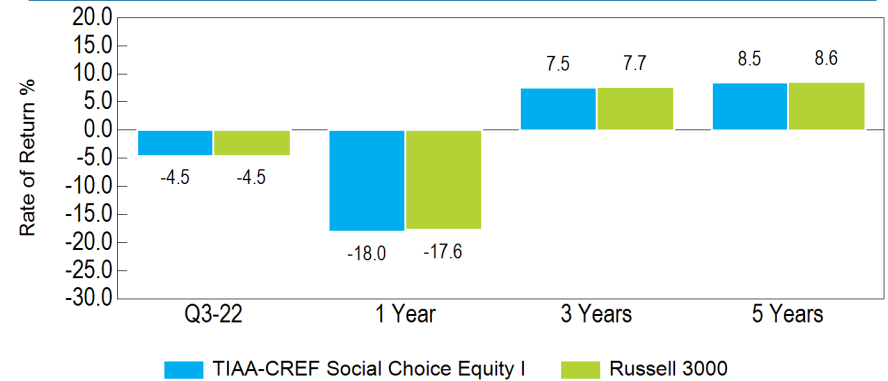
#### Description:

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 taking into consideration certain ESG criteria.

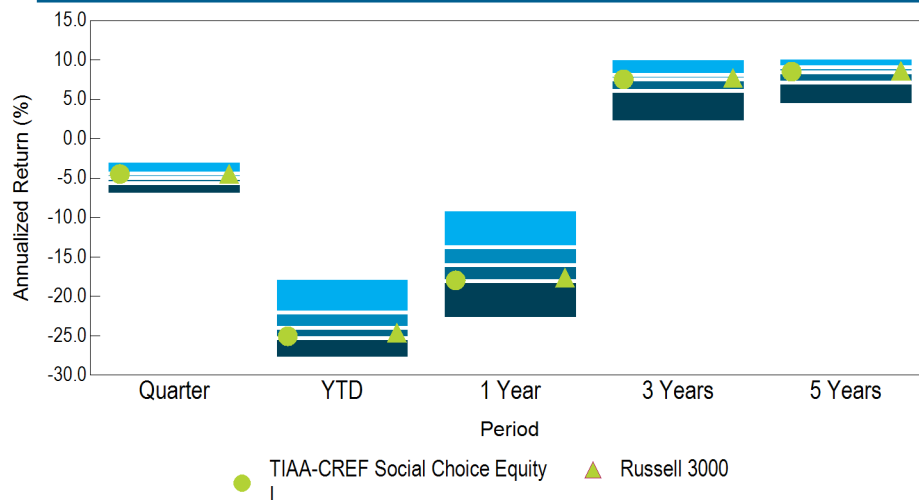
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TISCX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	74,723.73
<b>Net Assets (\$mm)</b>	4,709.02
<b>% Assets in Top 10 Holdings</b>	17.03
<b>Total Number of Holdings</b>	530
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	17
<b>Expense Ratio</b>	0.17%
<b>Closed to New Investors</b>	No

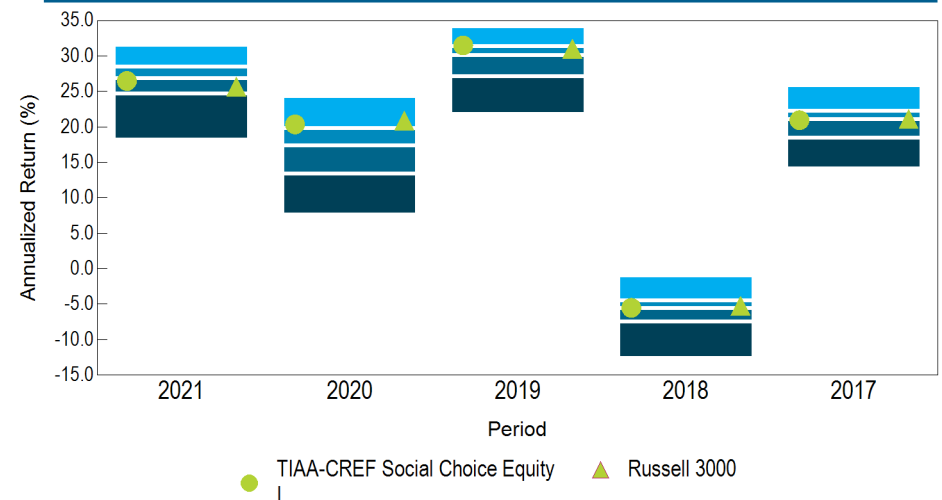
#### Return Summary



#### Large Blend MStar MF Return Comparison

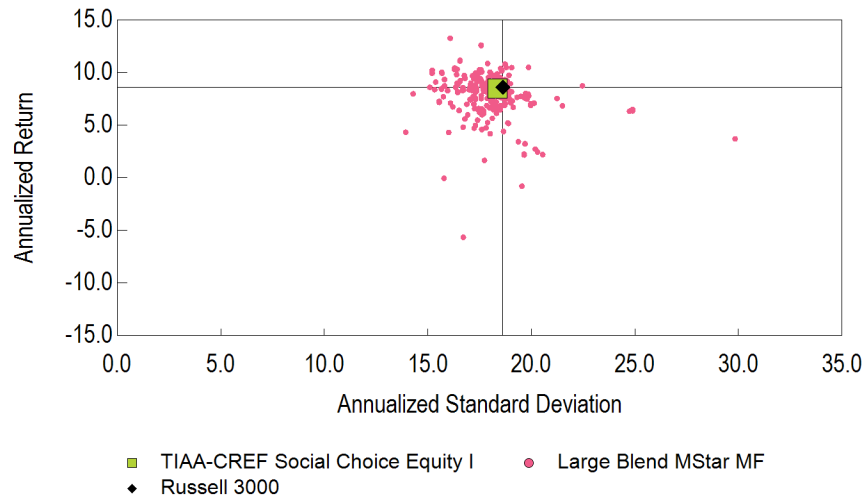


#### Large Blend MStar MF Return Comparison

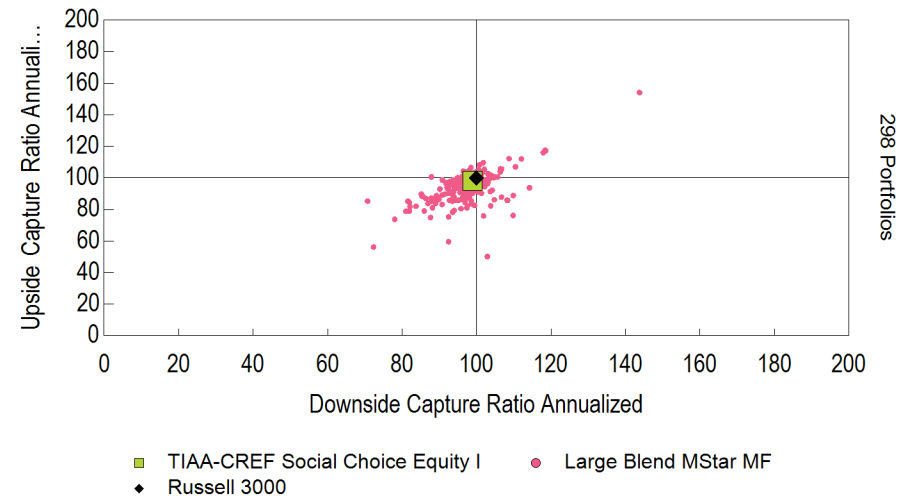


### TIAA-CREF Social Choice Equity I | As of September 30, 2022

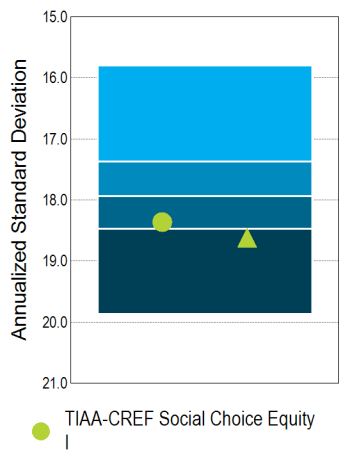
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



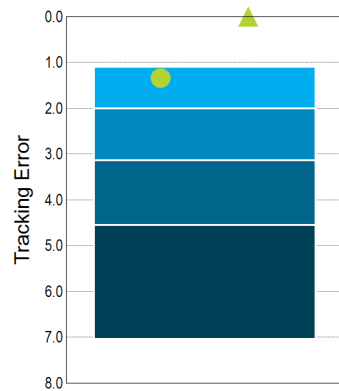
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



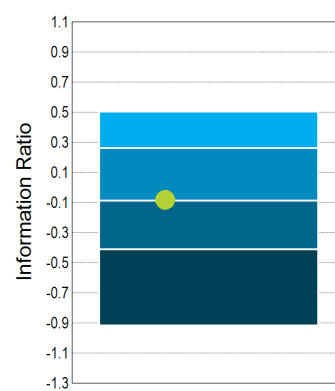
Annualized Standard Deviation



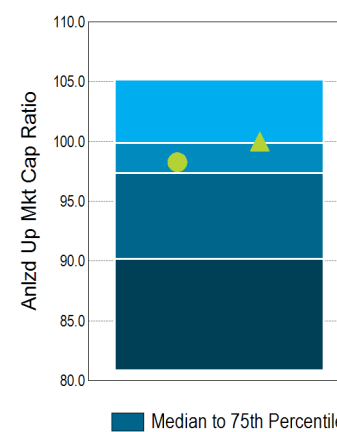
Tracking Error



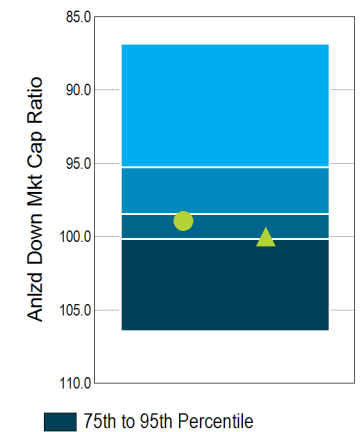
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.57
Average Market Cap (\$mm)	74,723.73
Price/Earnings	16.59
Price/Book	2.99
Price/Sales	1.91
Price/Cash Flow	9.97
Dividend Yield	1.85
Number of Equity Holdings	526
R-Squared (3 Year)	0.99
Alpha (3 Year)	0.00%

#### Top Holdings as of August 31, 2022

MICROSOFT CORP	5.40%
TESLA INC	2.25%
NVIDIA CORP	1.40%
PROCTER & GAMBLE CO	1.29%
THE HOME DEPOT INC	1.23%
MASTERCARD INC CLASS A	1.19%
COCA-COLA CO	1.09%
PEPSICO INC	1.09%
ELI LILLY AND CO	1.08%
THERMO FISHER SCIENTIFIC INC	1.00%

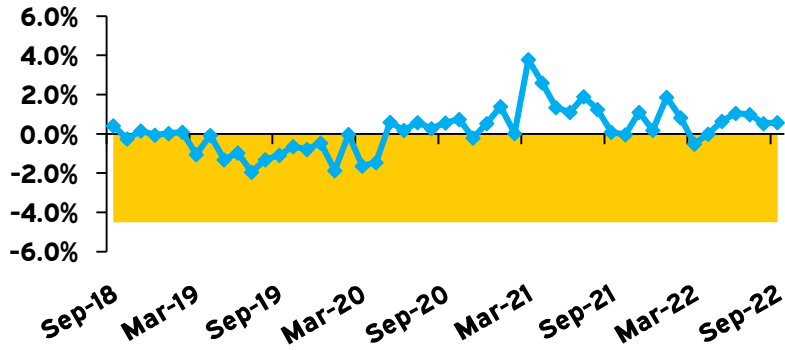
#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	2.65%
COMMUNICATION SERVICES	4.47%
CONSUMER CYCLICAL	10.49%
CONSUMER DEFENSIVE	6.21%
ENERGY	4.76%
FINANCIAL SERVICES	15.93%
HEALTHCARE	13.69%
INDUSTRIALS	9.96%
REAL ESTATE	2.92%
TECHNOLOGY	25.40%
UTILITIES	3.51%

#### Top Countries as of August 31, 2022

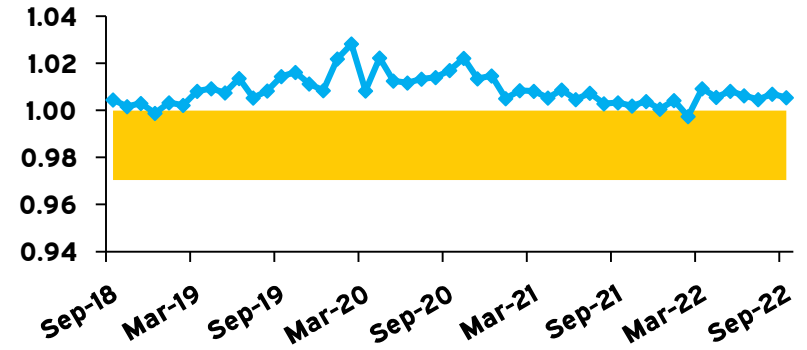
United States	98.39%
United Kingdom	0.89%
Switzerland	0.67%
Ireland	0.03%
Canada	0.01%

#### Short Term – Rolling 12-Month Excess Return



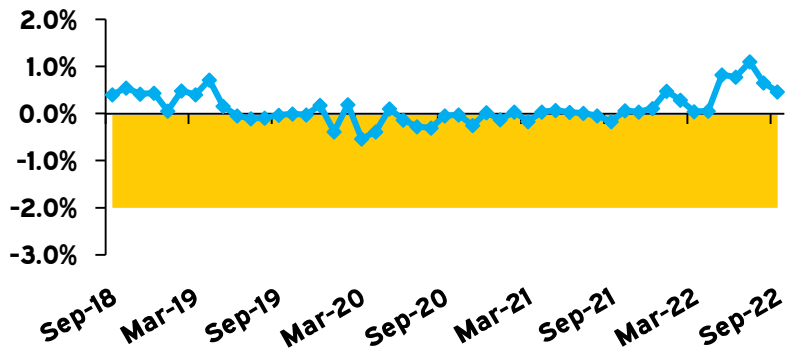
Results fall in the positive range.  
Probationary Threshold -4.50%

#### Long Term – VRR



Results fall in the positive range.  
Probationary Threshold <0.97

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -2.00%

Benchmark: MSCI World ex USA

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
DFA Large Cap International I	-10.1	-23.3	-0.8	-0.3	4.0	11/20/2011
MSCI World ex USA	-9.2	-23.9	-1.2	-0.4	3.7	

#### Monitoring Status

Positive

### DFA Large Cap International I | As of September 30, 2022

#### Description:

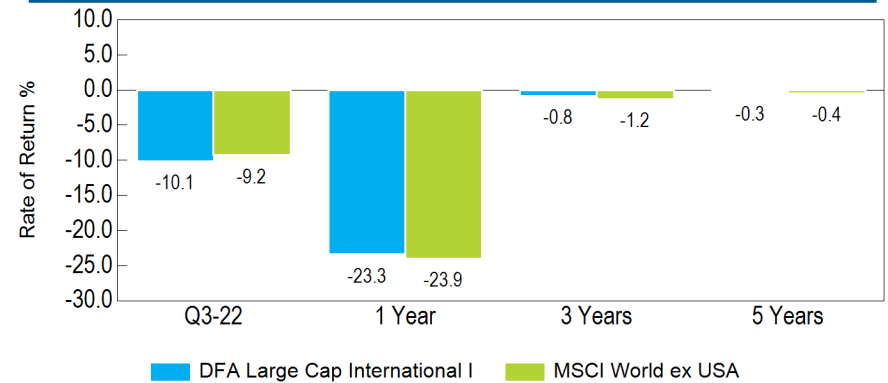
The investment seeks long-term capital appreciation.

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 increase or decrease equity market exposure based on actual or expected cash inflows to or outflows from the Portfolio.

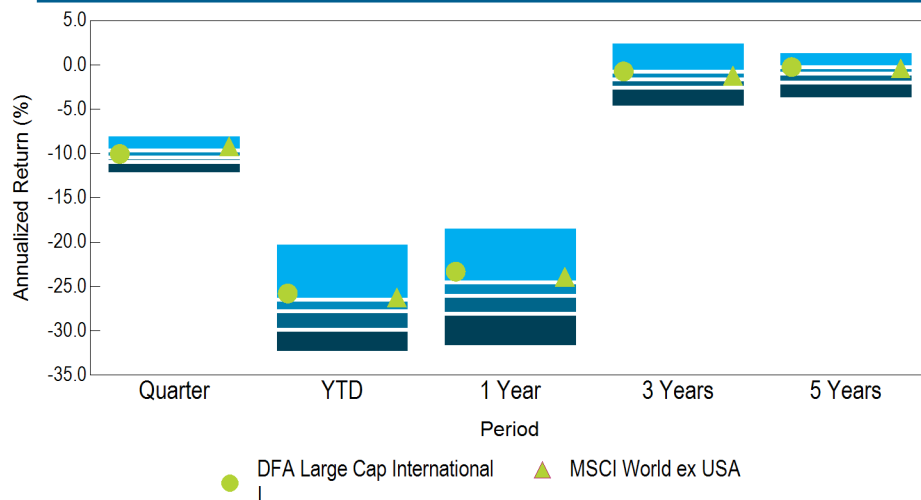
#### Portfolio Fund Information as of September 30, 2022

<b>Ticker</b>	DFALX
<b>Morningstar Category</b>	Foreign Large Blend
<b>Average Market Cap (\$mm)</b>	25,965.51
<b>Net Assets (\$mm)</b>	4,565.57
<b>% Assets in Top 10 Holdings</b>	10.36
<b>Total Number of Holdings</b>	1,348
<b>Manager Name</b>	Jed S. Fogdall
<b>Manager Tenure</b>	13
<b>Expense Ratio</b>	0.18%
<b>Closed to New Investors</b>	No

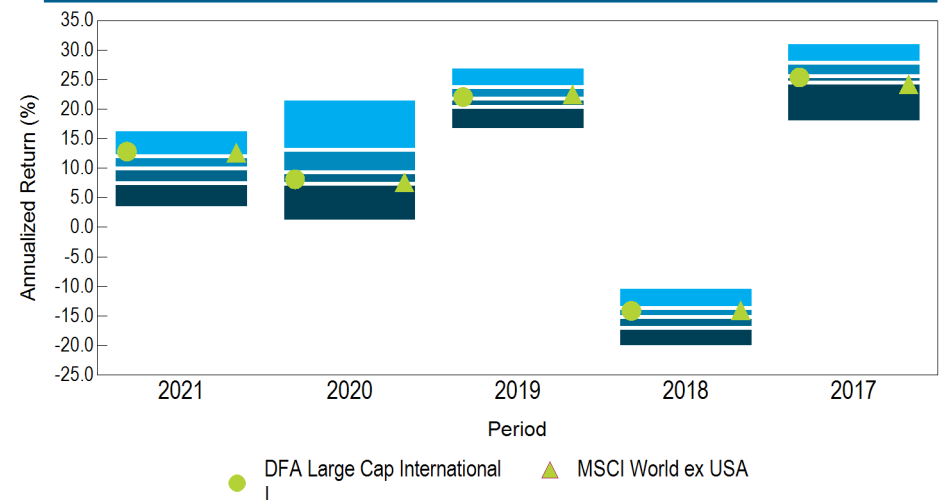
#### Return Summary



#### Foreign Large Blend MStar MF Return Comparison

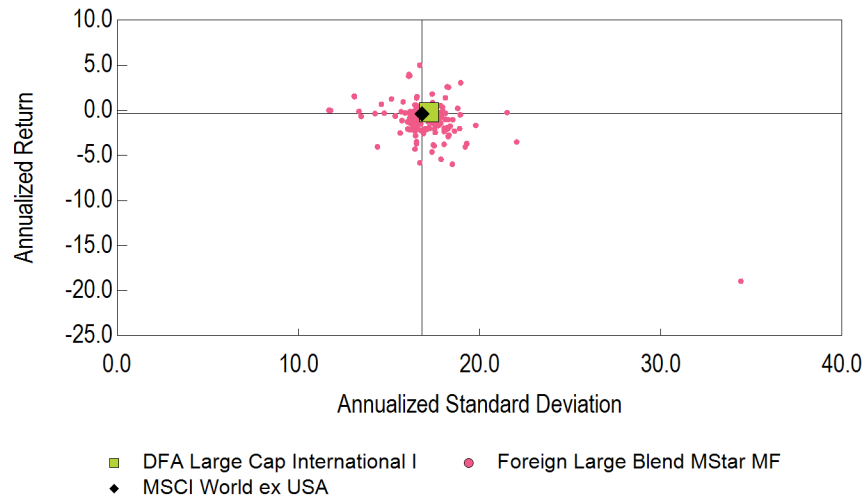


#### Foreign Large Blend MStar MF Return Comparison

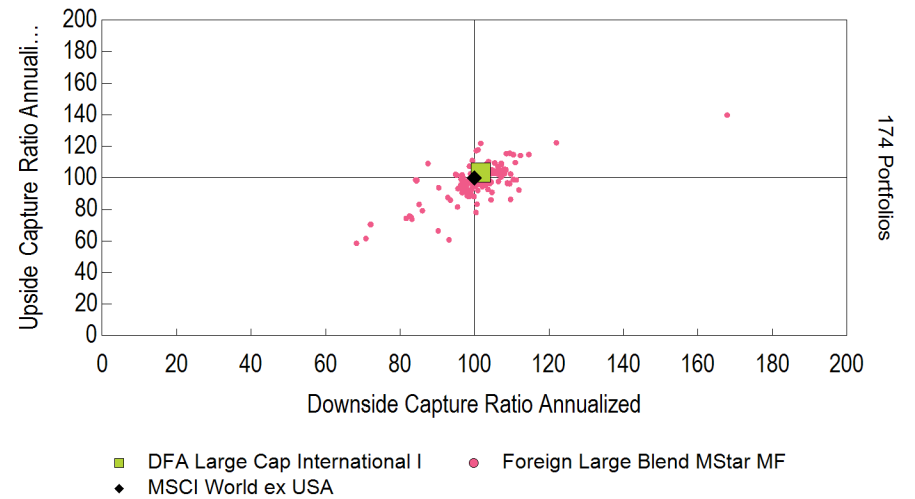


### DFA Large Cap International I | As of September 30, 2022

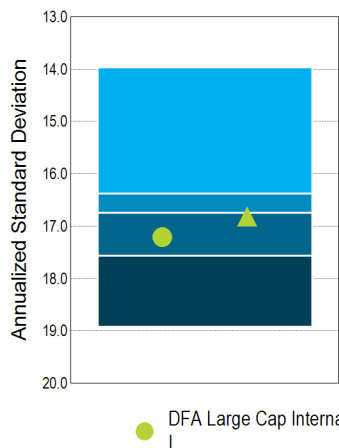
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



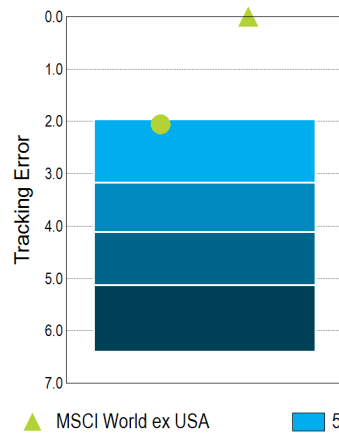
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



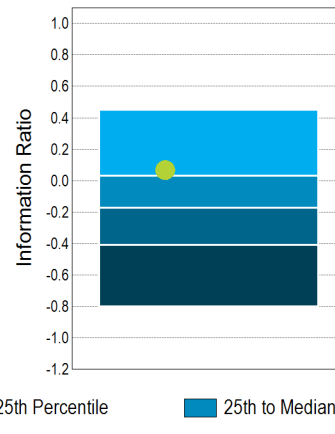
Annualized Standard Deviation



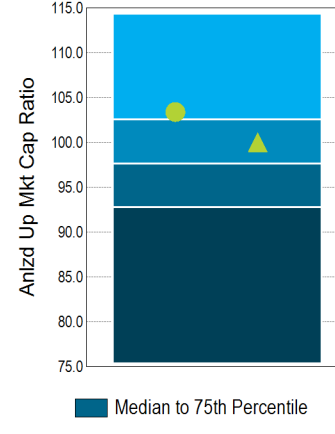
Tracking Error



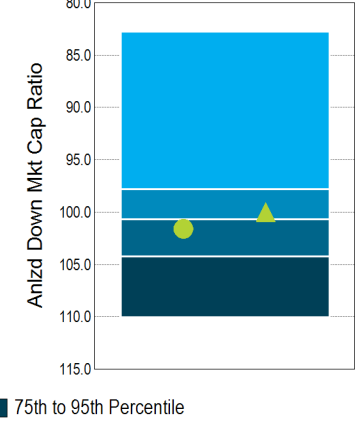
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### DFA Large Cap International I | As of September 30, 2022

#### Fund Characteristics as of September 30, 2022

Sharpe Ratio (3 Year)	-0.06
Average Market Cap (\$mm)	25,965.51
Price/Earnings	10.00
Price/Book	1.28
Price/Sales	0.89
Price/Cash Flow	4.94
Dividend Yield	4.65
Number of Equity Holdings	1,329
R-Squared (3 Year)	0.99
Alpha (3 Year)	0.04%

#### Sector Allocation as of September 30, 2022

BASIC MATERIALS	10.61%
COMMUNICATION SERVICES	5.98%
CONSUMER CYCLICAL	10.46%
CONSUMER DEFENSIVE	9.54%
ENERGY	7.47%
FINANCIAL SERVICES	17.82%
HEALTHCARE	10.79%
INDUSTRIALS	15.29%
REAL ESTATE	1.63%
TECHNOLOGY	7.08%
UTILITIES	3.32%

#### Top Holdings as of September 30, 2022

NESTLE SA	1.58%
ROCHE HOLDING AG	1.46%
SHELL PLC ADR (REPRESENTING - ORDINARY SHARES)	1.20%
NOVO NORDISK A/S ADR	1.10%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.03%
ROYAL BANK OF CANADA	0.95%
TOTALENERGIES SE	0.89%
ASML HOLDING NV ADR	0.75%
S+P500 EMINI FUT DEC22 XCME 20221216	0.71%
TOYOTA MOTOR CORP	0.69%

#### Top Countries as of September 30, 2022

Japan	21.74%
United Kingdom	12.72%
Canada	11.62%
France	8.83%
Switzerland	8.83%
Australia	7.23%
Germany	6.61%
Netherlands	3.98%
Sweden	2.80%
Denmark	2.25%

### TIAA-CREF Social Choice Intl Equity | As of September 30, 2022

#### Description:

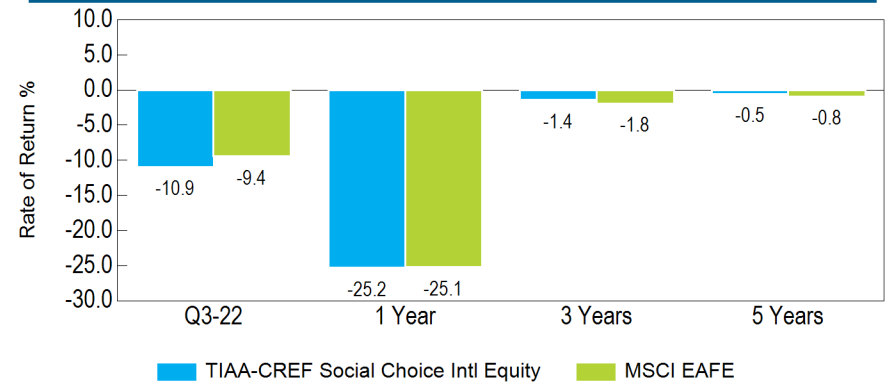
The investment seeks a favorable long-term total return that reflects the investment performance of the overall foreign equity markets while giving special consideration to certain environmental, social and governance ("ESG") criteria.

Under normal circumstances, the fund invests at least 80% of its assets in equity securities of foreign issuers. The advisor attempts to achieve the return of the foreign equity markets, as represented by its benchmark index, the Morgan Stanley Capital International EAFE® (Europe, Australasia, Far East) Index (the "MSCI EAFE Index"), while taking into consideration certain ESG criteria.

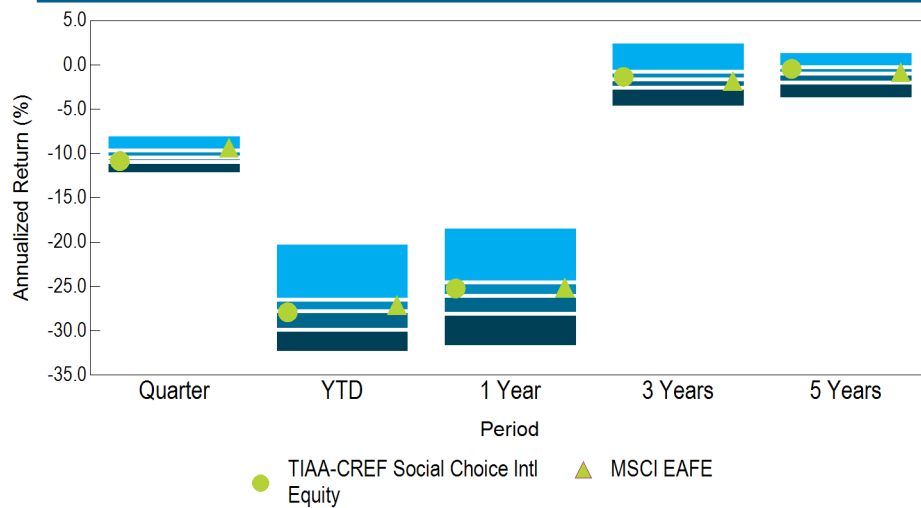
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TSONX
<b>Morningstar Category</b>	Foreign Large Blend
<b>Average Market Cap (\$mm)</b>	35,283.17
<b>Net Assets (\$mm)</b>	661.24
<b>% Assets in Top 10 Holdings</b>	15.27
<b>Total Number of Holdings</b>	362
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	7
<b>Expense Ratio</b>	0.36%
<b>Closed to New Investors</b>	No

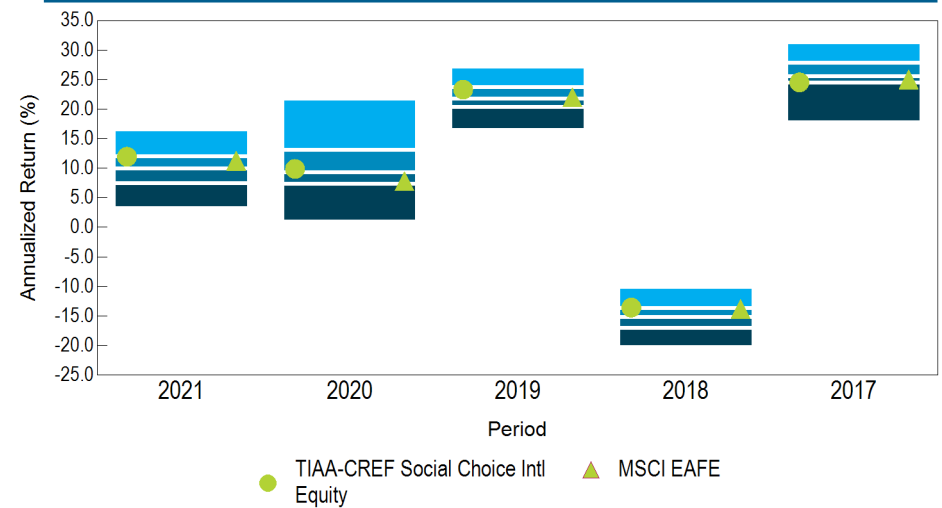
#### Return Summary



#### Foreign Large Blend MStar MF Return Comparison



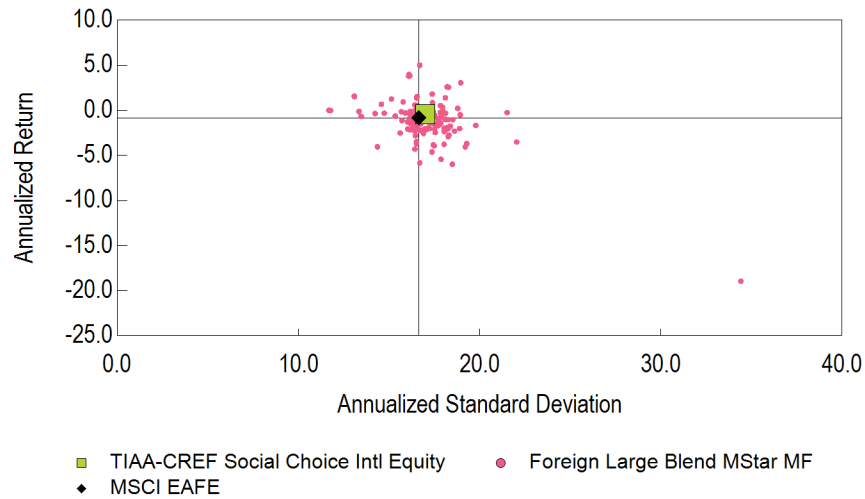
#### Foreign Large Blend MStar MF Return Comparison



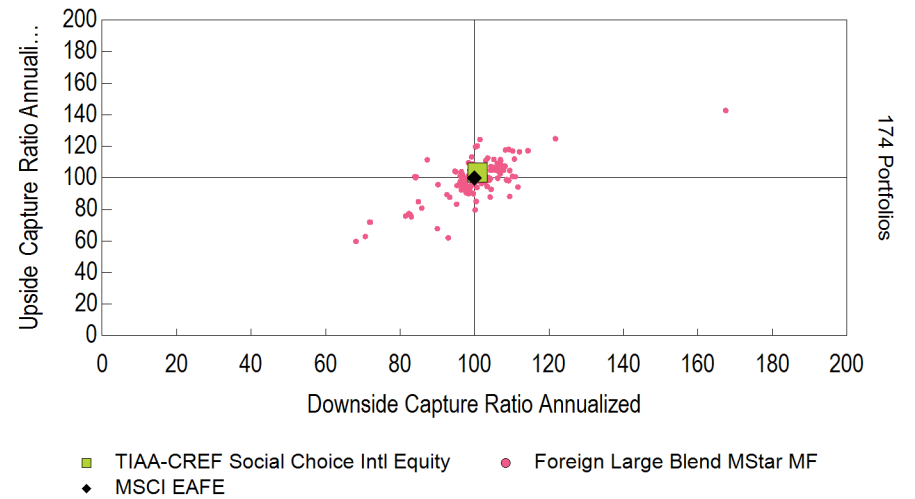


### TIAA-CREF Social Choice Intl Equity | As of September 30, 2022

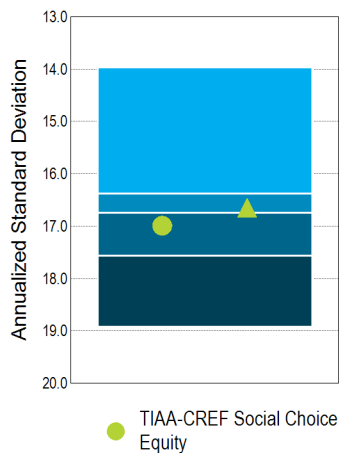
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



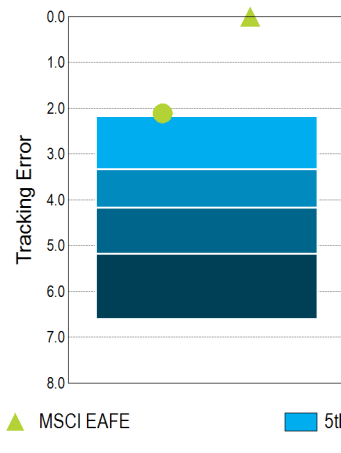
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



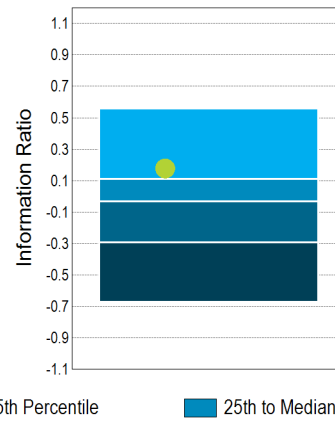
Annualized Standard Deviation



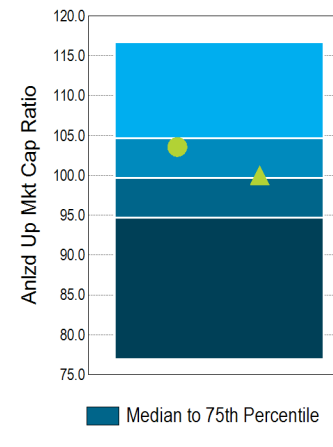
Tracking Error



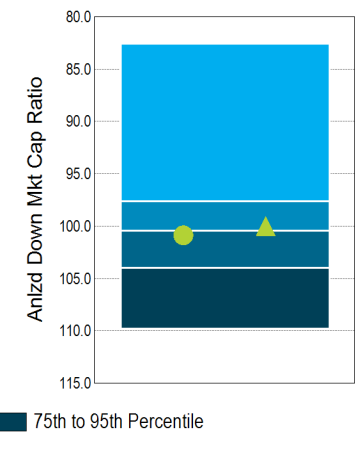
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.15
Average Market Cap (\$mm)	35,283.17
Price/Earnings	12.49
Price/Book	1.50
Price/Sales	1.10
Price/Cash Flow	6.36
Dividend Yield	4.61
Number of Equity Holdings	355
R-Squared (3 Year)	0.99
Alpha (3 Year)	0.07%

#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	7.82%
COMMUNICATION SERVICES	6.40%
CONSUMER CYCLICAL	9.42%
CONSUMER DEFENSIVE	10.60%
ENERGY	5.46%
FINANCIAL SERVICES	17.67%
HEALTHCARE	13.18%
INDUSTRIALS	14.15%
REAL ESTATE	3.08%
TECHNOLOGY	8.88%
UTILITIES	3.34%

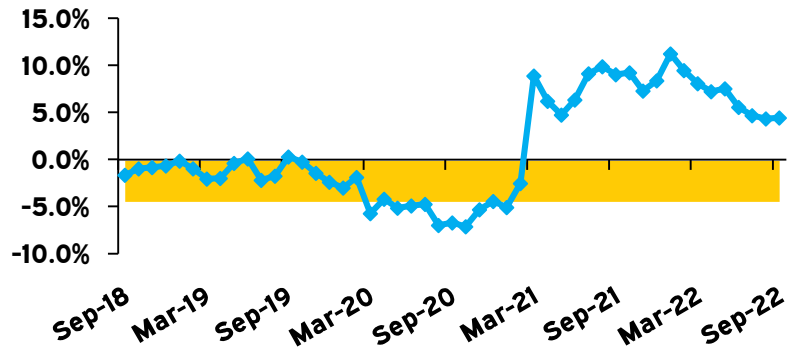
#### Top Holdings as of August 31, 2022

NESTLE SA	2.65%
ROCHE HOLDING AG	1.87%
ASML HOLDING NV	1.70%
ASTRAZENECA PLC	1.65%
NOVO NORDISK A/S CLASS B	1.57%
TOYOTA MOTOR CORP	1.42%
TOTALENERGIES SE	1.17%
HSBC HOLDINGS PLC	1.16%
COMMONWEALTH BANK OF AUSTRALIA	1.09%
BP PLC	0.99%

#### Top Countries as of August 31, 2022

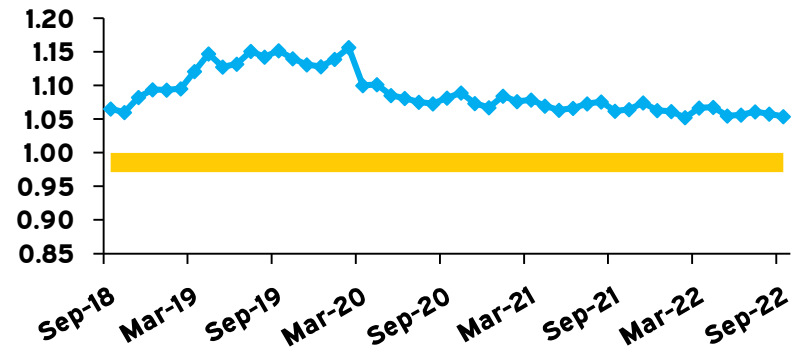
Japan	23.47%
United Kingdom	14.12%
Switzerland	10.67%
France	10.58%
Germany	7.73%
Australia	7.50%
Netherlands	3.83%
Sweden	3.04%
Hong Kong	2.97%
Denmark	2.82%

#### Short Term – Rolling 12-Month Excess Return



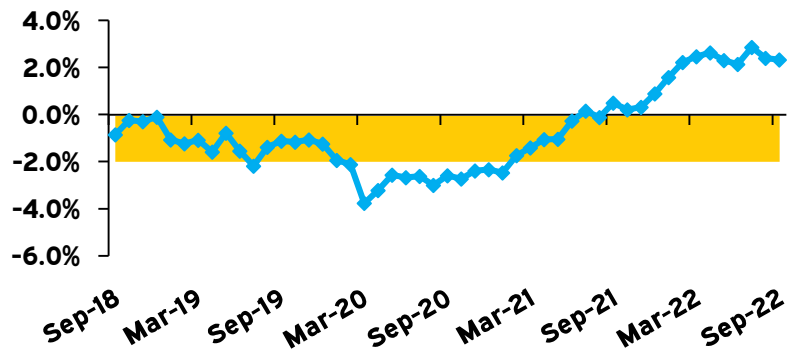
Results fall in the positive range.  
Probationary Threshold -4.50%

#### Long Term – VRR



Results fall in the positive range.  
Probationary Threshold <0.97

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -2.00%

Benchmark: MSCI Emerging Markets

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
DFA Emerging Markets Core Equity I	-10.9	-23.7	0.3	-0.7	2.2	11/20/2011
MSCI Emerging Markets	-11.6	-28.1	-2.1	-1.8	1.3	

#### Monitoring Status

Positive

### DFA Emerging Markets Core Equity I | As of September 30, 2022

#### Description:

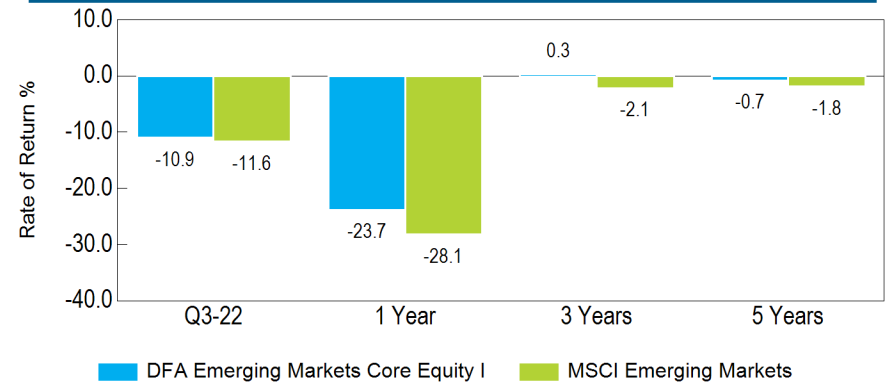
The investment seeks long-term capital appreciation.

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 the Advisor's Investment Committee ("Approved Markets"). It may gain exposure to companies in Approved Markets by purchasing equity securities in the form of depositary receipts, which may be listed or traded outside the issuer's domicile country.

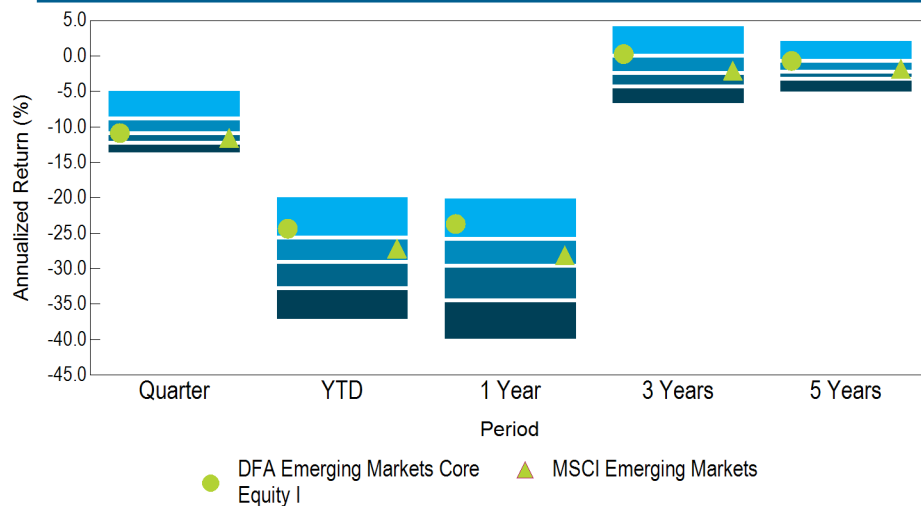
#### Portfolio Fund Information as of September 30, 2022

<b>Ticker</b>	DFCEX
<b>Morningstar Category</b>	Diversified Emerging Mkts
<b>Average Market Cap (\$mm)</b>	8,557.52
<b>Net Assets (\$mm)</b>	21,540.20
<b>% Assets in Top 10 Holdings</b>	13.60
<b>Total Number of Holdings</b>	6,906
<b>Manager Name</b>	Jed S. Fogdall
<b>Manager Tenure</b>	13
<b>Expense Ratio</b>	0.39%
<b>Closed to New Investors</b>	No

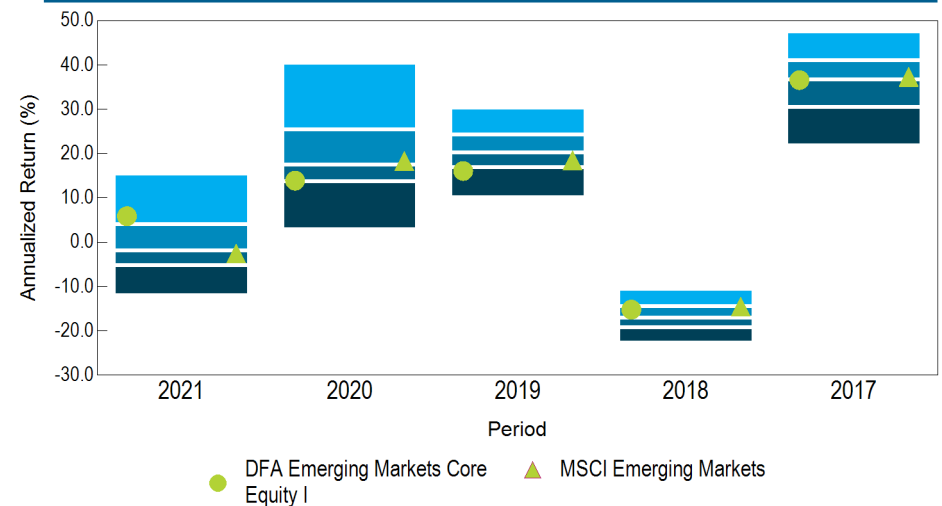
#### Return Summary



#### Diversified Emerging Mkts MStar MF Return Comparison

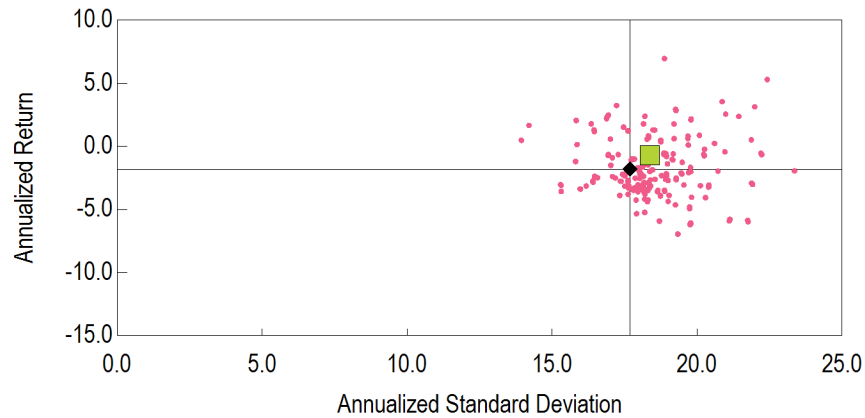


#### Diversified Emerging Mkts MStar MF Return Comparison

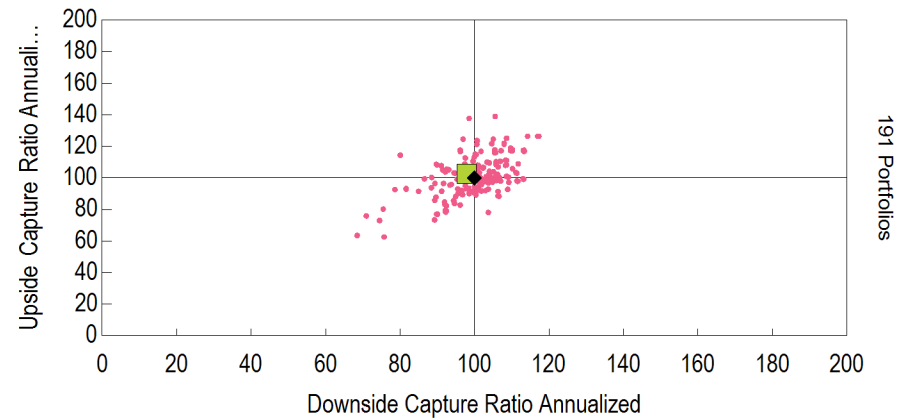


### DFA Emerging Markets Core Equity I | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



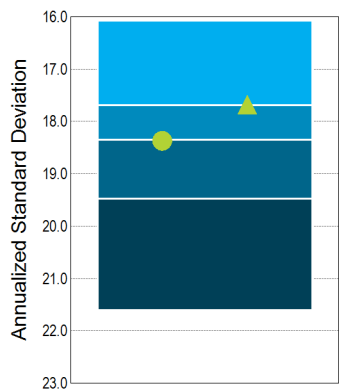
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



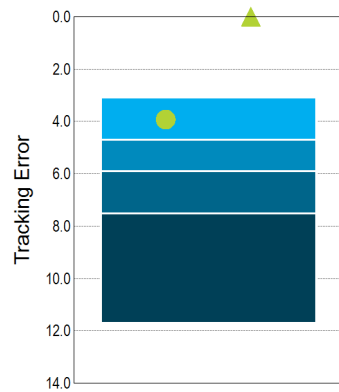
- DFA Emerging Markets Core Equity I
- Diversified Emerging Mkts MStar MF
- ◆ MSCI Emerging Markets

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

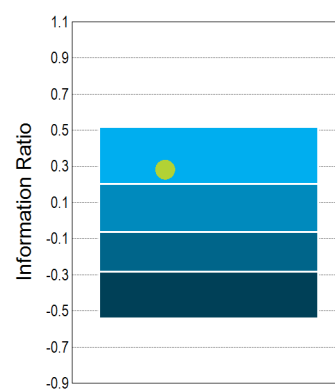
Annualized Standard Deviation



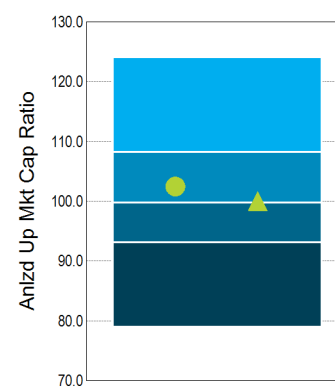
Tracking Error



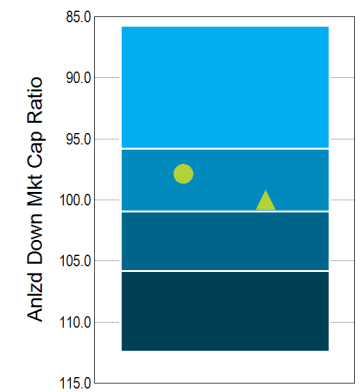
Information Ratio



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 September 30, 2022

#### Fund Characteristics as of September 30, 2022

Sharpe Ratio (3 Year)	-0.01
Average Market Cap (\$mm)	8,557.52
Price/Earnings	8.11
Price/Book	1.05
Price/Sales	0.69
Price/Cash Flow	3.52
Dividend Yield	4.93
Number of Equity Holdings	6,812
R-Squared (3 Year)	0.95
Alpha (3 Year)	0.22%

#### Sector Allocation as of September 30, 2022

BASIC MATERIALS	12.23%
COMMUNICATION SERVICES	7.36%
CONSUMER CYCLICAL	11.30%
CONSUMER DEFENSIVE	6.41%
ENERGY	5.46%
FINANCIAL SERVICES	16.90%
HEALTHCARE	4.71%
INDUSTRIALS	9.91%
REAL ESTATE	3.42%
TECHNOLOGY	18.89%
UTILITIES	3.39%

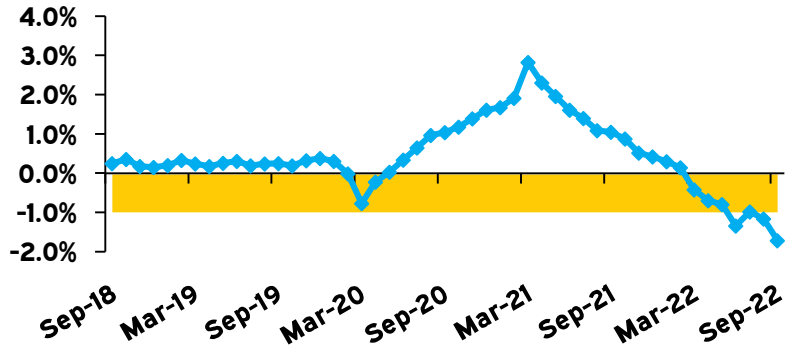
#### Top Holdings as of September 30, 2022

SAMSUNG ELECTRONICS CO LTD	2.65%
TENCENT HOLDINGS LTD	2.57%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.55%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD ADR	1.11%
CHINA CONSTRUCTION BANK CORP CLASS H	0.99%
VALE SA	0.86%
ALIBABA GROUP HOLDING LTD ADR	0.82%
RELIANCE INDUSTRIES LTD	0.74%
PING AN INSURANCE (GROUP) CO. OF CHINA LTD CLASS H	0.69%
INFOSYS LTD	0.63%

#### Top Countries as of September 30, 2022

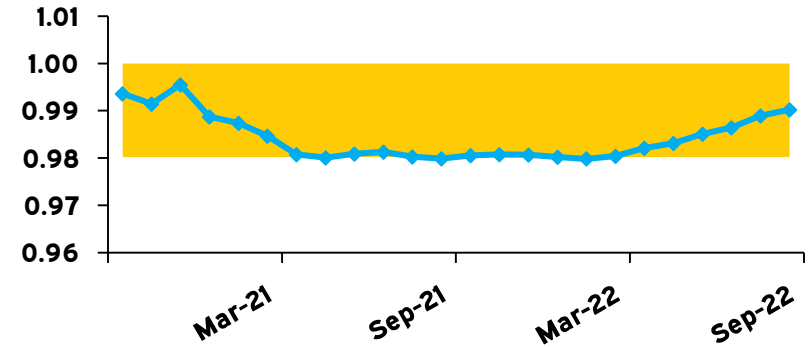
China	26.98%
India	17.79%
Taiwan	16.03%
South Korea	10.89%
Brazil	5.61%
Saudi Arabia	4.08%
South Africa	3.69%
Thailand	2.52%
Mexico	2.40%
Indonesia	2.38%

#### Short Term – Rolling 12-Month Excess Return



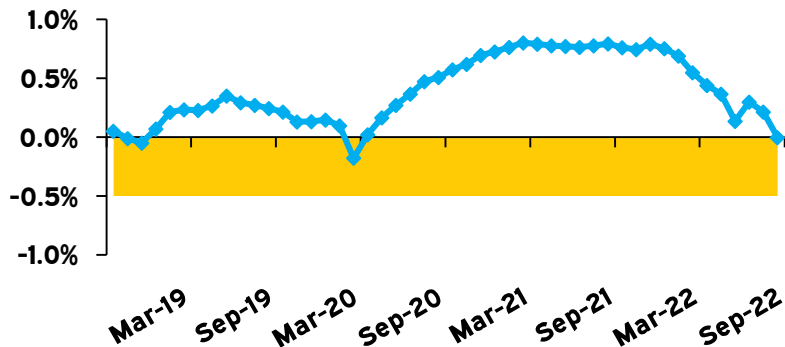
Results fall in the acceptable range.  
 Probationary Threshold -1.00%

#### Long Term – VRR



Results fall in the acceptable range.  
 Probationary Threshold <0.98

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
 Probationary Threshold -0.50%

Benchmark: Bloomberg US Aggregate TR

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
Metropolitan West Total Return Bond I	-5.2	-16.3	-3.3	-0.2	0.6	10/7/2015
Bloomberg US Aggregate TR	-4.8	-14.6	-3.3	-0.3	0.5	

#### Monitoring Status

Acceptable

### Metropolitan West Total Return Bond I | As of September 30, 2022

#### Description:

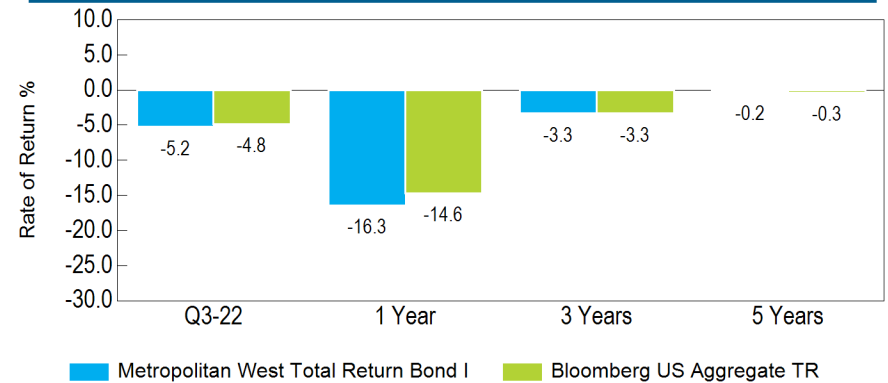
The investment seeks to maximize long-term total return.

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 any borrowings for investment purposes in fixed income securities it regards as bonds.

#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	MWTIX
<b>Morningstar Category</b>	Intermediate Core-Plus Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	41,694.75
<b>% Assets in Top 10 Holdings</b>	38.34
<b>Total Number of Holdings</b>	2,004
<b>Manager Name</b>	Stephen M. Kane
<b>Manager Tenure</b>	26
<b>Expense Ratio</b>	0.44%
<b>Closed to New Investors</b>	No

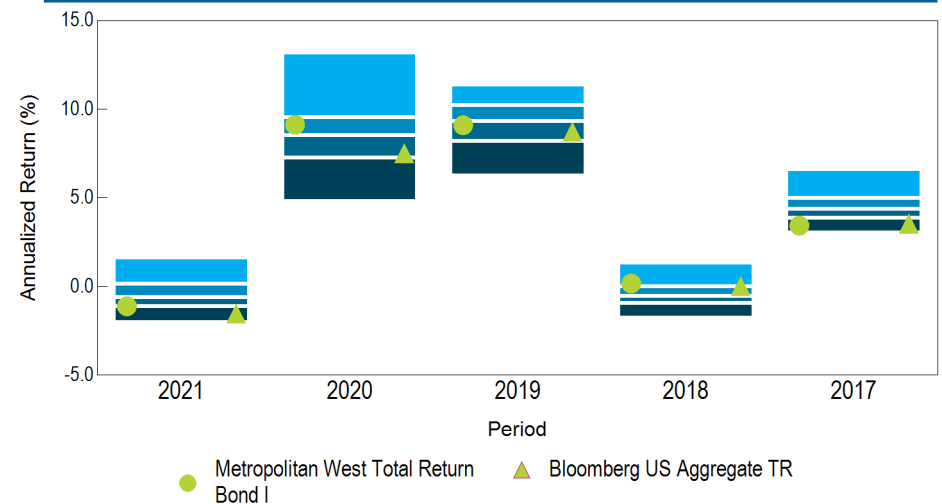
#### Return Summary



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



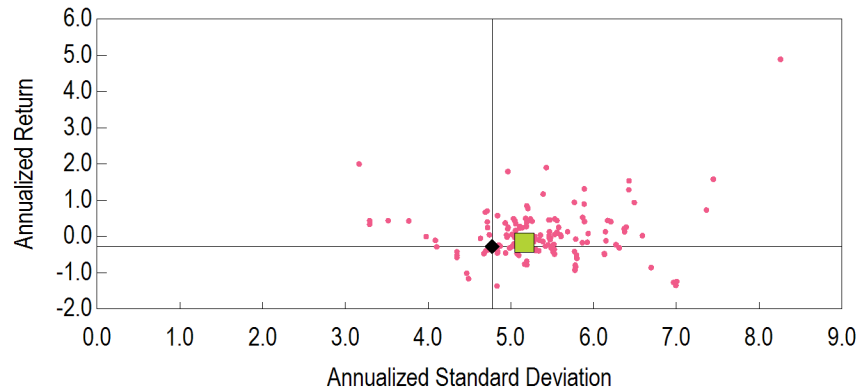
#### Intermediate Core Plus Bond MStar MF Return Comparison





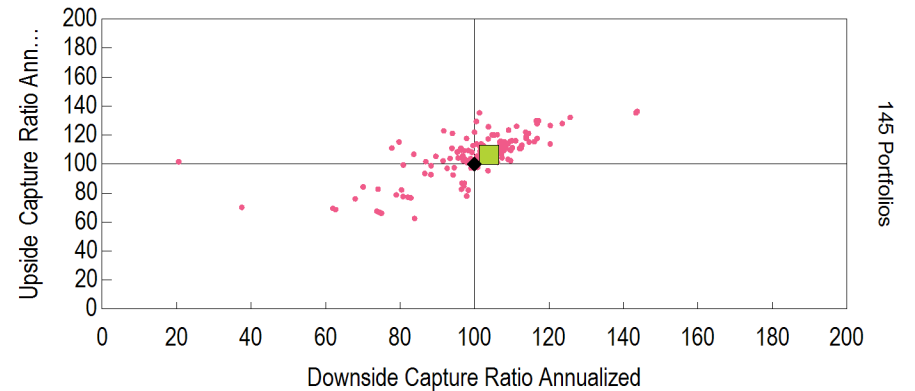
### Metropolitan West Total Return Bond I | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



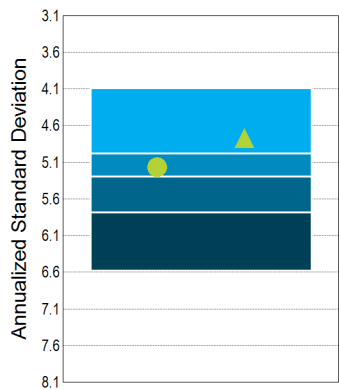
- Metropolitan West Total Return Bond I
- Bloomberg US Aggregate TR
- Intermediate Core Plus Bond MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

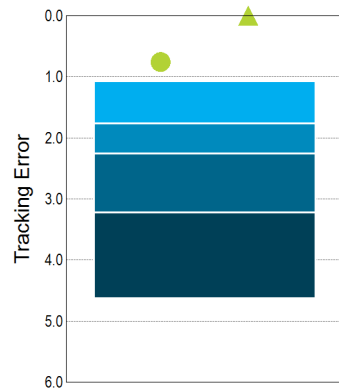


- Metropolitan West Total Return Bond I
- Bloomberg US Aggregate TR
- Intermediate Core Plus Bond MStar MF

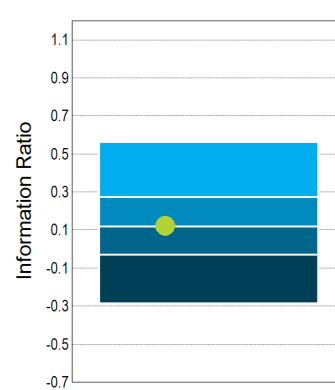
Annualized Standard Deviation



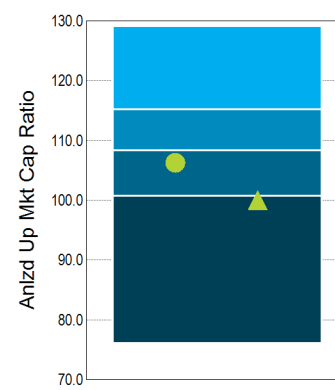
Tracking Error



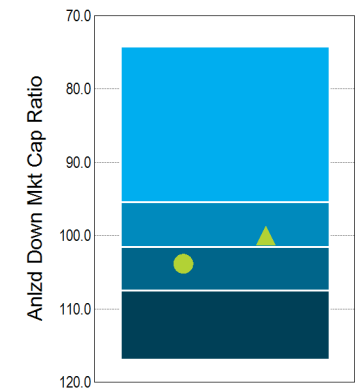
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



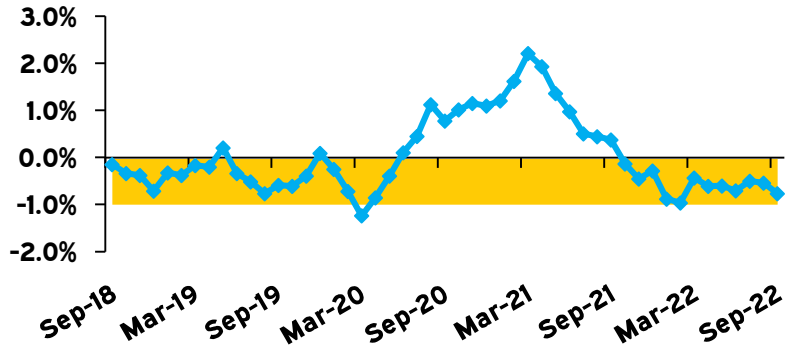
- Metropolitan West Total Return Bond I
- Bloomberg US Aggregate TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Metropolitan West Total Return Bond I | As of September 30, 2022

Fund Characteristics as of August 31, 2022		Top Holdings as of August 31, 2022		Fixed Income Sectors as of August 31, 2022	
Sharpe Ratio (3 Year)	-0.43	UNITED STATES TREASURY NOTES 3.25%	6.04%	GOVERNMENT	26.45%
Average Duration	6.78	FEDERAL NATIONAL MORTGAGE ASSOCIATION	4.83%	MUNICIPAL	0.58%
Average Coupon	3.16%	2%		CORPORATE	26.24%
Average Effective Maturity	8.51	UNITED STATES TREASURY NOTES 3.125%	4.78%	SECURITIZED	43.19%
R-Squared (3 Year)	0.98	FEDERAL NATIONAL MORTGAGE ASSOCIATION	4.60%	CASH & EQUIVALENTS	2.73%
Alpha (3 Year)	0.03%	2.5%		DERIVATIVE	0.81%
Beta (3 Year)	1.09	UNITED STATES TREASURY NOTES 3%	4.15%		
		UNITED STATES TREASURY BONDS 2%	3.10%		
		UNITED STATES TREASURY BONDS 2.375%	2.88%		
		UNITED STATES TREASURY NOTES 2.75%	2.88%		
		UNITED STATES TREASURY NOTES 3.25%	2.63%		
		FEDERAL NATIONAL MORTGAGE ASSOCIATION	2.45%		
		4.5%			

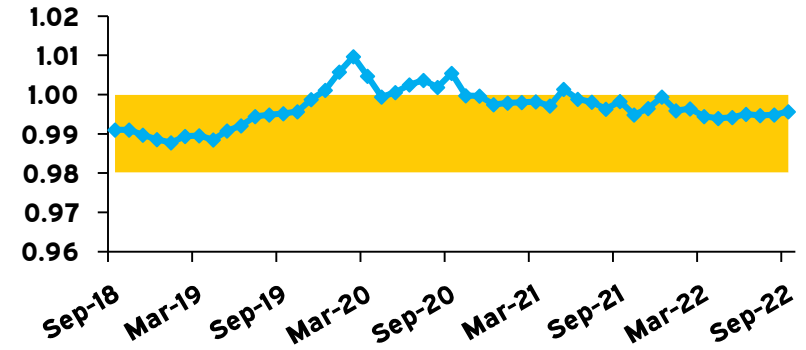
Credit Quality as of March 31, 2022		Maturities as of August 31, 2022		Top Countries as of August 31, 2022	
AAA	58.88%	1 to 3 Years	15.64%	United States	93.51%
AA	5.27%	3 to 5 Years	11.32%	United Kingdom	1.70%
A	13.02%	5 to 7 Years	9.55%	Cayman Islands	0.64%
BBB	15.45%	7 to 10 Years	5.45%	Germany	0.55%
BB	2.87%	10 to 15 Years	7.70%	Ireland	0.55%
B	1.16%	15 to 20 Years	8.86%	Mexico	0.36%
Below B	3.54%	20 to 30 Years	25.37%	Switzerland	0.36%
Not Rated	-0.19%	Greater than 30 Years	15.38%	Australia	0.35%
				Netherlands	0.35%
				Belgium	0.23%

#### Short Term – Rolling 12-Month Excess Return



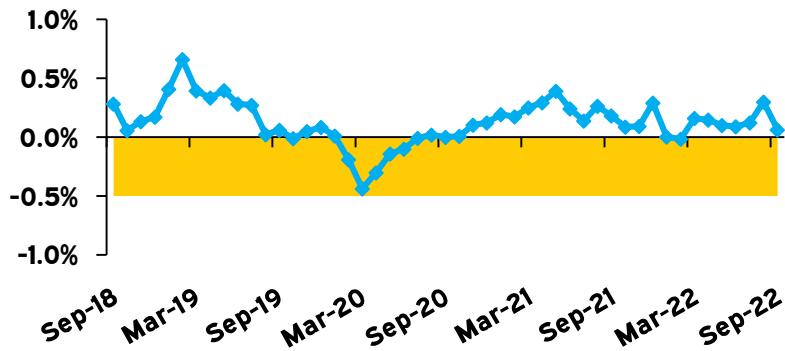
Results fall in the acceptable range.  
 Probationary Threshold -1.00%

#### Long Term – VRR



Results fall in the acceptable range.  
 Probationary Threshold <0.98

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
 Probationary Threshold -0.50%

Benchmark: Bloomberg US TIPS TR

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
PIMCO Real Return	-5.4	-12.3	0.9	1.8	1.6	11/20/2011
Bloomberg US TIPS TR	-5.1	-11.6	0.8	2.0	1.5	

#### Monitoring Status

Acceptable

#### Description:

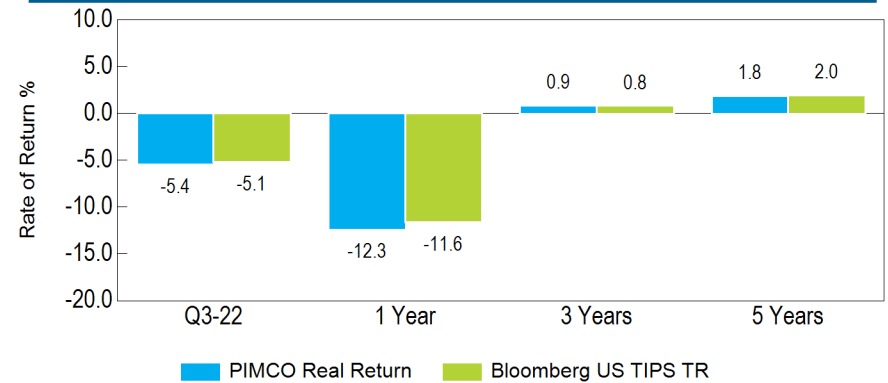
The investment seeks maximum real return, consistent with preservation of capital and prudent investment management.

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.

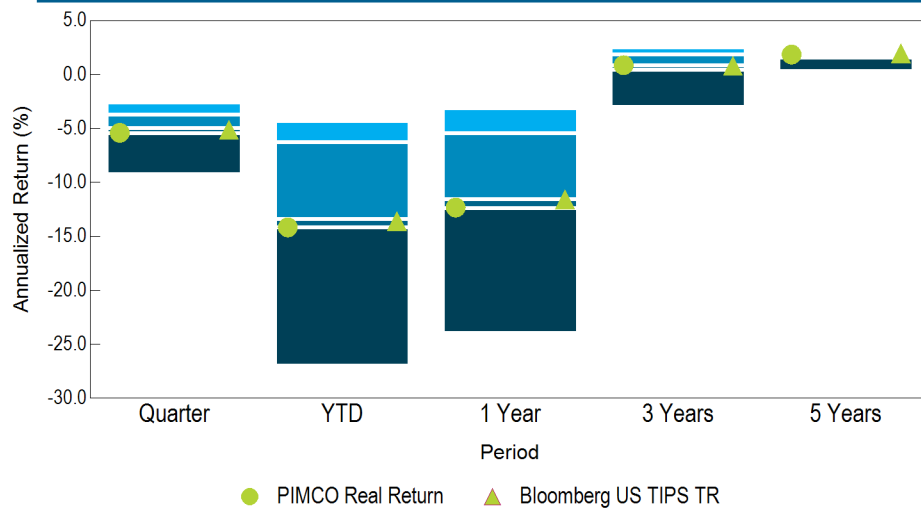
#### Portfolio Fund Information as of June 30, 2022

<b>Ticker</b>	PRRIX
<b>Morningstar Category</b>	Inflation-Protected Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	6,898.43
<b>% Assets in Top 10 Holdings</b>	65.12
<b>Total Number of Holdings</b>	871
<b>Manager Name</b>	Stephen A. Rodosky
<b>Manager Tenure</b>	4
<b>Expense Ratio</b>	0.47%
<b>Closed to New Investors</b>	No

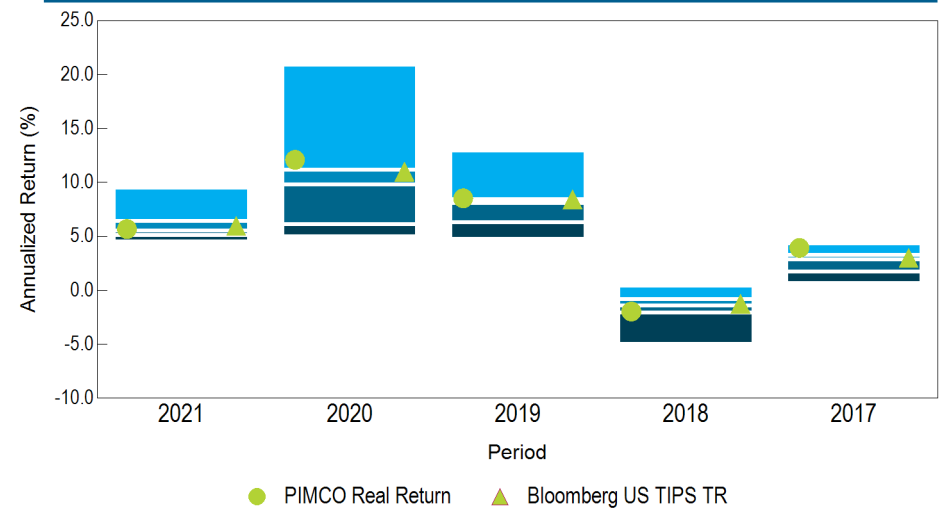
#### Return Summary



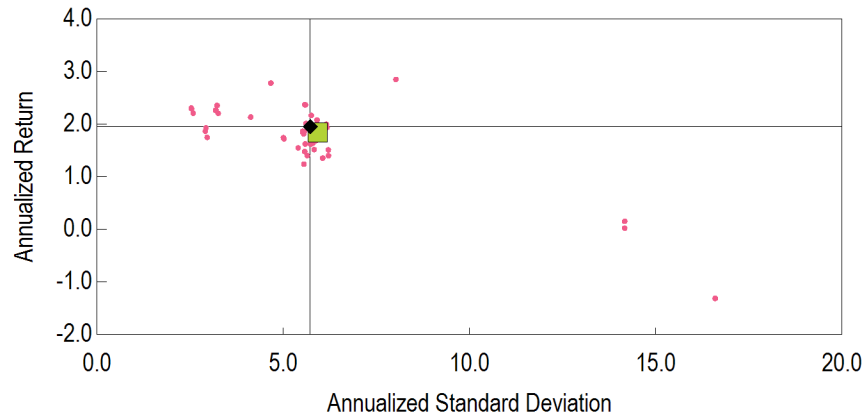
#### Inflation-Protected Bond MStar MF Return Comparison



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

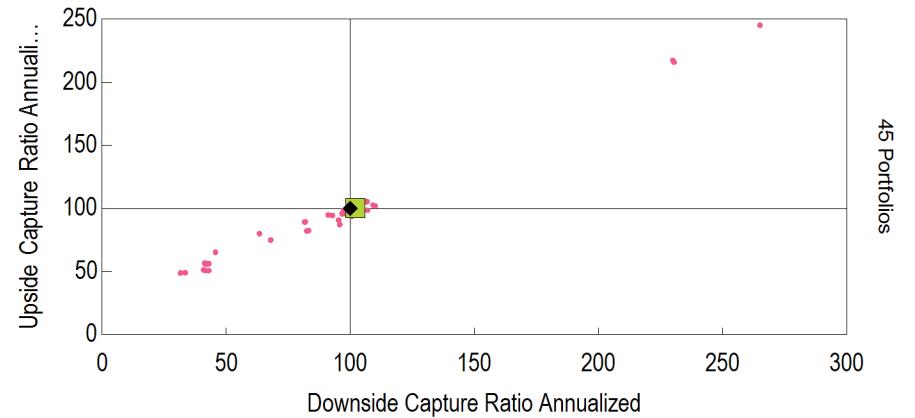


Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



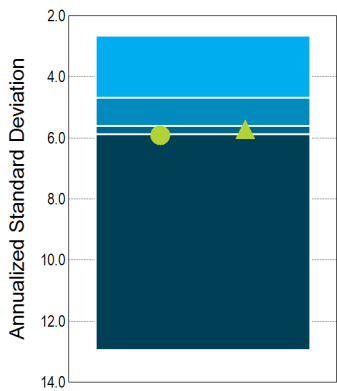
- PIMCO Real Return
- Inflation-Protected Bond MStar MF
- ◆ Bloomberg US TIPS TR

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

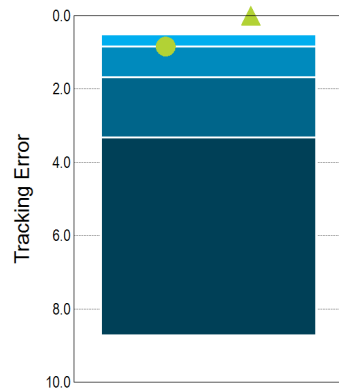


- PIMCO Real Return
- Inflation-Protected Bond MStar MF
- ◆ Bloomberg US TIPS TR

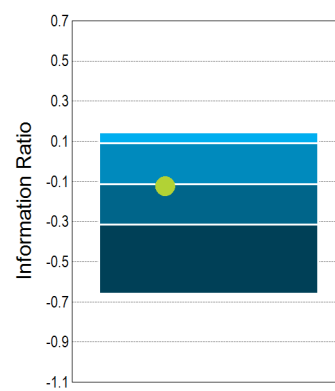
Annualized Standard Deviation



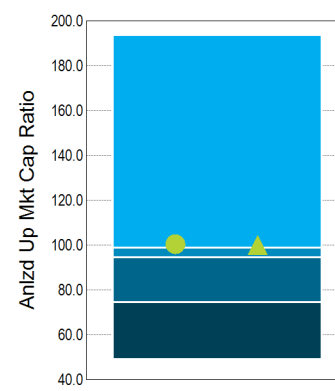
Tracking Error



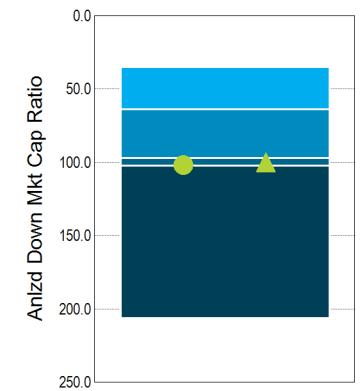
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



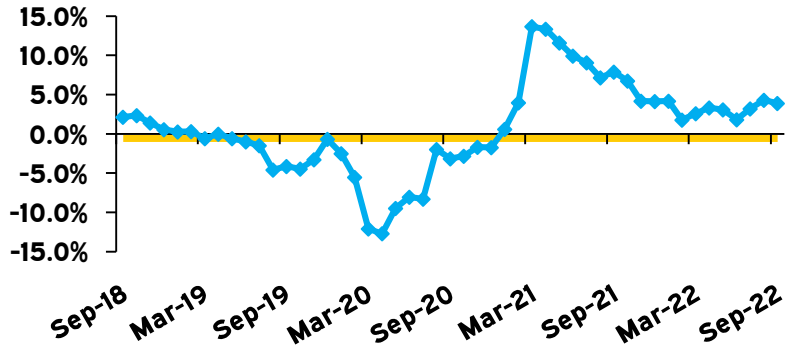
- PIMCO Real Return
- ▲ Bloomberg US TIPS TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Fund Characteristics as of June 30, 2022		Top Holdings as of June 30, 2022		Fixed Income Sectors as of June 30, 2022	
Sharpe Ratio (3 Year)	0.51	EURO SCHATZ FUTURE SEPT 22	11.62%	GOVERNMENT	70.54%
Average Duration	6.65	10 YEAR TREASURY NOTE FUTURE SEPT 22	11.09%	MUNICIPAL	0.00%
Average Coupon	1.17%	FIN FUT 10YR JGB OSE 09/12/22	7.42%	CORPORATE	0.60%
Average Effective Maturity	6.19	5 YEAR TREASURY NOTE FUTURE SEPT 22	6.74%	SECURITIZED	8.94%
R-Squared (3 Year)	0.97	US TREASURY BOND FUTURE SEPT 22	5.45%	CASH & EQUIVALENTS	7.49%
Alpha (3 Year)	0.00%	UNITED STATES TREASURY NOTES 0.625%	5.26%	DERIVATIVE	12.43%
Beta (3 Year)	1.02	UNITED STATES TREASURY BONDS 3.625%	4.72%		
		UNITED STATES TREASURY NOTES 0.125%	4.51%		
		LONG-TERM EURO BTP FUTURE SEPT 22	4.32%		
		UNITED STATES TREASURY NOTES 0.5%	3.97%		

Maturities as of June 30, 2022	
1 to 3 Years	14.48%
3 to 5 Years	12.25%
5 to 7 Years	15.49%
7 to 10 Years	15.85%
10 to 15 Years	2.30%
15 to 20 Years	3.37%
20 to 30 Years	10.75%
Greater than 30 Years	1.57%

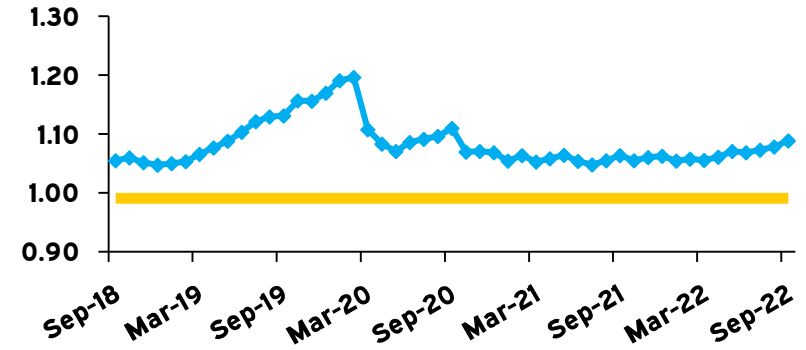
Top Countries as of June 30, 2022	
United States	77.85%
Germany	7.38%
United Kingdom	5.67%
Denmark	2.39%
Italy	2.32%
France	1.33%
Ireland	1.05%
Cayman Islands	0.81%
Japan	0.43%
Netherlands	0.24%

#### Short Term – Rolling 12-Month Excess Return



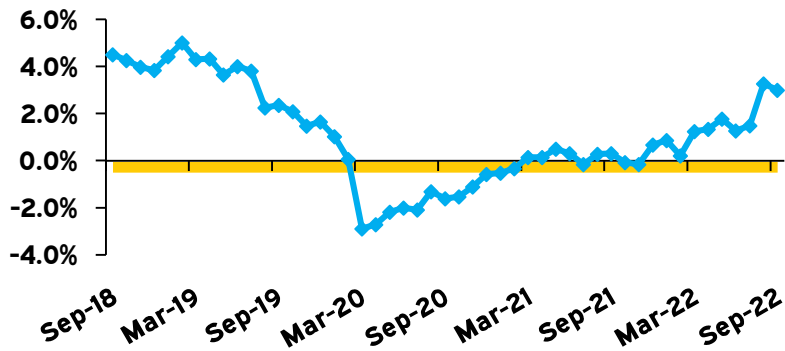
Results fall in the positive range.  
Probationary Threshold -1.00%

#### Long Term – VRR



Results fall in the positive range.  
Probationary Threshold <0.98

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -0.50%

Benchmark: Bloomberg US Aggregate TR

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
PIMCO Income I	-1.9	-10.7	-0.3	1.2	5.3	11/20/2011
Bloomberg US Aggregate TR	-4.8	-14.6	-3.3	-0.3	1.3	

#### Monitoring Status

Positive

#### Description:

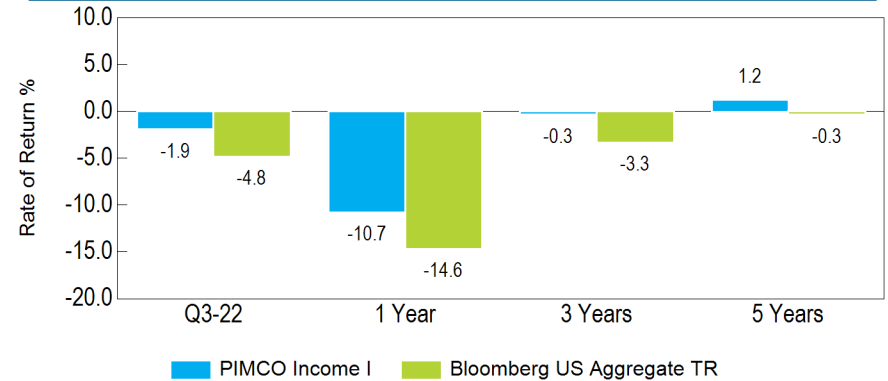
The investment seeks to maximize current income; long-term capital appreciation is a secondary objective.

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 June 30, 2022

<b>Ticker</b>	PIMIX
<b>Morningstar Category</b>	Multisector Bond
<b>Average Market Cap (\$mm)</b>	4,679.99
<b>Net Assets (\$mm)</b>	67,629.21
<b>% Assets in Top 10 Holdings</b>	31.02
<b>Total Number of Holdings</b>	7,549
<b>Manager Name</b>	Daniel J. Ivascyn
<b>Manager Tenure</b>	16
<b>Expense Ratio</b>	0.51%
<b>Closed to New Investors</b>	No

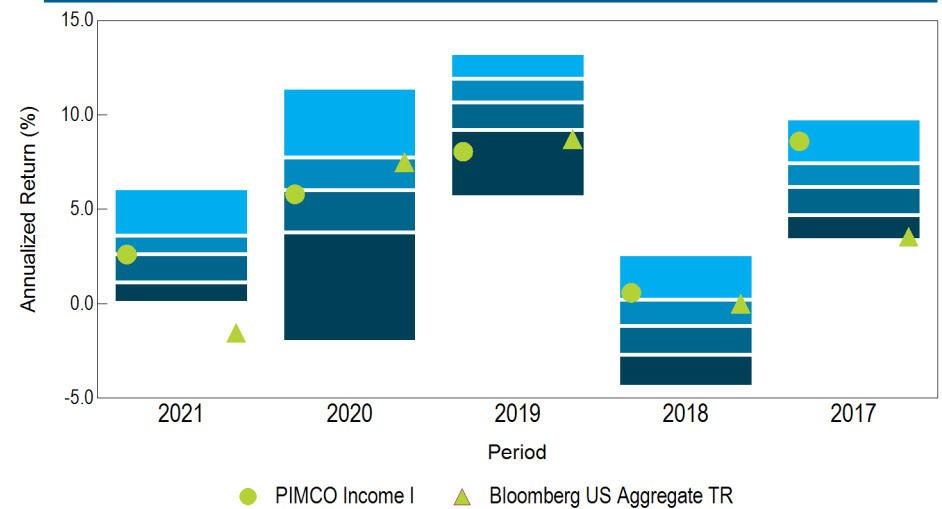
#### Return Summary



#### Multisector Bond MStar MF Return Comparison

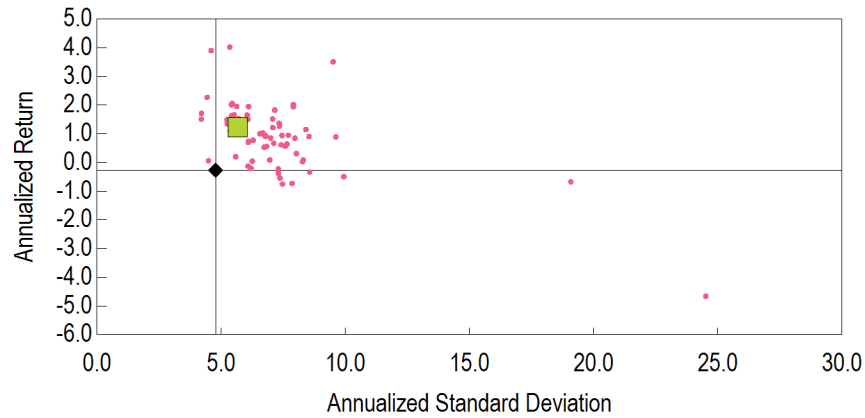


#### Multisector Bond MStar MF Return Comparison



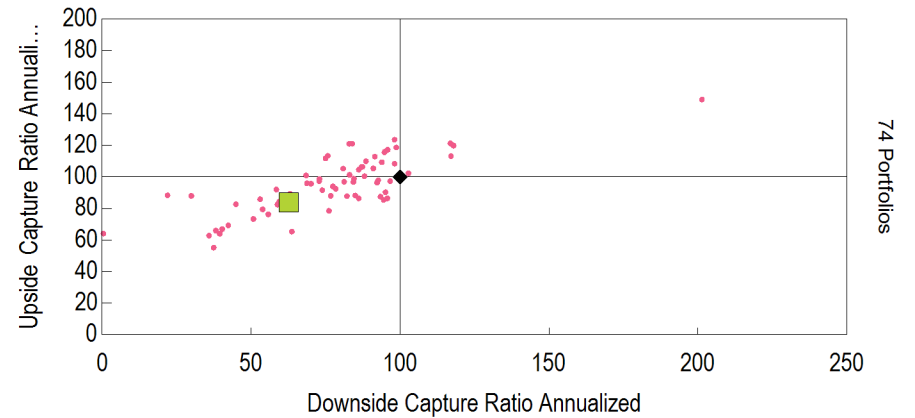


Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



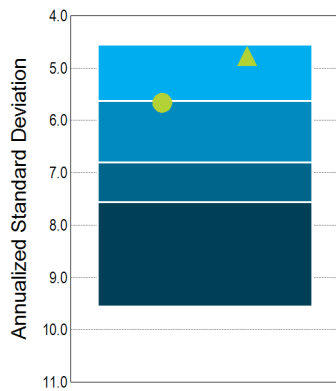
■ PIMCO Income I      ● Multisector Bond MStar MF  
◆ Bloomberg US Aggregate TR

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



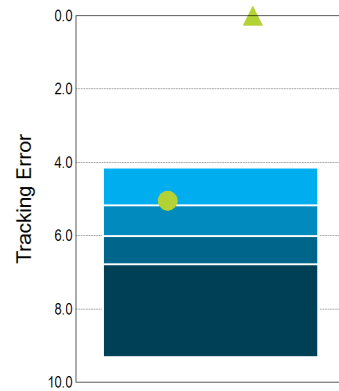
■ PIMCO Income I      ● Multisector Bond MStar MF  
◆ Bloomberg US Aggregate TR

Annualized Standard Deviation



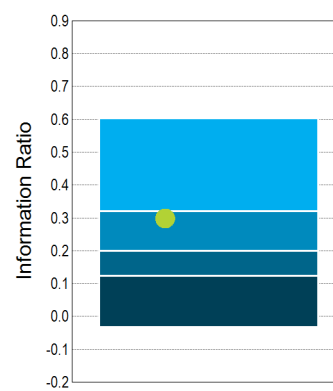
● PIMCO Income I

Tracking Error

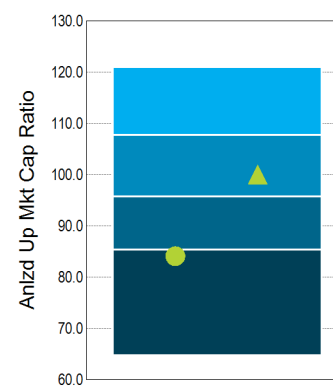


▲ Bloomberg US Aggregate TR

Information Ratio

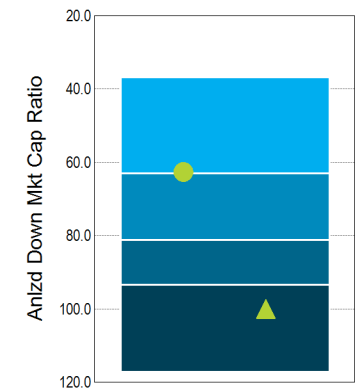


Anlzd Up Mkt Cap Ratio



■ Median to 75th Percentile

Anlzd Down Mkt Cap Ratio



■ 75th to 95th Percentile

Fund Characteristics as of June 30, 2022		Top Holdings as of June 30, 2022		Fixed Income Sectors as of June 30, 2022	
Sharpe Ratio (3 Year)	-0.03	10 YEAR TREASURY NOTE FUTURE SEPT 22	7.46%	GOVERNMENT	26.91%
Average Duration	2.94	FEDERAL NATIONAL MORTGAGE ASSOCIATION	6.34%	MUNICIPAL	0.04%
Average Coupon	4%	FEDERAL NATIONAL MORTGAGE ASSOCIATION	5.72%	CORPORATE	7.38%
Average Effective Maturity	4.83	3.5%		SECURITIZED	22.42%
R-Squared (3 Year)	0.18	US TREASURY BOND FUTURE SEPT 22	2.47%	CASH & EQUIVALENTS	24.67%
Alpha (3 Year)	0.09%	FIN FUT US ULTRA 30YR CBT 09/21/22	2.01%	DERIVATIVE	18.58%
Beta (3 Year)	0.60	LONG-TERM EURO BTP FUTURE SEPT 22	1.90%		
		UNITED STATES TREASURY NOTES 2.375%	1.30%		
		DURHAM MORTGAGES B PLC 1.68176%	1.29%		
		PIMCO FDS	1.28%		
		CITIGROUP MORTGAGE LOAN TRUST 2021-RP4	1.24%		
		1.5%			

Credit Quality as of June 30, 2022		Maturities as of June 30, 2022		Top Countries as of June 30, 2022	
AAA	40.76%	1 to 3 Years	6.98%	United States	79.34%
AA	5.76%	3 to 5 Years	18.49%	United Kingdom	4.54%
A	4.00%	5 to 7 Years	10.75%	Mexico	3.20%
BBB	16.91%	7 to 10 Years	10.63%	Belize	2.97%
BB	18.59%	10 to 15 Years	5.23%	Australia	2.11%
B	4.74%	15 to 20 Years	1.81%	South Africa	1.34%
Below B	9.24%	20 to 30 Years	17.91%	Italy	1.19%
Not Rated	0.00%	Greater than 30 Years	15.26%	Ireland	0.77%
				Turkey	0.55%
				Canada	0.35%

### Vanguard High-Yield Corp Adm | As of September 30, 2022

#### Description:

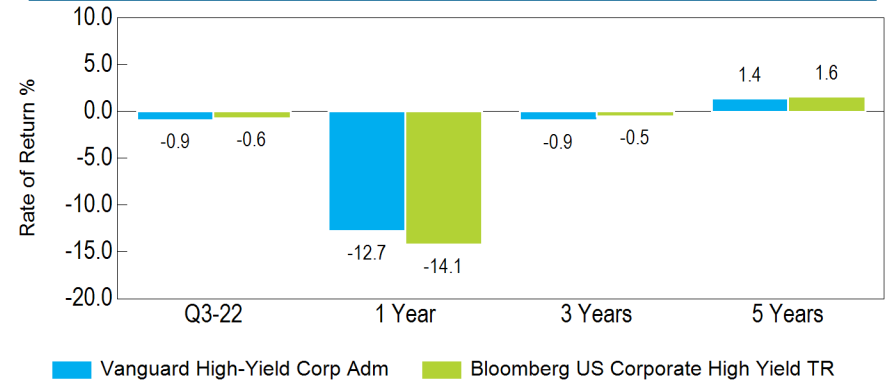
The investment seeks to provide a high level of current income.

The fund invests primarily in a diversified group of high-yielding, higher-risk corporate bonds—commonly known as "junk bonds"—with medium- and lower-range credit-quality ratings. It invests at least 80% of its assets in corporate bonds that are rated below Baa by Moody's Investors Service, Inc. (Moody's); have an equivalent rating by any other independent bond-rating agency; or, if unrated, are determined to be of comparable quality by the fund's advisor. The fund's high-yield bonds and loans mostly have short- and intermediate-term maturities.

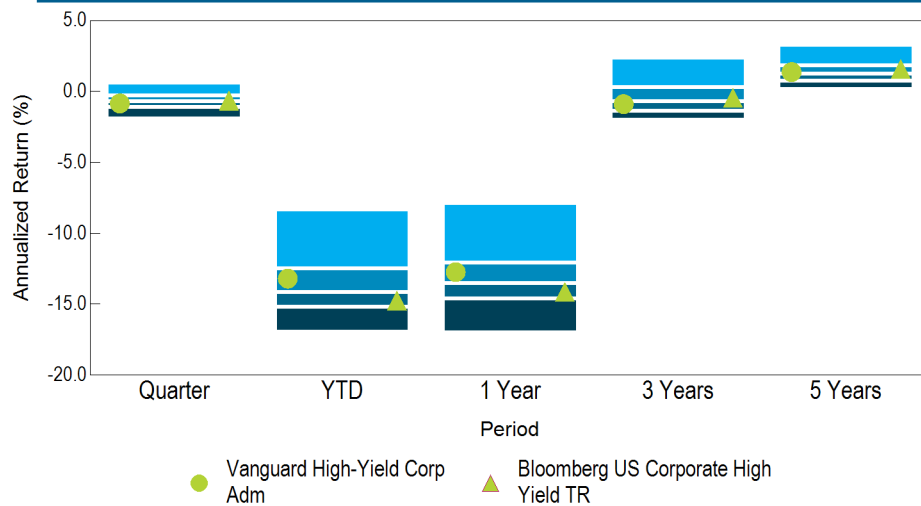
#### Portfolio Fund Information as of June 30, 2022

<b>Ticker</b>	VWEAX
<b>Morningstar Category</b>	High Yield Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	21,134.30
<b>% Assets in Top 10 Holdings</b>	9.24
<b>Total Number of Holdings</b>	636
<b>Manager Name</b>	Michael L. Hong
<b>Manager Tenure</b>	15
<b>Expense Ratio</b>	0.13%
<b>Closed to New Investors</b>	No

#### Return Summary



#### High Yield Bond MStar MF Return Comparison

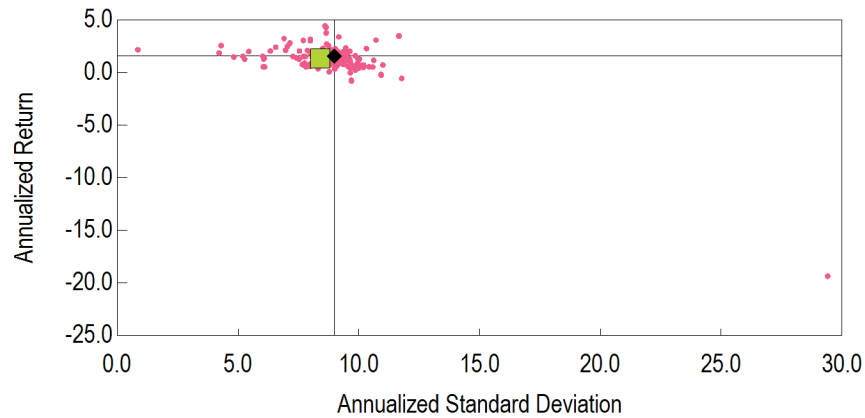


#### High Yield Bond MStar MF Return Comparison



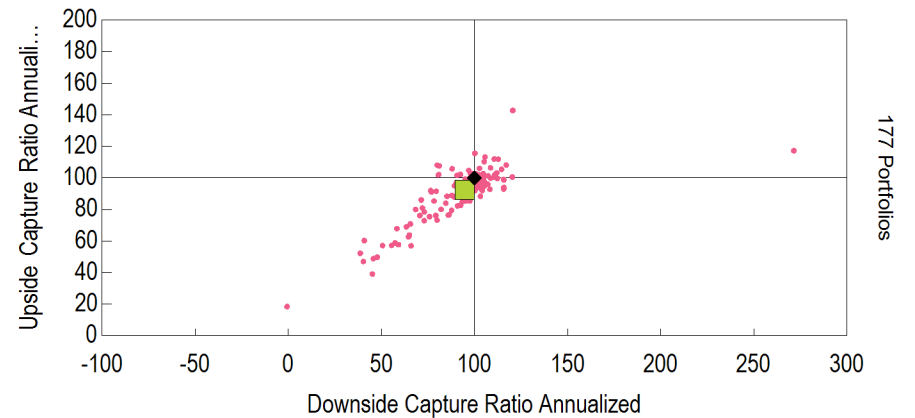
### Vanguard High-Yield Corp Adm | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



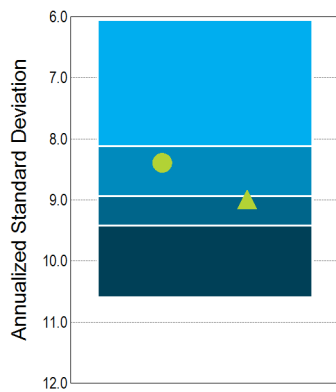
- Vanguard High-Yield Corp Adm
- ◆ Bloomberg US Corporate High Yield TR
- High Yield Bond MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

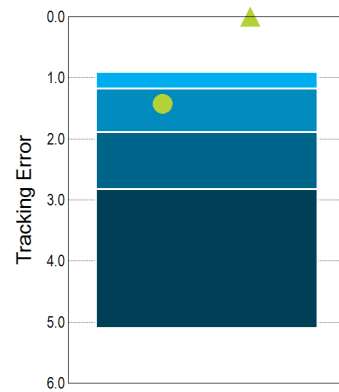


- Vanguard High-Yield Corp Adm
- ◆ Bloomberg US Corporate High Yield TR
- High Yield Bond MStar MF

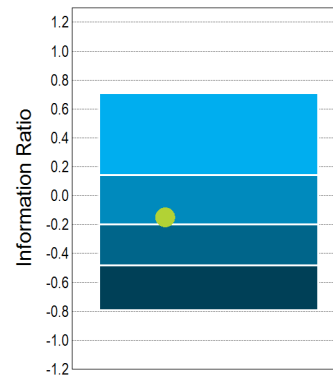
Annualized Standard Deviation



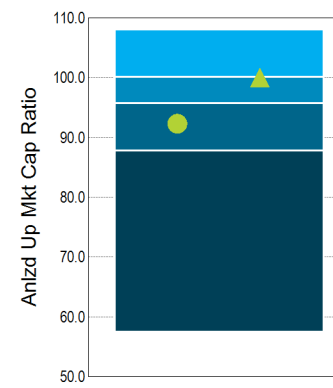
Tracking Error



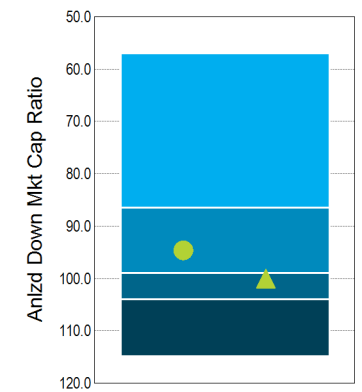
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio

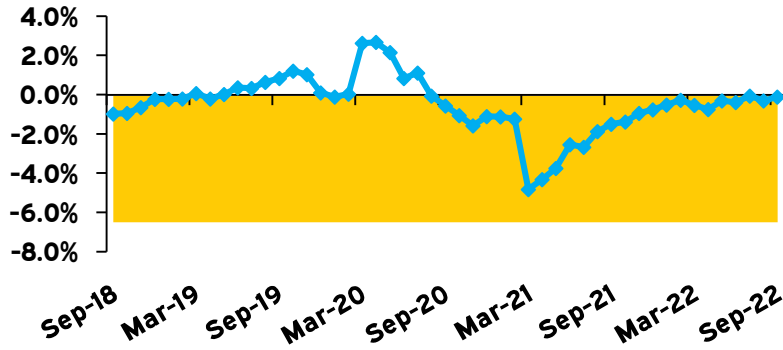


- Vanguard High-Yield Corp Adm
- ▲ Bloomberg US Corporate High Yield TR
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

Fund Characteristics as of June 30, 2022		Top Holdings as of June 30, 2022		Fixed Income Sectors as of June 30, 2022	
Sharpe Ratio (3 Year)	-0.06	T-MOBILE US INC	1.41%	GOVERNMENT	3.14%
Average Duration	4.27	UNITED STATES TREASURY NOTES	1.15%	MUNICIPAL	0.00%
Average Coupon	4.84%	IMOLA MERGER CORP.	0.91%	CORPORATE	95.01%
Average Effective Maturity	6.10	UNITED STATES TREASURY NOTES	0.85%	SECURITIZED	0.00%
R-Squared (3 Year)	0.98	UNITED STATES TREASURY NOTES	0.84%	CASH & EQUIVALENTS	1.85%
Alpha (3 Year)	-0.02%	MOZART DEBT MERGER SUBORDINATED INC.	0.78%	DERIVATIVE	0.00%
Beta (3 Year)	0.88	HERC HOLDINGS INC	0.77%		
		CREDIT SUISSE GROUP AG	0.75%		
		HCA INC.	0.64%		

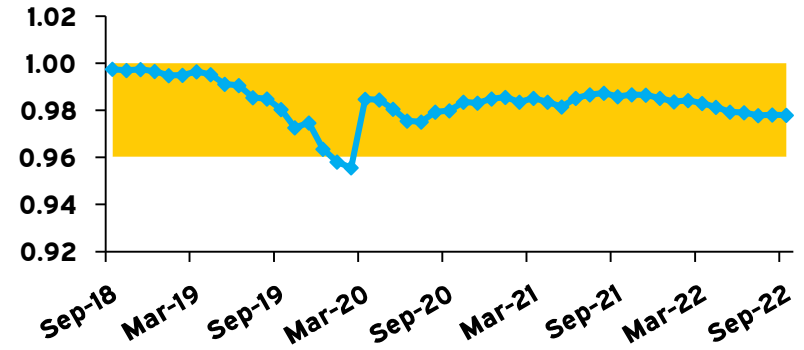
Credit Quality as of September 30, 2022		Maturities as of June 30, 2022		Top Countries as of June 30, 2022	
AAA	3.97%	1 to 3 Years	10.44%	United States	84.58%
AA	1.23%	3 to 5 Years	18.63%	Canada	3.50%
A	0.00%	5 to 7 Years	33.23%	Netherlands	2.67%
BBB	5.16%	7 to 10 Years	27.60%	United Kingdom	1.23%
BB	52.52%	10 to 15 Years	0.92%	France	1.04%
B	30.01%	15 to 20 Years	1.24%	Italy	1.00%
Below B	4.91%	20 to 30 Years	2.01%	Ireland	0.98%
Not Rated	2.20%	Greater than 30 Years	0.27%	Spain	0.86%
				Finland	0.85%
				Israel	0.75%

#### Short Term – Rolling 12-Month Excess Return



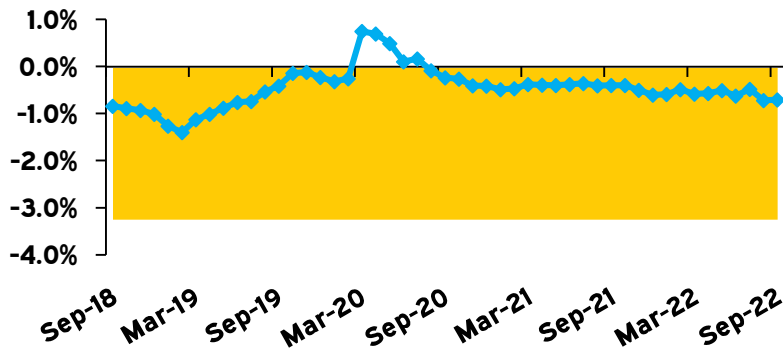
Results fall in the acceptable range.  
 Probationary Threshold -6.50%

#### Long Term – VRR



Results fall in the acceptable range.  
 Probationary Threshold <0.96

#### Medium Term – Rolling 36-Month Excess Return



Results fall in the acceptable range.  
 Probationary Threshold -3.25%

Benchmark: S&P/LSTA Performing Loan TR USD

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TRowe Price Floating Rate I	1.5	-2.7	1.7	2.7	3.7	11/20/2011
S&P/LSTA Performing Loan TR USD	1.4	-2.6	2.4	3.1	4.2	

#### Monitoring Status

Acceptable

#### Description:

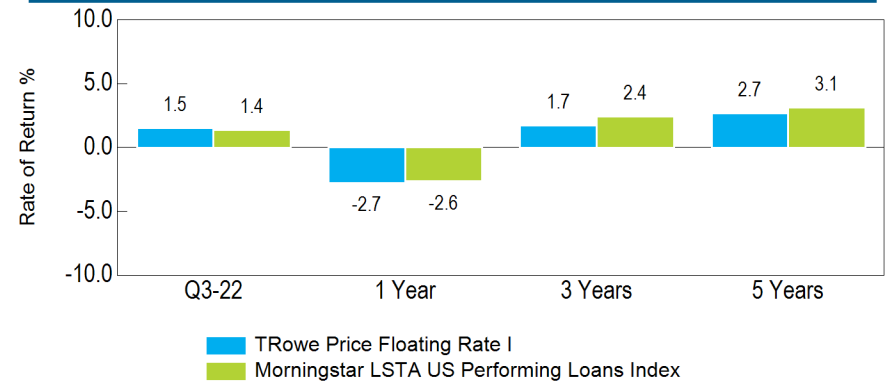
The investment seeks high current income and, secondarily, capital appreciation.

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. The fund may also invest up to 20% of its total assets in non-U.S. dollar-denominated investments.

#### Portfolio Fund Information as of September 30, 2022

<b>Ticker</b>	RPIFX
<b>Morningstar Category</b>	Bank Loan
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	4,624.28
<b>% Assets in Top 10 Holdings</b>	17.43
<b>Total Number of Holdings</b>	374
<b>Manager Name</b>	Paul M. Massaro
<b>Manager Tenure</b>	14
<b>Expense Ratio</b>	0.57%
<b>Closed to New Investors</b>	No

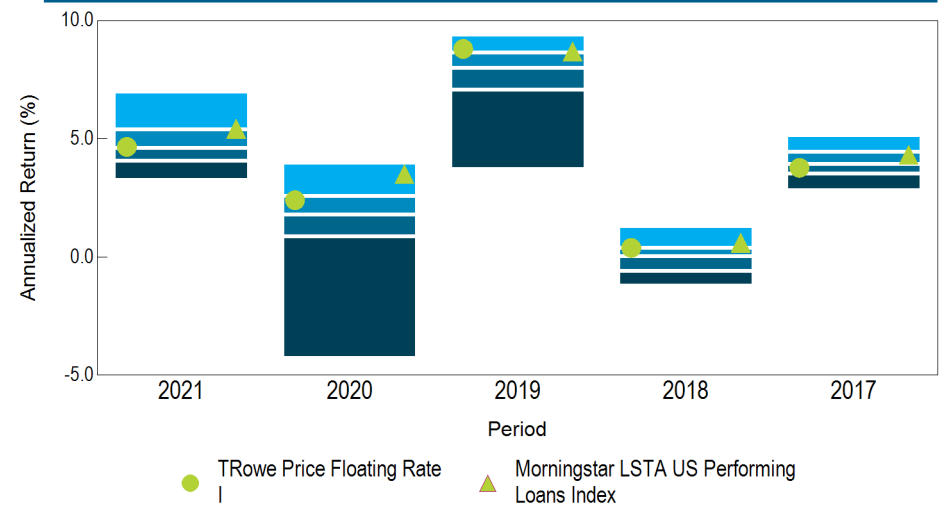
#### Return Summary



#### Bank Loan MStar MF Return Comparison

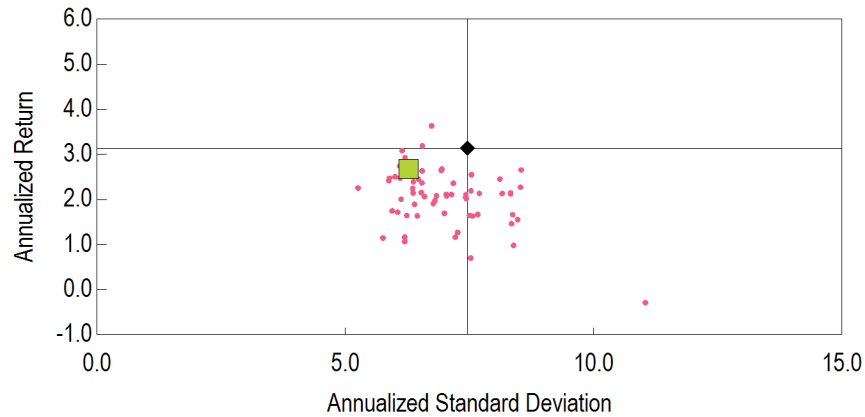


#### Bank Loan MStar MF Return Comparison



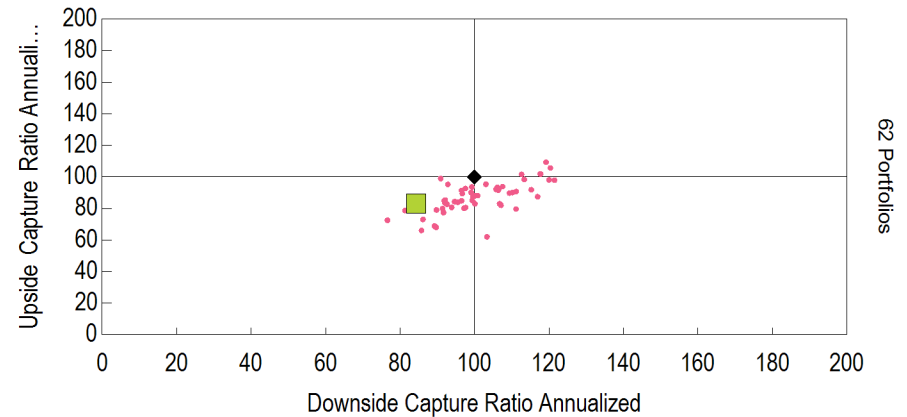
### TRowe Price Floating Rate I | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



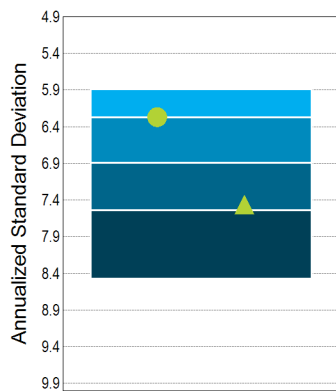
- TRowe Price Floating Rate I
- ◆ Morningstar LSTA US Performing Loans Index
- Bank Loan MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

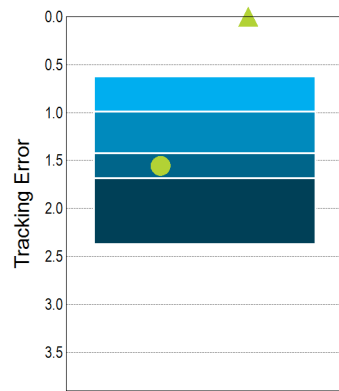


- TRowe Price Floating Rate I
- ◆ Morningstar LSTA US Performing Loans Index
- Bank Loan MStar MF

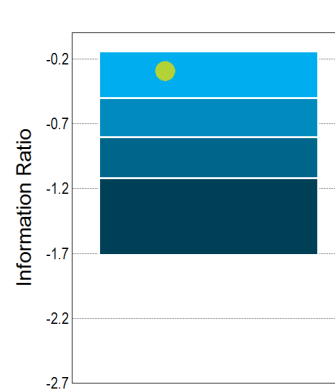
Annualized Standard Deviation



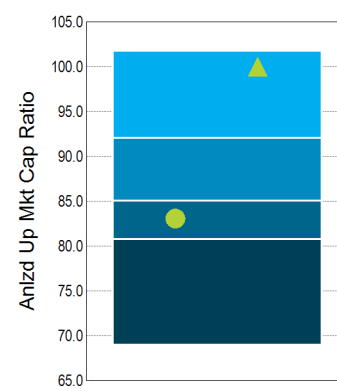
Tracking Error



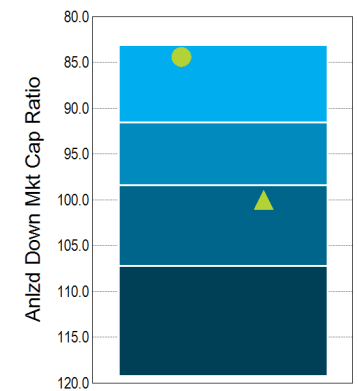
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- TRowe Price Floating Rate I
- ▲ Morningstar LSTA US Performing Loans Index
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

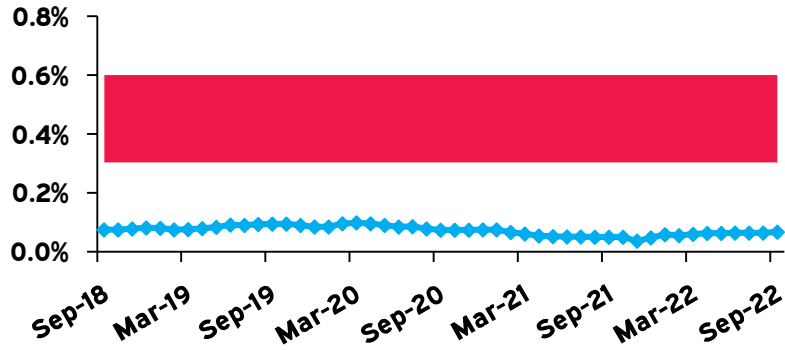


Fund Characteristics as of September 30, 2022		Top Holdings as of September 30, 2022		Fixed Income Sectors as of September 30, 2022	
Sharpe Ratio (3 Year)	0.16	T. ROWE PRICE GOV. RESERVE	3.73%	GOVERNMENT	0.00%
Average Duration	0.51	HUB INTERNATIONAL	2.43%	MUNICIPAL	0.00%
Average Coupon	6.93%	UKG	2.17%	CORPORATE	96.18%
Average Effective Maturity	4.54	GAINWELL ACQUISITION	1.65%	SECURITIZED	0.00%
R-Squared (3 Year)	0.98	UFC HOLDINGS	1.59%	CASH & EQUIVALENTS	3.82%
Alpha (3 Year)	-0.03%	EPICOR SOFTWARE	1.49%	DERIVATIVE	0.00%
Beta (3 Year)	0.83	USI INC/NY	1.14%		
		CENTRAL PARENT	1.12%		
		MILEAGE PLUS HOLDINGS	1.06%		
		PETVET CARE CENTERS	1.05%		

Credit Quality as of September 30, 2022		Maturities as of September 30, 2022		Top Countries as of September 30, 2022	
AAA	8.10%	1 to 3 Years	20.99%	United States	94.34%
AA	0.00%	3 to 5 Years	32.42%	United Kingdom	1.44%
A	0.14%	5 to 7 Years	44.19%	Canada	1.22%
BBB	1.84%	7 to 10 Years	2.40%	France	0.97%
BB	10.63%	10 to 15 Years	0.00%	Luxembourg	0.94%
B	64.82%	15 to 20 Years	0.00%	Germany	0.32%
Below B	12.37%	20 to 30 Years	0.00%	Sweden	0.26%
Not Rated	2.10%	Greater than 30 Years	0.00%	Denmark	0.23%
				Ireland	0.12%
				Finland	0.08%

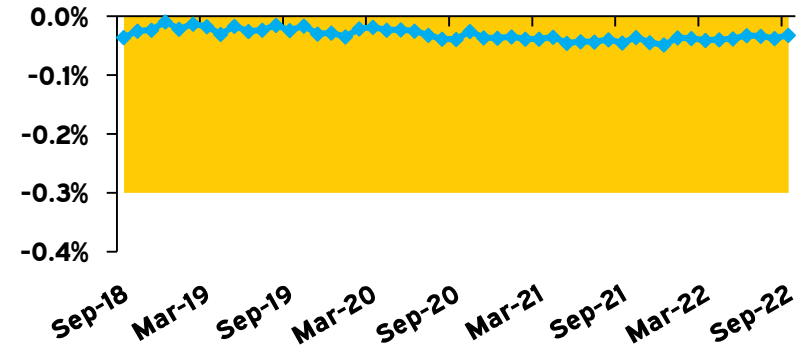
## Sensitivity Analyses: Passive Funds

#### Short Term – Rolling 12-Month Tracking Error



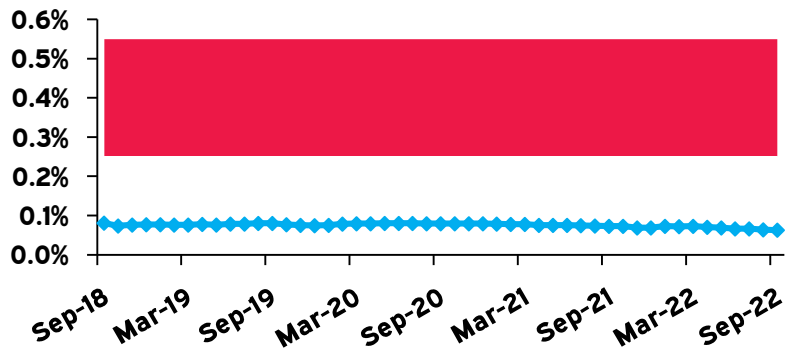
Results fall in the positive range.  
Probationary Threshold 0.30%

#### Long Term – Rolling 60-Month Excess Return



Results fall in the acceptable range.  
Probationary Threshold -0.30%

#### Medium Term – Rolling 36-Month Tracking Error



Results fall in the positive range.  
Probationary Threshold 0.25%

Benchmark: Russell 3000

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF Equity Index I	-4.4	-17.6	7.7	8.6	11.9	11/20/2011
Russell 3000	-4.5	-17.6	7.7	8.6	12.0	

#### Monitoring Status

Acceptable

### TIAA-CREF Equity Index I | As of September 30, 2022

#### Description:

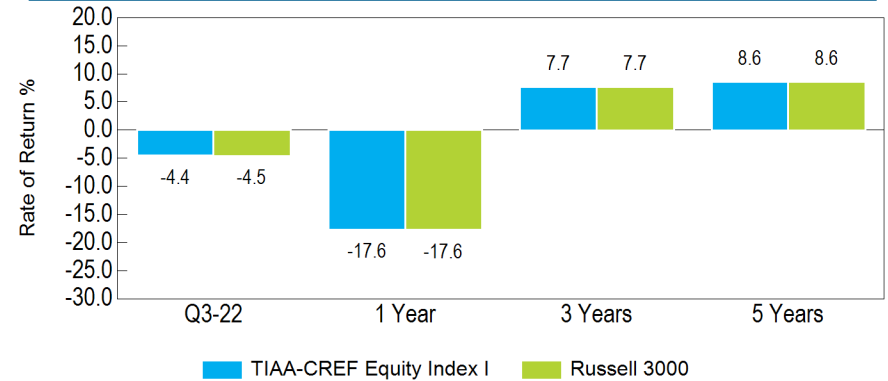
The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of equity securities selected to track the overall U.S. equity markets based on a market index.

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.

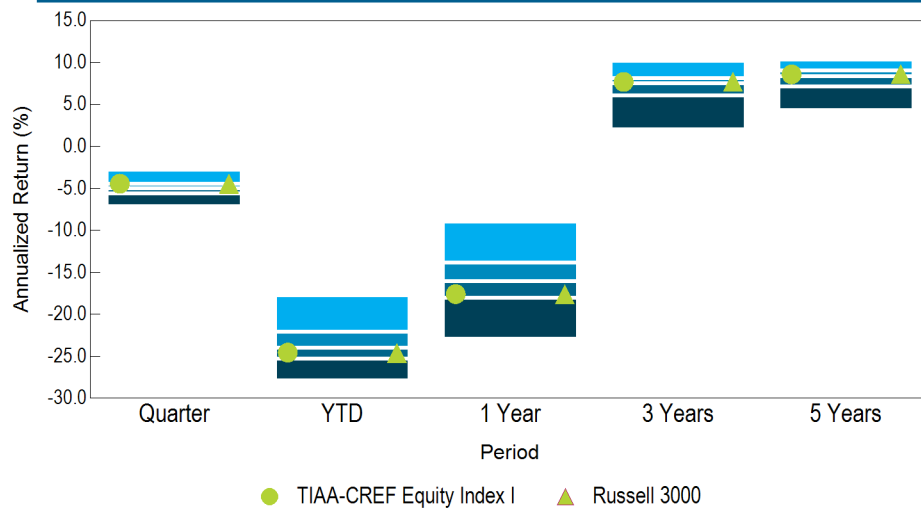
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TIEIX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	107,318.95
<b>Net Assets (\$mm)</b>	11,853.21
<b>% Assets in Top 10 Holdings</b>	23.31
<b>Total Number of Holdings</b>	2,860
<b>Manager Name</b>	Philip James (Jim) Campagna
<b>Manager Tenure</b>	17
<b>Expense Ratio</b>	0.05%
<b>Closed to New Investors</b>	No

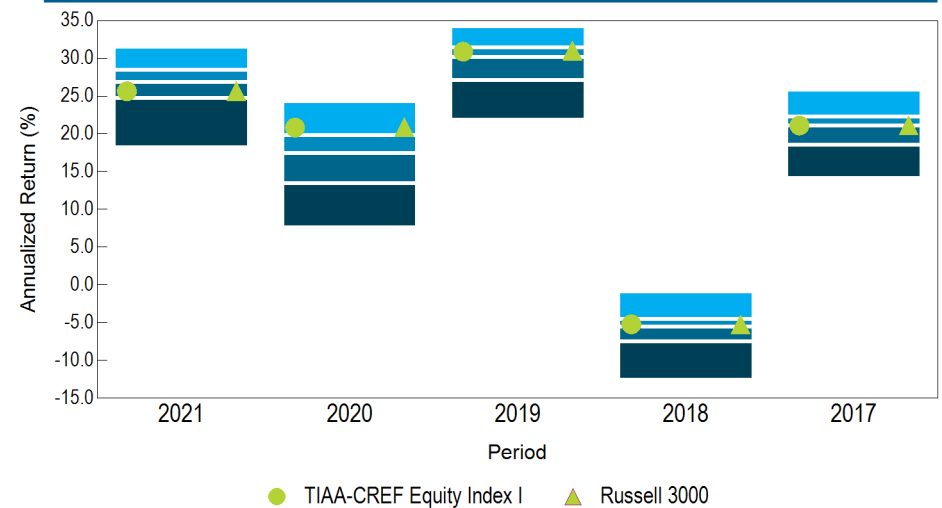
#### Return Summary



#### Large Blend MStar MF Return Comparison

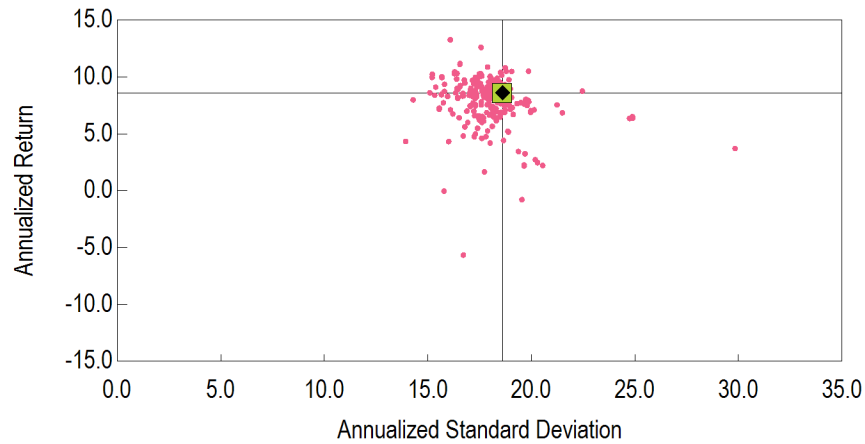


#### Large Blend MStar MF Return Comparison



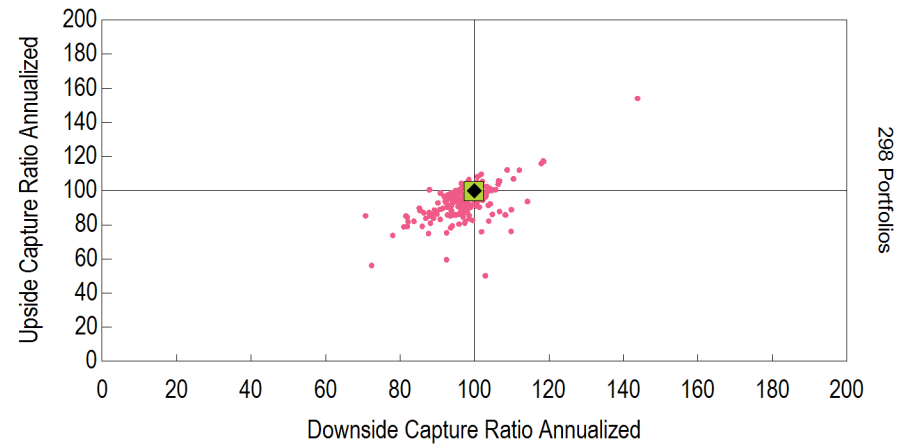
### TIAA-CREF Equity Index I | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



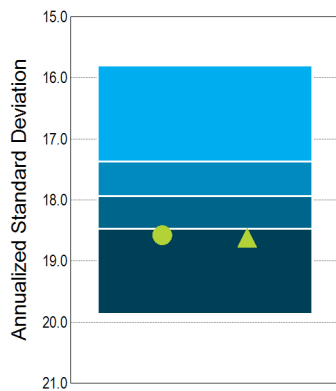
■ TIAA-CREF Equity Index I   ◆ Russell 3000   ● Large Blend MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



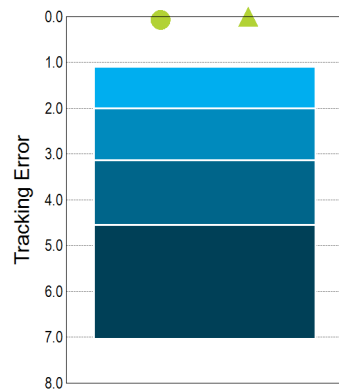
■ TIAA-CREF Equity Index I   ◆ Russell 3000   ● Large Blend MStar MF

Annualized Standard Deviation



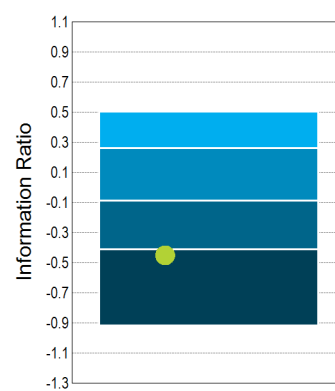
● TIAA-CREF Equity Index I

Tracking Error



▲ Russell 3000

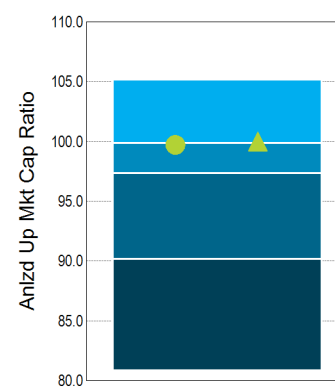
Information Ratio



■ 5th to 25th Percentile

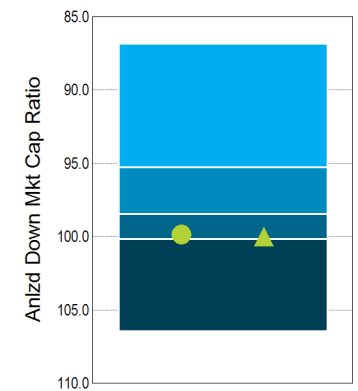
■ 25th to Median

Anlzd Up Mkt Cap Ratio



■ Median to 75th Percentile

Anlzd Down Mkt Cap Ratio



■ 75th to 95th Percentile

#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.57
Average Market Cap (\$mm)	107,318.95
Price/Earnings	16.44
Price/Book	3.01
Price/Sales	1.86
Price/Cash Flow	9.75
Dividend Yield	1.73
Number of Equity Holdings	2,852
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.00%

#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	2.53%
COMMUNICATION SERVICES	7.72%
CONSUMER CYCLICAL	11.21%
CONSUMER DEFENSIVE	6.56%
ENERGY	4.79%
FINANCIAL SERVICES	13.26%
HEALTHCARE	14.01%
INDUSTRIALS	9.18%
REAL ESTATE	3.73%
TECHNOLOGY	23.98%
UTILITIES	3.04%

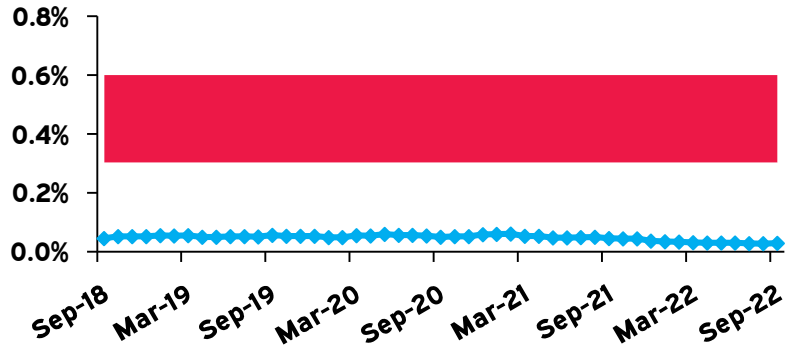
#### Top Holdings as of August 31, 2022

APPLE INC	6.05%
MICROSOFT CORP	4.92%
AMAZON.COM INC	2.84%
TESLA INC	1.76%
ALPHABET INC CLASS A	1.64%
ALPHABET INC CLASS C	1.51%
BERKSHIRE HATHAWAY INC CLASS B	1.27%
UNITEDHEALTH GROUP INC	1.22%
JOHNSON & JOHNSON	1.07%
EXXON MOBIL CORP	1.02%

#### Top Countries as of August 31, 2022

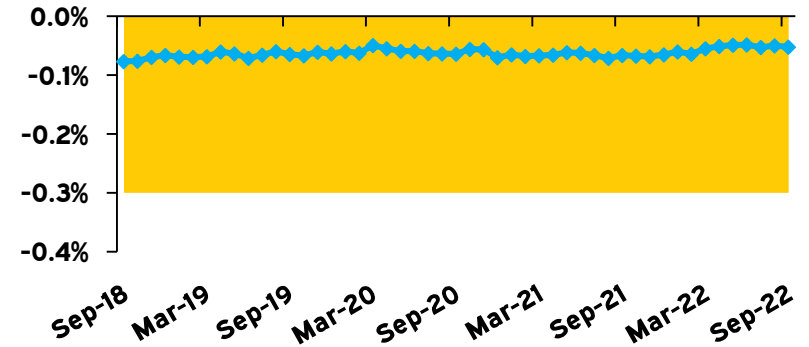
United States	99.11%
United Kingdom	0.45%
Switzerland	0.28%
Puerto Rico	0.03%
Brazil	0.02%
Canada	0.02%
India	0.02%
China	0.01%
Israel	0.01%
Marshall Islands	0.01%

#### Short Term – Rolling 12-Month Tracking Error



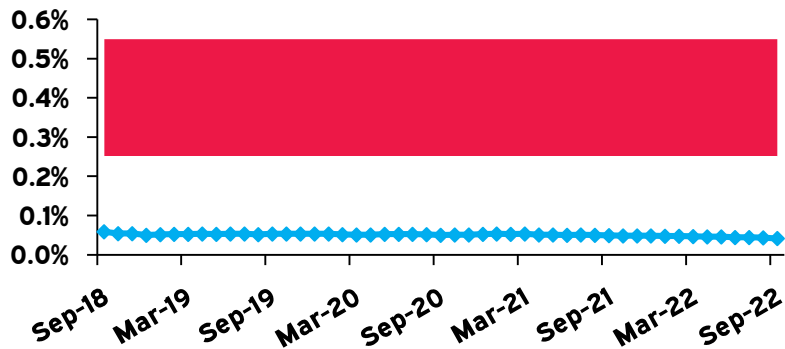
Results fall in the positive range.  
Probationary Threshold 0.30%

#### Long Term – Rolling 60-Month Excess Return



Results fall in the acceptable range.  
Probationary Threshold -0.30%

#### Medium Term – Rolling 36-Month Tracking Error



Results fall in the positive range.  
Probationary Threshold 0.25%

Benchmark: S&P 500

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF S&P 500 Index I	-4.9	-15.5	8.1	9.2	12.2	11/20/2011
S&P 500	-4.9	-15.5	8.2	9.2	12.3	

#### Monitoring Status

Acceptable

#### Description:

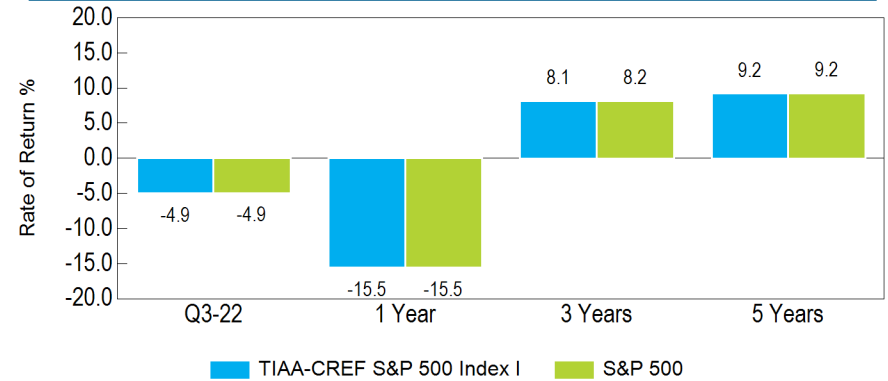
The investment seeks a favorable long-term total return, mainly through capital appreciation, by investing primarily in a portfolio of equity securities of large domestic companies selected to track U.S. equity markets based on a market index.

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.

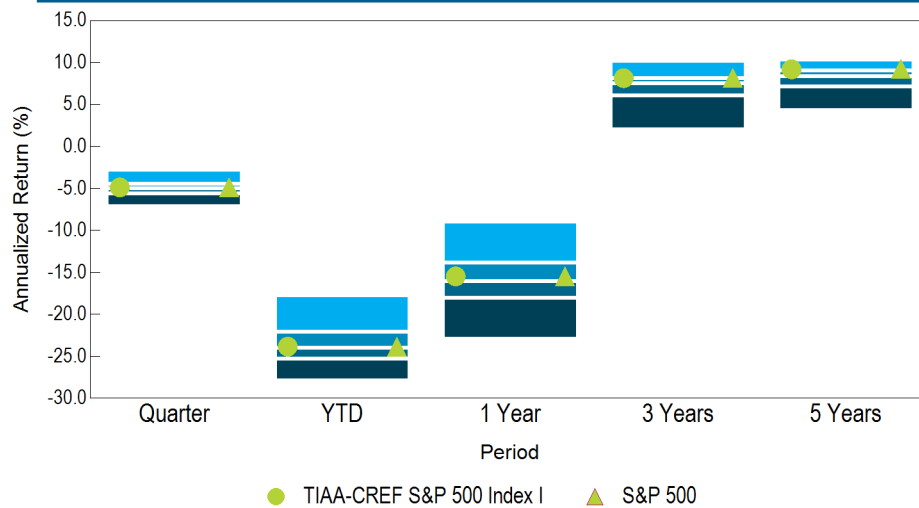
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TISPX
<b>Morningstar Category</b>	Large Blend
<b>Average Market Cap (\$mm)</b>	181,894.12
<b>Net Assets (\$mm)</b>	4,958.69
<b>% Assets in Top 10 Holdings</b>	27.17
<b>Total Number of Holdings</b>	511
<b>Manager Name</b>	Philip James (Jim) Campagna
<b>Manager Tenure</b>	17
<b>Expense Ratio</b>	0.05%
<b>Closed to New Investors</b>	No

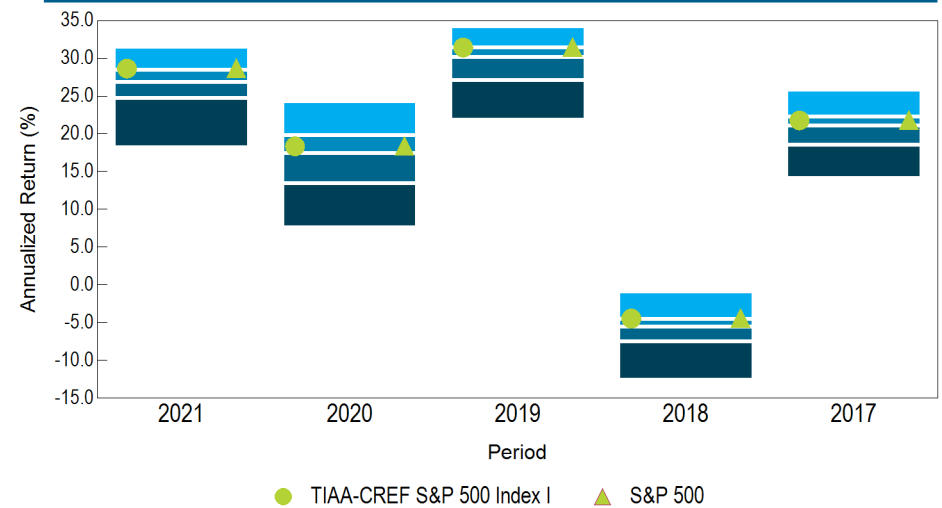
#### Return Summary



#### Large Blend MStar MF Return Comparison

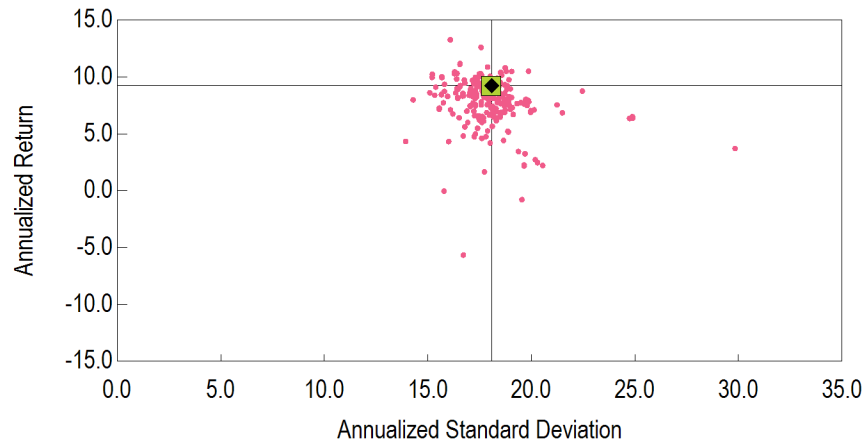


#### Large Blend MStar MF Return Comparison



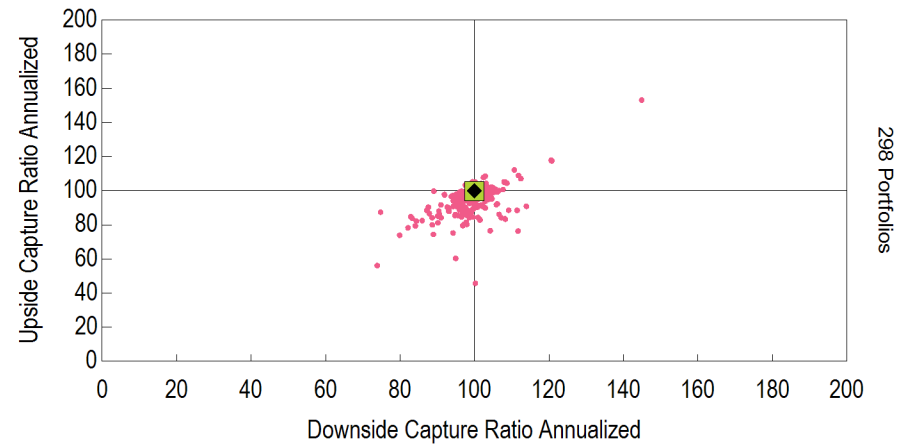


Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



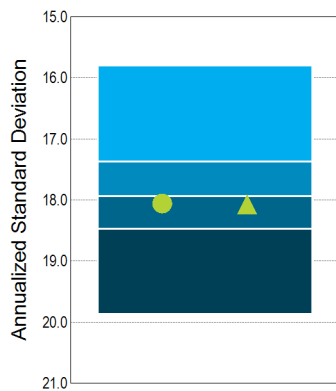
■ TIAA-CREF S&P 500 Index I    ◆ S&P 500    ● Large Blend MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

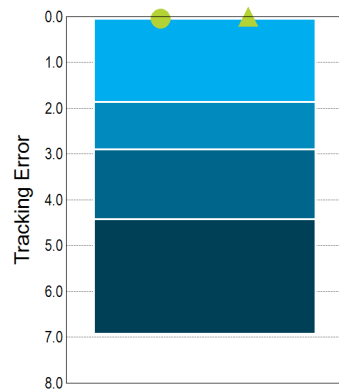


■ TIAA-CREF S&P 500 Index I    ◆ S&P 500    ● Large Blend MStar MF

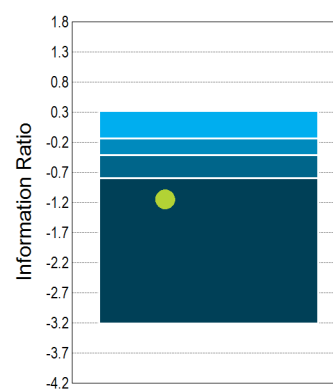
Annualized Standard Deviation



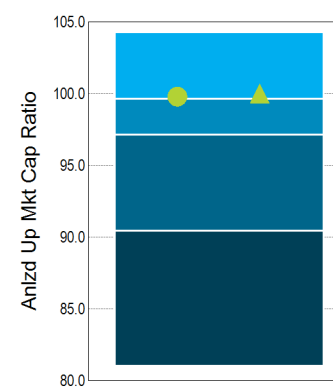
Tracking Error



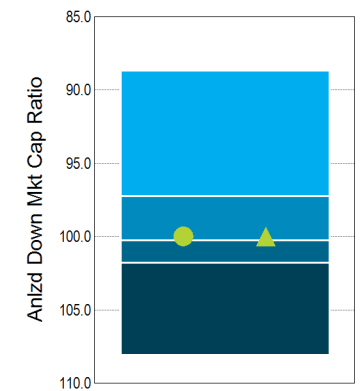
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



● TIAA-CREF S&P 500 Index I    ▲ S&P 500    ■ 5th to 25th Percentile    ■ 25th to Median    ■ Median to 75th Percentile    ■ 75th to 95th Percentile

#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.61
Average Market Cap (\$mm)	181,894.12
Price/Earnings	17.35
Price/Book	3.27
Price/Sales	2.07
Price/Cash Flow	10.74
Dividend Yield	1.79
Number of Equity Holdings	503
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.00%

#### Top Holdings as of August 31, 2022

APPLE INC	7.10%
MICROSOFT CORP	5.74%
AMAZON.COM INC	3.26%
TESLA INC	2.04%
ALPHABET INC CLASS A	1.91%
ALPHABET INC CLASS C	1.77%
BERKSHIRE HATHAWAY INC CLASS B	1.49%
UNITEDHEALTH GROUP INC	1.43%
JOHNSON & JOHNSON	1.25%
EXXON MOBIL CORP	1.18%

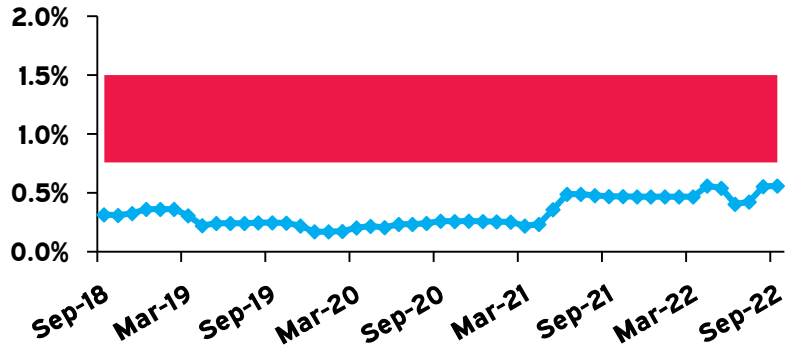
#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	2.24%
COMMUNICATION SERVICES	8.42%
CONSUMER CYCLICAL	11.21%
CONSUMER DEFENSIVE	7.19%
ENERGY	4.67%
FINANCIAL SERVICES	13.00%
HEALTHCARE	14.15%
INDUSTRIALS	8.46%
REAL ESTATE	2.85%
TECHNOLOGY	24.67%
UTILITIES	3.13%

#### Top Countries as of August 31, 2022

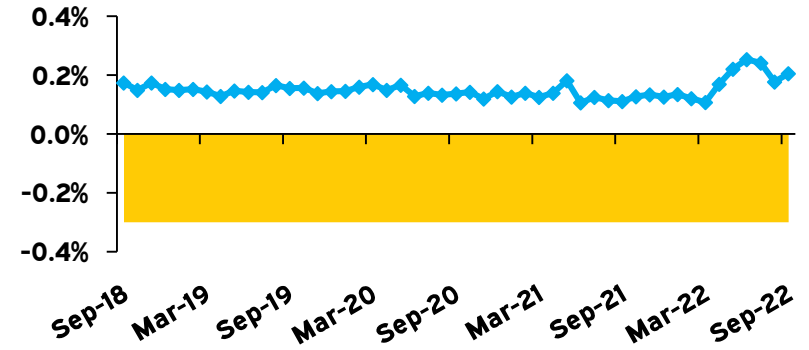
United States	98.99%
United Kingdom	0.50%
Switzerland	0.34%
Netherlands	0.13%
Singapore	0.04%

#### Short Term – Rolling 12-Month Tracking Error



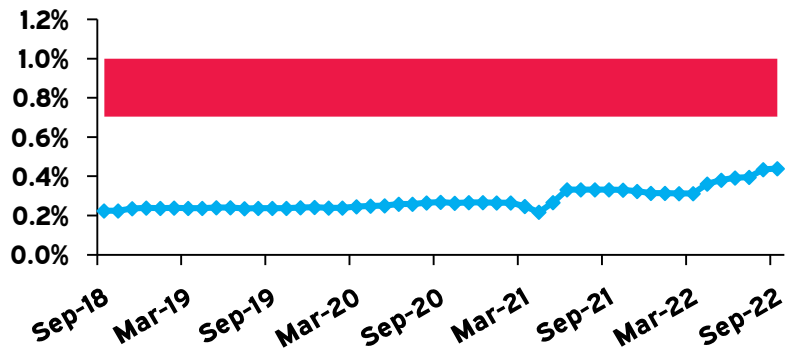
Results fall in the positive range.  
Probationary Threshold 0.75%

#### Long Term – Rolling 60-Month Excess Return



Results fall in the positive range.  
Probationary Threshold -0.30%

#### Medium Term – Rolling 36-Month Tracking Error



Results fall in the positive range.  
Probationary Threshold 0.70%

Benchmark: MSCI EAFE

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF International Equity Index	-9.6	-24.7	-1.6	-0.6	3.8	11/20/2011
MSCI EAFE	-9.4	-25.1	-1.8	-0.8	3.7	

#### Monitoring Status

Positive

### TIAA-CREF International Equity Index | As of September 30, 2022

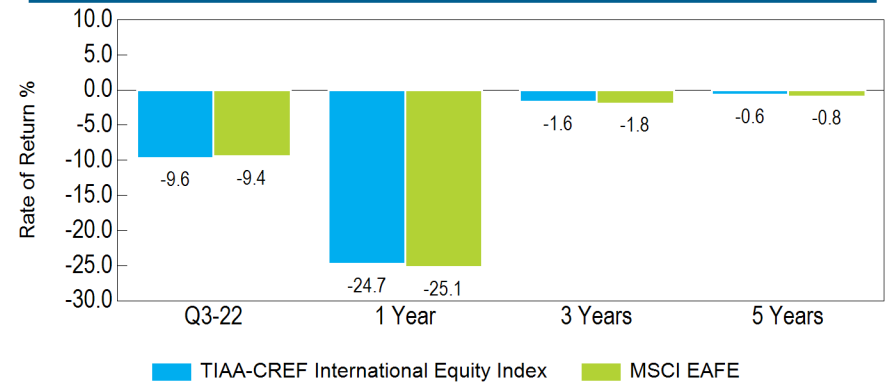
#### Description:

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.

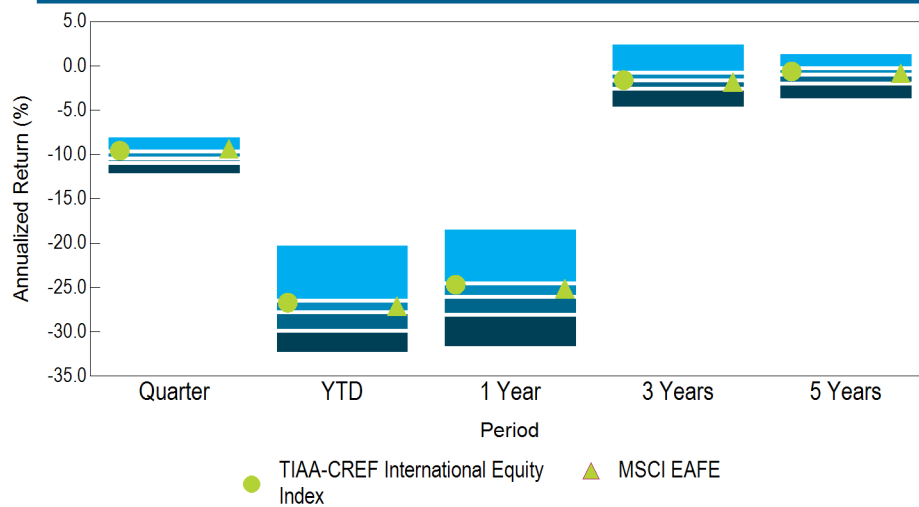
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TCIEX
<b>Morningstar Category</b>	Foreign Large Blend
<b>Average Market Cap (\$mm)</b>	40,201.11
<b>Net Assets (\$mm)</b>	8,569.16
<b>% Assets in Top 10 Holdings</b>	14.80
<b>Total Number of Holdings</b>	822
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	17
<b>Expense Ratio</b>	0.05%
<b>Closed to New Investors</b>	No

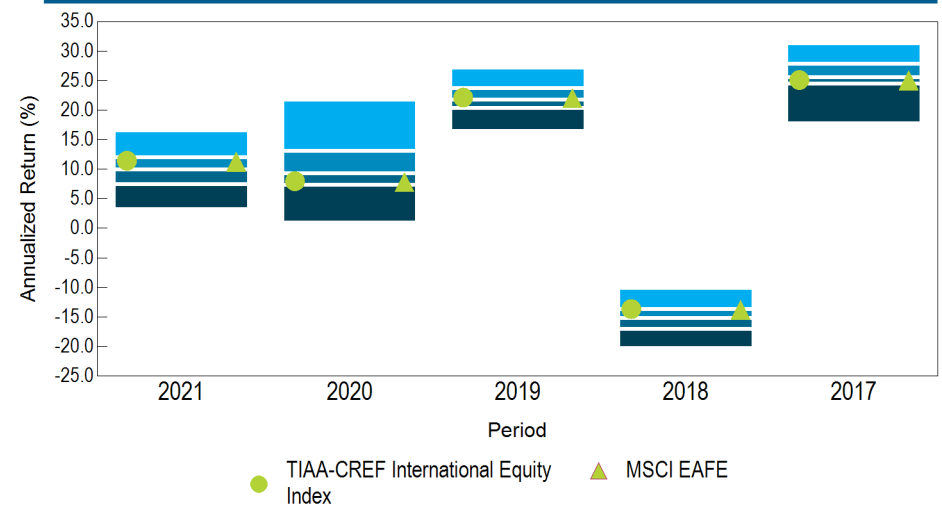
#### Return Summary



#### Foreign Large Blend MStar MF Return Comparison

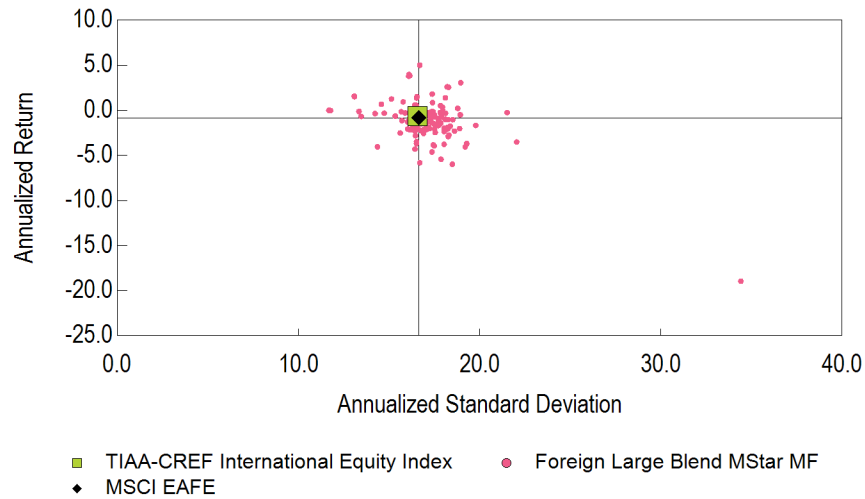


#### Foreign Large Blend MStar MF Return Comparison

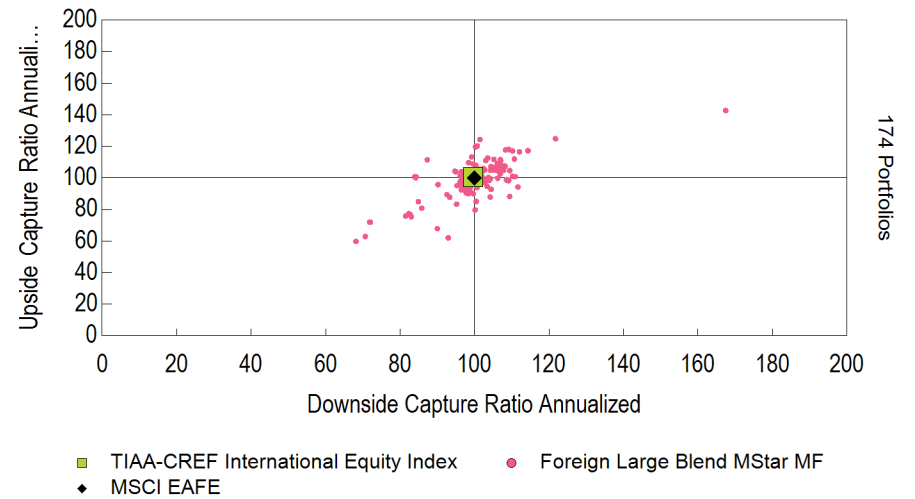


### TIAA-CREF International Equity Index | As of September 30, 2022

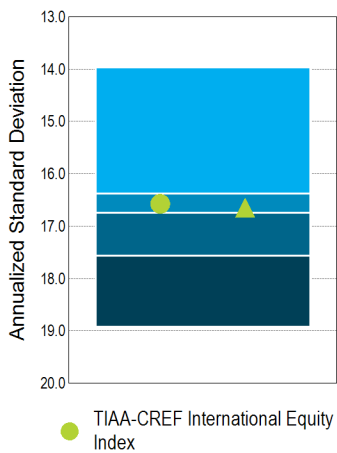
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



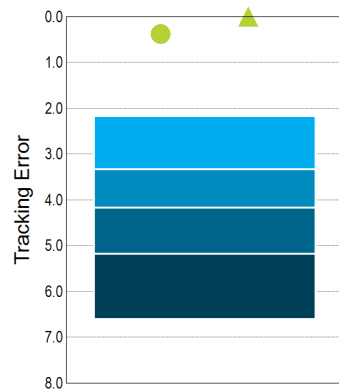
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



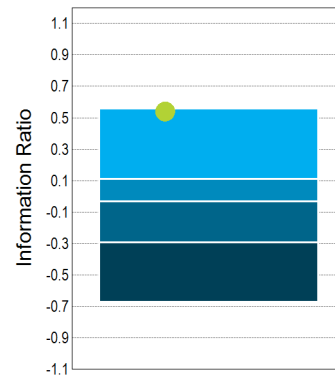
Annualized Standard Deviation



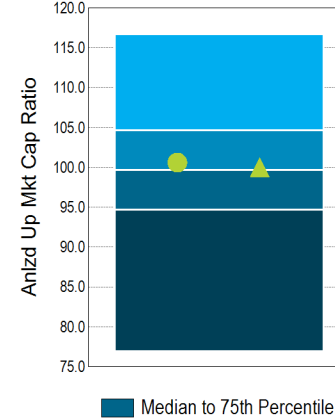
Tracking Error



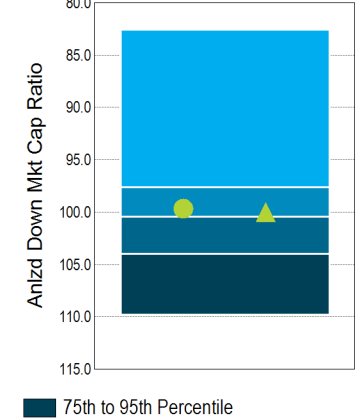
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### TIAA-CREF International Equity Index | As of September 30, 2022

#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.11
Average Market Cap (\$mm)	40,201.11
Price/Earnings	11.89
Price/Book	1.46
Price/Sales	1.16
Price/Cash Flow	6.34
Dividend Yield	4.25
Number of Equity Holdings	801
R-Squared (3 Year)	1.00
Alpha (3 Year)	0.01%

#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	7.46%
COMMUNICATION SERVICES	5.16%
CONSUMER CYCLICAL	10.68%
CONSUMER DEFENSIVE	10.93%
ENERGY	4.98%
FINANCIAL SERVICES	17.52%
HEALTHCARE	13.59%
INDUSTRIALS	14.94%
REAL ESTATE	3.08%
TECHNOLOGY	8.39%
UTILITIES	3.27%

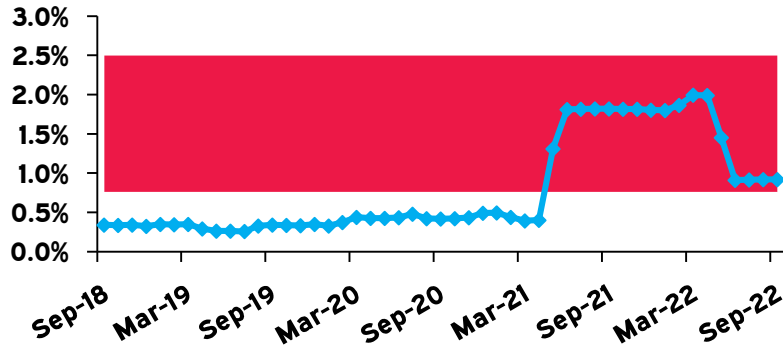
#### Top Holdings as of August 31, 2022

NESTLE SA	2.36%
MSCI EAFE SEP22 IFUS 20220916	1.67%
ROCHE HOLDING AG	1.62%
ASML HOLDING NV	1.42%
SHELL PLC	1.41%
ASTRAZENECA PLC	1.38%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.28%
NOVO NORDISK A/S CLASS B	1.27%
NOVARTIS AG	1.25%
TOYOTA MOTOR CORP	1.14%

#### Top Countries as of August 31, 2022

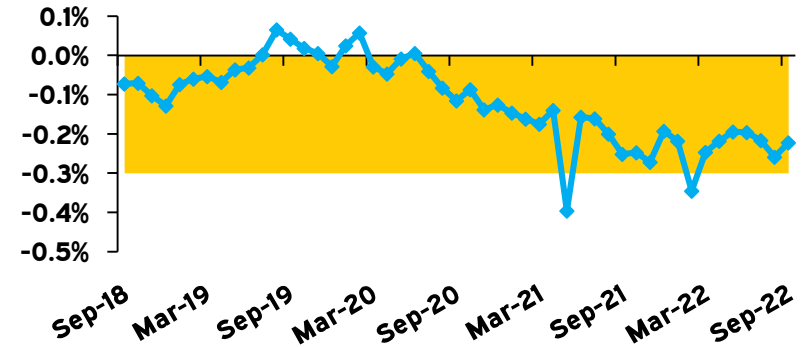
Japan	22.94%
United Kingdom	14.86%
Switzerland	10.86%
France	10.49%
Australia	8.13%
Germany	7.45%
Netherlands	4.67%
Sweden	3.39%
Hong Kong	2.78%
Denmark	2.73%

#### Short Term – Rolling 12-Month Tracking Error



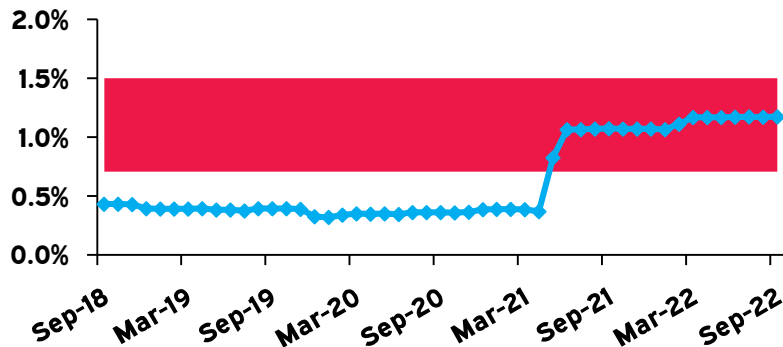
Results fall in the caution range.  
Probationary Threshold 0.75%

#### Long Term – Rolling 60-Month Excess Return



Results fall in the acceptable range.  
Probationary Threshold -0.30%

#### Medium Term – Rolling 36-Month Tracking Error



Results fall in the caution range.  
Probationary Threshold 0.70%

Benchmark: MSCI Emerging Markets

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF Emerging Markets Equity Index	-11.8	-28.1	-2.4	-2.0	-0.1	1/31/2011
MSCI Emerging Markets	-11.6	-28.1	-2.1	-1.8	0.4	

#### Monitoring Status

Caution

### TIAA-CREF Emerging Markets Equity Index | As of September 30, 2022

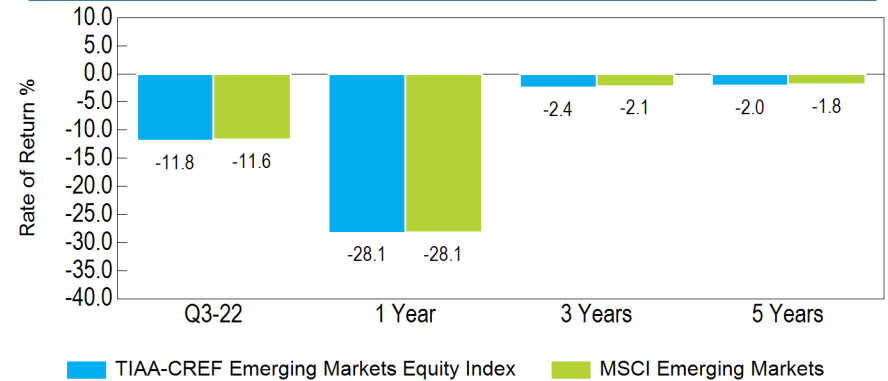
#### Description:

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.

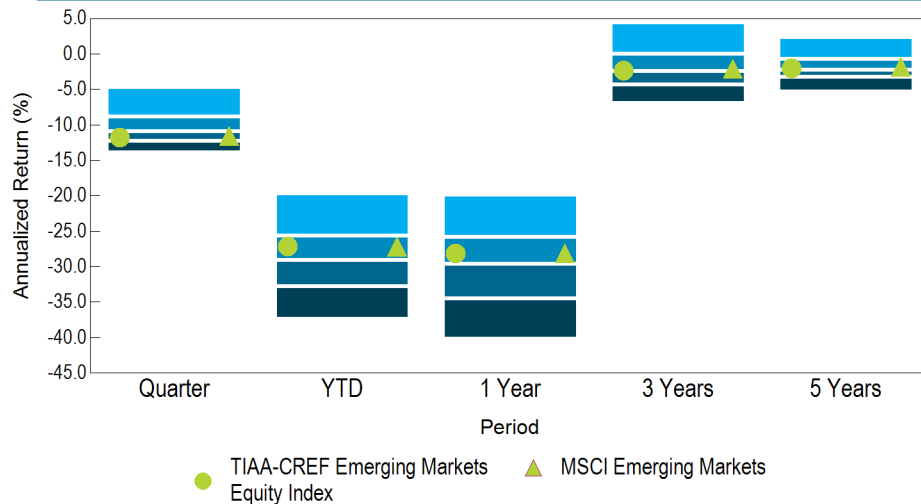
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TEQLX
<b>Morningstar Category</b>	Diversified Emerging Mkts
<b>Average Market Cap (\$mm)</b>	35,455.79
<b>Net Assets (\$mm)</b>	1,150.52
<b>% Assets in Top 10 Holdings</b>	22.88
<b>Total Number of Holdings</b>	1,399
<b>Manager Name</b>	Philip James(Jim) Campagna
<b>Manager Tenure</b>	12
<b>Expense Ratio</b>	0.18%
<b>Closed to New Investors</b>	No

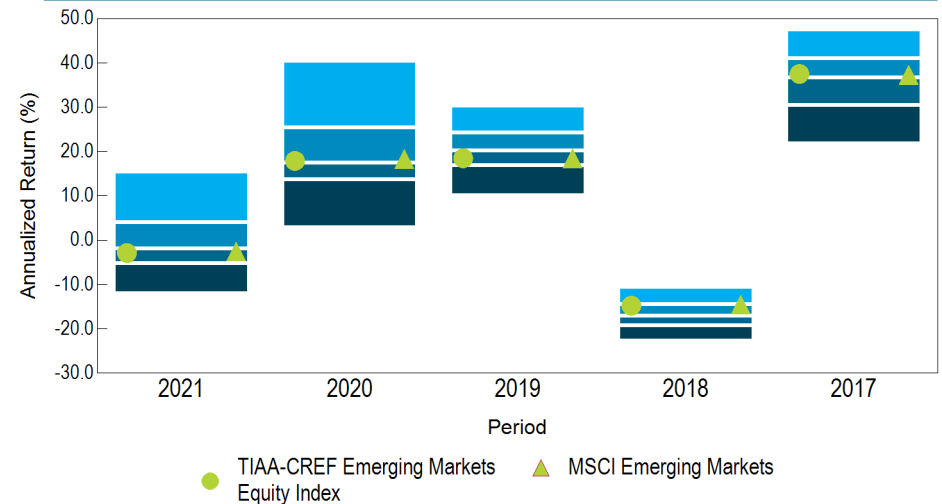
#### Return Summary



#### Diversified Emerging Mkts MStar MF Return Comparison



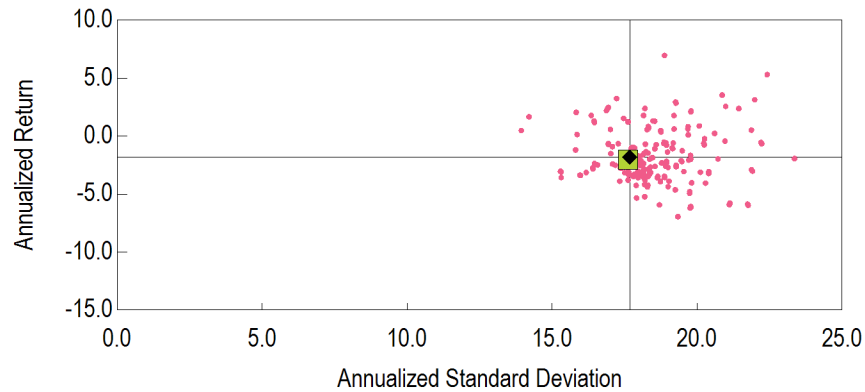
#### Diversified Emerging Mkts MStar MF Return Comparison



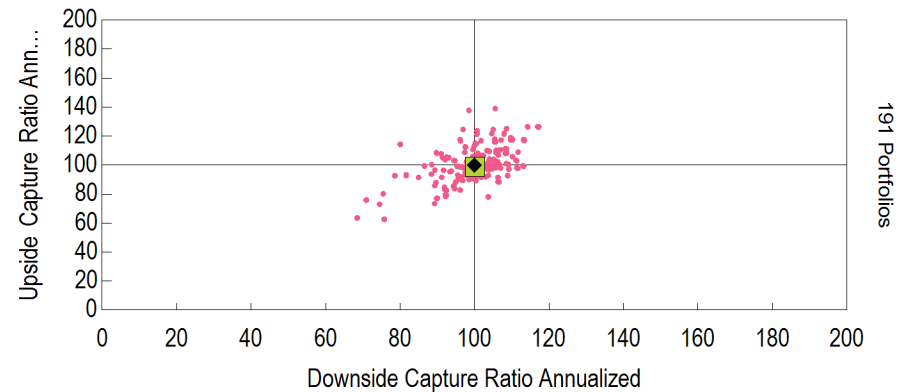


### TIAA-CREF Emerging Markets Equity Index | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



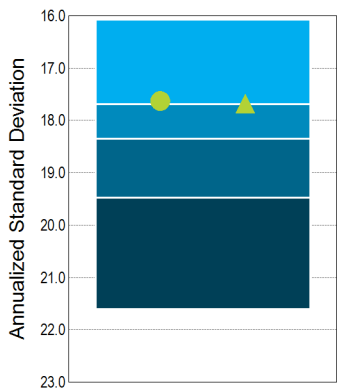
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



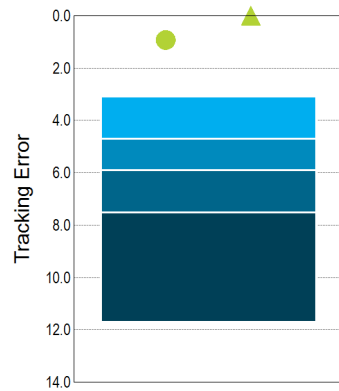
- TIAA-CREF Emerging Markets Equity Index
- ◆ MSCI Emerging Markets
- Diversified Emerging Mkts MStar MF

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

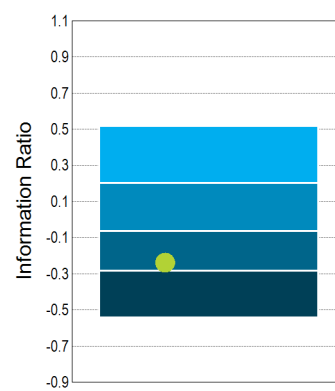
Annualized Standard Deviation



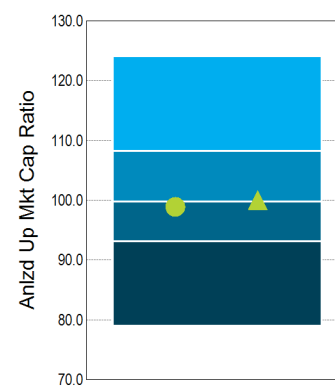
Tracking Error



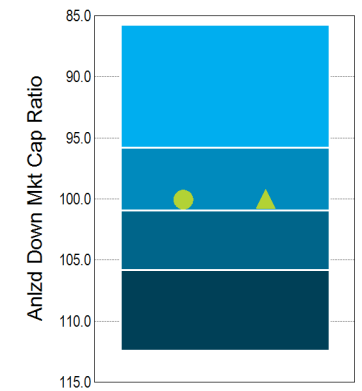
Information Ratio



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 September 30, 2022

#### Fund Characteristics as of August 31, 2022

Sharpe Ratio (3 Year)	0.11
Average Market Cap (\$mm)	35,455.79
Price/Earnings	10.61
Price/Book	1.46
Price/Sales	1.17
Price/Cash Flow	5.15
Dividend Yield	3.72
Number of Equity Holdings	1,381
R-Squared (3 Year)	1.00
Alpha (3 Year)	-0.03%

#### Sector Allocation as of August 31, 2022

BASIC MATERIALS	8.53%
COMMUNICATION SERVICES	10.42%
CONSUMER CYCLICAL	13.77%
CONSUMER DEFENSIVE	6.01%
ENERGY	5.20%
FINANCIAL SERVICES	21.73%
HEALTHCARE	4.14%
INDUSTRIALS	5.79%
REAL ESTATE	1.98%
TECHNOLOGY	19.29%
UTILITIES	3.13%

#### Top Holdings as of August 31, 2022

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.97%
TENCENT HOLDINGS LTD	3.82%
SAMSUNG ELECTRONICS CO LTD	3.14%
ALIBABA GROUP HOLDING LTD ORDINARY SHARES	2.68%
MEITUAN CLASS B	1.57%
RELIANCE INDUSTRIES LTD	1.48%
MSCI EMGMKT SEP22 IFUS 20220916	1.40%
JD.COM INC ORDINARY SHARES - CLASS A	1.01%
INFOSYS LTD	0.92%
CHINA CONSTRUCTION BANK CORP CLASS H	0.89%

#### Top Countries as of August 31, 2022

China	31.73%
Taiwan	14.44%
India	14.30%
South Korea	11.52%
Brazil	5.27%
Saudi Arabia	4.61%
South Africa	3.29%
Thailand	2.01%
Mexico	1.99%
Indonesia	1.98%

### Nuveen ESG Emerging Markets Equity ETF | As of September 30, 2022

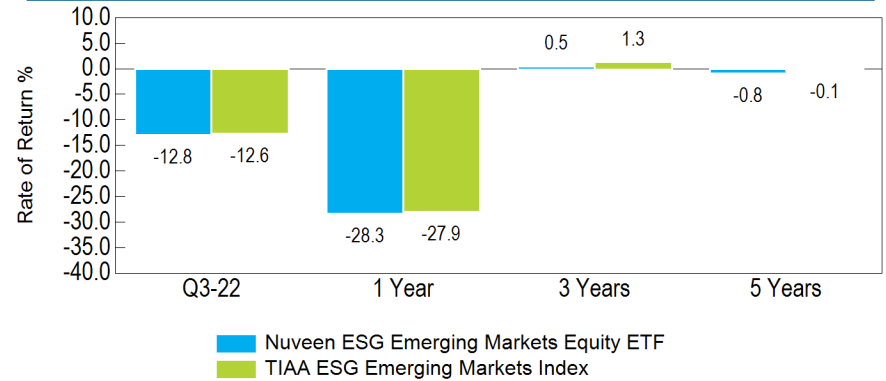
#### Description:

The investment seeks to track the investment results, before fees and expenses, of the TIAA ESG Emerging Markets Equity Index (the "index"). In seeking to track the investment results of the index, the advisor attempts to replicate the index by investing all, or substantially all, of its assets in the securities represented in the index in approximately the same proportions as the index. The index identifies equity securities from the base index that satisfy certain ESG criteria, based on ESG performance data collected by MSCI ESG Research, Inc.

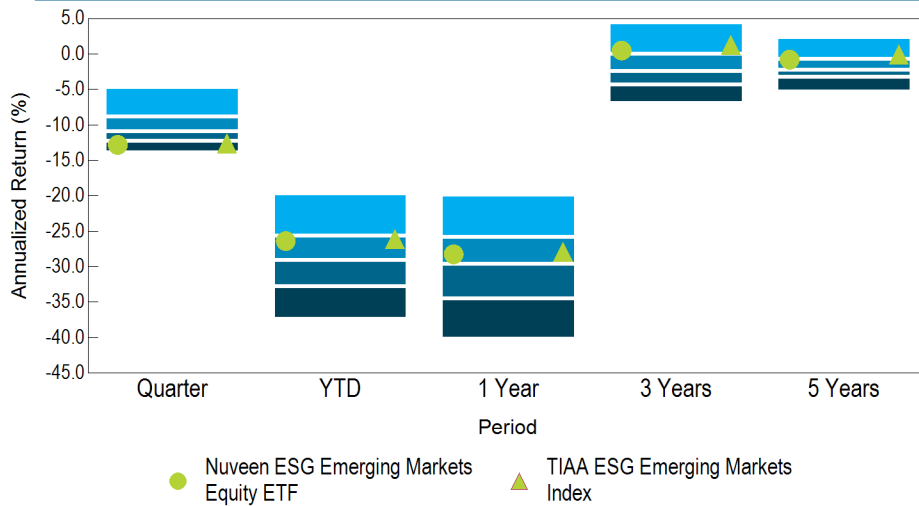
#### Account Information

Account Name	<b>Nuveen ESG Emerging Markets Equity ETF</b>
Account Structure	<b>Mutual Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>8/01/17</b>
Account Type	
Benchmark	<b>TIAA ESG Emerging Markets Index</b>
Universe	<b>Diversified Emerging Mkts MStar MF</b>

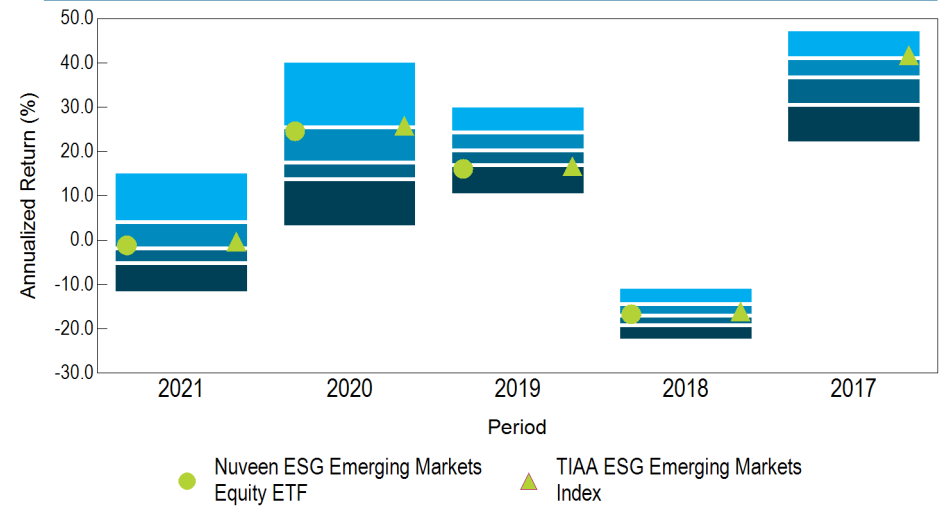
#### Return Summary



#### Diversified Emerging Mkts MStar MF Return Comparison

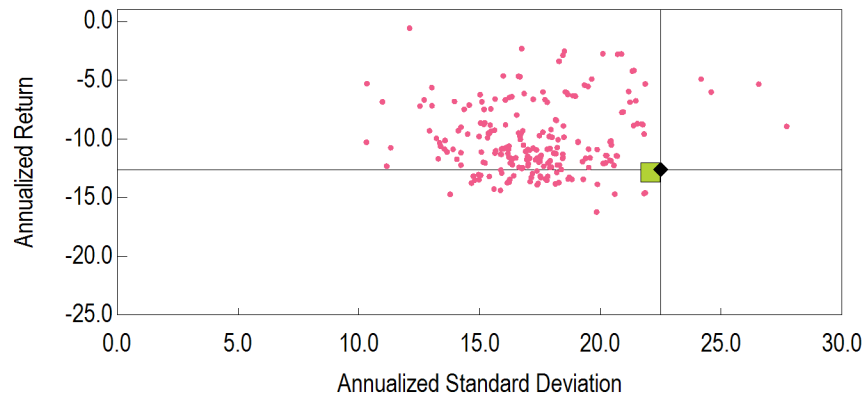


#### Diversified Emerging Mkts MStar MF Return Comparison

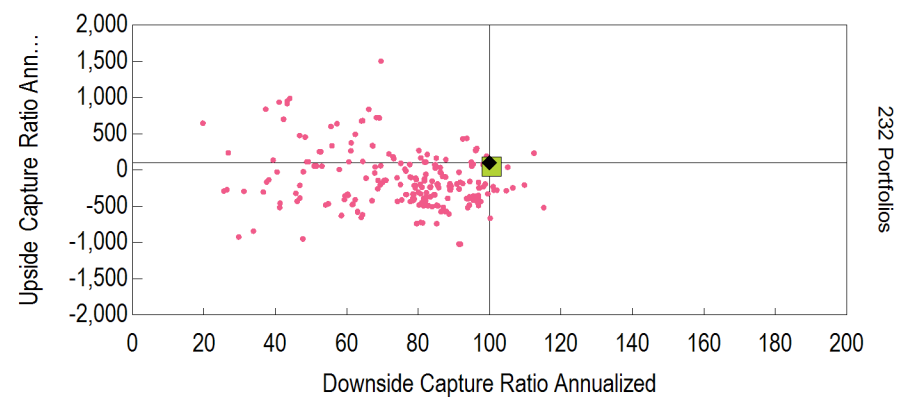


### Nuveen ESG Emerging Markets Equity ETF | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
3 Months Ending September 30, 2022



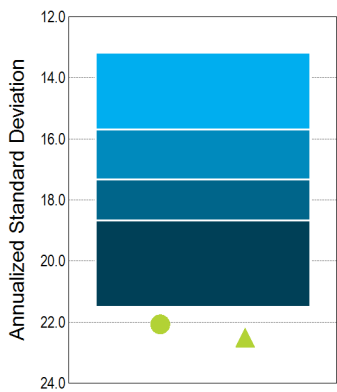
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
3 Months Ending September 30, 2022



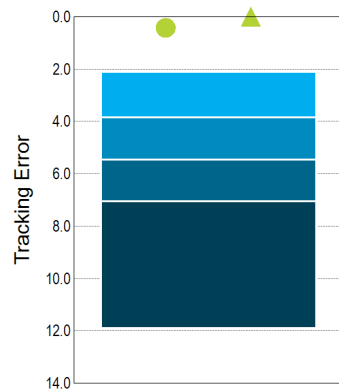
- Nuveen ESG Emerging Markets Equity ETF
- ◆ TIAA ESG Emerging Markets Index
- Diversified Emerging Mkts MStar MF

- Nuveen ESG Emerging Markets Equity ETF
- ◆ TIAA ESG Emerging Markets Index
- Diversified Emerging Mkts MStar MF

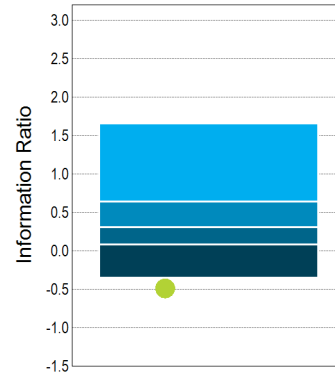
Annualized Standard Deviation



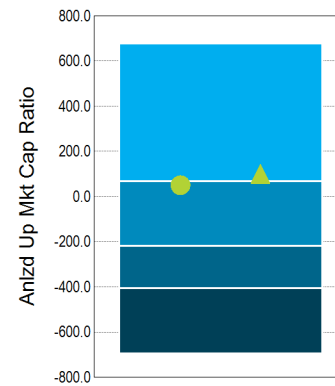
Tracking Error



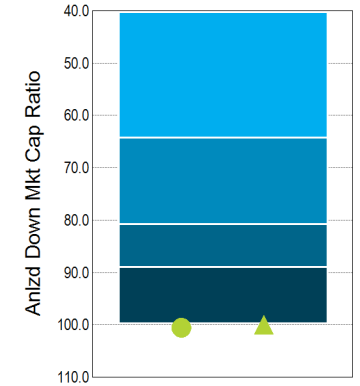
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- Nuveen ESG Emerging Markets Equity ETF
- ▲ TIAA ESG Emerging Markets Index
- 5th to 25th Percentile
- 25th to Median

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

### Nuveen ESG Emerging Markets Equity ETF | As of September 30, 2022

Characteristics	
	Portfolio
Number of Holdings	207
Weighted Avg. Market Cap. (\$B)	58.49
Median Market Cap. (\$B)	8.23
Price To Earnings	10.53
Price To Book	2.54
Price To Sales	1.10
Return on Equity (%)	16.29
Yield (%)	3.56
Beta	
R-Squared	

Top Holdings	
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	6.94%
ALIBABA GROUP HOLDING LTD	3.93%
MISCELLANEOUS SECURITIES	3.57%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	2.34%
CHINA CONSTRUCTION BANK CORP	2.27%
HINDUSTAN UNILEVER LTD	1.86%
AXIS BANK	1.74%
SAUDI TELECOM CO	1.65%
TELEKOMUNIKASI INDONESIA	1.59%
SABIC AGRI-NUTRIENTS COMPANY	1.58%

Holdings By Sector	
GICS Sector	% of Total
Energy	3.26%
Materials	10.20%
Industrials	5.24%
Consumer Discretionary	14.60%
Consumer Staples	7.90%
Health Care	3.13%
Financials	21.57%
Information Technology	17.06%
Communication Services	7.43%
Utilities	4.00%

### Vanguard Short Term Inflation-Protected Securities | As of September 30, 2022

#### Description:

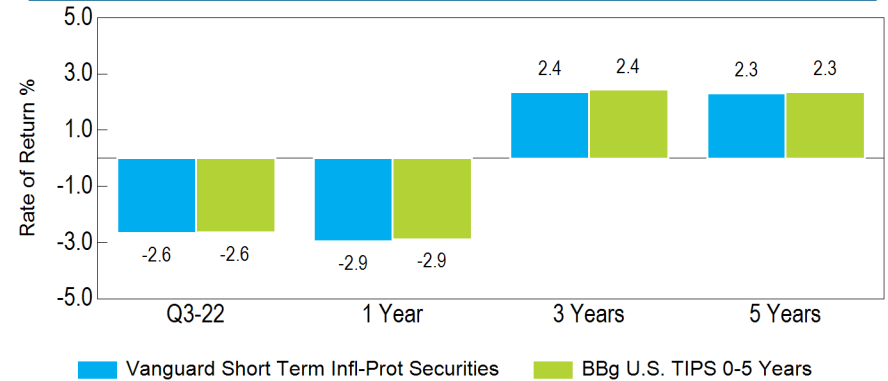
The investment seeks to track the performance of the Bloomberg U.S. Treasury Inflation-Protected Securities (TIPS) 0-5 Year Index.

The index is a market-capitalization-weighted index that includes all inflation-protected public obligations issued by the U.S. Treasury with remaining maturities of less than 5 years. The manager attempts to replicate the target index by investing all, or substantially all, of its assets in the securities that make up the index, holding each security in approximately the same proportion as its weighting in the index.

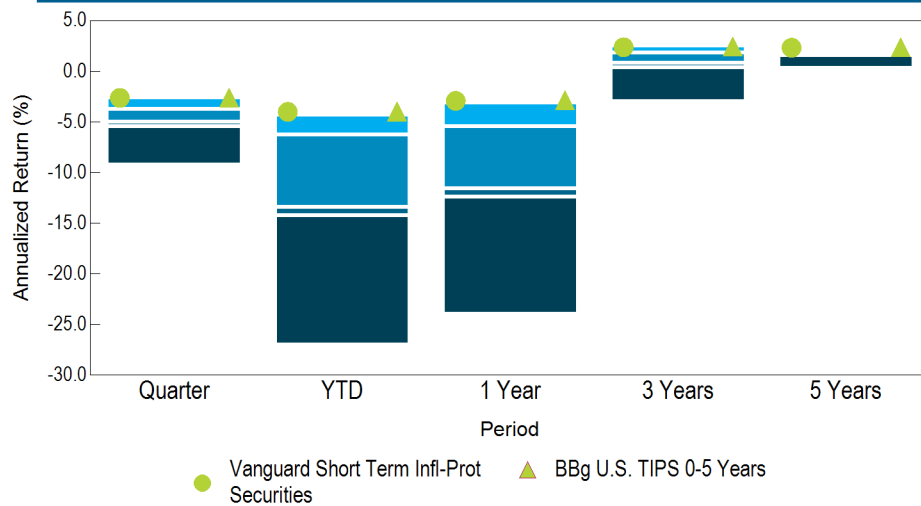
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	VTSPX
<b>Morningstar Category</b>	Inflation-Protected Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	17,651.67
<b>% Assets in Top 10 Holdings</b>	56.95
<b>Total Number of Holdings</b>	22
<b>Manager Name</b>	Joshua C. Barrickman
<b>Manager Tenure</b>	10
<b>Expense Ratio</b>	0.04%
<b>Closed to New Investors</b>	No

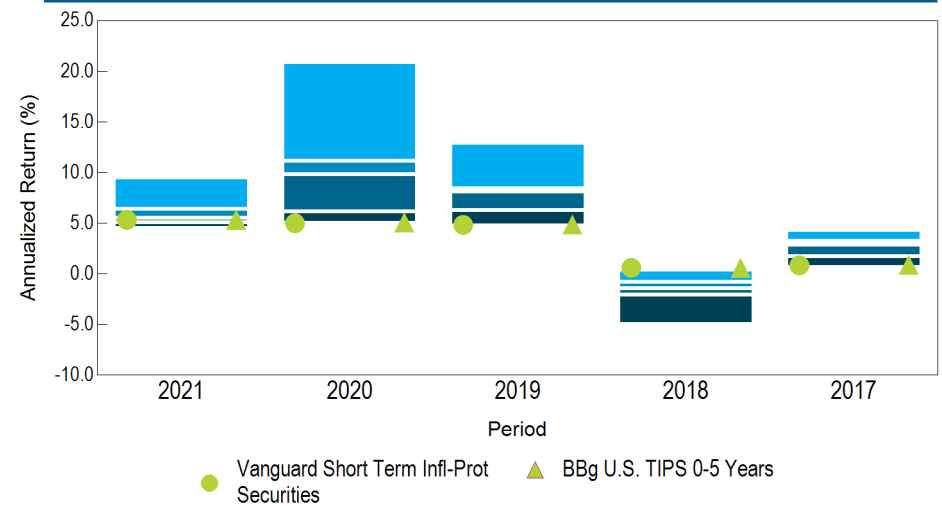
#### Return Summary



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

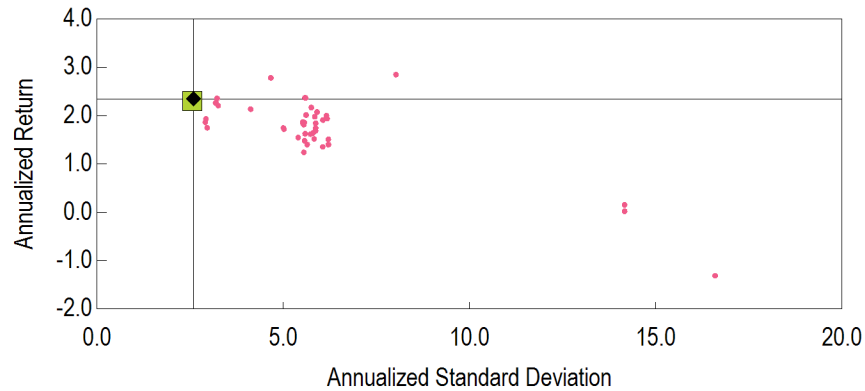


#### Inflation-Protected Bond MStar MF Return Comparison



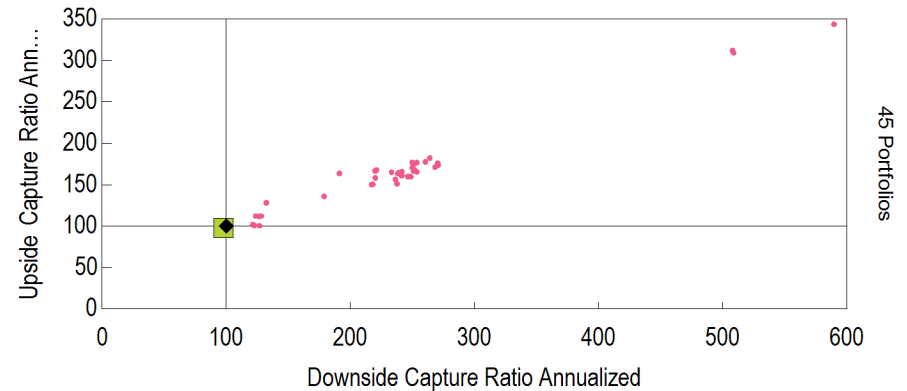
### Vanguard Short Term Inflation-Protected Securities | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



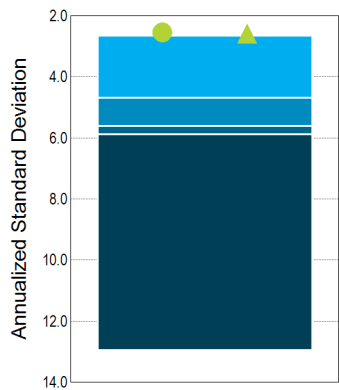
- Vanguard Short Term Inflation-Protected Securities
- ◆ Bbg U.S. TIPS 0-5 Years
- Inflation-Protected Bond MStar MF

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022

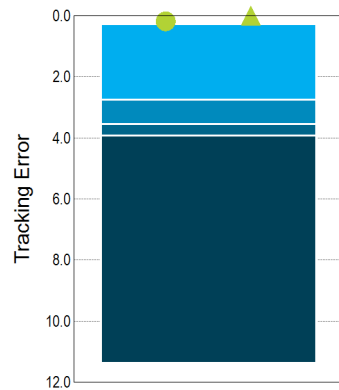


- Vanguard Short Term Inflation-Protected Securities
- ◆ Bbg U.S. TIPS 0-5 Years
- Inflation-Protected Bond MStar MF

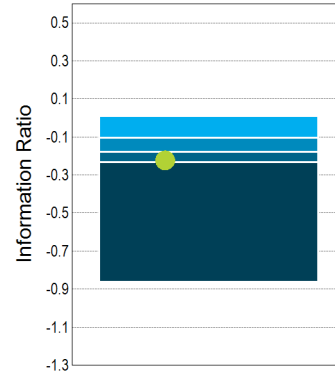
Annualized Standard Deviation



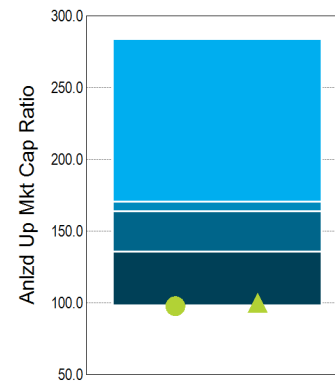
Tracking Error



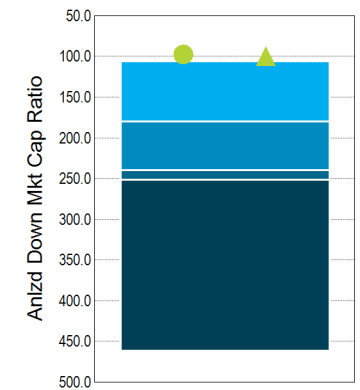
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- Vanguard Short Term Inflation-Protected Securities
- ▲ Bbg U.S. TIPS 0-5 Years
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

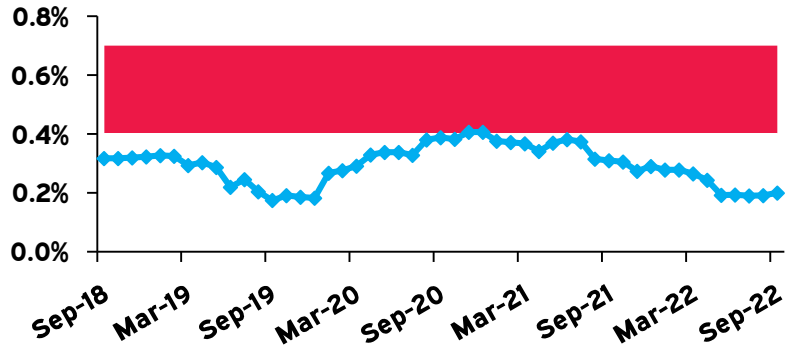
Vanguard Short Term Infl-Prot Securities | As of September 30, 2022

Fund Characteristics as of August 31, 2022		Top Holdings as of August 31, 2022		Fixed Income Sectors as of August 31, 2022	
Sharpe Ratio (3 Year)	1.11	UNITED STATES TREASURY NOTES	6.72%	GOVERNMENT	99.98%
Average Duration	2.58	UNITED STATES TREASURY NOTES	6.49%	MUNICIPAL	0.00%
Average Coupon		UNITED STATES TREASURY NOTES	6.17%	CORPORATE	0.00%
Average Effective Maturity	2.60	UNITED STATES TREASURY NOTES	5.75%	SECURITIZED	0.00%
R-Squared (3 Year)	1.00	UNITED STATES TREASURY NOTES	5.60%	CASH & EQUIVALENTS	0.02%
Alpha (3 Year)	0.01%	UNITED STATES TREASURY NOTES	5.57%	DERIVATIVE	0.00%
Beta (3 Year)	0.97	UNITED STATES TREASURY NOTES	5.34%		
		UNITED STATES TREASURY NOTES	5.26%		
		UNITED STATES TREASURY NOTES	5.09%		
		UNITED STATES TREASURY NOTES	4.97%		

Credit Quality as of September 30, 2022		Maturities as of August 31, 2022		Top Countries as of August 31, 2022	
AAA	99.99%	1 to 3 Years	38.52%	United States	100.00%
AA	0.00%	3 to 5 Years	42.56%		
A	0.00%	5 to 7 Years	0.00%		
BBB	0.00%	7 to 10 Years	0.00%		
BB	0.00%	10 to 15 Years	0.00%		
B	0.00%	15 to 20 Years	0.00%		
Below B	0.00%	20 to 30 Years	0.00%		
Not Rated	0.01%	Greater than 30 Years	0.00%		

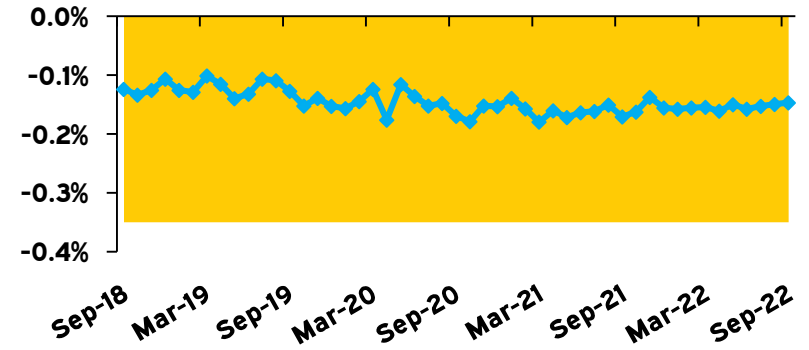


#### Short Term – Rolling 12-Month Tracking Error



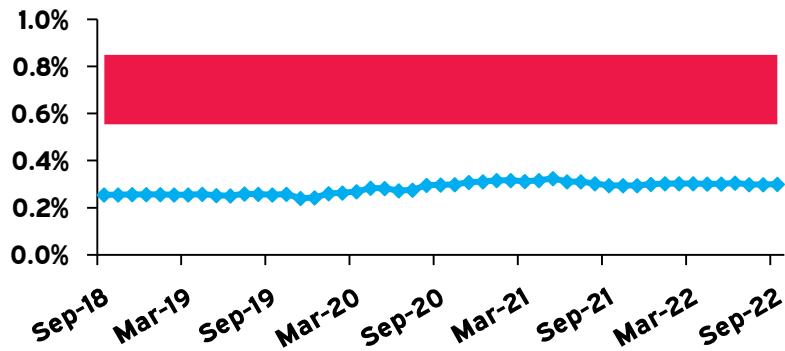
Results fall in the positive range.  
Probationary Threshold 0.40%

#### Long Term – Rolling 60-Month Excess Return



Results fall in the acceptable range.  
Probationary Threshold -0.35%

#### Medium Term – Rolling 36-Month Tracking Error



Results fall in the positive range.  
Probationary Threshold 0.55%

Benchmark: Bloomberg US Aggregate TR

#### Portfolio Performance Summary

	Qtr (%)	1 YR (%)	3 YR (%)	5 YR (%)	Incep (%)	Incep Date
TIAA-CREF Bond Index I	-4.8	-14.7	-3.4	-0.4	1.1	11/20/2011
Bloomberg US Aggregate TR	-4.8	-14.6	-3.3	-0.3	1.3	

#### Monitoring Status

Acceptable

#### Description:

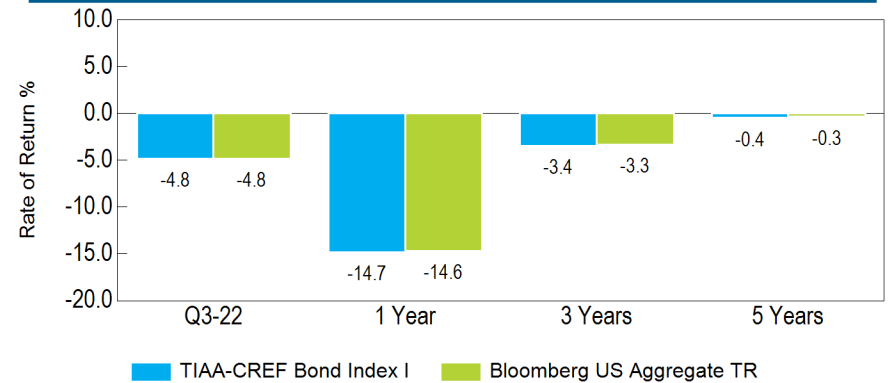
The investment seeks total return that corresponds with the total return of the Bloomberg Barclays U.S. Aggregate Bond Index.

The fund invests at least 80% of its assets in bonds within its benchmark and portfolio tracking index, the Bloomberg U.S. Aggregate Bond Index. The securities purchased by the fund will mainly be high-quality instruments rated in the top four credit categories by Moody's or S&P or deemed to be of the same quality by the advisors using its own credit quality analysis.

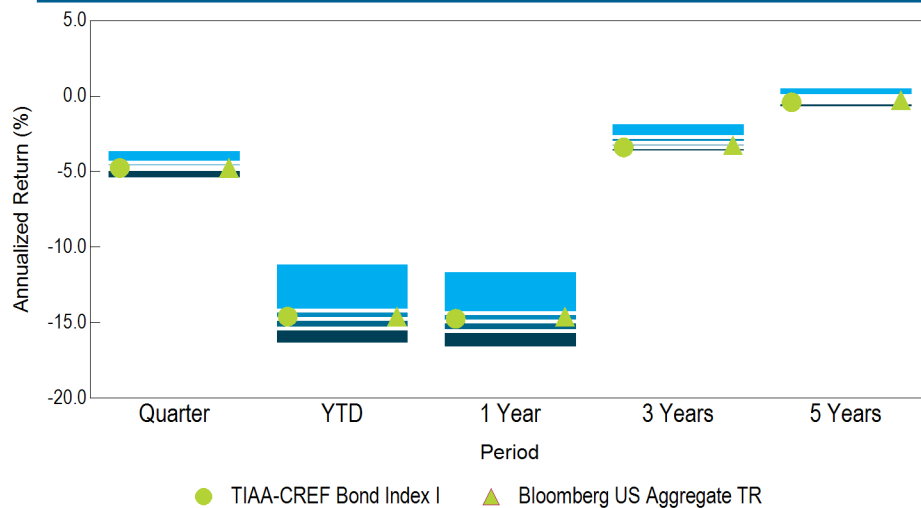
#### Portfolio Fund Information as of August 31, 2022

<b>Ticker</b>	TBIX
<b>Morningstar Category</b>	Intermediate Core Bond
<b>Average Market Cap (\$mm)</b>	
<b>Net Assets (\$mm)</b>	9,057.76
<b>% Assets in Top 10 Holdings</b>	9.44
<b>Total Number of Holdings</b>	8,219
<b>Manager Name</b>	Lijun (Kevin) Chen
<b>Manager Tenure</b>	13
<b>Expense Ratio</b>	0.07%
<b>Closed to New Investors</b>	No

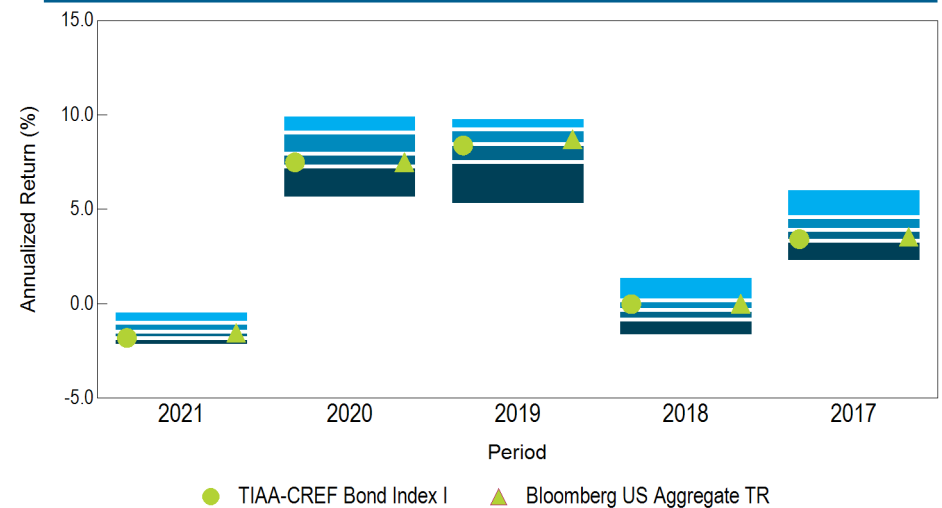
#### Return Summary



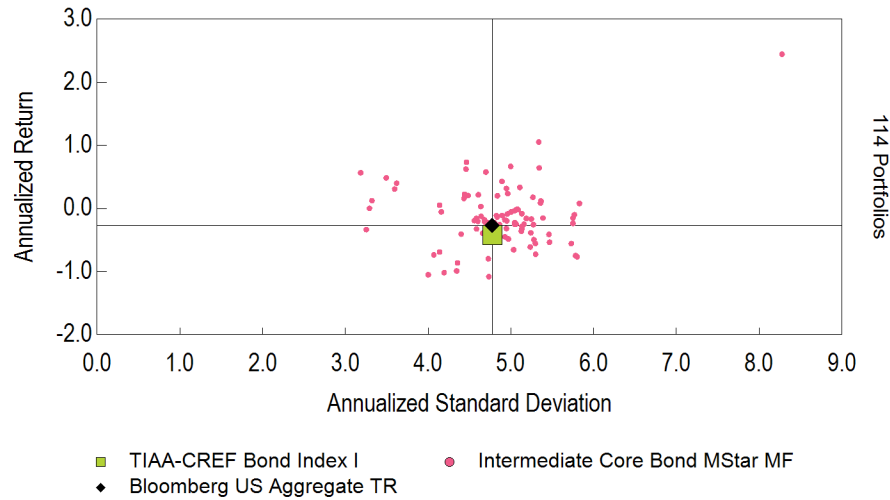
#### Intermediate Core Bond MStar MF Return Comparison



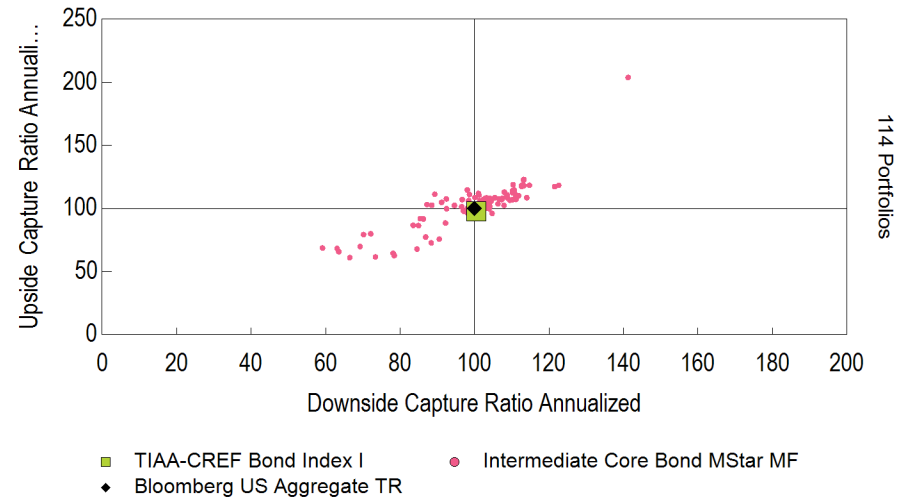
#### Intermediate Core Bond MStar MF Return Comparison



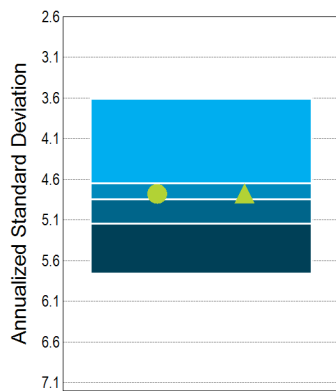
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



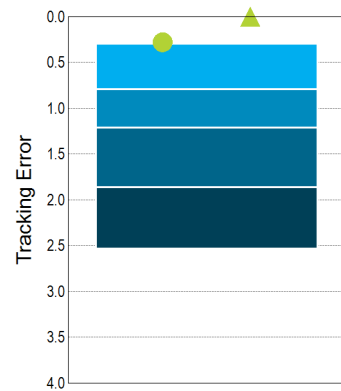
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



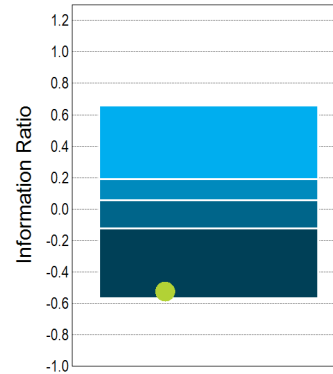
Annualized Standard Deviation



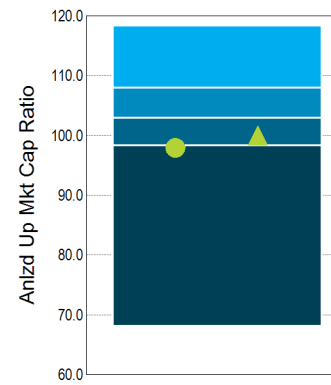
Tracking Error



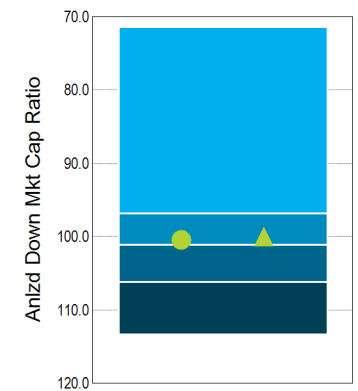
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



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

Fund Characteristics as of August 31, 2022		Top Holdings as of August 31, 2022		Fixed Income Sectors as of August 31, 2022	
Sharpe Ratio (3 Year)	-0.55	UNITED STATES TREASURY NOTES 2.125%	1.58%	GOVERNMENT	43.92%
Average Duration	6.39	UNITED STATES TREASURY NOTES 0.375%	1.19%	MUNICIPAL	0.77%
Average Coupon	2.51%	UNITED STATES TREASURY NOTES 1.75%	1.02%	CORPORATE	24.16%
Average Effective Maturity	8.75	UNITED STATES TREASURY BONDS 3.5%	0.92%	SECURITIZED	30.05%
R-Squared (3 Year)	1.00	UNITED STATES TREASURY NOTES 2.25%	0.85%	CASH & EQUIVALENTS	1.09%
Alpha (3 Year)	-0.01%	GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2%	0.84%	DERIVATIVE	0.00%
Beta (3 Year)	1.01	FEDERAL NATIONAL MORTGAGE ASSOCIATION 2.5%	0.78%		
		UNITED STATES TREASURY NOTES 1.125%	0.77%		
		UNITED STATES TREASURY NOTES 0.75%	0.74%		
		UNITED STATES TREASURY NOTES 1.75%	0.73%		

Credit Quality as of August 31, 2022		Maturities as of August 31, 2022		Top Countries as of August 31, 2022	
AAA	73.17%	1 to 3 Years	16.19%	United States	93.46%
AA	3.14%	3 to 5 Years	19.21%	Supranational	1.38%
A	10.88%	5 to 7 Years	7.92%	Canada	0.85%
BBB	12.79%	7 to 10 Years	8.78%	United Kingdom	0.82%
BB	0.00%	10 to 15 Years	4.67%	Japan	0.67%
B	0.00%	15 to 20 Years	7.09%	Germany	0.39%
Below B	0.00%	20 to 30 Years	33.25%	Netherlands	0.35%
Not Rated	0.02%	Greater than 30 Years	2.26%	Mexico	0.28%
				Belgium	0.23%
				South Korea	0.13%

### Nuveen ESG US Aggregate Bond ETF | As of September 30, 2022

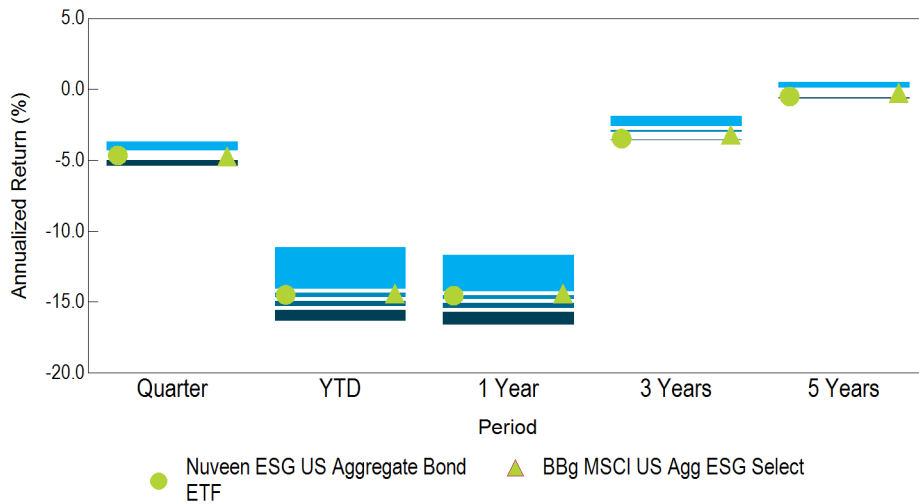
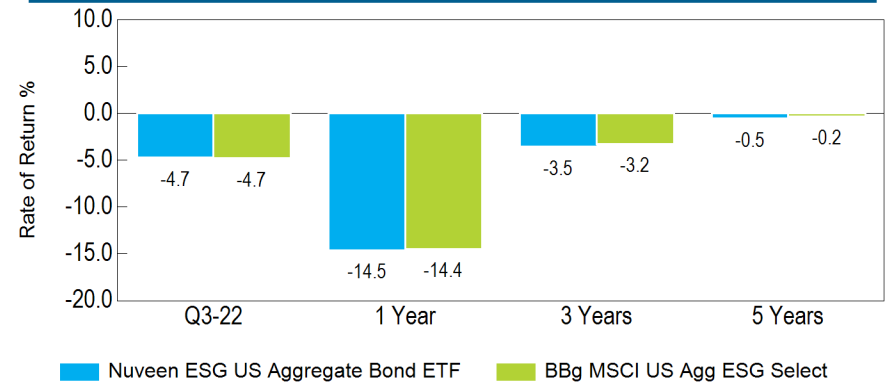
#### Description:

The investment seeks to track the investment results, before fees and expenses, of the Bloomberg MSCI U.S. Aggregate ESG Select Index (the "index"). Under normal market conditions, the fund invests at least 80% of the sum of its net assets and the amount of any borrowings for investment purposes in component securities of the index. The index utilizes certain environmental, social, and governance ("ESG") criteria to select from the securities included in the Bloomberg U.S. Aggregate Bond Index (the "base index"), which is designed to broadly capture the U.S. investment grade, taxable fixed income market.

#### Account Information

Account Name	<b>Nuveen ESG US Aggregate Bond ETF</b>
Account Structure	<b>Mutual Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>10/01/17</b>
Account Type	
Benchmark	<b>BBg MSCI US Agg ESG Select</b>
Universe	<b>Intermediate Core Bond MStar MF</b>

#### Return Summary

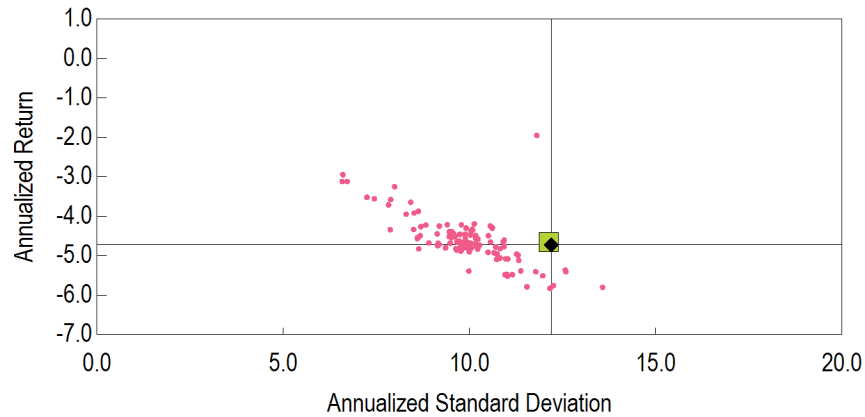


#### Intermediate Core Bond MStar MF Return Comparison



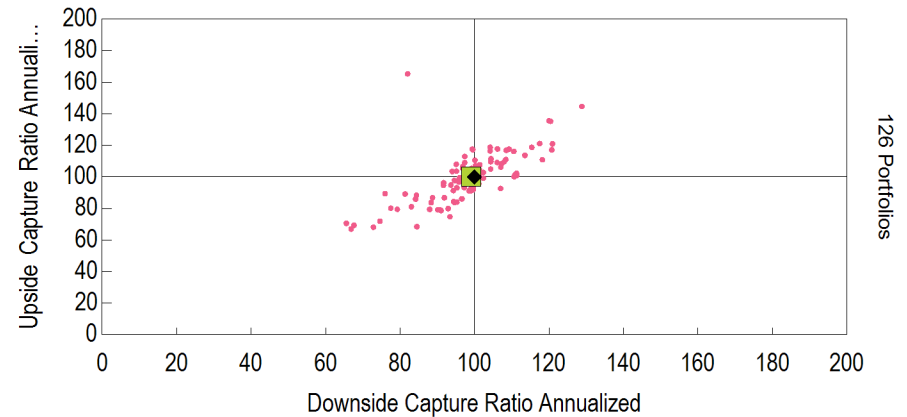
### Nuveen ESG US Aggregate Bond ETF | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
3 Months Ending September 30, 2022



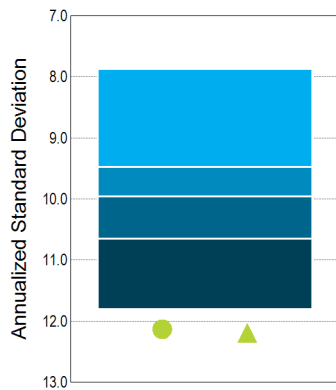
- Nuveen ESG US Aggregate Bond ETF
- Intermediate Core Bond MStar MF
- ◆ BBg MSCI US Agg ESG Select

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
3 Months Ending September 30, 2022

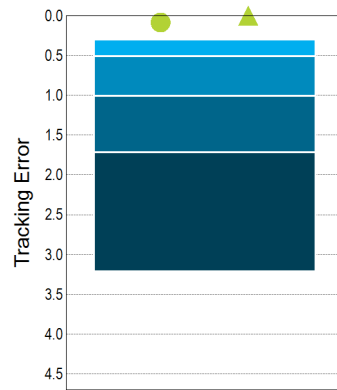


- Nuveen ESG US Aggregate Bond ETF
- Intermediate Core Bond MStar MF
- ◆ BBg MSCI US Agg ESG Select

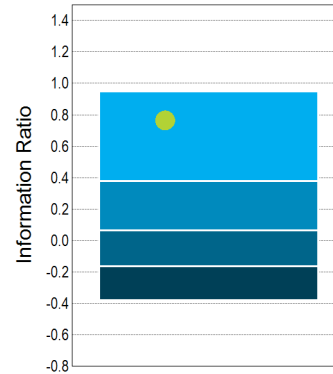
Annualized Standard Deviation



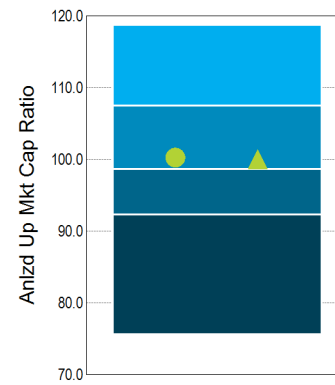
Tracking Error



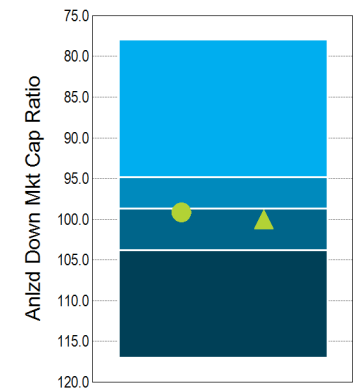
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- Nuveen ESG US Aggregate Bond ETF
- ▲ BBg MSCI US Agg ESG Select
- 5th to 25th Percentile
- 25th to Median
- Median to 75th Percentile
- 75th to 95th Percentile

### Nuveen ESG US Aggregate Bond ETF | As of September 30, 2022

	Portfolio Q3-22
Fixed Income Characteristics	
Yield to Maturity	4.72
Average Quality	AAA

	Portfolio Q3-22
US Sector Allocation	
UST/Agency	40.07
Corporate	24.52
Other	35.14
Cash	0.27

	Portfolio Q3-22
Credit Quality Allocation	
AAA	71.74
AA	3.46
A	12.74
BBB	11.08
Not Rated	0.98

Top Holdings	
FNMA 2.000 2051-03-01 USD	6.57%
FNMA 2.500 2051-11-01 USD	5.13%
GENERIC FIXED INCOME	4.11%
UST 0% NTS 31/10/23 USDBH-2023	3.94%
UST 0% NTS 30/04/26 USDY-2026	2.82%
UST 0% NTS 30/09/25 USDAD-2025	2.74%
FNMA 3.000 2051-01-01 USD	2.60%
UST 2.75% SNR 15/02/28 USD1000	2.26%
UST 0% NTS 30/11/23 USDBK-2023	2.18%
UST 2.75% SNR 15/08/47 USD1000	2.15%

### Nuveen ESG High Yield Corp Bond ETF | As of September 30, 2022

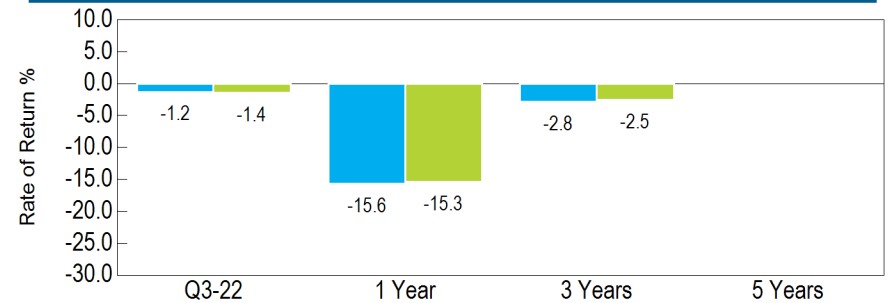
#### Description:

The investment seeks to track the investment results, before fees and expenses, of the Bloomberg MSCI U.S. High Yield Very Liquid ESG Select Index. The index utilizes certain environmental, social, and governance ("ESG") criteria to select from the securities included in the Bloomberg U.S. High Yield Very Liquid Index (the "Base Index"), which is designed to broadly capture the U.S. dollar-denominated, high yield, fixed-rate corporate bond market. Under normal market conditions, it invests at least 80% of the sum of its net assets and the amount of any borrowings for investment purposes in component securities of the index.

#### Account Information

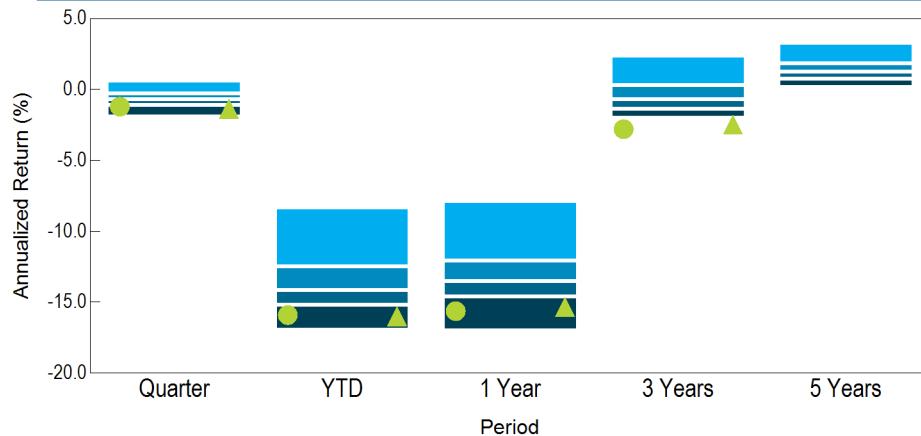
Account Name	<b>Nuveen ESG High Yield Corp Bond ETF</b>
Account Structure	<b>Mutual Fund</b>
Investment Style	<b>Passive</b>
Inception Date	<b>10/01/19</b>
Account Type	
Benchmark	<b>BBg MSCI US High Yield Very Liquid ESG Select</b>
Universe	<b>High Yield Bond MStar MF</b>

#### Return Summary



■ Nuveen ESG High Yield Corp Bond ETF  
■ BBg MSCI US High Yield Very Liquid ESG Select

#### High Yield Bond MStar MF Return Comparison



● Nuveen ESG High Yield Corp Bond ETF    ▲ BBg MSCI US High Yield Very Liquid ESG Select

#### High Yield Bond MStar MF Return Comparison

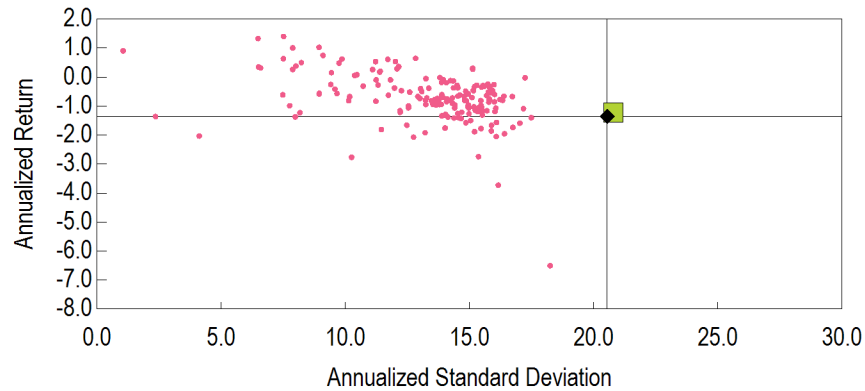


● Nuveen ESG High Yield Corp Bond ETF    ▲ BBg MSCI US High Yield Very Liquid ESG Select

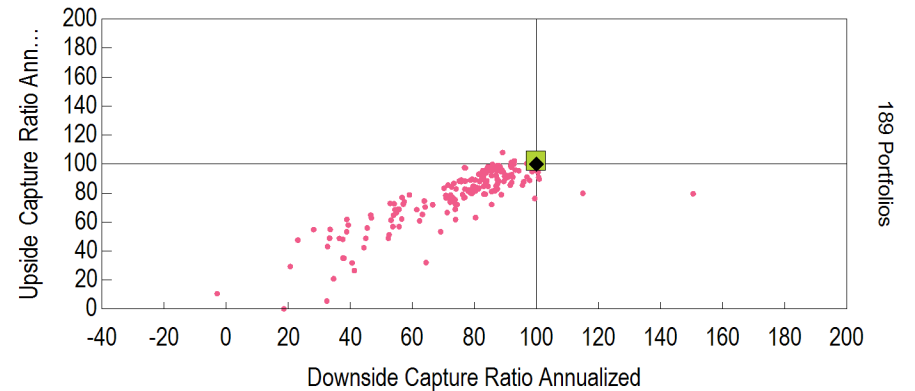


### Nuveen ESG High Yield Corp Bond ETF | As of September 30, 2022

Annualized Return vs. Annualized Standard Deviation  
3 Months Ending September 30, 2022



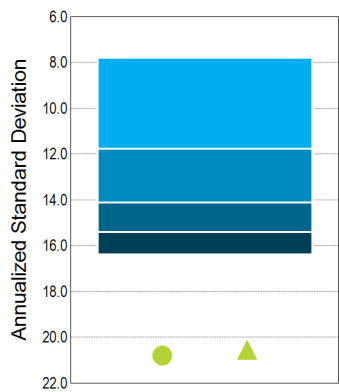
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
3 Months Ending September 30, 2022



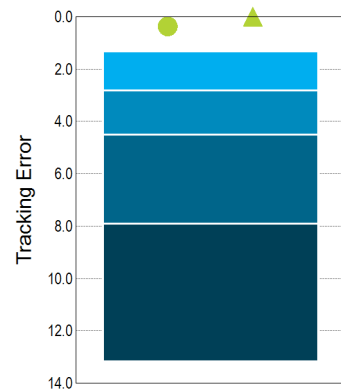
- Nuveen ESG High Yield Corp Bond ETF
- ◆ BBg MSCI US High Yield Very Liquid ESG Select
- High Yield Bond MStar MF

- Nuveen ESG High Yield Corp Bond ETF
- ◆ BBg MSCI US High Yield Very Liquid ESG Select
- High Yield Bond MStar MF

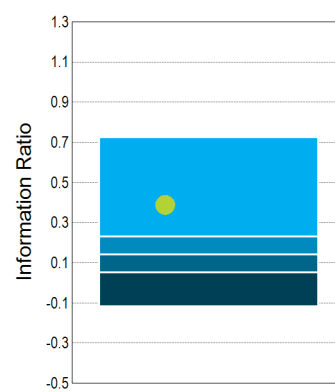
Annualized Standard Deviation



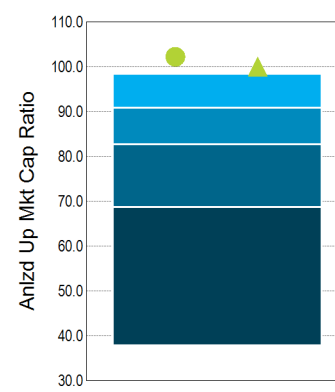
Tracking Error



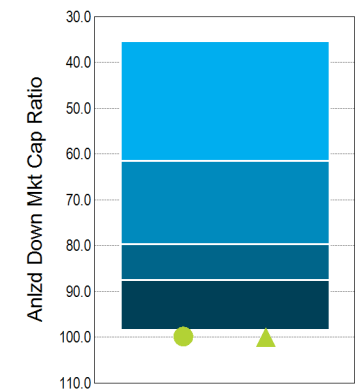
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



- Nuveen ESG High Yield Corp Bond ETF

- ▲ BBg MSCI US High Yield Very Liquid ESG Select

- 5th to 25th Percentile

- 25th to Median

- Median to 75th Percentile

- 75th to 95th Percentile

### Nuveen ESG High Yield Corp Bond ETF | As of September 30, 2022

	Portfolio Q3-22
Fixed Income Characteristics	
Average Duration	5.80
Average Quality	B

	Portfolio Q3-22
US Sector Allocation	
Corporate	90.54
Foreign	7.05
Other	2.41

	Portfolio Q3-22
Credit Quality Allocation	
BBB	0.22
BB	37.66
B	52.01
CCC	6.59
Not Rated	3.52

Top Holdings	
MISCELLANEOUS SECURITIES	13.90%
UBER TECHNOLOGIES INC 7.5% GTD SNR 15/05/2025 USD	1.76%
Weatherford International Ltd Bermuda SNR NTS USD (144A)	1.55%
Herc Holdings Inc 5.5% GTD SNR 15/07/2027 USD	1.52%
Hilton Grand Vacations Borrower Escrow LLC/ Hilton Grand Vacations Borrower Escrow Inc 4.875% SNR 01/07/2031 USD	1.52%
Select Medical Corporation 6.25% GTD SNR 15/08/26 USD	1.44%
Uniti Group LP/Uniti Fiber Holdings Inc/Uniti Group Finance 2019 Inc/CSL Capital LLC 7.875% GTD 15/02/2025 USD	1.31%
Prime Securities Services Borrower, LLC and Prime Finance, Inc. 6.25% SNR SEC 15/01/28 USD	1.29%
Trivium Packaging Finance BV 5.5% GTD 15/08/2026 USD	1.14%
WEATHERFORD INTERNATIONA SR SECURED 144A 0928 6.5	1.14%

### Vanguard Real Estate Index | As of September 30, 2022

#### Description:

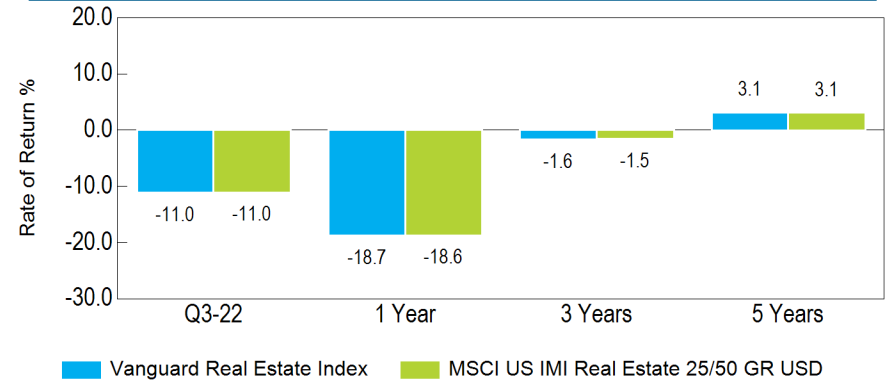
The investment seeks to provide a high level of income and moderate long-term capital appreciation by tracking the performance of the MSCI US Investable Market Real Estate 25/50 Index that measures the performance of publicly traded equity REITs and other real estate-related investments.

The advisor attempts to track the index by investing all, or substantially all, of its assets—either directly or indirectly through a wholly owned subsidiary, which is itself a registered investment company—in the stocks that make up the index, holding each stock in approximately the same proportion as its weighting in the index. The fund is non-diversified.

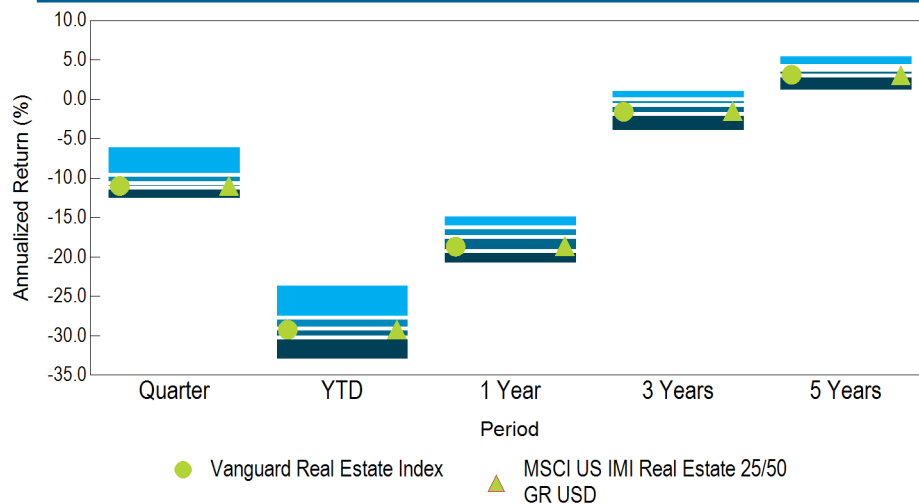
#### Portfolio Fund Information as of September 30, 2022

<b>Ticker</b>	VGSNX
<b>Morningstar Category</b>	Real Estate
<b>Average Market Cap (\$mm)</b>	18,748.51
<b>Net Assets (\$mm)</b>	9,553.10
<b>% Assets in Top 10 Holdings</b>	45.28
<b>Total Number of Holdings</b>	171
<b>Manager Name</b>	Gerard C. O'Reilly
<b>Manager Tenure</b>	26
<b>Expense Ratio</b>	0.10%
<b>Closed to New Investors</b>	No

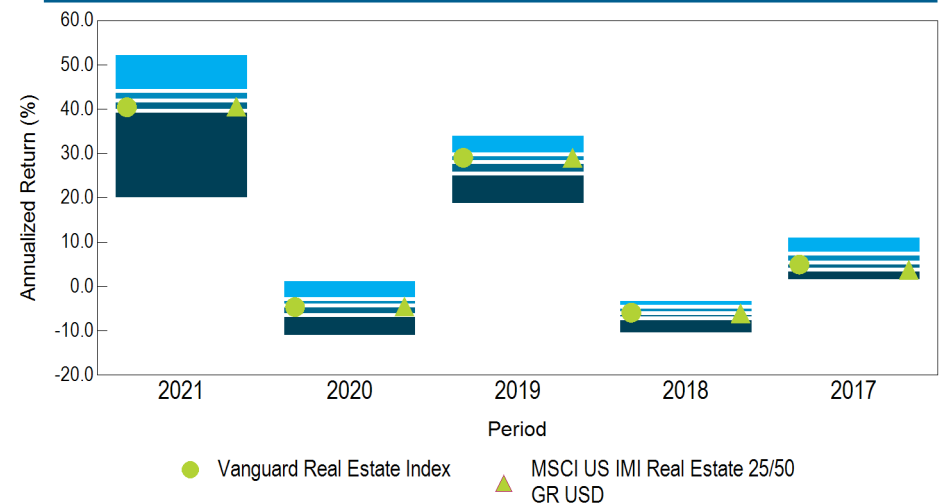
#### Return Summary



#### Real Estate MStar MF Return Comparison

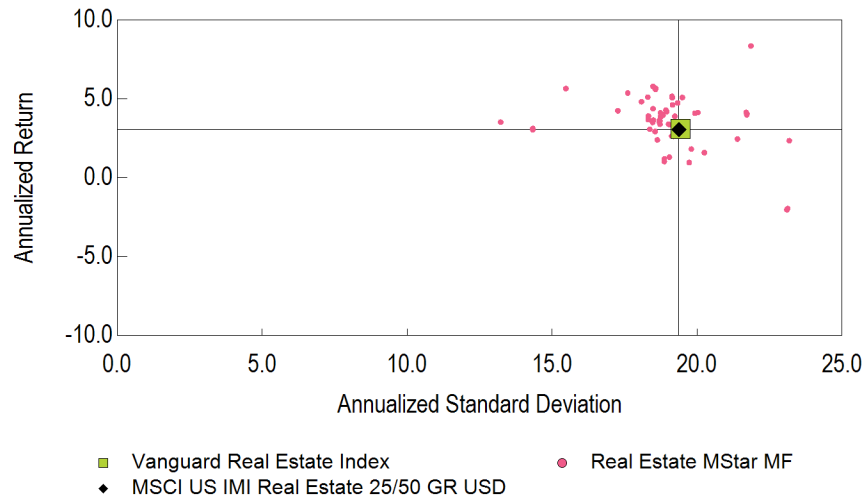


#### Real Estate MStar MF Return Comparison

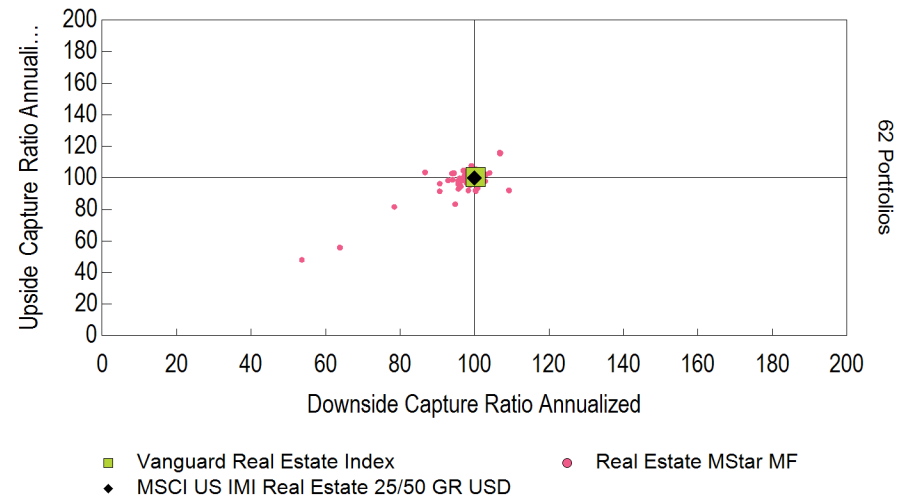


### Vanguard Real Estate Index | As of September 30, 2022

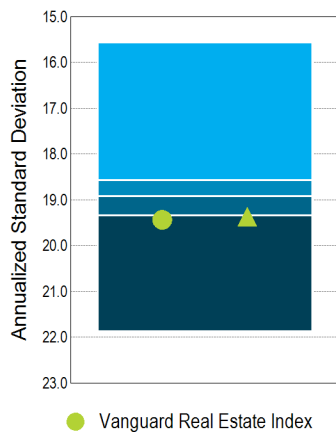
Annualized Return vs. Annualized Standard Deviation  
5 Years Ending September 30, 2022



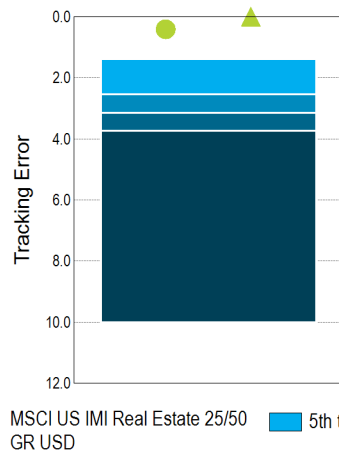
Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized  
5 Years Ending September 30, 2022



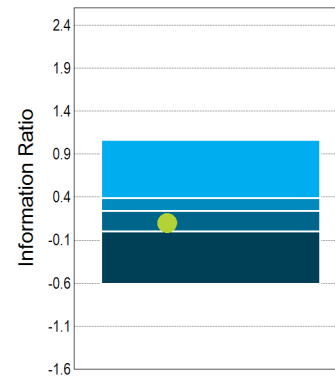
Annualized Standard Deviation



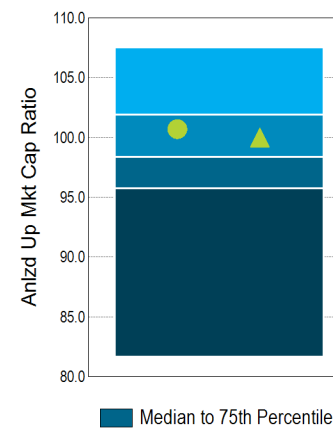
Tracking Error



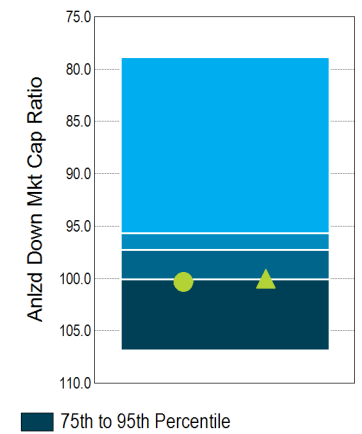
Information Ratio



Anlzd Up Mkt Cap Ratio



Anlzd Down Mkt Cap Ratio



### Vanguard Real Estate Index | As of September 30, 2022

#### Fund Characteristics as of September 30, 2022

Sharpe Ratio (3 Year)	-0.09
Average Market Cap (\$mm)	18,748.51
Price/Earnings	26.92
Price/Book	2.02
Price/Sales	3.75
Price/Cash Flow	12.89
Dividend Yield	3.95
Number of Equity Holdings	167
R-Squared (3 Year)	1.00
Alpha (3 Year)	-0.01%

#### Sector Allocation as of September 30, 2022

BASIC MATERIALS	0.00%
COMMUNICATION SERVICES	0.53%
CONSUMER CYCLICAL	0.00%
CONSUMER DEFENSIVE	0.00%
ENERGY	0.00%
FINANCIAL SERVICES	0.00%
HEALTHCARE	0.00%
INDUSTRIALS	0.00%
REAL ESTATE	99.42%
TECHNOLOGY	0.05%
UTILITIES	0.00%

#### Top Holdings as of September 30, 2022

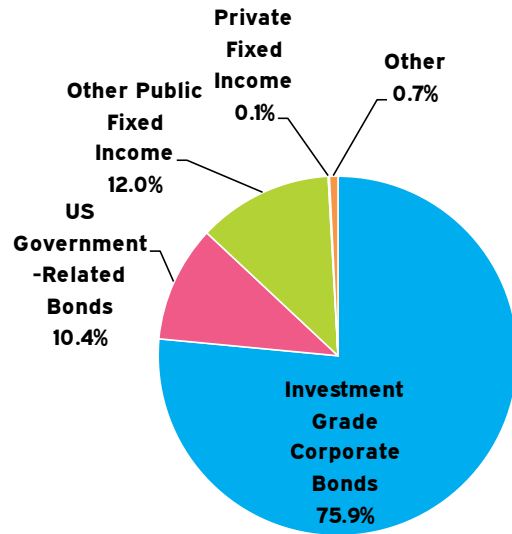
VANGUARD REAL ESTATE II INDEX	11.84%
AMERICAN TOWER CORP	7.18%
PROLOGIS INC	5.51%
CROWN CASTLE INC	4.59%
EQUINIX INC	3.79%
PUBLIC STORAGE	3.39%
REALTY INCOME CORP	2.57%
SBA COMMUNICATIONS CORP	2.25%
SIMON PROPERTY GROUP INC	2.10%
WELLTOWER OP LLC	2.06%

#### Top Countries as of September 30, 2022

United States	99.96%
Canada	0.04%

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

#### T-C Life Funding Agreement



Monitoring Status
Positive

	Criteria	Status as of 9/30/22
Financial Strength	Moody's = Aa2 Standard & Poor's = AA A.M. Best = A+ Fitch = AA-	Moody's = Aa1 Standard & Poor's = AA+ A.M. Best = A++ Fitch = AAA
Mortgage Portfolio*	100% in Good Standing	100% in Good Standing*
Bond Portfolio*	At least 90% Investment Grade	99.1% in Investment Grade
Account Diversification*	Portfolio is diversified across asset classes and types	Portfolio is diversified across asset classes and types (see chart above)

\*Portfolio did not contain any commercial mortgages.  
Source: TIAA-CREF

## Summary Points



Summary Points

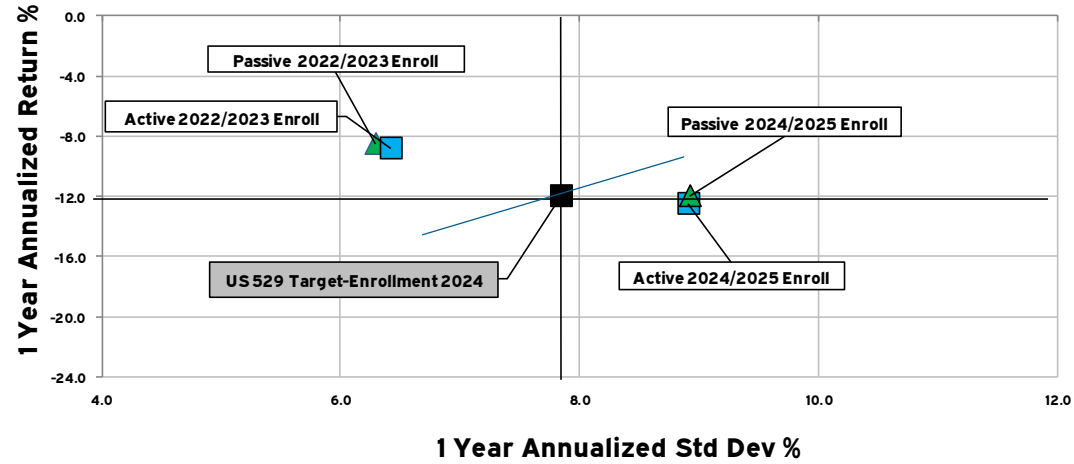
	Criteria Utilized for Performance Watch Status			
	On Watch	Short-term	Medium-term	Long-term
T. Rowe Price Instl Large Cap Growth	Yes	Yes	Yes	---
T. Rowe Price Instl Large Cap Value	No	---	---	---
TIAA-CREF Quant Small Cap Equity	No	---	---	---
TIAA-CREF Social Choice Equity	No	---	---	---
DFA Large Cap International	No	---	---	---
DFA Emerging Markets Core Equity	No	---	---	---
Metropolitan West Total Return Bond	No	---	---	---
PIMCO Real Return	No	---	---	---
PIMCO Income	No	---	---	---
T. Rowe Price Instl Floating Rate	No	---	---	---
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>1 of 16</b>	<b>1 of 15 eligible funds</b>	<b>1 of 15 eligible funds</b>	<b>0 of 15 eligible funds</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.
- Long-term analysis is presented for informational value to provide context but is not a factor used to determine an Underlying Investment's status.

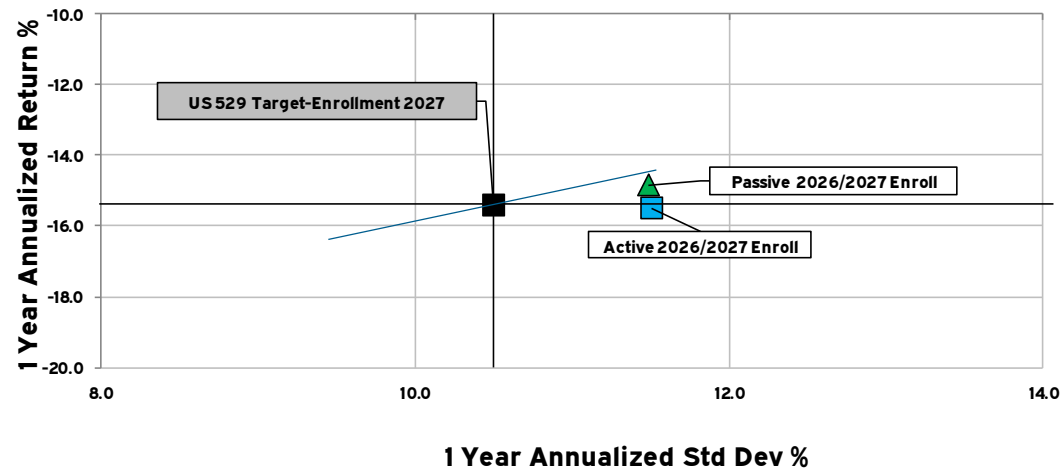
## **Enrollment Date Fund Performance**

**Enrollment Date Portfolios Performance**

**Morningstar Target Date 2024: 1 Year Risk/Return as of 9/30/2022**

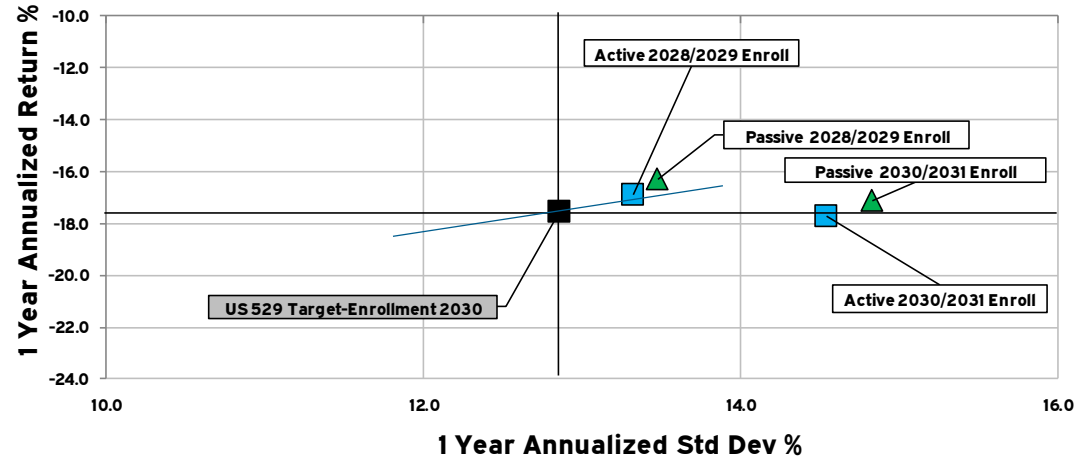


**Morningstar Target Date 2027: 1 Year Risk/Return as of 9/30/2022**

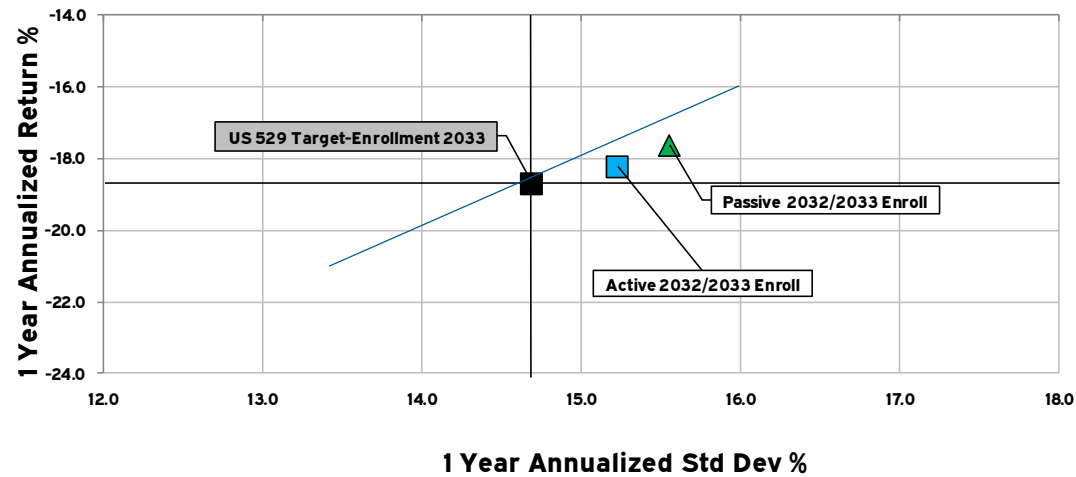


**Enrollment Date Portfolios Performance**

**Morningstar Target Date 2030: 1 Year Risk/Return as of 9/30/2022**

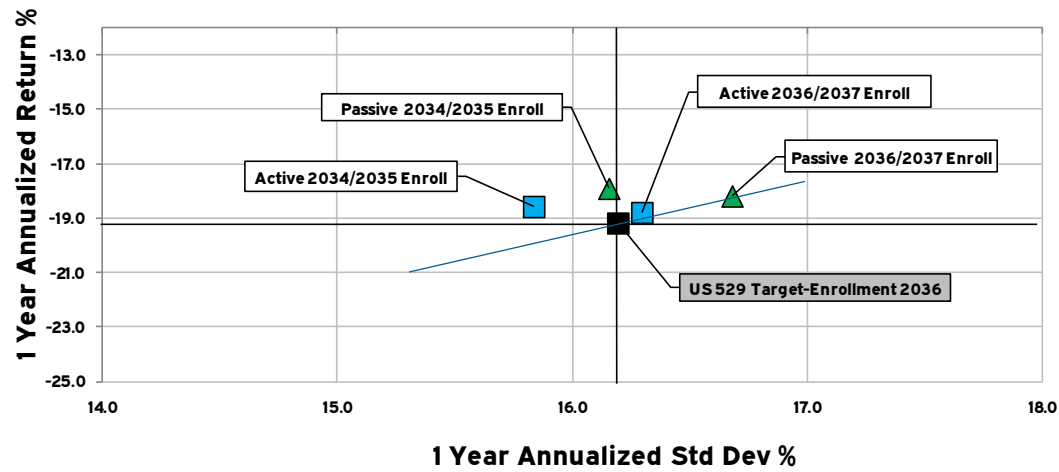


**Morningstar Target Date 2033: 1 Year Risk/Return as of 9/30/2022**

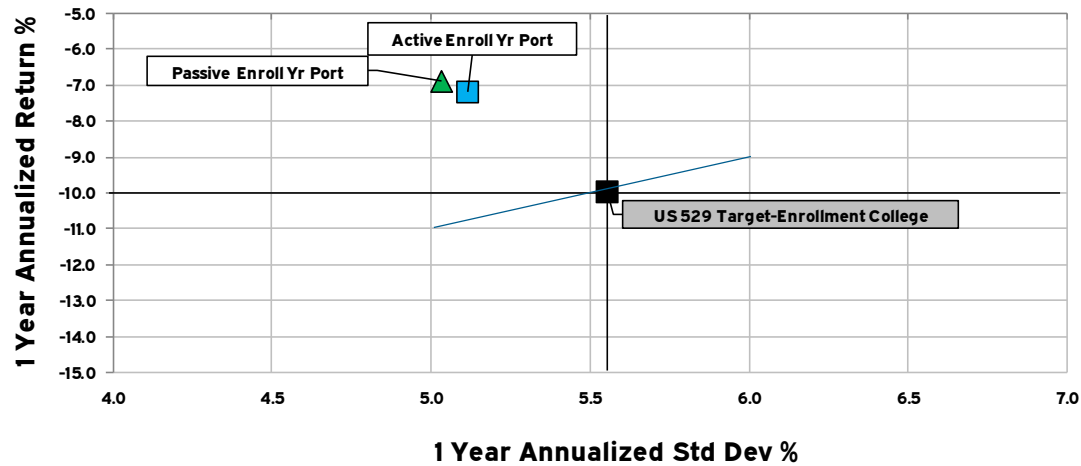


**Enrollment Date Portfolios Performance**

**Morningstar Target Date 2036: 1 Year Risk/Return as of 9/30/2022**

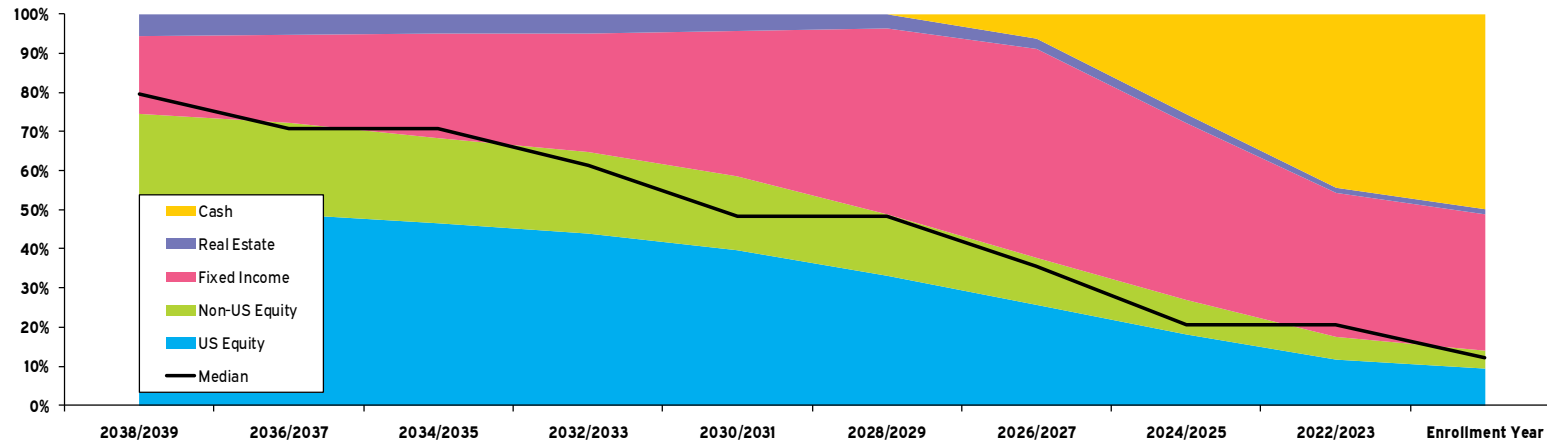


**Morningstar Target Date 2039: 1 Year Risk/Return as of 9/30/2022**

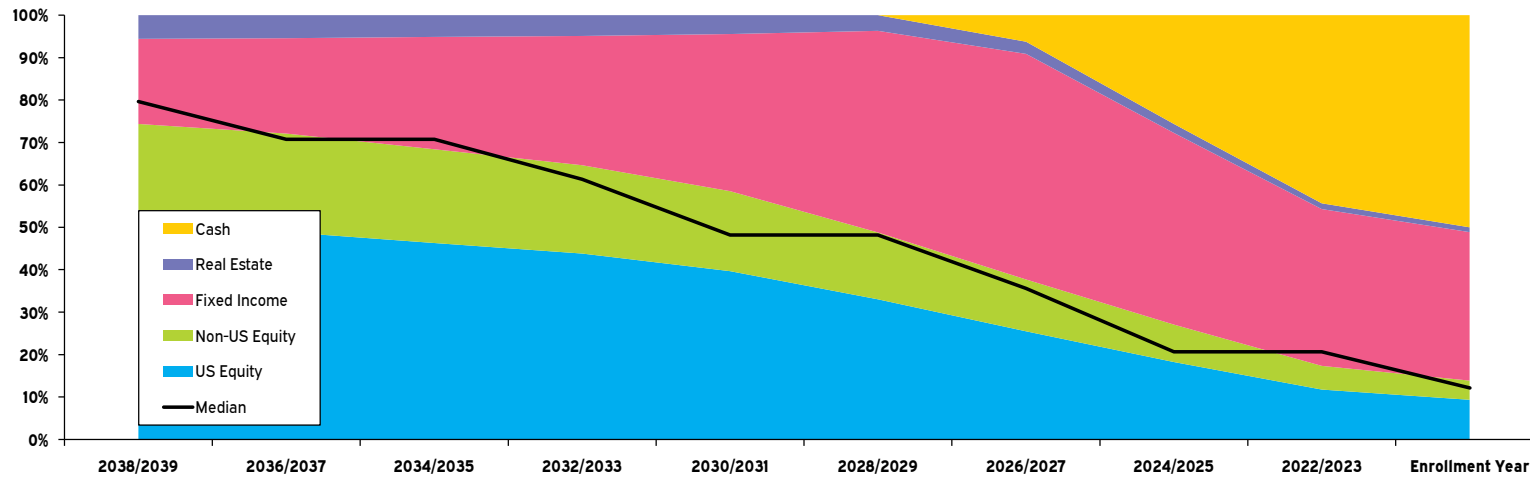


#### ScholarShare Enrollment Date Glidepath

##### Active Enrollment Date Portfolio

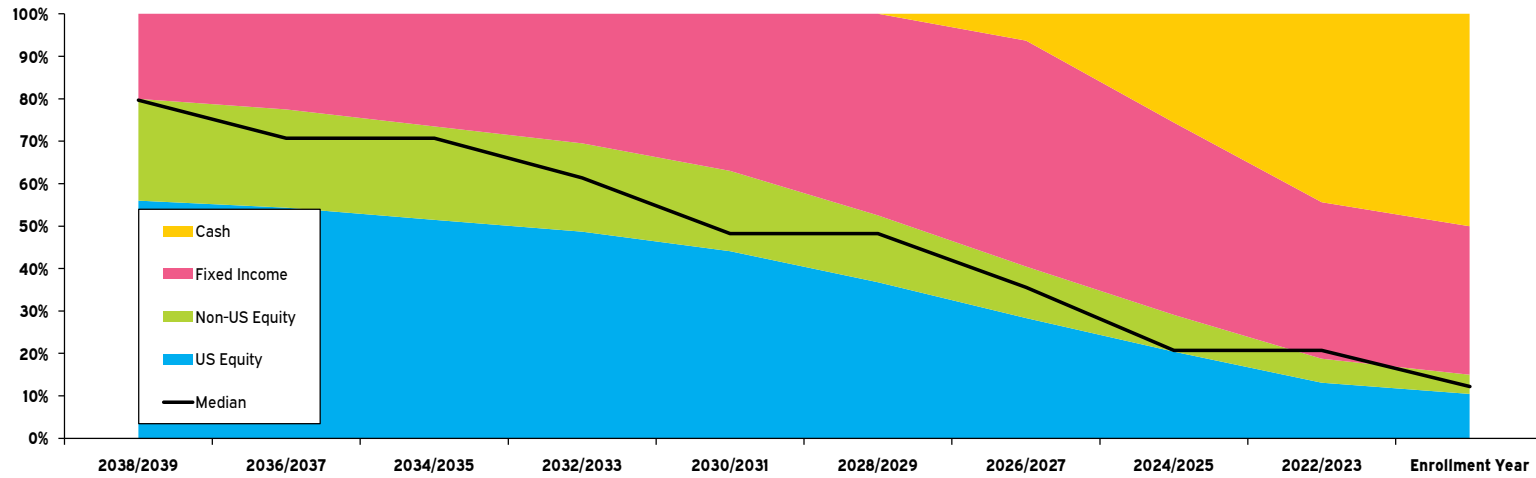


##### Passive Enrollment Date Portfolio



**ScholarShare Enrollment Date Glidepath**

**ESG 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:  $\text{Manager Cumulative Return} / \text{Benchmark Cumulative Return}$ .

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## MEMORANDUM

**TO:** ScholarShare Investment Board (SIB)  
**FROM:** Eric White, CFA; Kay Ceserani; Inwoo Hwang;  
Meketa Investment Group  
**DATE:** December 14, 2022  
**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 July 1, 2022, through September 30, 2022.

At the end of the period, 2 funds continue to qualify for watch (TIAA-CREF Emerging Markets Equity Index, T. Rowe Large Cap Growth) though we continue to recommend SIB forgo watch status for the TIAA-CREF Emerging Markets Equity Index as the spike in tracking error was caused by a technical market anomaly discussed at the March 23, 2022 meeting. T. Rowe Price Large Cap Growth fund was placed on Watch at the June 22, 2022 meeting. Meketa recommends the fund remain on Watch and be closely monitored over coming quarters. We will report any material findings to SIB.

### Qualifying for Watch

1. TIAA-CREF Emerging Markets Equity Index
2. T. Rowe Large Cap Growth

### Performance of Funds on Watch Status As of 9/30/2022

Funds on Watch Status	Board Action Date	Watch Status Start Date	No. Months Since Watch Began	Excess Perf. Since Watch Began	Plan Assets (\$mil)	% of Plan Assets
T. Rowe Large Cap Growth		4/1/2022	6	-1.3	264.5	2.4%

## Discussion

### T. Rowe Large Cap Growth

#### Investment Role in Program

The T. Rowe Large Cap Growth Fund is one of two actively managed US Large Cap Funds in the program. The fund holds a \$264.5M of fund assets.

The T. Rowe Large Cap Growth Fund seeks long-term capital appreciation by investing in common stock of large cap growth companies.

#### History and Organizational Structure

T. Rowe Price serves as the manager and advisor of the fund. Headquartered in Maryland, T. Rowe Price has over \$1 trillion in assets under management.

#### Investment Team

Taymour Tamaddon has served as the fund manager since 2017. Mr. Tamaddon has managed this fund since 2017 and has been with the firm for since 2004. He earned an MBA from Dartmouth College and is also a CFA charter holder.

#### Investment Philosophy and Approach

The fund uses a growth style of investing. The fund invests utilizes a bottom-up investment approach on companies that fall in the large-cap U.S. investment universe, defined as companies in the Russel 1000 Growth Index. The team seeks companies with an above-average rate of earnings and cash flow growth, as well as lucrative strategic positioning to drive future earnings growth. The fund is non-diversified as the fund may invest a larger percentage of assets in a smaller number of securities than a diversified fund. The fund looks for companies with one of more of the following characteristics:

- Above average growth rate: seek companies with superior growth in earnings and cash flow.
- Operations in "fertile fields": seeks companies with ability to sustain earnings momentum even in economic slowdowns by operating in industries or services where earnings and dividends can outpace inflation and the overall economy.
- Durability of earnings growth: seeks companies that operate in a lucrative niche in the economy that enables the company to expand even during slow growth periods.

#### Performance

The fund qualified for "Watch" based on the medium-term monitoring criteria. The Fund outperformed in the most recent quarter, attributable to stock selection and a general overweight allocation to Consumer Discretionary, as well as stock selection in Health Care.



### Trailing Performance Results, Net of Fees Ending September 30, 2022

Fund	Quarter	1 Year	3 Years	5 Years	Since Addition (11/20/2011)
T. Rowe Price Large Cap Growth Fund	-2.9	-31.1	7.1	9.9	14.0
<i>Russell 1000 Growth</i>	-3.6	-22.6	10.7	12.2	14.1
Difference	0.7	-8.5	-3.6	-2.3	-0.1
Percentile Rank*	20	70	49	35	8

\*Morningstar Large-Cap Growth Universe. 1 = Best, 100 = Worst.

The fund has outperformed the benchmark in the three of the last five calendar years, though it underperformed in the most recent calendar year. Stock selection especially in Information Technology, Consumer Discretionary, and Communications services sectors detracted from performance in 2021.

### Calendar Year Performance Results, Net of Fees Ending December 31, 2021

Fund	2017	2018	2019	2020	2021
T. Rowe Price Large Cap Growth Fund	37.8	4.3	28.5	39.6	23.2
<i>Russell 1000 Growth</i>	30.2	-1.5	36.4	38.5	27.6
Difference	7.6	5.8	-7.9	1.1	-4.4
Percentile Rank*	4	9	88	32	45

\* Morningstar Large-Cap Growth Universe. 1 = Best, 100 = Worst.

Over time, the large cap growth segment of the US stock market has proven itself to be an area where active investment managers have particularly struggled. Illustrating this fact is the top quartile performance of the Russell 1000 Growth index over longer trailing time periods. In fact, as of the end of 2021, the index ranked in the 14<sup>th</sup> percentile over the trailing 10-year period, indicating it has outperformed over 85% of the funds with similar capital market exposure. This compares to other asset classes where the index tends to produce near-median results. The exceptional peer performance of the index can be attributed to multiple factors with the dominant factors being the high concentration in the index top holdings.

The Russell 1000 Growth index is highly concentrated in its top holdings. In fact, just the top 10 holdings constitute approximately 50% of the index, while the top 5 holdings comprise roughly 40%. Of those, two stocks, Apple and Microsoft, each account for more than 10% of the index. This high concentration results in the price movement of 5 or 10 stocks dominating the performance of the index. As a result, a manager's weighting to those 5 to 10 stocks largely defines their relative performance to the index. As such, their view on just 10 or so holdings often overwhelms their view on the other 490 or so stocks in the index. Compounding this is the fact that, in practice, it is difficult for an active manager to express

positive conviction in the top 5 stocks of the index given their enormous weight and the fact that the manager would have to hold them at an even larger weight.

As such, it is likely that the T. Rowe Large Cap Growth fund will exhibit volatile relative performance over time. We would expect that this volatility should be materially positive in some periods and materially negative in others. Prior to recent materially negative relative performance, the Fund had a sizeable relative outperformance over a considerable period of time. Over time, this Fund has demonstrated strong absolute and peer results though with periods of dramatic underperformance relative to the benchmark. Overall, Meketa has a favorable opinion of the fund and views it as one of the better options in its peer universe.

### Recommendation

Due to continued underperformance against its benchmark, Meketa recommends that the T. Rowe Large Cap Growth Fund remain on "Watch" status to be closely monitored over future periods.

EDW/KRC/IH/mp



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