



AGENDA REPORT

TO: Jestin D. Johnson
City Administrator

FROM: Erin Roseman
Finance Director

SUBJECT: Oakland PFRS's Investment Portfolio
as of June 30, 2024

DATE: September 4, 2024

City Administrator Approval


Jestin Johnson (Sep 25, 2024 14:44 PDT)

Date: Sep 25, 2024

RECOMMENDATION

Staff Recommends That The City Council Receive An Informational Report On The Oakland Police And Fire Retirement System's ("PFRS", Or "System") Investment Portfolio As Of June 30, 2024.

EXECUTIVE SUMMARY

The attached Quarterly Investment Performance report (**Attachment A**), provided by the Oakland Police and Fire Retirement System (PFRS) Investment Consultant, Meketa Investment Group (MIG), summarizes the performance of the PFRS investment portfolio for the quarter ended June 30, 2024.

During the most recent quarter, the PFRS Total Portfolio generated an absolute return of 0.3 percent, gross of fees, underperforming its policy benchmark by -1.1 percent. The portfolio also underperformed its benchmark over the latest one-year period, three-year period, and five-year period. This is discussed in more detail in the "Investment Performance" section of this report.

	Quarter	1 Year	3 Year	5 Year
Total Portfolio (a)	0.3	10.9	2.7	6.5
Policy Benchmark	1.4	12.6	3.3	6.9
Excess Return	-1.1	-1.7	-0.6	-0.4

(a) Investment returns are gross of fees.

BACKGROUND / LEGISLATIVE HISTORY

The Oakland Police and Fire Retirement System is a closed defined benefit plan established by the City of Oakland's (the "City") Charter. PFRS is governed by a board of seven trustees (the "PFRS Board"). PFRS covers the City's sworn police and fire employees hired prior to July 1, 1976. PFRS was closed to new members on June 30, 1976. As of June 30, 2024, PFRS had 626 retired members and no active members.

Finance and Management Committee
October 8, 2024

The System's investment portfolio is governed by the investment policy set by the PFRS Board. The PFRS Board sets an investment policy that authorizes investments in a variety of domestic and international equity and fixed income securities. Eleven external investment managers currently manage the System's portfolio. Most of the portfolio is held in custody at Northern Trust. In accordance with the City Charter, the PFRS Board makes investment decisions according to the prudent person standard as defined by applicable court decisions and as required by the California Constitution.

In March 1997, the City issued Taxable Pension Obligation Bonds, Series 1997 ("1997 POBs") and, as a result, deposited \$417 million into the System to pay the City's contributions through June 2011. As a result of the funding agreement entered at the time the 1997 POBs were issued, City payments to PFRS were suspended from February 25, 1997, to June 30, 2011. The City of Oakland resumed contributing to PFRS effective July 1, 2011, and contributed \$45.5 million for the fiscal year (FY) ending June 30, 2012.

In July 2012, the City issued \$212.5 million of Taxable Pension Obligation Bonds, Series 2012 ("2012 POBs"). The City subsequently deposited \$210 million into the System and entered a funding agreement with the PFRS Board. Thus, no additional contributions were required until July 1, 2017.

As of the most recent actuary study dated July 1, 2023, the System's Unfunded Actuarial Liability is approximately \$97.0 million, and the System had a Funded Ratio of 81.4 percent on an Actuarial Value of Assets (AVA) basis. The City of Oakland is currently making monthly payments to the Plan for the FY 2023/2024 required contribution of \$40.76 million.

ANALYSIS AND POLICY ALTERNATIVES

The attached report, provided by the PFRS Investment Consultant and Actuary, summarizes the performance of the PFRS' investment portfolio. This report is being provided in accordance with the City of Oakland Charter to provide an update to the City Council on the status of the Oakland Police and Fire Retirement System.

The presentation of this report supports the Citywide priority of **responsive, trustworthy government**. This report communicates the PFRS's financial positions and obligations to the public, policymakers, retirees, and stakeholders. At the same time, the annual audits of the PFRS finances assures the accuracy of the information contained therein.

PFRS' Membership

The City Charter establishes plan membership, contribution, and benefit provisions. The System serves the City's sworn employees hired prior to July 1, 1976, who have not transferred to the California Public Employees' Retirement System ("CalPERS"). As of June 30, 2024, the System's membership was 626, as shown in **Table 1** below.

Table 1 PFRS Membership as of June 30, 2024			
Membership	POLICE	FIRE	TOTAL
Retiree	263	147	410
Beneficiary	126	90	216
Total Membership	389	237	626

PFRS Investment Portfolio

As of June 30, 2024, the PFRS' portfolio had an aggregate value of \$453.2 million, as shown in **Table 2**.

Table 2 PFRS Investment Portfolio as of June 30, 2024	
Investment	Fair Value
Domestic Equities	\$194,973,749
Fixed Income	107,748,738
Covered Calls	24,121,617
International Equities	59,974,536
Crisis Risk Offset	39,948,914
Credit	10,084,780
Cash	16,379,309
Total Portfolio	\$ 453,231,642

As of June 30, 2024, the PFRS portfolio had an aggregate value of \$453.2 million. This represents a \$1.4 million decrease in investment value after \$2.7 million in outflows for the benefit payments over the quarter. During the previous one-year period, the PFRS Total Portfolio decreased in value by \$44.6 million after drawdowns of \$11.6 million for benefit payments, as shown in **Table 3** below. The investment drawdowns for benefit payments are less the City of Oakland Contributions to the PFRS Plan of \$13.2 million for the Quarter and \$40.7 million for the fiscal year.

Table 3 Change in PFRS Portfolio Valuation as of June 30, 2024		
Total Plan Value	1 Quarter	1 Year
Beginning Market Value	\$ 454,455,689	\$ 420,170,089
Investment Drawdowns for Benefit Payments	-2,663,182	-11,615,491
Gain/(Loss) on Investment	1,439,135	44,677,044
Ending Market Value	\$ 453,231,642	\$ 453,231,642

PFRS Investment Performance

During the most recent quarter ending June 30, 2024, the PFRS Total Portfolio generated an absolute return of 0.3 percent, gross of fees, matching underperforming its policy benchmark by -1.1 percent. The portfolio also underperformed with the benchmark over the one-year, three-year, and five-year periods.

Over the most recent quarter ending June 30, 2024, the Plan's Domestic Equity allocation underperformed its benchmark by -2.8 percent. The Plan's International Equity allocation underperformed its benchmark by -0.8 percent. The Plan's Fixed Income allocation matched its benchmark. The Plan's Credit allocation also matched its benchmark. The Plan's Crisis Risk Offset allocation underperformed its benchmark by -0.1 percent, while the Covered Calls allocation outperformed its benchmark by 2.1 percent. **Table 4** below shows PFRS's recent investment performance in comparison to its corresponding benchmarks.

Table 4 PFRS Asset Class Performance as of June 30, 2024				
Investment Type	Quarter	1 Year	3 Year	5 Year
PFRS Total Fund	0.3	10.9	2.7	6.5
PFRS Policy Benchmark	1.4	12.6	3.3	6.9
Excess Returns	-1.1	-1.7	-0.6	-0.4
PFRS Domestic Equity	0.4	17.3	6.0	12.0
Benchmark: Russell 3000	3.2	23.1	8.1	14.1
Excess Returns	-2.8	-5.8	-2.1	-2.1

Table 4				
PFRS Asset Class Performance				
As of June 30, 2024, <i>cont'd</i>				
Investment Type	Quarter	1 Year	3 Year	5 Year
PFRS International Equity	0.2	14.6	3.4	7.1
Benchmark: MSCI ACWI Ex US (Net)	1.0	11.6	0.5	5.5
Excess Returns	-0.8	3.0	2.9	1.6
PFRS Fixed Income	0.2	3.2	-2.5	0.4
Benchmark: Bloomberg US Universal	0.2	3.5	-2.7	0.1
Excess Returns	0.0	-0.3	0.2	0.3
PFRS Credit	1.1	10.2	3.8	5.4
Benchmark: Bloomberg US Corp High Yield	1.1	10.4	1.6	3.9
Excess Returns	0.0	-0.2	2.2	1.5
PFRS Crisis Risk Offset	-1.5	0.9	-3.2	-7.1
Benchmark: Crisis Risk Offset Benchmark	-1.4	3.6	4.3	0.7
Excess Returns	-0.1	-2.7	-7.5	-7.8
PFRS Covered Calls	3.6	16.2	8.4	11.7
Benchmark: CBOE S&P 500 Buy Write	1.5	8.9	5.0	5.6
Excess Returns	2.1	7.3	3.4	6.1
Note: Investment returns are gross of fees. Crisis Risk Offset Benchmark is composed of 100% SG Multi Alternative Risk Premia Index through 12/31/2022; 33.34% SG Trend Index, 33.33% SG Multi Alternative Risk Premia Index, and 33.33% Bloomberg US Government Long Term Bond Index thereafter.				

Table 5 compares PFRS Total Portfolio performance to other pension funds and benchmarks.

Table 5				
PFRS Total Fund Performance as of June 30, 2024				
	Quarter	1 Year	3 Year	5 Year
PFRS Fund (Gross of Fees)	0.3	10.9	2.7	6.5
Comparisons:				
PFRS Actuarial Expected Rate of Return (blend) (a) (b)	1.5	6.0	6.0	6.0
Policy Benchmark (blend) (c)	1.4	12.6	3.3	6.9
Median Fund (d)	0.9	10.5	2.7	7.2
CalSTRS Investment Returns (Gross of Fees)	1.1	8.6	4.5	8.6
East Bay MUD Investment Returns (Gross of Fees)	1.9	12.6	3.6	7.7
San Joaquin County Investment Returns (Gross of Fees)	1.4	10.1	4.3	7.0
<p>a) The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 12/31/2017, and 6.0% currently.</p> <p>b) The quarterly actuarial expected rate of return is calculated based on the 6.0% annual return assumption.</p> <p>c) The Policy Benchmark currently consists of 40% Russell 3000, 12% MSCI ACWI ex US (Net), 31% Bloomberg US Universal, 2% Bloomberg US Corp. High Yield, 5% CBOE S&P 500 Buy Write Index (BXM), 10% Crisis Risk Offset Benchmark since 1/1/ 2019. Crisis Risk Offset Benchmark is composed of 100% SG Multi Alternative Risk Premia Index through 12/31/2022; 33.34% SG Trend Index, 33.33% SG Multi Alternative Risk Premia Index, and 33.33% Bloomberg US Government Long Term Bond Index thereafter.</p> <p>d) Median Fund is of Public Defined Benefits Plans with \$250 million to \$1 billion in assets.</p> <p>e) CalSTRS Investment Returns data is not available yet.</p>				

FISCAL IMPACT

This is an informational report. There are no budget implications associated with this report.

PUBLIC OUTREACH / INTEREST

This item did not require public outreach other than the required posting on the City's website.

COORDINATION

This report was prepared in coordination with the PFRS' Investment Consultant (Meketa).

SUSTAINABLE OPPORTUNITIES

Economic: Whenever possible, the PFRS Board seeks to benefit the local Oakland-based economy. In 2006, the PFRS Board and staff created the PFRS Local Broker provision. This provision mandates that the PFRS Investment Managers consider using Oakland-based brokers for all trades conducted on behalf of the fund based on best execution. This program aims to regenerate some of the commissions generated by the System into the Oakland economy.

Environmental: The PFRS Board supports a sustainable environment. On June 29, 2016, the PFRS Board passed Resolution No. 6927 prohibiting PFRS investment managers from investing PFRS funds in any publicly traded company which derives at least 50 percent of its revenue from the mining and extracting of thermal coal.

Race & Equity: There are no race and equity opportunities associated with this report.

ACTION REQUESTED OF THE CITY COUNCIL

Staff Recommends That the City Council Receive an Informational Report on the Oakland Police and Fire Retirement System's ("PFRS" or "System") Investment Portfolio as of June 30, 2024.

For questions regarding this report, please contact Erin Roseman, Director of Finance, at (510) 238-2026.

Respectfully submitted,



Erin Roseman (Sep 24, 2024 12:20 PDT)

ERIN ROSEMAN
Director of Finance, Finance Department

Reviewed by:
Dawn Hort, Assistant Treasury Administrator

Prepared by:
Téir Jenkins, Investment & Operations Manager
Retirement Unit

Attachments (1):

Attachment A: Oakland Police and Fire System Quarterly Investment Performance Report as of June 30, 2024

Oakland Police and Fire Retirement System

August 28, 2024

Quarterly Performance Report
as of June 30, 2024

Agenda

1. Executive Summary
2. Economic and Market Update as of June 30, 2024
3. Quarterly Performance as of June 30, 2024
4. Manager Monitoring / Probation Status
5. Appendix
6. Disclaimer, Glossary, and Notes

Executive Summary

Total Portfolio Review

The Oakland Police and Fire Retirement System (OPFRS) finished the quarter with \$453.2 million in assets after net cash flows including monthly benefit payments. All asset classes were within their acceptable target allocation ranges¹ except for Fixed Income, which was slightly outside of its lower target limit at the end of the quarter.

Cash Flow Summary (\$ Millions)	Quarter	1 Year
Beginning Market Value	454.5	420.2
Net Cash Flows (including Benefit Payments)	-2.7	-11.6
Net Investment Change (Gain/Loss)	1.4	44.7
Ending Market Value	453.2	453.2

Investment Performance²

	QTD	YTD	1 Year	3 Year	5 Year
Total Plan (Gross)	0.3	5.3	10.9	2.7	6.5
Total Plan (Net)	0.3	5.1	10.6	2.4	6.2
<i>Policy Benchmark</i>	<i>1.4</i>	<i>6.8</i>	<i>12.6</i>	<i>3.3</i>	<i>6.9</i>
Excess Return	-1.1	-1.7	-2.0	-0.9	-0.7
<i>Public DB (\$250M-\$1B) Median Fund</i>	<i>0.9</i>	<i>5.6</i>	<i>10.5</i>	<i>2.7</i>	<i>7.2</i>
Total Plan (Net) vs. Peer Median Fund	-0.7	-0.4	0.1	-0.3	-0.9
<i>Peer Group Percentile Rank</i>	<i>82</i>	<i>66</i>	<i>50</i>	<i>57</i>	<i>77</i>

¹ The allocation targets are those adopted by the board in 2017 Q4. A new asset-liability study was completed, and new long-term and interim targets and ranges were adopted in 2024 Q1; these are expected to commence starting July 2024.

² Fiscal year begins on July 1. Peer group is Investment Metrics Public Defined Benefit plans with \$250 million to \$1 billion in assets. The number of peers is about 80-90 portfolios in each time period. Please see the Benchmark History section for the Policy Benchmark's current and historical compositions.

Asset Class and Manager Highlights¹

- **Total Plan** underperformed its Policy Benchmark across all time periods on a net of fee basis.
 - The underperformance during the quarter, year-to-date, and over the trailing 1-year period was driven primarily by the Domestic Equity segment as most managers performance lagged the broad market Russell 3000 Index. International Equity and Fixed Income were positive contributors to the Total Plan's relative performance for year-to-date and over the trailing 1-year period, partially offsetting Domestic Equity's underperformance.
- **Domestic Equity** underperformed the Russell 3000 Index over all trailing periods. Active Domestic Equity managers across different styles, with the exception of Brown Small Cap Value, trailed the broad market Russell 3000 Index over the 1-year period as a select group of companies ("Magnificent Seven") drove returns in 2023. For the quarter, Brown Small Cap Value and Rice Hall James outperformed their respective benchmarks while all other active managers underperformed their respective benchmarks.
- **International Equity** and its only active manager, SGA, outperformed MSCI ACWI ex US (Net) for all periods except over the quarter.
- **Fixed Income** slightly outperformed or matched its custom benchmark over the quarter and 1-year trailing period. The underweight allocation to Fixed Income has contributed to the Total Plan's relative performance over the past 1-year trailing period. The underlying managers outperformed their respective benchmarks for most time periods.
- The **Credit** segment, with Polen Capital as its sole manager, outperformed its underlying benchmark, the Bloomberg US Corporate High Yield Index, for all time periods except for the quarter and 1-year trailing period.
- **Covered Calls**, as well as both the passive BXM and the active DeltaShift strategies, outperformed the CBOE S&P 500 Buy Write Index across almost all periods measured.
- The **Crisis Risk Offset** segment underperformed its custom benchmark over all time periods measured. Year-to-date Kepos Alternative Risk Premia and Vanguard Long-term Treasury ETF have outperformed their respective benchmarks while Versor Trend Following lagged its benchmark, despite its outperformance over the quarter.

¹ Fiscal year begins on July 1. Please see the Benchmark History section for the custom benchmarks' current and historical compositions.

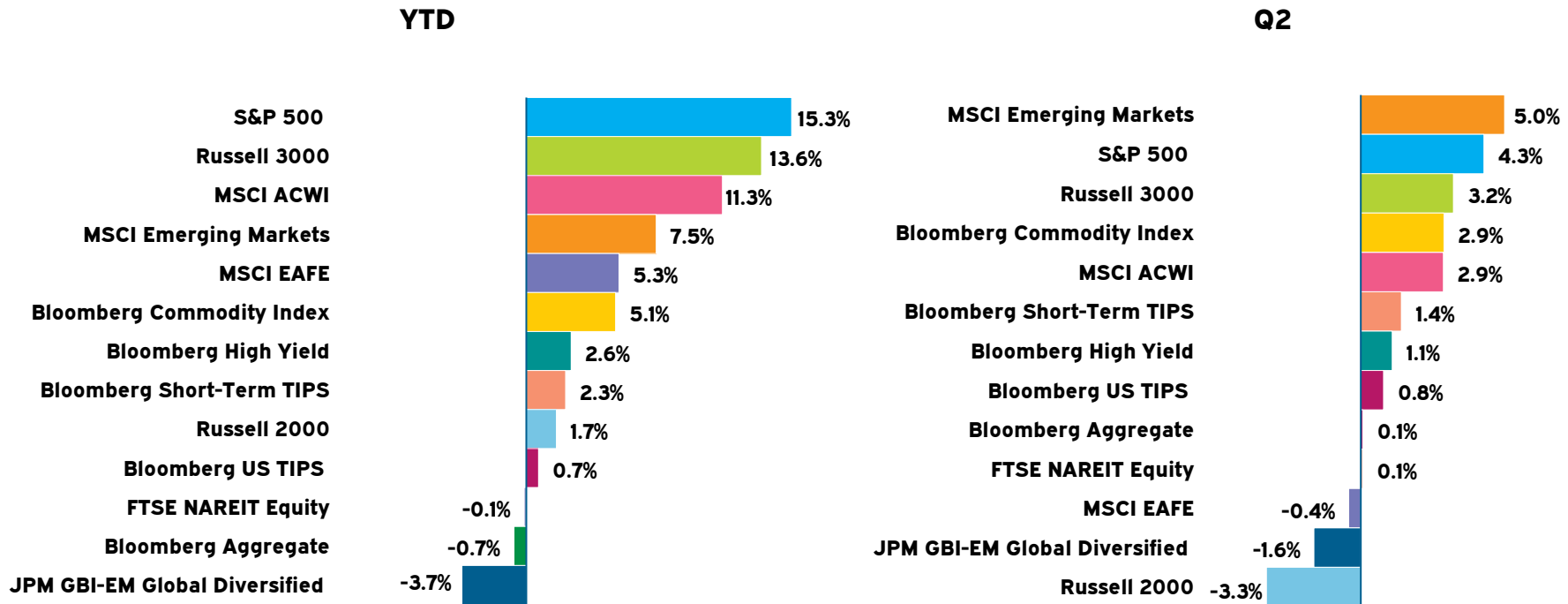
Economic and Market Update

As of June 30, 2024

Commentary

- Softening economic data, increased hopes of interest rate cuts, and ongoing AI optimism drove most asset classes higher in the second quarter.
- While the Fed remains data dependent, improvements in inflation and a cooling labor market may clear the way for several rate cuts this year.
 - Inflation pressures have eased in most countries from their pandemic peaks, but some uncertainty remains and levels are still above most central bank targets. In the second quarter, headline and core inflation measures in the US both fell, with most readings coming in below expectations.
 - The US equity markets (Russell 3000 index) added to its gains in the second quarter, rising 3.2%. Technology continued to drive results in the quarter due to AI demand and investment.
 - Non-US developed equity markets fell in the second quarter (-0.4%) on continued strength in the US dollar and political uncertainty in Europe.
 - Emerging market equities rallied (5.0%), for the quarter. Chinese stocks were up 7.1% as coordinated buying of Chinese exchange traded funds (ETFs) by state-backed financial services companies helped boost stock prices.
 - US interest rates rose over the quarter but finished off their highs. Income offset capital losses though, leading to the broad US bond market rising 0.1% in the second quarter.
- Looking to the rest of this year, the paths of inflation and monetary policy, China's economic disorder and slowing economic growth, and the many looming elections will be key factors.

Index Returns¹



→ Declining inflation, resilient growth, and strong corporate earnings supported most asset classes in the second quarter.

→ Mid-way through 2024, US stocks have significantly outperformed other asset classes on a year-to-date basis.

¹ Source: Bloomberg. Data is as of June 30, 2024.

Domestic Equity Returns¹

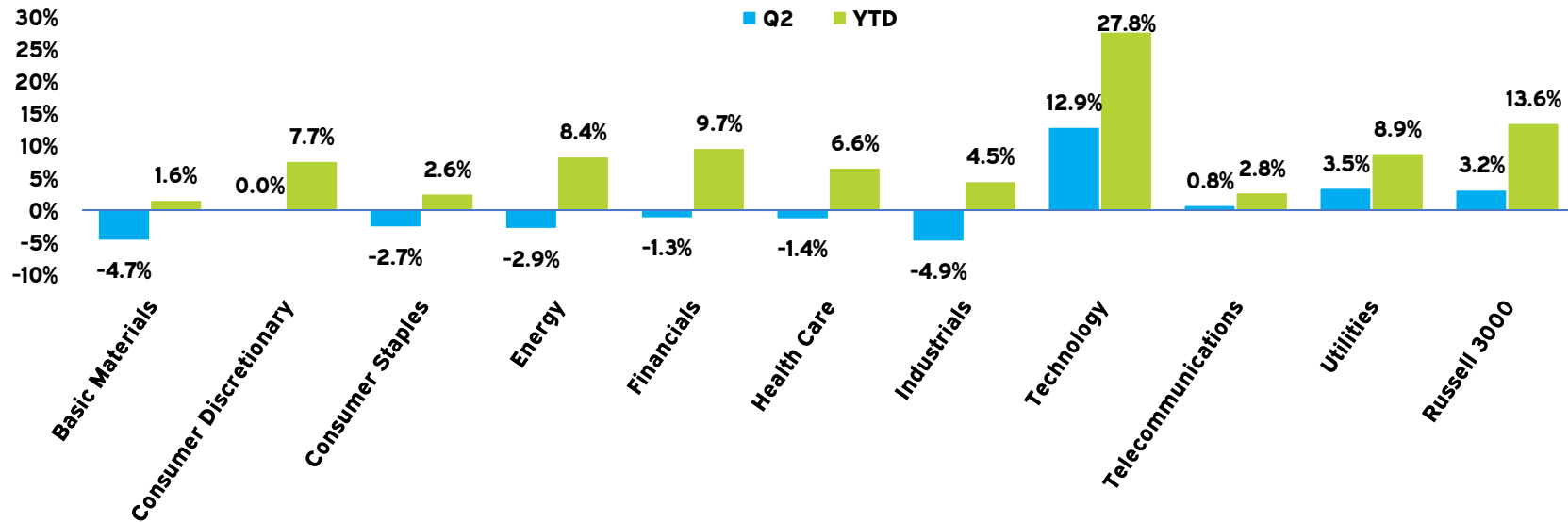
Domestic Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	3.6	4.3	15.3	24.6	10.0	15.1	12.9
Russell 3000	3.1	3.2	13.6	23.1	8.1	14.2	12.1
Russell 1000	3.3	3.6	14.2	23.9	8.8	14.6	12.5
Russell 1000 Growth	6.7	8.3	20.7	33.5	11.3	19.4	16.3
Russell 1000 Value	-0.9	-2.2	6.6	13.1	5.5	9.0	8.2
Russell MidCap	-0.7	-3.3	5.0	12.9	2.4	9.5	9.0
Russell MidCap Growth	1.7	-3.2	6.0	15.1	-0.1	9.9	10.5
Russell MidCap Value	-1.6	-3.4	4.5	12.0	3.7	8.5	7.6
Russell 2000	-0.9	-3.3	1.7	10.1	-2.6	6.9	7.0
Russell 2000 Growth	-0.2	-2.9	4.4	9.1	-4.9	6.2	7.4
Russell 2000 Value	-1.7	-3.6	-0.8	10.9	-0.5	7.1	6.2

US Equities: The Russell 3000 rose 3.2% in the second quarter, bringing the year-to-date results to 13.6%.

- US stocks continued their rise in June driven by on-going AI optimism. Nearly all the quarterly market gains in the S&P 500 were driven by large cap technology stocks, with the S&P 500 equal weighted index down 3.1% for the quarter.
- US large cap stocks continue to outperform small cap stocks. This dynamic is driven by the large technology stocks like NVIDIA, Apple, and Alphabet and the underperformance of small cap biopharma companies and banks.
- Growth outperformed value for the quarter, with the most pronounced outperformance in the large cap space (8.3% versus -2.2%).

¹ Source: Bloomberg. Data is as of June 30, 2024.

Russell 3000 Sector Returns¹



- Unlike first quarter performance, where all sectors gained, the second quarter saw mixed results across the major sectors.
- Technology (+12.9%) continued to drive results fueled by on-going AI optimism. Utilities were a distant second increasing 3.5%, on expectations of increased demand from AI-related companies.
- Many other sectors fell, including financials (-1.3%), health care (-1.4%), consumer staples (-2.7%), energy (-2.9%), materials (-4.7%), and industrials (-4.9%).
- All sectors have positive returns for the year-to-date period. Technology stocks (+27.8%) continue to lead the broader market, followed by financials (9.7%).

¹ Source: Bloomberg. Data is as of June 30, 2024.

Foreign Equity Returns¹

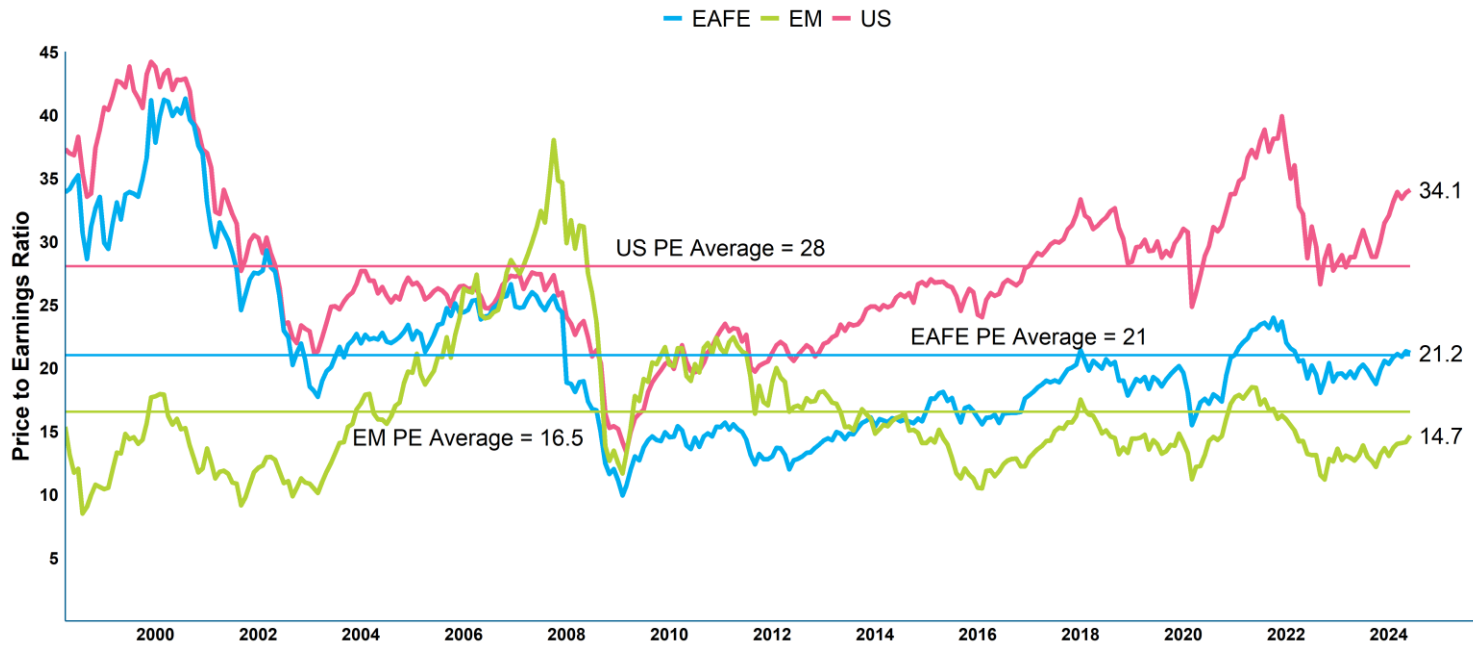
Foreign Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-0.1	1.0	5.7	11.6	0.5	5.6	3.8
MSCI EAFE	-1.6	-0.4	5.3	11.5	2.9	6.5	4.3
MSCI EAFE (Local Currency)	-0.6	1.0	11.1	15.1	8.1	9.0	7.4
MSCI EAFE Small Cap	-3.0	-1.8	0.5	7.8	-3.4	4.2	4.3
MSCI Emerging Markets	3.9	5.0	7.5	12.5	-5.1	3.1	2.8
MSCI Emerging Markets (Local Currency)	4.3	6.2	11.0	15.5	-1.6	5.6	5.8
MSCI EM ex. China	6.1	4.2	8.4	18.5	1.4	6.7	3.9
MSCI China	-1.9	7.1	4.7	-1.6	-17.7	-4.3	1.4

Foreign Equity: Developed international equities (MSCI EAFE) fell 0.4% in the second quarter, while emerging market equities (MSCI Emerging Markets) gained 5.0%.

- For the second quarter, developed market equities declined driven by continued strength in the US dollar and regional political risks particularly in France. UK and Japanese equities made new all-time highs during the quarter, but this was not enough to offset losses in Europe.
- Emerging market equities outpaced developed market equities during the quarter given strong results in China (7.1%). China equities moved into positive territory for the year (4.7%) due to government purchases of shares, improving economic data, and returning foreign investors.

¹ Source: Bloomberg. Data is as of June 30, 2024.

Equity Cyclically Adjusted P/E Ratios¹



- At the end of the second quarter, the US equity price-to-earnings ratio remained elevated and above its 21st century average.
- International equity market valuations remain well below the US. International developed market valuations have increased to slightly above their long-term average, while emerging market equities remain below their long-term average despite recent gains.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of June 2024. The average line is the long-term average of the US, EM, and EAFE PE values from April 1998 to the recent month-end respectively.

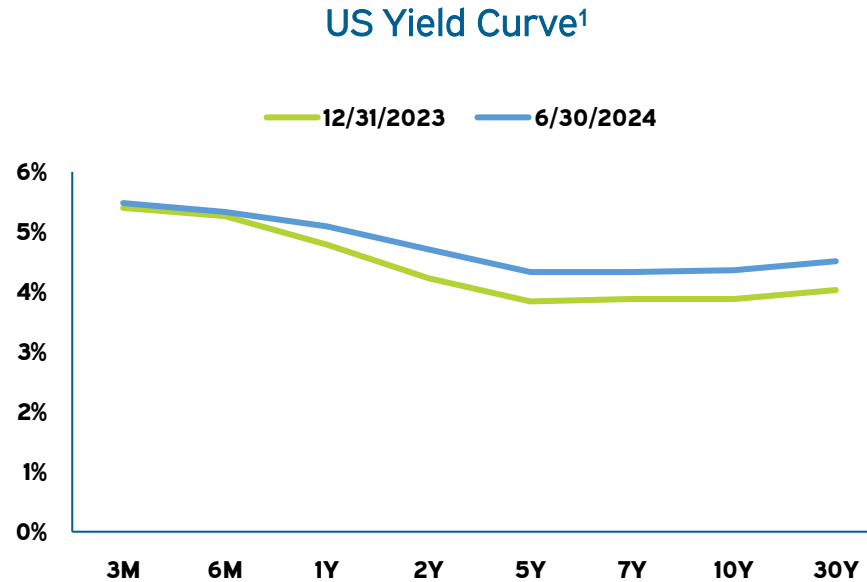
Fixed Income Returns¹

Fixed Income	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	0.9	0.2	-0.3	3.5	-2.7	0.1	1.6	5.3	6.0
Bloomberg Aggregate	0.9	0.1	-0.7	2.6	-3.0	-0.2	1.3	5.0	6.2
Bloomberg US TIPS	0.8	0.8	0.7	2.7	-1.3	2.1	1.9	4.8	6.6
Bloomberg Short-term TIPS	0.6	1.4	2.3	5.4	2.2	3.2	2.0	5.1	2.4
Bloomberg High Yield	0.9	1.1	2.6	10.4	1.6	3.9	4.3	7.9	3.7
JPM GBI-EM Global Diversified (USD)	-1.1	-1.6	-3.7	0.7	-3.3	-1.3	-0.9	--	--

Fixed Income: The Bloomberg Universal index rose 0.2% in the second quarter, reducing the year-to-date decline to -0.3%.

- Bonds finished the quarter slightly up as May and June gains offset the April declines.
- The broad US bond market (Bloomberg Aggregate) rose 0.1% in the second quarter, with the broad TIPS market gaining 0.8%. The less interest rate sensitive short-term TIPS index increased 1.4% for the quarter, leading to the best results.
- High yield bonds (1.1%) also rose, as risk appetite remains strong.

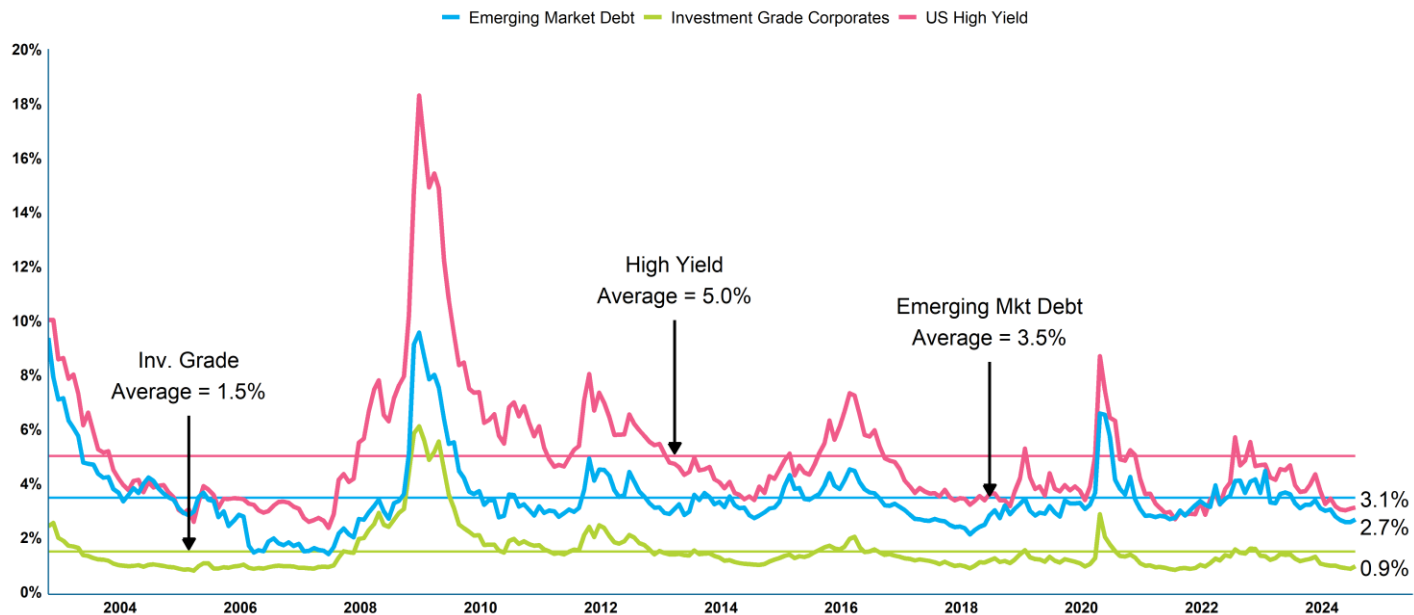
¹ Source: Bloomberg. Data is as of June 30, 2024. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively. JPM GBI-EM data is from J.P. Morgan. Current yield and duration data is not available.



- After rates significantly increased in April on strong inflation data, they then declined in May and June. Chair Powell confirming that the FOMC would not raise rates again this year as economic data appears to be returning to long-run trends led to rates declining from the April highs.
- The more policy sensitive 2-year Treasury yield finished the quarter roughly 0.2% higher at 4.76% but well off its peak of over 5.0%. The 10-year Treasury rose by a similar amount during the quarter finishing at 4.39%; also, off its April peak of 4.68%.
- The yield curve remained inverted at month-end, with the spread between the 2-year and 10-year Treasury at roughly -35 basis points.

¹ Source: Bloomberg. Data is as of June 30, 2024.

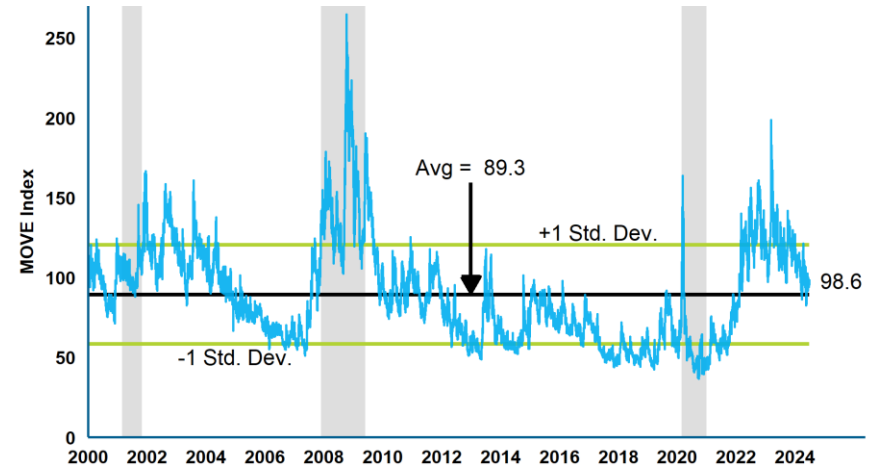
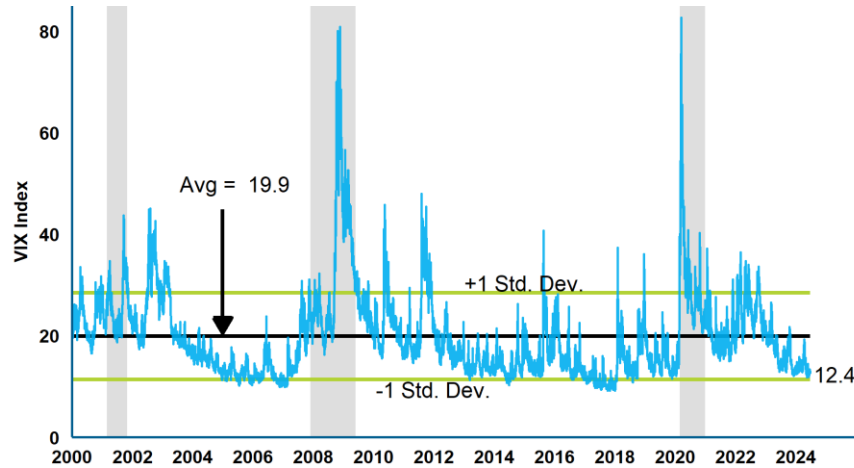
Credit Spreads vs. US Treasury Bonds¹



- Despite rising rates, investor demand for risk exposure in credit markets remained strong in Q2 given measured weakness in the economic outlook and expectations of lower interest rates by year-end.
- Spreads (the yield above a comparable maturity Treasury) stayed relatively steady over the quarter, near post-pandemic lows. All spreads remained below their respective long-run averages, particularly high yield.
- Although spreads are relatively tight, yields remain at above-average levels compared to the last two decades, particularly for short-term issues.

¹ Source: Bloomberg. Data is as of June 30, 2024. Average lines denote the average of the investment grade, high yield, and emerging market spread values from September 2002 to the recent month-end, respectively.

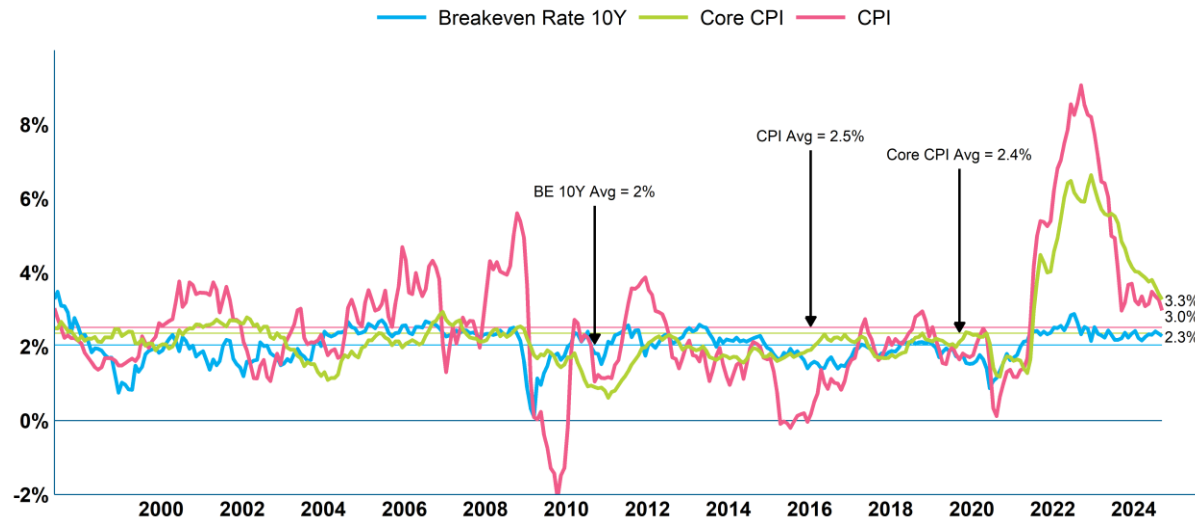
Equity and Fixed Income Volatility¹



- Volatility in equities was around one standard deviation below its long-term average at the end of the quarter as continued strength in technology stocks and weakening economic data has moderated fear in the markets.
- Volatility in bonds (MOVE) ended June higher than where it started the quarter (98.6 versus 86.4) and above its long-run average.

¹ Equity Volatility – Source: FRED. 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 June 2024. The average line indicated is the average of the VIX and MOVE values between January 2000 and June 2024.

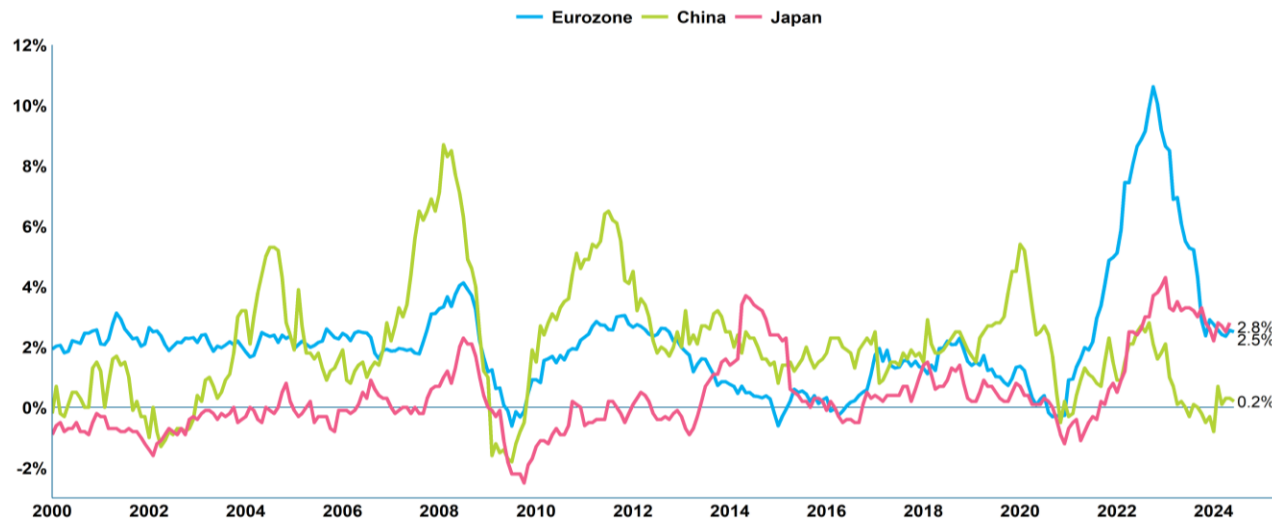
US Ten-Year Breakeven Inflation and CPI¹



- Year-over-year headline inflation continued to fall in June (3.3% to 3.0%) and again came in below expectations. Over the quarter, inflation fell by a total of 0.5%.
- Month-over-month inflation was negative for the first time since March 2020, largely because of price declines in energy and core goods.
- Core inflation (excluding food and energy) also declined in June (3.4% to 3.3%) and came in below expectations. A drop in used car prices, transportation services, and a slowing of the pace of shelter price increases all contributed to the decline.
- Inflation expectations (breakevens) have been volatile, but they finished the quarter largely where they started.

¹ Source: FRED. Data is as June 2024. The CPI and 10 Year Breakeven average lines denote the average values from February 1997 to the present month-end, respectively. Breakeven values represent month-end values for comparative purposes.

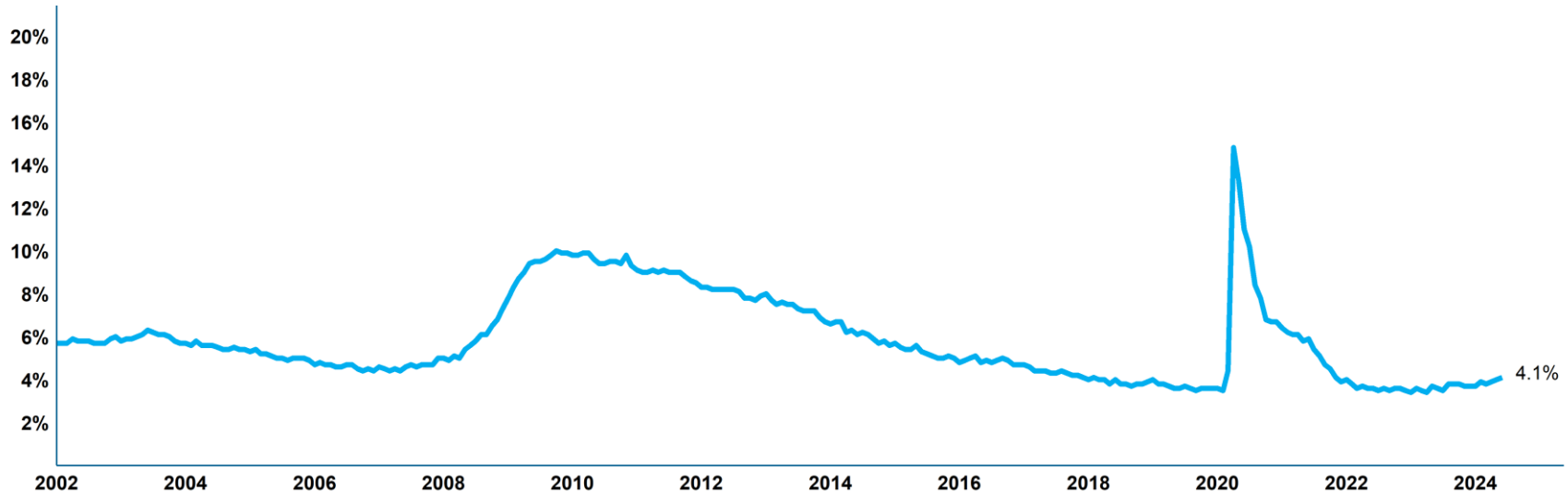
Global Inflation (CPI Trailing Twelve Months)¹



- Outside the US, inflation is also easing from the recent peaks.
- In the eurozone, inflation experienced a dramatic decline last year but remains above the central bank's 2% target. In June, inflation fell slightly from 2.6% to 2.5% year-over-year.
- Inflation in Japan has slowly dropped from the early 2023 peak of 4.3%, but it remains near levels not seen in a decade. In the most recent reading (May), inflation rose modestly from 2.5% to 2.8% as fuel and utility prices increased.
- China appears to have emerged from deflationary pressures, but inflation levels remain well below other major economies due to slowing economic growth. Annual inflation levels have been positive for the last five readings signaling improvement in domestic demand. The June year-over-year number came in at 0.2%, slightly lower than the prior reading of 0.3%.

¹ Source: Bloomberg. Data is June 30, 2024, except Japan which is as of May 31, 2024.

US Unemployment¹

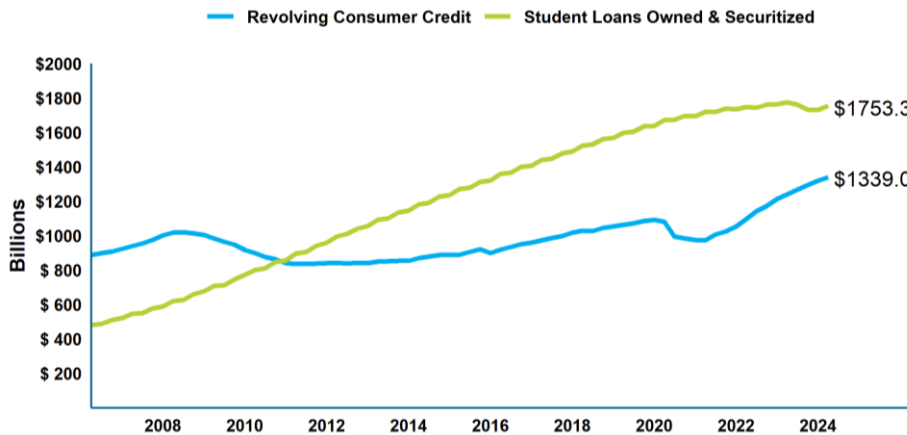


- Overall, the US labor market remains healthy, but there have been some recent signs of softening.
- The unemployment rate came in above expectations in June reaching 4.1%, a level not seen since early 2022. Over the second quarter unemployment increased 0.3%.
- Wage growth remains strong though (around 3.9% annually), and initial claims for unemployment are still subdued.
- Despite significant downward revisions to job gains in April and May, in June the economy added 206,000 jobs (above expectations). The government added the most jobs (70,000), followed by the healthcare sector (49,000).

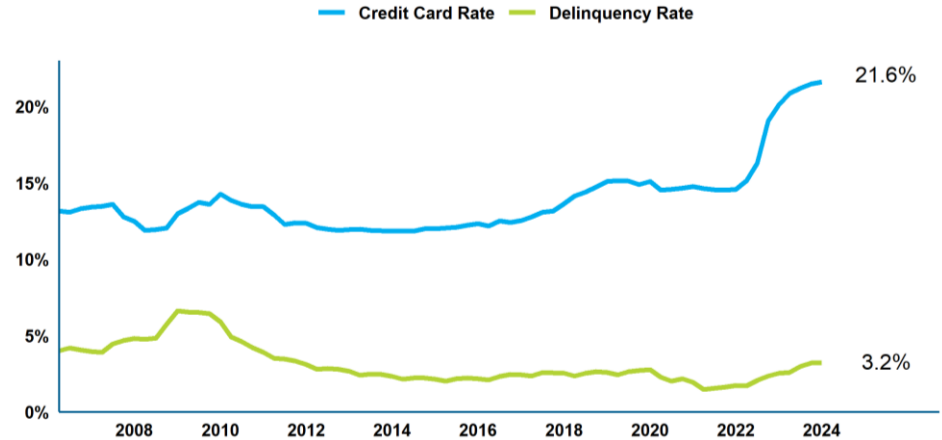
¹ Source: FRED. Data is as June 30, 2024.

US Consumer Under Stress?¹

Revolving Consumer Credit & Student Loans (\$B)



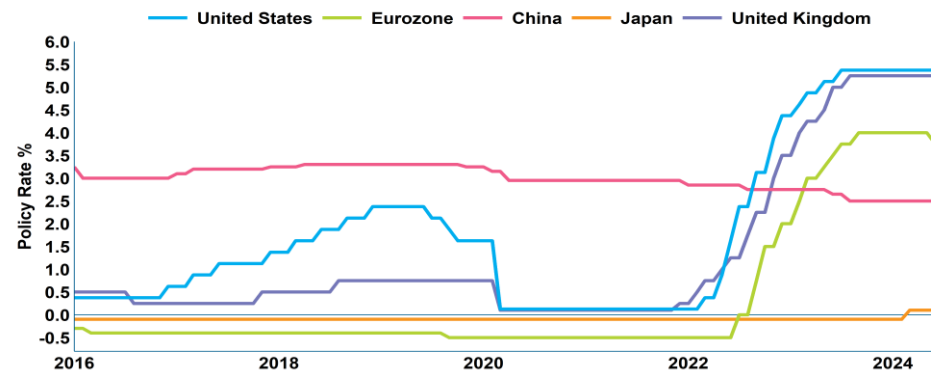
Consumer Credit Card Interest Rates (%)



- Despite the strong labor market and higher wages, pressures are building on the US consumer. This is an important consideration as consumer spending has been a key driver of economic growth.
- Revolving consumer credit surged to new highs in 2023 even as credit card interest rates hit levels not seen before (the prior peak was around 19% in the 1980s). Recently, we have also seen payment delinquencies on credit cards and auto loans start to increase, particularly for younger people.
- The return of student loan repayments after a three-year pandemic-related reprieve could add to pressures on consumers' budgets. This might be partially mitigated by recently initiated repayment and forgiveness programs.
- It is worth noting though that many people locked in low-rate fixed mortgages before rates increased and many corporations issued debt at extremely low levels, reducing the sensitivity to higher rates.

¹ Source: FRED. Data is as of March 31, 2024. Revolving Consumer Credit data is seasonally adjusted to remove distortions during the holiday season.

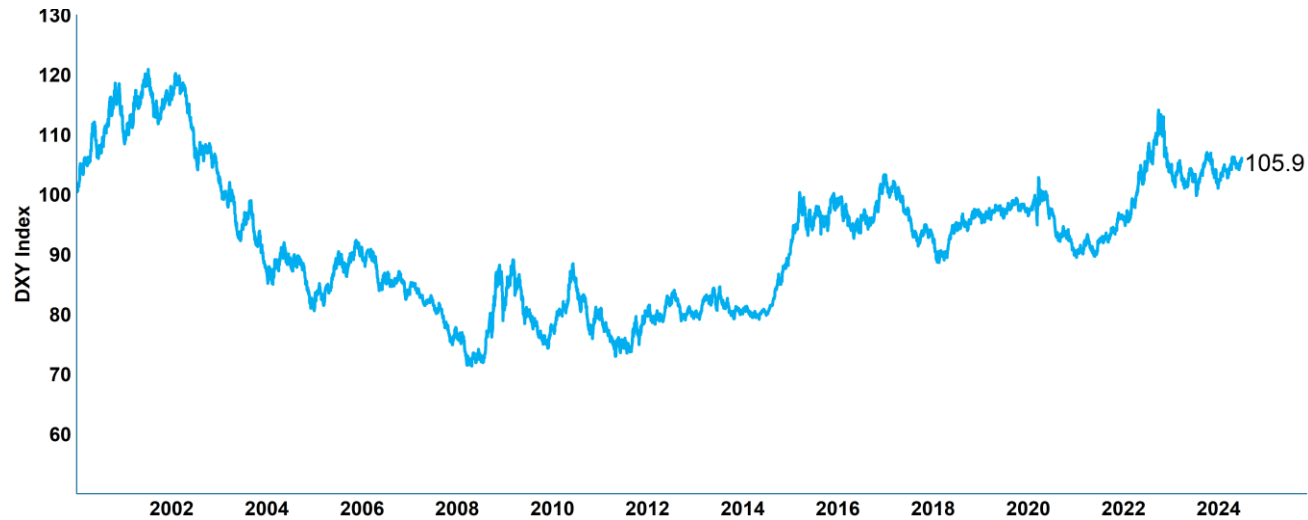
Policy Rates¹



- In the US interest rates have remained at current levels (5.25%-5.50%) for a year now. The most recent “dot plot” (the Fed’s expectation on the path of rates) showed a median expectation of roughly one rate cut this year. Markets are now pricing in two to three rate cuts in 2024 given the improving inflation data with the probability of a cut around 100% in September and slightly over 90% for December.
- The European Central Bank (ECB) cut its policy rate by 25 basis points at the beginning of June, as expected. Like the US, cuts are also anticipated at the September and December meetings.
- After ending the last negative interest rate policy given higher inflation levels, the Bank of Japan (BOJ) has since kept rates at slightly above 0%. Policy is expected to tighten going forward with the BOJ announcing at their recent meeting they would also start reducing their bond purchases. Interest rate futures markets are pricing in roughly two rate hikes (of 10 basis points) through the end of the year.
- The central bank in China has maintained interest rates at record low levels and continues to inject liquidity into the banking system, to support economic growth.

¹ Source: Bloomberg. Data is as of June 30, 2024. United States rate is the mid-point of the Federal Funds Target Rate range. Eurozone rate is the ECB Deposit Facility Announcement Rate. Japan rate is the Bank of Japan Unsecured Overnight Call Rate Expected. China rate is the China Central Bank 1-Year Medium Term Interest Rate. UK rate is the UK Bank of England Official Bank Rate.

US Dollar vs. Broad Currencies¹



- Overall, the dollar rose in the second quarter (104.5 to 105.9) versus a basket of currencies of major trading partners.
- China and the ECB cutting policy rates, stronger relative growth, and the weakening of the Japanese yen, have all collectively helped strengthen the dollar.

¹ Source: Bloomberg. Data as of June 30, 2024.

Summary

Key Trends:

- According to the International Monetary Fund's (IMF) April report, global growth this year is expected to match the 2023 estimate at around 3.2% with most major economies predicted to avoid a recession. Continued strong economic growth does run the risk of inflation and interest rates staying higher for longer.
- Key economic data in the US has largely weakened and come in below expectations, causing markets to expect between two and three rate cuts this year. Uncertainty remains though regarding the timing and pace of interest rate cuts in the coming year.
- We have started to see some divergences in monetary policy with other central banks, such as the European Central Bank (ECB), starting to cut interest rates while the Fed remains on hold. This disparity will likely influence investment flows and currencies.
- US consumers could feel pressure as certain components of inflation (e.g., shelter) remain high, borrowing costs are elevated, and the job market may weaken.
- A focus for US equities going forward will be whether earnings can remain resilient if growth slows. Also, the future paths of the large technology companies that have driven market gains will be important.
- Equity valuations remain lower in emerging and developed markets, but risks remain, including China's economic uncertainty and ongoing weakness in the real estate sector. Japan's recent tightening of monetary policy along with changes in corporate governance in the country could influence relative results.

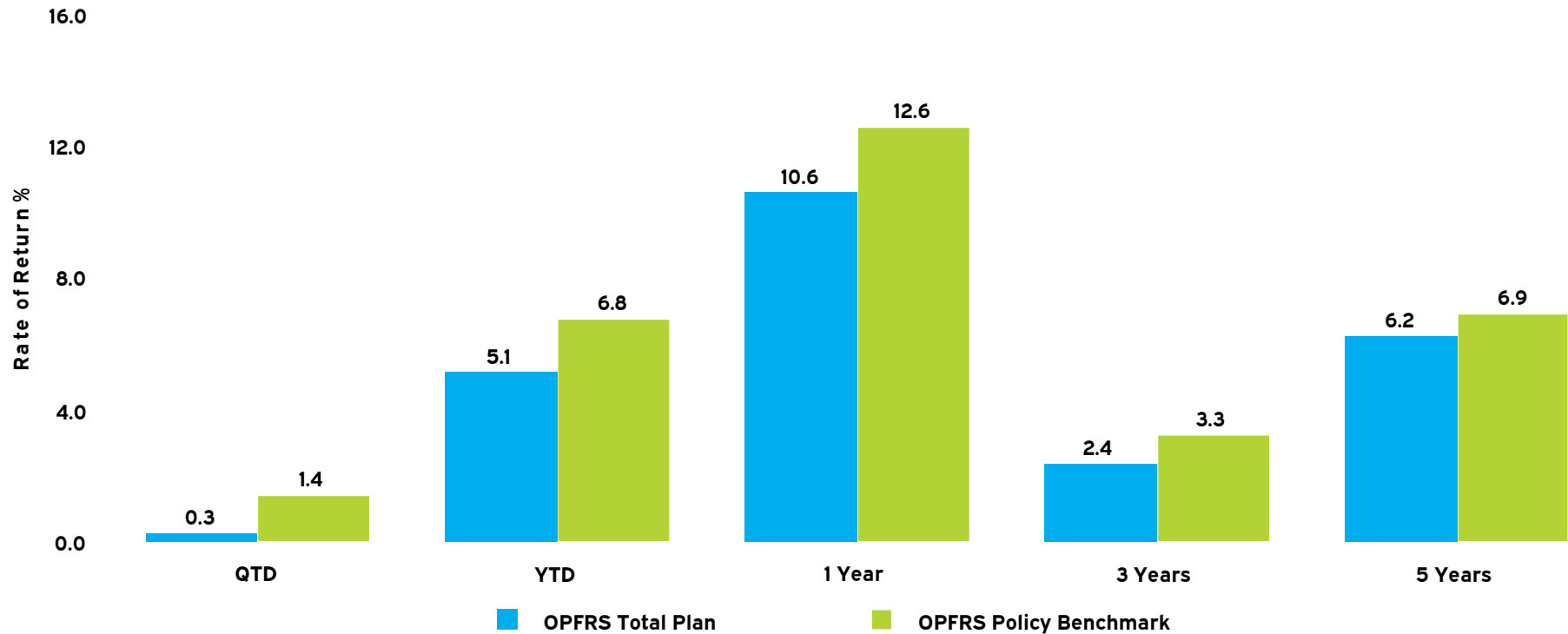
Quarterly Performance

as of June 30, 2024

Summary of Cash Flows

	QTD (\$)	1 Year (\$)
OPFRS Total Plan		
Beginning Market Value	454,455,689	420,170,089
Net Cash Flow	-2,663,182	-11,615,491
Net Investment Change	1,439,135	44,677,044
Ending Market Value	453,231,642	453,231,642

Return Summary Ending June 30, 2024

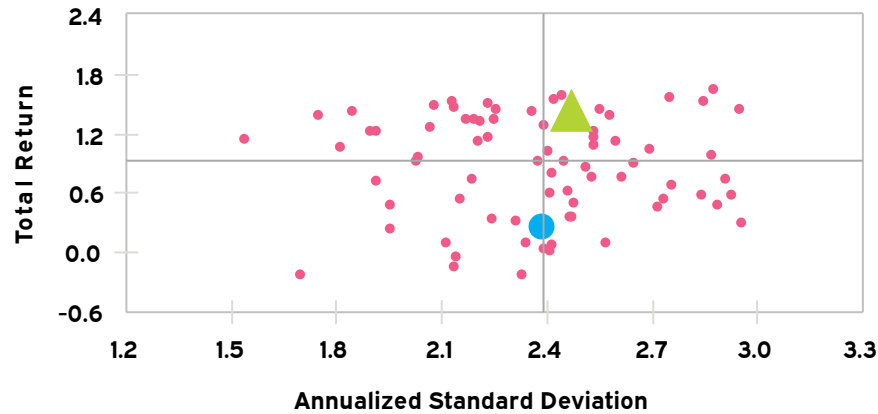


Total Plan performance shown is net of fees.

Oakland Police and Fire Retirement System

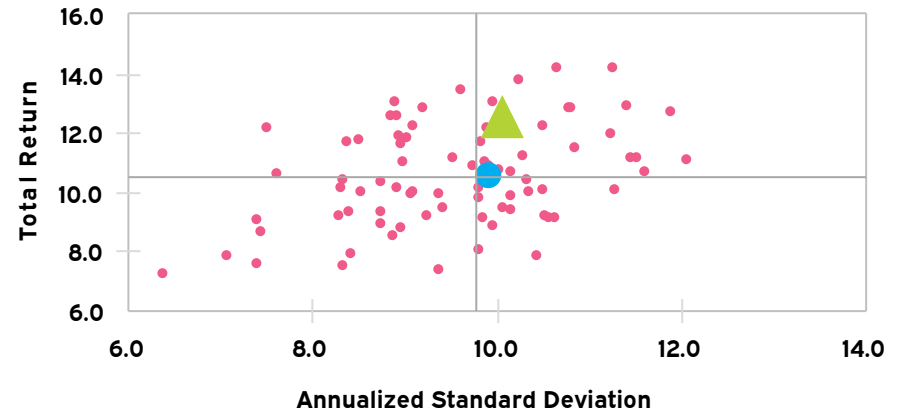
Total Plan Risk/Return Summary | As of June 30, 2024

Risk-Return Summary QTD Ending June 30, 2024



- IM Public DB \$250M-\$1B
- OPFRS Total Plan
- ▲ OPFRS Policy Benchmark

Risk-Return Summary 1 Yr Ending June 30, 2024



- IM Public DB \$250M-\$1B
- OPFRS Total Plan
- ▲ OPFRS Policy Benchmark

	Return	Standard Deviation
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OPFRS Total Plan	0.3	2.4
OPFRS Policy Benchmark	1.4	2.5
Median	0.9	2.4

	Return	Standard Deviation
--	--------	--------------------

OPFRS Total Plan	10.6	9.9
OPFRS Policy Benchmark	12.6	10.1
Median	10.5	9.8

Performance shown is net of fees. Calculation is based on monthly periodicity. Fiscal year begins on July 1. Plan Sponsor Peer Group shown is net of fees.

Asset Class Performance: Gross of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
OPFRS Total Plan (Gross)	453,231,642	100.0	0.3	5.3	10.9	2.7	6.5	6.8	6.7	Dec-88
<i>OPFRS Policy Benchmark</i>			<i>1.4</i>	<i>6.8</i>	<i>12.6</i>	<i>3.3</i>	<i>6.9</i>	<i>6.9</i>	<i>8.0</i>	
Excess Return			-1.1	-1.5	-1.7	-0.6	-0.4	-0.1	-1.3	
Domestic Equity (Gross)	194,973,749	43.0	0.4	8.8	17.3	6.0	12.0	11.1	9.2	Jun-97
<i>Russell 3000 (Blend)</i>			<i>3.2</i>	<i>13.6</i>	<i>23.1</i>	<i>8.1</i>	<i>14.1</i>	<i>12.1</i>	<i>9.6</i>	
Excess Return			-2.8	-4.8	-5.8	-2.1	-2.1	-1.0	-0.4	
International Equity (Gross)	59,974,536	13.2	0.2	6.9	14.6	3.4	7.1	5.7	5.7	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>1.0</i>	<i>5.7</i>	<i>11.6</i>	<i>0.5</i>	<i>5.5</i>	<i>3.8</i>	<i>5.3</i>	
Excess Return			-0.8	1.2	3.0	2.9	1.6	1.9	0.4	
Fixed Income (Gross)	107,748,738	23.8	0.2	-0.2	3.2	-2.5	0.4	2.0	4.7	Jan-94
<i>Bloomberg Universal (Blend)</i>			<i>0.2</i>	<i>-0.3</i>	<i>3.5</i>	<i>-2.7</i>	<i>0.1</i>	<i>1.6</i>	<i>4.5</i>	
Excess Return			0.0	0.1	-0.3	0.2	0.3	0.4	0.2	
Credit (Gross)	10,084,780	2.2	1.1	4.3	10.2	3.8	5.4	--	5.8	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>1.1</i>	<i>2.6</i>	<i>10.4</i>	<i>1.6</i>	<i>3.9</i>	<i>4.3</i>	<i>4.8</i>	
Excess Return			0.0	1.7	-0.2	2.2	1.5	--	1.0	
Covered Calls (Gross)	24,121,617	5.3	3.6	10.1	16.2	8.4	11.7	9.8	9.9	Apr-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>1.5</i>	<i>7.6</i>	<i>8.9</i>	<i>5.0</i>	<i>5.6</i>	<i>5.8</i>	<i>5.9</i>	
Excess Return			2.1	2.5	7.3	3.4	6.1	4.0	4.0	
Crisis Risk Offset (Gross)	39,948,914	8.8	-1.5	1.9	0.9	-3.2	-7.1	--	-6.5	Aug-18
<i>Crisis Risk Offset Benchmark</i>			<i>-1.4</i>	<i>3.9</i>	<i>3.6</i>	<i>4.3</i>	<i>0.7</i>	<i>--</i>	<i>0.7</i>	
Excess Return			-0.1	-2.0	-2.7	-7.5	-7.8	--	-7.2	
Cash (Gross)	16,379,309	3.6	0.3	0.3	0.3	0.1	0.5	0.8	0.5	Mar-11

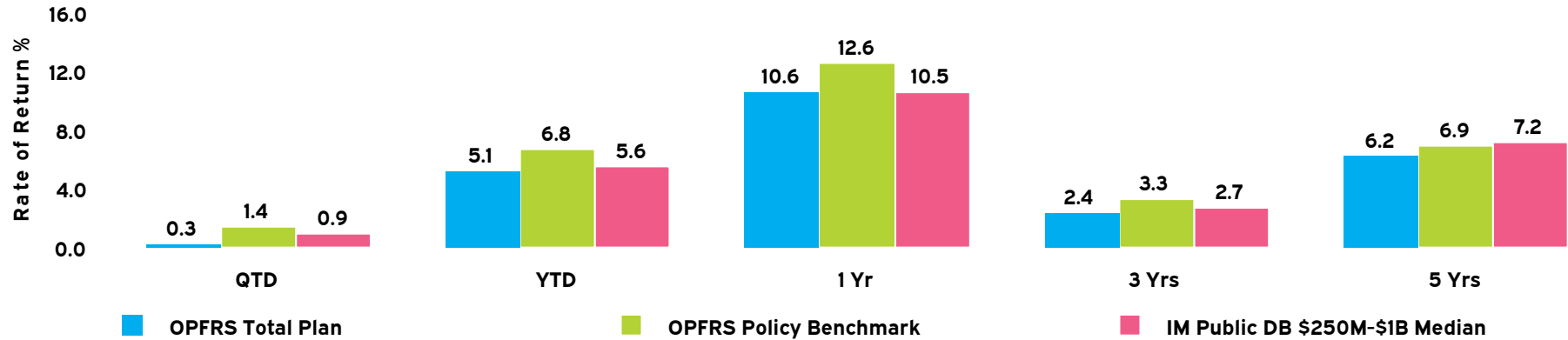
Performance shown is gross of fees. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Asset Class Performance: Net of Fees | As of June 30, 2024

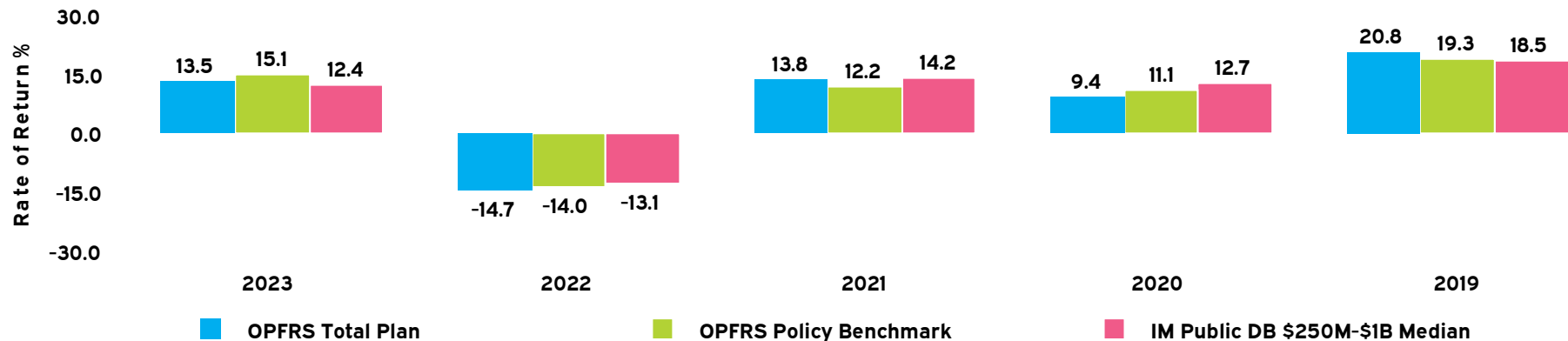
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
OPFRS Total Plan (Net)	453,231,642	100.0	0.3	5.1	10.6	2.4	6.2	6.5	6.7	Dec-88
<i>OPFRS Policy Benchmark</i>			1.4	6.8	12.6	3.3	6.9	6.9	8.0	
Excess Return			-1.1	-1.7	-2.0	-0.9	-0.7	-0.4	-1.3	
<i>IM Public DB \$250M-\$1B Median (Net)</i>			0.9	5.6	10.5	2.7	7.2	6.5	8.0	
Peer Group Rank			82	66	50	57	77	47	100	
Domestic Equity (Net)	194,973,749	43.0	0.3	8.6	16.9	5.7	11.7	10.8	9.1	Jun-97
<i>Russell 3000 (Blend)</i>			3.2	13.6	23.1	8.1	14.1	12.1	9.6	
Excess Return			-2.9	-5.0	-6.2	-2.4	-2.4	-1.3	-0.5	
International Equity (Net)	59,974,536	13.2	0.1	6.6	13.9	2.7	6.5	5.2	5.5	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			1.0	5.7	11.6	0.5	5.5	3.8	5.3	
Excess Return			-0.9	0.9	2.3	2.2	1.0	1.4	0.2	
Fixed Income (Net)	107,748,738	23.8	0.1	-0.3	3.0	-2.7	0.2	1.8	4.4	Jan-94
<i>Bloomberg Universal (Blend)</i>			0.2	-0.3	3.5	-2.7	0.1	1.6	4.5	
Excess Return			-0.1	0.0	-0.5	0.0	0.1	0.2	-0.1	
Credit (Net)	10,084,780	2.2	1.0	4.0	9.6	3.2	4.8	--	5.1	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			1.1	2.6	10.4	1.6	3.9	4.3	4.8	
Excess Return			-0.1	1.4	-0.8	1.6	0.9	--	0.3	
Covered Calls (Net)	24,121,617	5.3	3.6	10.0	15.9	8.2	11.5	9.5	9.6	Apr-14
<i>Cboe S&P 500 Buy Write Index</i>			1.5	7.6	8.9	5.0	5.6	5.8	5.9	
Excess Return			2.1	2.4	7.0	3.2	5.9	3.7	3.7	
Crisis Risk Offset (Net)	39,948,914	8.8	-1.6	1.8	0.7	-3.3	-7.3	--	-6.7	Aug-18
<i>Crisis Risk Offset Benchmark</i>			-1.4	3.9	3.6	4.3	0.7	--	0.7	
Excess Return			-0.2	-2.1	-2.9	-7.6	-8.0	--	-7.4	
Cash (Net)	16,379,309	3.6	0.3	0.3	0.3	0.1	0.5	0.8	0.5	Mar-11

Performance shown is net of fees, except for Total Plan, Domestic Equity, and International Equity composites which have a mix of gross and net of fees performance. Please see the Addendum for more details. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Trailing Period Performance Ending June 30, 2024



Calendar Year Performance Ending December 31, 2023



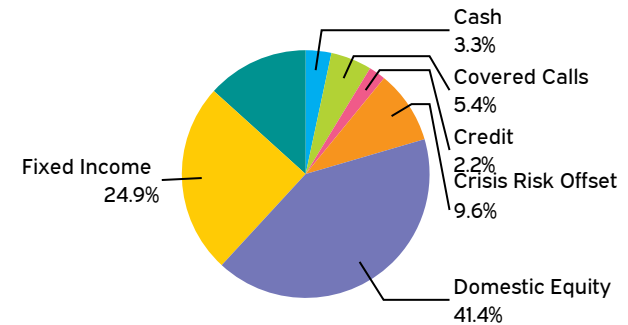
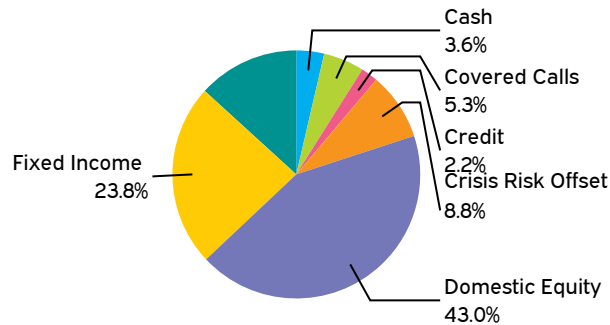
Total Plan performance is a mix of gross and net of fees; performance is gross of fees prior to January 2016 and thereafter. Fiscal year begins on July 1.

Asset Allocation | As of June 30, 2024

	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	194,973,749	43.0	40.0	3.0	30.0 - 50.0	Yes
International Equity	59,974,536	13.2	12.0	1.2	8.0 - 14.0	Yes
Fixed Income	107,748,738	23.8	31.0	-7.2	25.0 - 40.0	No
Credit	10,084,780	2.2	2.0	0.2	1.0 - 3.0	Yes
Covered Calls	24,121,617	5.3	5.0	0.3	5.0 - 10.0	Yes
Crisis Risk Offset	39,948,914	8.8	10.0	-1.2	5.0 - 15.0	Yes
Cash	16,379,309	3.6	0.0	3.6	0.0 - 5.0	Yes
Total	453,231,642	100.0	100.0	0.0		

June 30, 2024: \$453,231,642.0

June 30, 2023: \$406,308,110.42



Cash account market value includes cash balances held in ETF accounts at the custodian and residuals from terminated managers. Target weights reflect the Plan's evolving asset allocation (effective 05/31/2017).

Manager Performance - Net of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Domestic Equity	194,973,749	100.0	0.3	8.6	16.9	5.7	11.7	10.8	9.1	Jun-97
<i>Russell 3000 (Blend)</i>			3.2	13.6	23.1	8.1	14.1	12.1	9.6	
Excess Return			-2.9	-5.0	-6.2	-2.4	-2.4	-1.3	-0.5	
Northern Trust Russell 1000	100,798,118	51.7	3.6	14.2	23.9	8.6	14.5	12.4	14.0	Jun-10
<i>Russell 1000 Index</i>			3.6	14.2	23.9	8.7	14.6	12.5	14.1	
Excess Return			0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	
EARNEST Partners	39,396,764	20.2	-5.3	2.2	10.0	3.3	10.3	10.6	9.3	Apr-06
<i>Russell Midcap Index</i>			-3.3	5.0	12.9	2.4	9.5	9.0	8.8	
Excess Return			-2.0	-2.8	-2.9	0.9	0.8	1.6	0.5	
eV US Mid Cap Core Equity Rank			74	77	71	68	49	21	37	
Wellington Select Quality Equity	25,563,443	13.1	-0.5	4.5	9.4	--	--	--	7.1	May-22
<i>Russell 1000 Index</i>			3.6	14.2	23.9	8.7	14.6	12.5	14.9	
Excess Return			-4.1	-9.7	-14.5	--	--	--	-7.8	
eV US Large Cap Core Equity Rank			85	97	97	--	--	--	94	
Brown Fundamental Small Cap Value	13,276,304	6.8	-1.5	3.4	17.7	6.2	--	--	6.7	Apr-21
<i>Russell 2000 Value Index</i>			-3.6	-0.8	10.9	-0.5	7.1	6.2	0.9	
Excess Return			2.1	4.2	6.8	6.7	--	--	5.8	
eV US Small Cap Value Equity Rank			20	27	11	16	--	--	19	
Rice Hall James	15,939,120	8.2	-1.8	3.5	7.6	-3.2	5.7	--	6.7	Aug-17
<i>Russell 2000 Growth Index</i>			-2.9	4.4	9.1	-4.9	6.2	7.4	7.2	
Excess Return			1.1	-0.9	-1.5	1.7	-0.5	--	-0.5	
eV US Small Cap Growth Equity Rank			39	63	60	46	78	--	92	

Performance shown is net of fees, except for the Domestic Equity composite which has a mix of gross and net of fees performance. Please see the Addendum for more details. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Manager Performance - Net of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
International Equity	59,974,536	100.0	0.1	6.6	13.9	2.7	6.5	5.2	5.5	Jan-98
<i>MSCI ACWI ex US (Blend)</i>			<i>1.0</i>	<i>5.7</i>	<i>11.6</i>	<i>0.5</i>	<i>5.5</i>	<i>3.8</i>	<i>5.3</i>	
Excess Return			-0.9	0.9	2.3	2.2	1.0	1.4	0.2	
Vanguard Developed Markets ETF	16,549,028	27.6	-0.6	4.7	10.8	1.8	6.6	4.5	7.7	Sep-19
<i>FTSE Developed All Cap ex-U.S. Index</i>			<i>-0.6</i>	<i>4.5</i>	<i>11.4</i>	<i>2.1</i>	<i>6.8</i>	<i>4.7</i>	<i>7.9</i>	
Excess Return			0.0	0.2	-0.6	-0.3	-0.2	-0.2	-0.2	
SGA ACWI ex-U.S. Equity	43,425,507	72.4	0.3	7.3	15.1	3.3	--	--	5.6	Dec-19
<i>MSCI AC World ex USA (Net)</i>			<i>1.0</i>	<i>5.7</i>	<i>11.6</i>	<i>0.5</i>	<i>5.5</i>	<i>3.8</i>	<i>5.5</i>	
Excess Return			-0.7	1.6	3.5	2.8	--	--	0.1	
eV ACWI ex-US All Cap Core Eq Rank			55	26	14	13	--	--	60	

Performance shown is net of fees, except for the International Equity composite which has a mix of gross and net of fees performance. Please see the Addendum for more details. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Manager Performance - Net of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Fixed Income	107,748,738	100.0	0.1	-0.3	3.0	-2.7	0.2	1.8	4.4	Jan-94
<i>Bloomberg Universal (Blend)</i>			0.2	-0.3	3.5	-2.7	0.1	1.6	4.5	
Excess Return			-0.1	0.0	-0.5	0.0	0.1	0.2	-0.1	
Ramirez	73,029,640	67.8	0.1	-0.4	2.8	-2.9	0.0	--	1.5	Jan-17
<i>Blmbg. U.S. Aggregate Index</i>			0.1	-0.7	2.6	-3.0	-0.2	1.3	1.1	
Excess Return			0.0	0.3	0.2	0.1	0.2	--	0.4	
eV US Core Fixed Inc Rank			83	59	74	57	71	--	34	
Wellington Core Bond	7,006,703	6.5	0.4	0.2	4.2	-2.8	--	--	-2.1	Apr-21
<i>Blmbg. U.S. Aggregate Index</i>			0.1	-0.7	2.6	-3.0	-0.2	1.3	-2.2	
Excess Return			0.3	0.9	1.6	0.2	--	--	0.1	
eV US Core Fixed Inc Rank			15	17	15	52	--	--	58	
Reams	27,712,396	25.7	0.3	-0.2	3.0	-2.2	2.4	2.8	4.8	Feb-98
<i>Bloomberg Universal (Blend)</i>			0.2	-0.3	3.5	-2.7	0.1	1.6	4.1	
Excess Return			0.1	0.1	-0.5	0.5	2.3	1.2	0.7	
eV US Core Plus Fixed Inc Rank			69	73	82	30	3	10	26	

Performance shown is net of fees. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Manager Performance - Net of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Credit	10,084,780	100.0	1.0	4.0	9.6	3.2	4.8	--	5.1	Feb-15
<i>Blmbg. U.S. Corp: High Yield Index</i>			<i>1.1</i>	<i>2.6</i>	<i>10.4</i>	<i>1.6</i>	<i>3.9</i>	<i>4.3</i>	<i>4.8</i>	
Excess Return			<i>-0.1</i>	<i>1.4</i>	<i>-0.8</i>	<i>1.6</i>	<i>0.9</i>	<i>--</i>	<i>0.3</i>	
Polen Capital	10,084,780	100.0	1.0	4.0	9.6	3.2	4.8	--	5.1	Feb-15
<i>ICE BofA U.S. High Yield Index</i>			<i>1.1</i>	<i>2.6</i>	<i>10.4</i>	<i>1.6</i>	<i>3.7</i>	<i>4.2</i>	<i>4.7</i>	
Excess Return			<i>-0.1</i>	<i>1.4</i>	<i>-0.8</i>	<i>1.6</i>	<i>1.1</i>	<i>--</i>	<i>0.4</i>	
eV US High Yield Fixed Inc Rank			75	11	65	16	16	--	19	

Performance shown is net of fees. Since inception date and performance begin in the month following an investment's initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Manager Performance - Net of Fees | As of June 30, 2024

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Covered Calls	24,121,617	100.0	3.6	10.0	15.9	8.2	11.5	9.5	9.6	Apr-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>1.5</i>	<i>7.6</i>	<i>8.9</i>	<i>5.0</i>	<i>5.6</i>	<i>5.8</i>	<i>5.9</i>	
Excess Return			2.1	2.4	7.0	3.2	5.9	3.7	3.7	
Parametric BXM	11,654,056	48.3	2.7	8.7	13.0	6.8	8.7	7.5	7.6	Apr-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>1.5</i>	<i>7.6</i>	<i>8.9</i>	<i>5.0</i>	<i>5.6</i>	<i>5.8</i>	<i>5.9</i>	
Excess Return			1.2	1.1	4.1	1.8	3.1	1.7	1.7	
Parametric DeltaShift	12,467,561	51.7	4.4	11.4	18.9	9.5	14.0	11.5	11.7	Apr-14
<i>Cboe S&P 500 Buy Write Index</i>			<i>1.5</i>	<i>7.6</i>	<i>8.9</i>	<i>5.0</i>	<i>5.6</i>	<i>5.8</i>	<i>5.9</i>	
Excess Return			2.9	3.8	10.0	4.5	8.4	5.7	5.8	

Performance shown is net of fees. Since inception date and performance begin in the month following an investment's initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

Manager Performance - Net of Fees | As of June 30, 2024

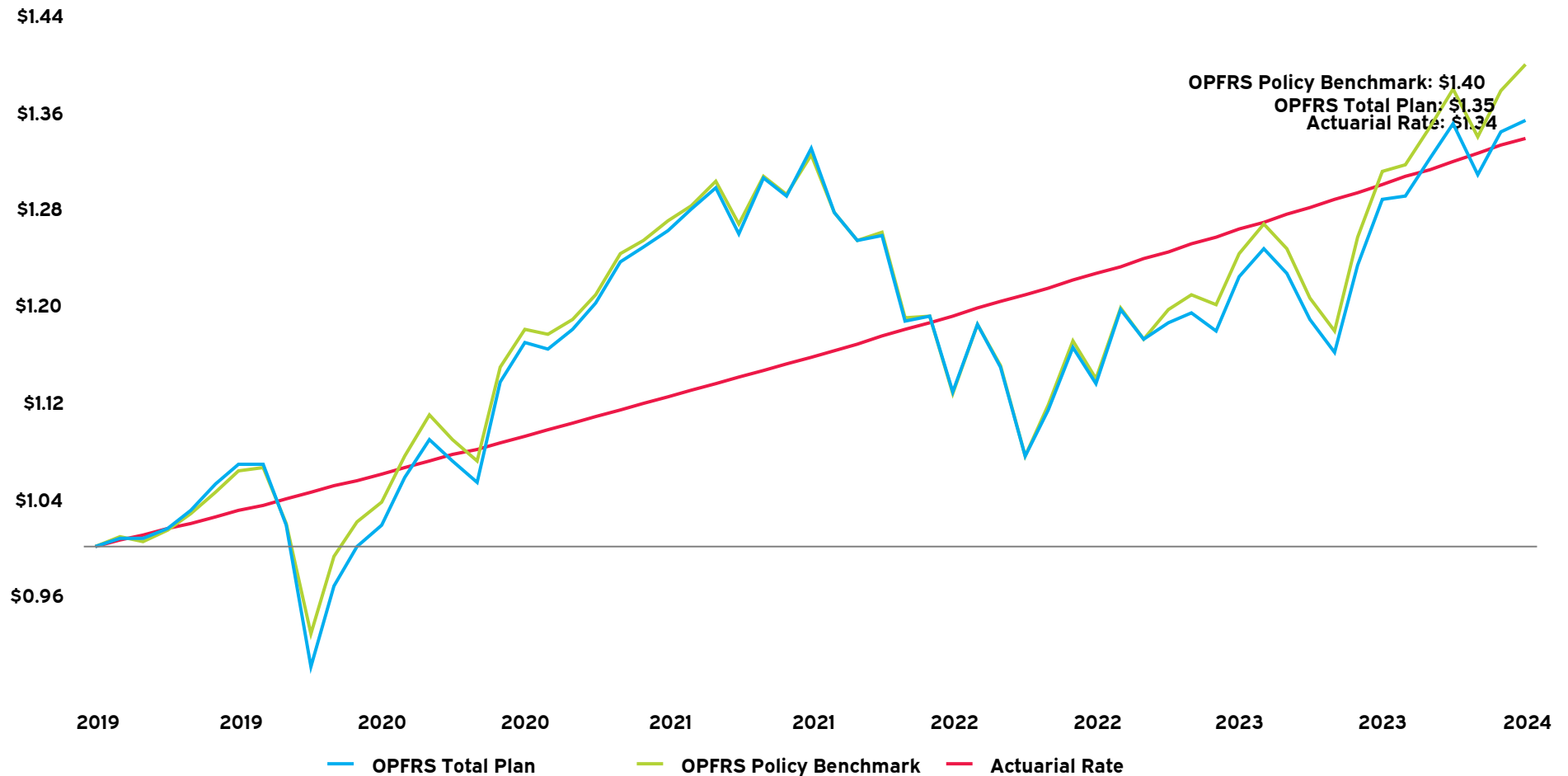
	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Since Inception	Inception Date
Crisis Risk Offset	39,948,914	100.0	-1.6	1.8	0.7	-3.3	-7.3	--	-6.7	Aug-18
<i>Crisis Risk Offset Benchmark</i>			<i>-1.4</i>	<i>3.9</i>	<i>3.6</i>	<i>4.3</i>	<i>0.7</i>	<i>--</i>	<i>0.7</i>	
Over/Under			<i>-0.2</i>	<i>-2.1</i>	<i>-2.9</i>	<i>-7.6</i>	<i>-8.0</i>	<i>--</i>	<i>-7.4</i>	
Kepos Alternative Risk Premia	12,120,231	30.3	0.3	11.4	15.7	--	--	--	8.3	Feb-22
<i>SG Multi Alternative Risk Premia Index</i>			<i>0.5</i>	<i>8.0</i>	<i>11.0</i>	<i>7.0</i>	<i>2.2</i>	<i>--</i>	<i>7.6</i>	
Over/Under			<i>-0.2</i>	<i>3.4</i>	<i>4.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>0.7</i>	
Versor Trend Following	14,998,517	37.5	-3.0	0.7	-3.6	--	--	--	0.0	Apr-22
<i>SG Trend Index</i>			<i>-3.2</i>	<i>8.7</i>	<i>4.0</i>	<i>10.5</i>	<i>9.4</i>	<i>6.0</i>	<i>5.5</i>	
Over/Under			<i>0.2</i>	<i>-8.0</i>	<i>-7.6</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.5</i>	
Vanguard Long-Term Treasury ETF	12,830,166	32.1	-1.6	-4.7	-5.7	-10.5	-4.3	0.6	-4.3	Jul-19
<i>Blmbg. U.S. Government: Long Term Bond Index</i>			<i>-1.8</i>	<i>-5.0</i>	<i>-5.6</i>	<i>-10.4</i>	<i>-4.2</i>	<i>0.6</i>	<i>-4.2</i>	
Over/Under			<i>0.2</i>	<i>0.3</i>	<i>-0.1</i>	<i>-0.1</i>	<i>-0.1</i>	<i>0.0</i>	<i>-0.1</i>	

Performance shown is net of fees. Since inception date and performance begin in the month following an investments initial funding. Fiscal year begins on July 1. Please see Benchmark History section for custom benchmark compositions.

**Cash Flow Summary
Quarter To Date**

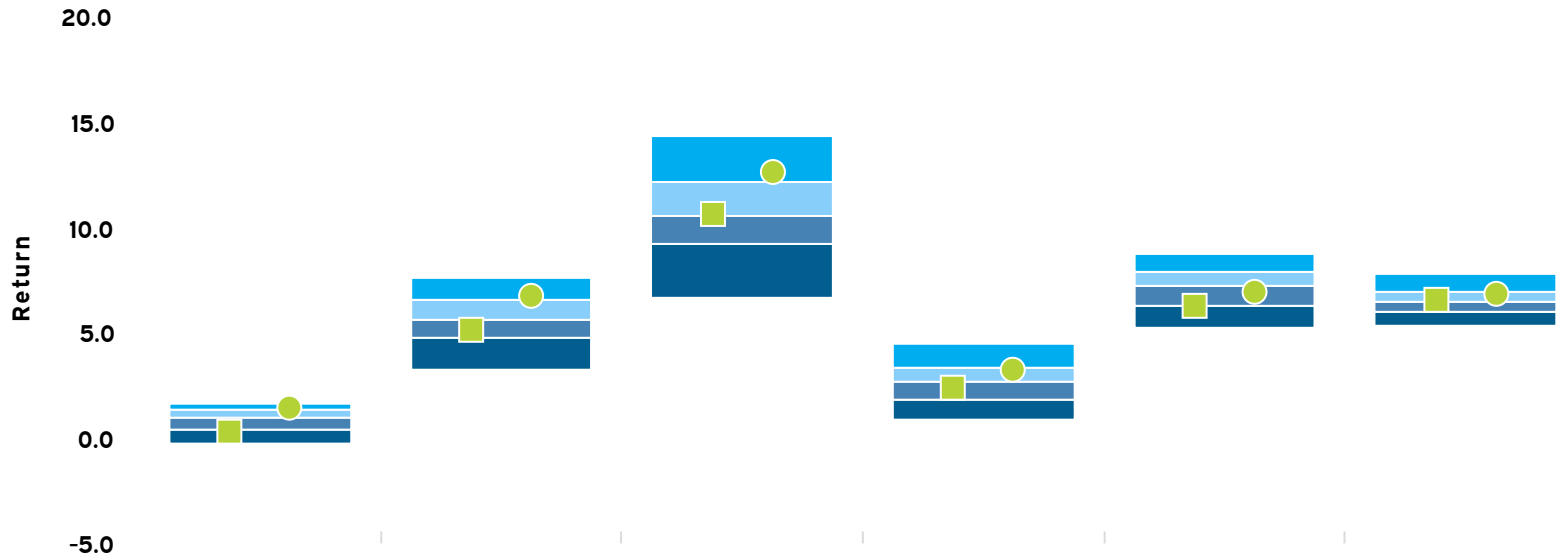
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Northern Trust Russell 1000	97,326,458	-	3,471,660	100,798,118
EARNEST Partners	42,502,989	-1,000,000	-2,106,224	39,396,764
Wellington Select Quality Equity	25,703,596	-	-140,153	25,563,443
Brown Fundamental Small Cap Value	13,481,386	-	-205,083	13,276,304
Rice Hall James	16,194,267	-	-255,147	15,939,120
Vanguard Developed Markets ETF	16,800,177	-154,272	-96,876	16,549,028
SGA ACWI ex-U.S. Equity	43,184,334	-	241,173	43,425,507
Ramirez	72,950,679	-	78,961	73,029,640
Wellington Core Bond	6,980,801	-	25,902	7,006,703
Reams	27,629,437	-	82,959	27,712,396
Polen Capital	9,984,458	-	100,322	10,084,780
Parametric BXM	12,339,462	-1,000,000	314,594	11,654,056
Parametric DeltaShift	12,936,202	-1,000,000	531,359	12,467,561
Kepos Alternative Risk Premia	12,080,647	-	39,583	12,120,231
Versor Trend Following	15,458,363	-	-459,846	14,998,517
Vanguard Long-Term Treasury ETF	13,177,168	-80,390	-266,612	12,830,166
Cash - Money Market	5,402,267	417,364	46,679	5,866,309
Cash - Treasury	10,323,000	190,000	-	10,513,000
Securities Lending Northern Trust	-	-35,884	35,884	-
OPFRS Total Plan	454,455,689	-2,663,182	1,439,135	453,231,642

Growth of a Dollar 5 Years ending June 30, 2024



The actuarial expected rate of return was 8% through 6/30/2009, 7.5% through 6/30/2010, 7% through 6/30/2011, 6.75% through 6/30/2014, 6.5% through 2/31/2017 and 6.0% currently.

Plan Sponsor Peer Group Performance Comparison vs. InvMetrics Public DB \$250M-\$1B Net

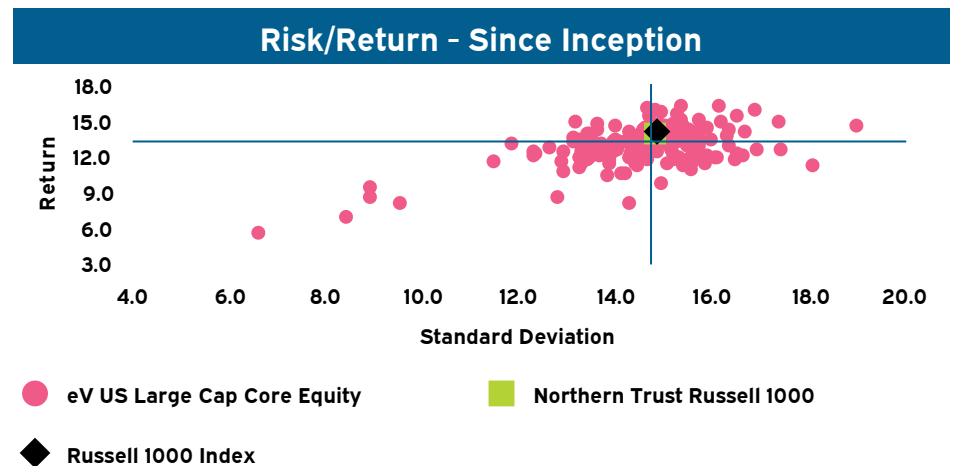
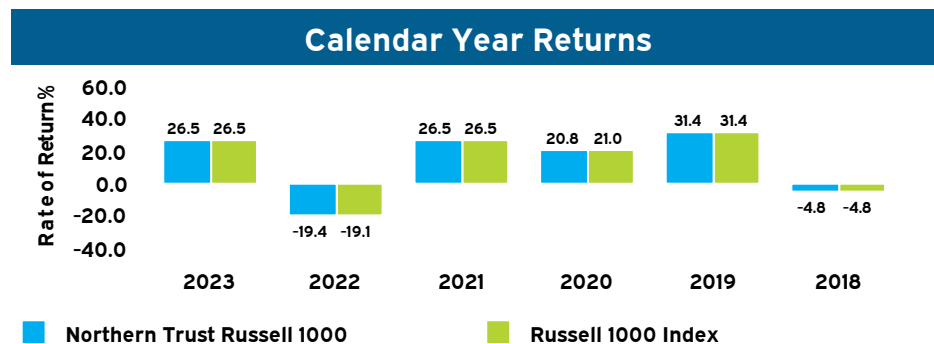
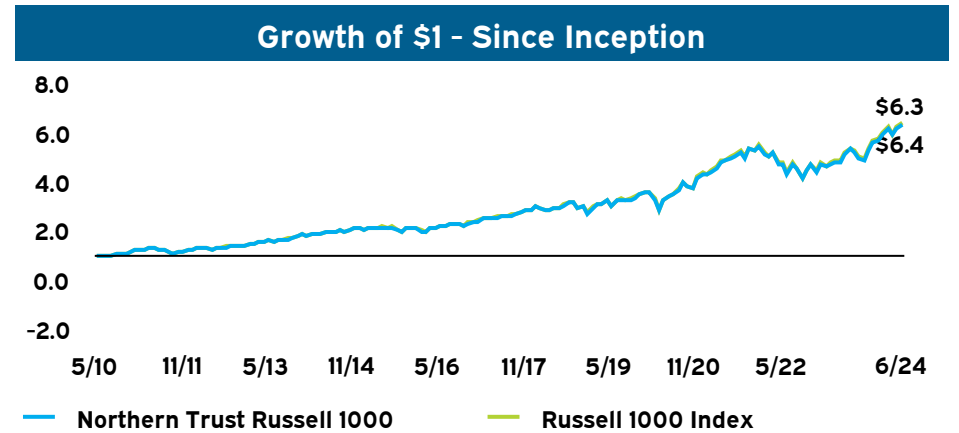
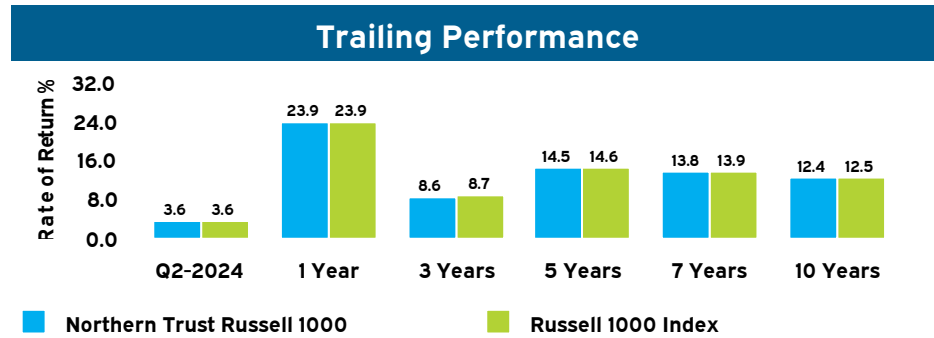


	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
■ OPFRS Total Plan	0.3 (82)	5.1 (66)	10.6 (50)	2.4 (57)	6.2 (77)	6.5 (47)
● OPFRS Policy Benchmark	1.4 (20)	6.8 (18)	12.6 (21)	3.3 (26)	6.9 (58)	6.9 (29)
5th Percentile	1.7	7.6	14.3	4.5	8.7	7.8
1st Quartile	1.4	6.5	12.1	3.3	7.9	7.0
Median	0.9	5.6	10.5	2.7	7.2	6.5
3rd Quartile	0.4	4.8	9.2	1.8	6.3	5.9
95th Percentile	-0.2	3.2	6.7	0.8	5.2	5.3
Population	94	94	94	94	93	83

Total Plan performance is a mix of gross and net of fees; performance is gross of fees prior to January 2016 and net of fees thereafter. Parentheses contain percentile rankings. Calculation based on monthly periodicity. Fiscal year begins on July 1.

Portfolio Characteristics & Manager Profiles

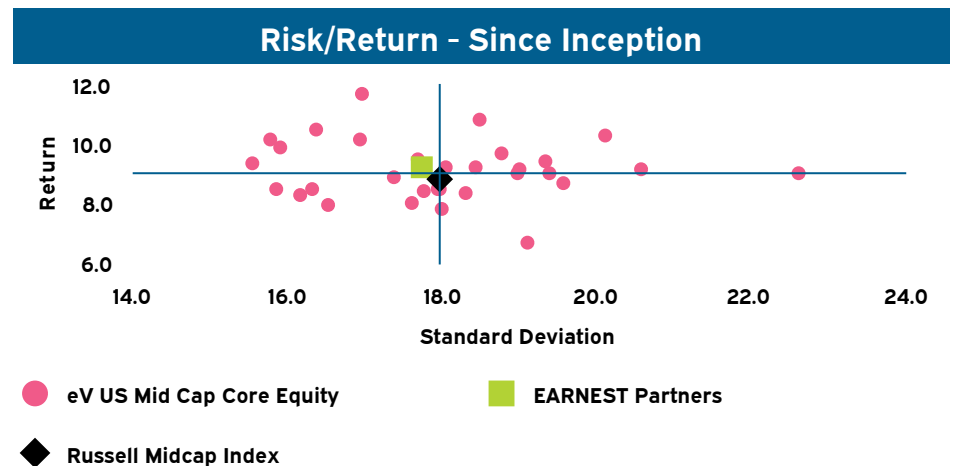
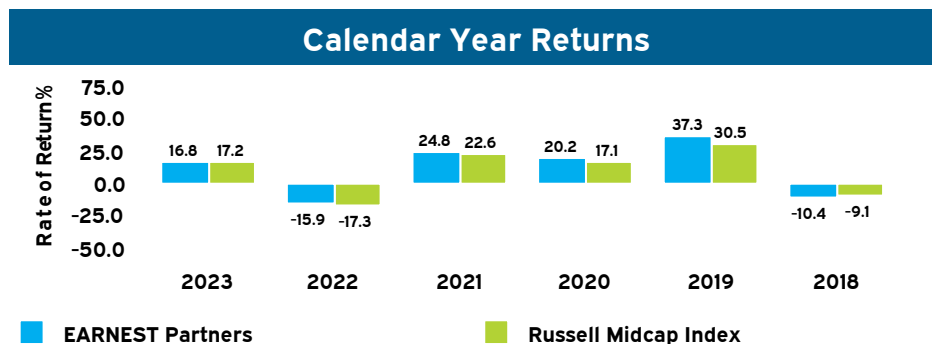
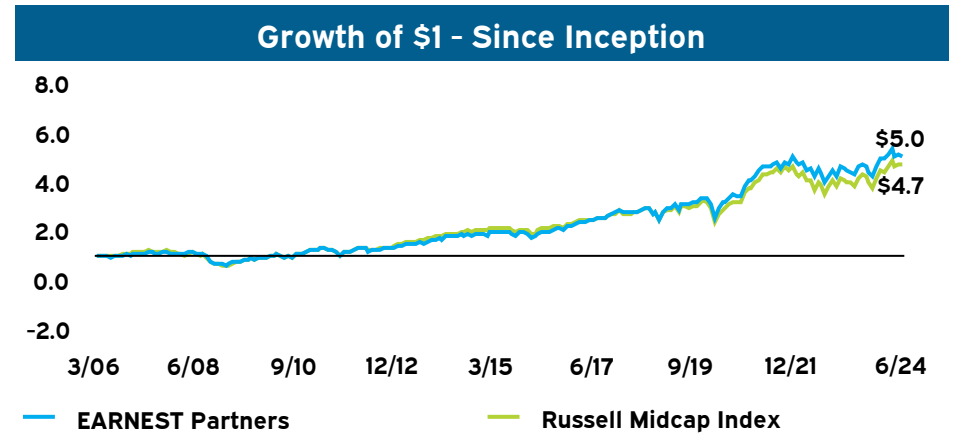
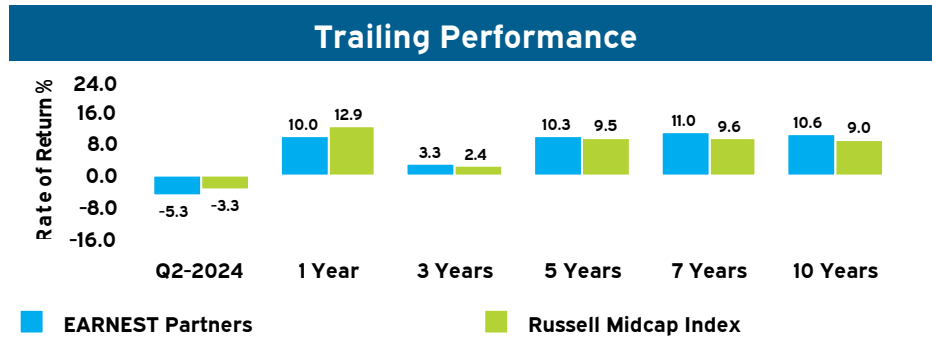
	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Northern Trust Russell 1000	0.00	1.00	-0.63	0.21	0.01	1.00	99.82	99.90
Russell 1000 Index	0.00	1.00	-	0.21	0.00	1.00	100.00	100.00



	QTD Return	QTD Risk
Northern Trust Russell 1000	3.56	3.93
Russell 1000 Index	3.57	3.94

Performance shown is net of fees. Risk is measured as Standard Deviation.

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
EARNEST Partners	-0.75	0.92	-1.23	-0.69	0.54	0.98	52.57	110.49
Russell Midcap Index	0.00	1.00	-	-0.45	0.00	1.00	100.00	100.00

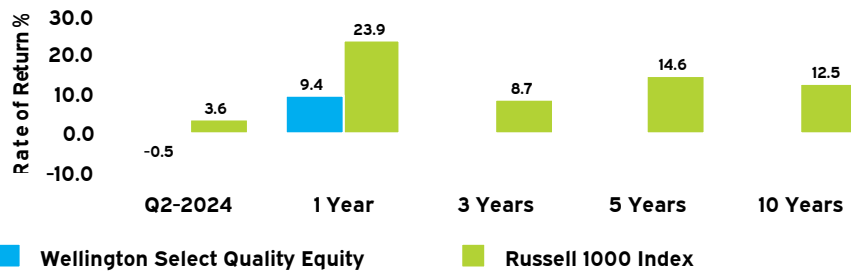


	QTD Return	QTD Risk
EARNEST Partners	-5.26	3.15
Russell Midcap Index	-3.35	3.38

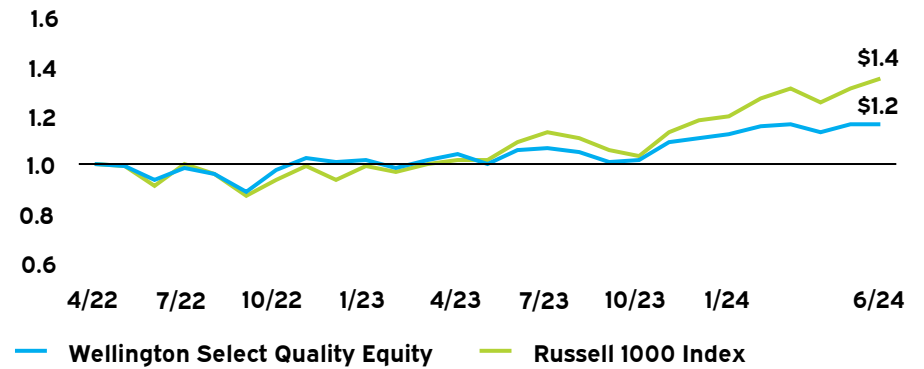
Performance shown is net of fees. Risk is measured as Standard Deviation.

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Wellington Select Quality Equity	-0.92	0.62	-0.81	-0.23	1.73	0.89	36.43	79.16
Russell 1000 Index	0.00	1.00	-	0.21	0.00	1.00	100.00	100.00

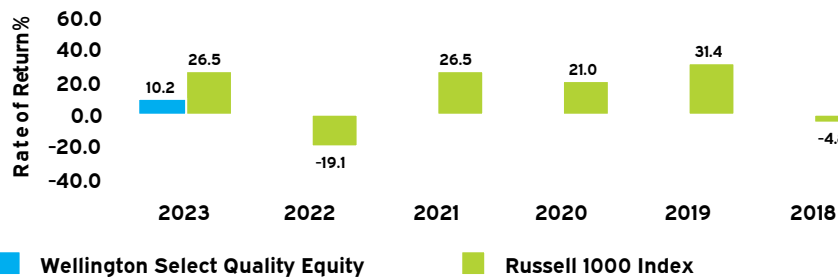
Trailing Performance



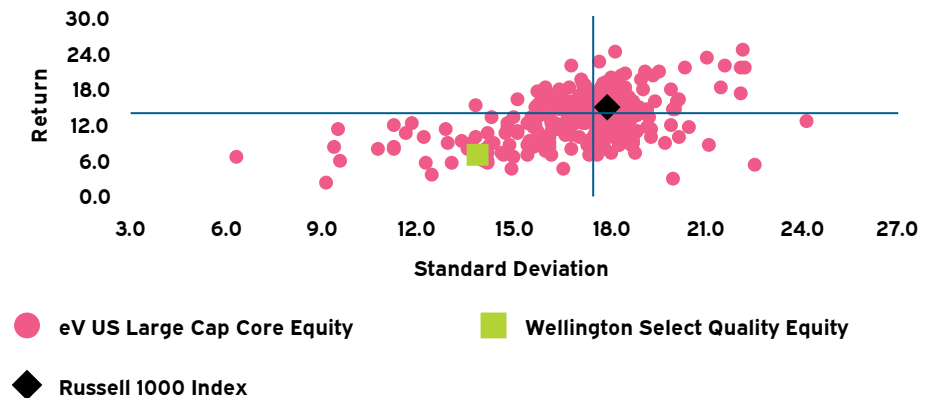
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



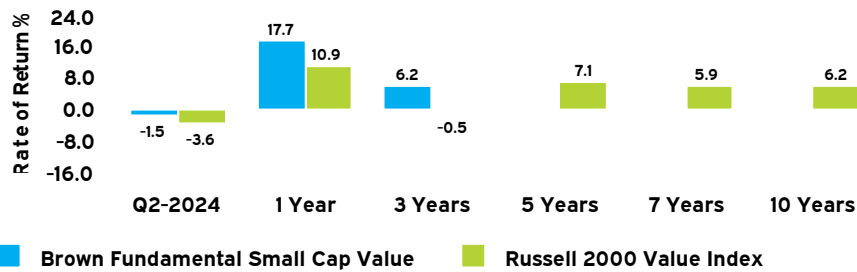
	QTD Return	QTD Risk
Wellington Select Quality Equity	-0.55	2.57
Russell 1000 Index	3.57	3.94

Performance shown is net of fees. Risk is measured as Standard Deviation.

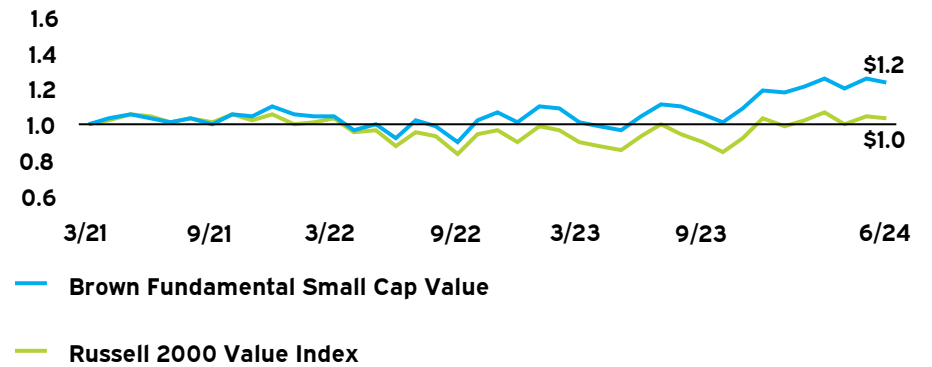
Brown Fundamental Small Cap Value | As of June 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Brown Fundamental Small Cap Value	0.54	0.86	0.85	-0.22	0.82	0.98	104.53	76.78
Russell 2000 Value Index	0.00	1.00	-	-0.35	0.00	1.00	100.00	100.00

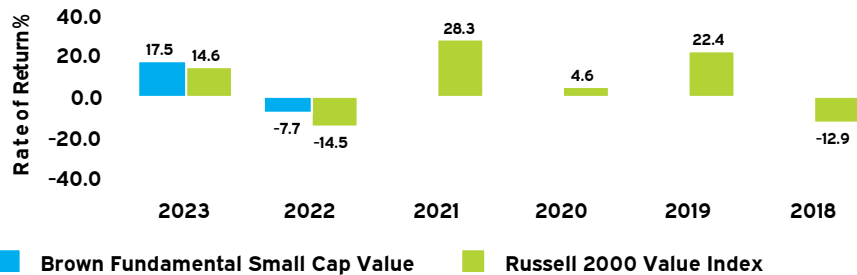
Trailing Performance



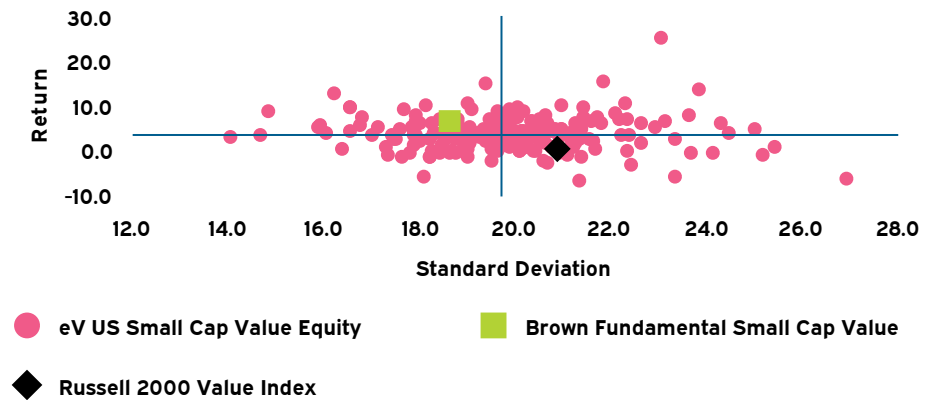
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	QTD Return	QTD Risk
Brown Fundamental Small Cap Value	-1.52	3.94
Russell 2000 Value Index	-3.64	4.53

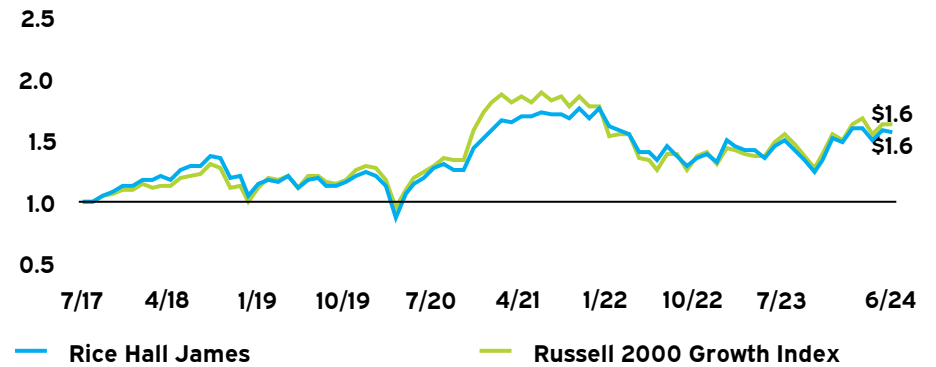
Performance shown is net of fees. Risk is measured as Standard Deviation.

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Rice Hall James	0.17	0.82	0.30	-0.22	1.07	0.99	91.83	82.11
Russell 2000 Growth Index	0.00	1.00	-	-0.24	0.00	1.00	100.00	100.00

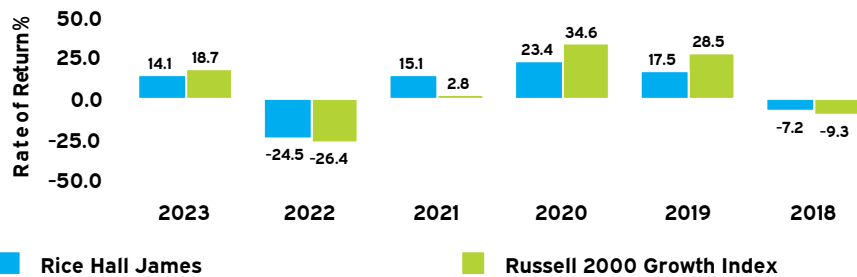
Trailing Performance



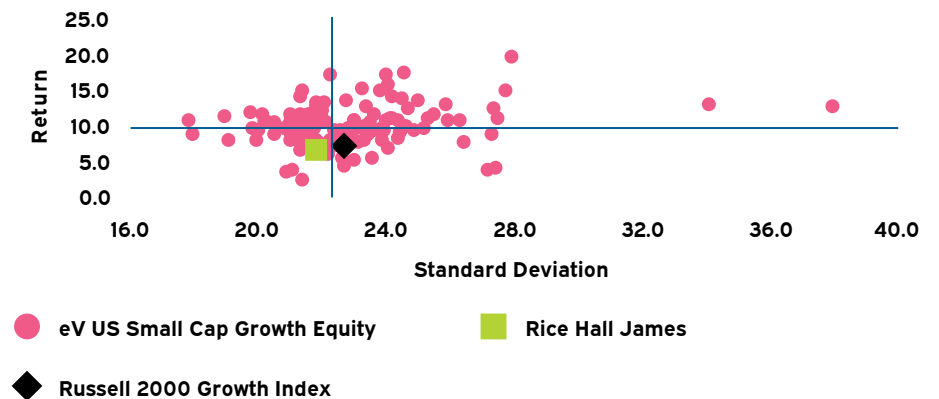
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



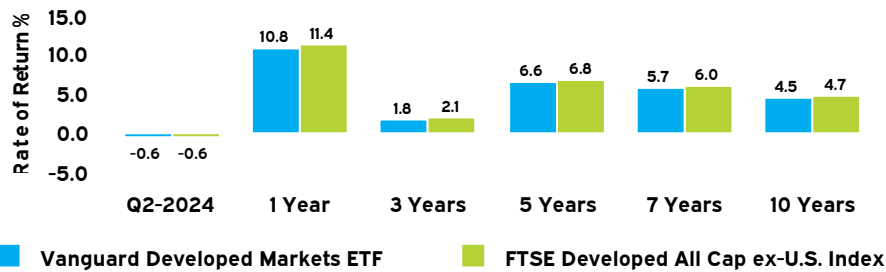
	QTD Return	QTD Risk
Rice Hall James	-1.82	4.40
Russell 2000 Growth Index	-2.92	5.35

Performance shown is net of fees. Risk is measured as Standard Deviation.

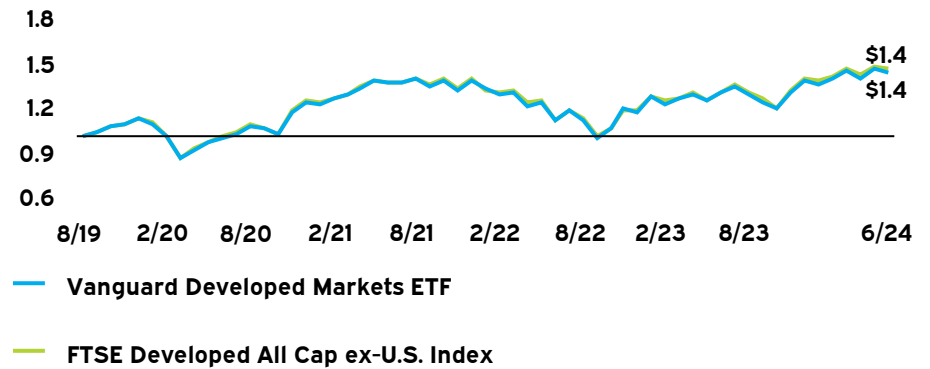
Vanguard Developed Markets ETF | As of June 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
Vanguard Developed Markets ETF	0.08	1.27	0.05	-0.17	0.73	1.00	128.43	122.44
FTSE Developed All Cap ex-U.S. Index	0.00	1.00	-	-0.22	0.00	1.00	100.00	100.00

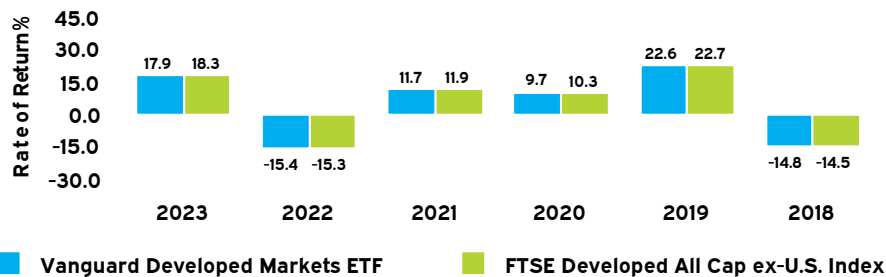
Trailing Performance



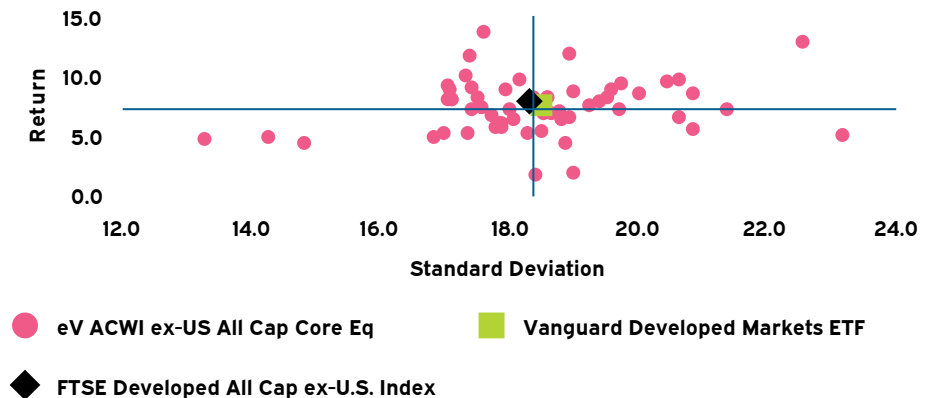
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



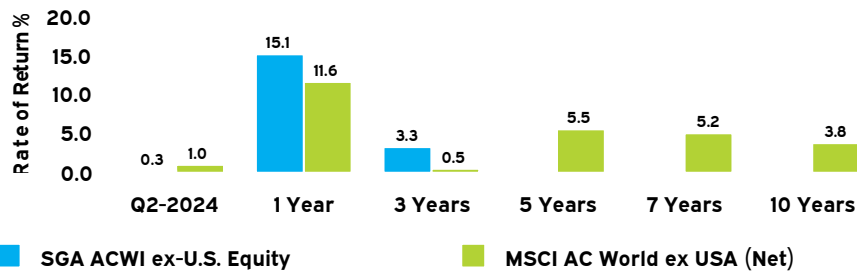
	QTD Return	QTD Risk
Vanguard Developed Markets ETF	-0.57	3.47
FTSE Developed All Cap ex-U.S. Index	-0.61	2.74

Performance shown is net of fees. Risk is measured as Standard Deviation.

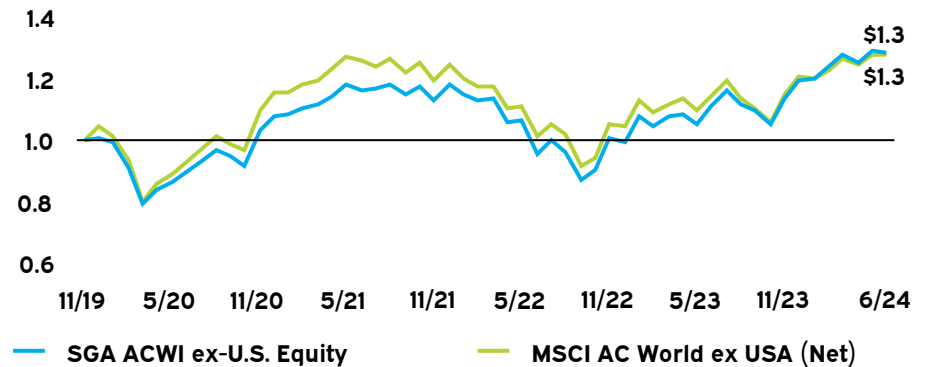
SGA ACWI ex-U.S. Equity | As of June 30, 2024

	Alpha	Beta	Information Ratio	Sharpe Ratio	Tracking Error	R-Squared	Up Capture	Down Capture
SGA ACWI ex-U.S. Equity	-0.20	1.00	-1.54	-0.16	0.13	1.00	95.43	125.27
MSCI AC World ex USA (Net)	0.00	1.00	-	-0.05	0.00	1.00	100.00	100.00

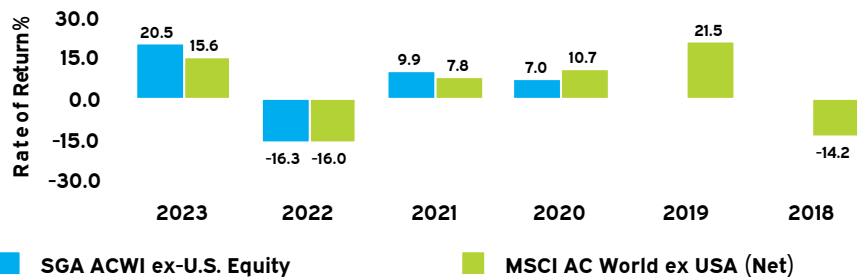
Trailing Performance



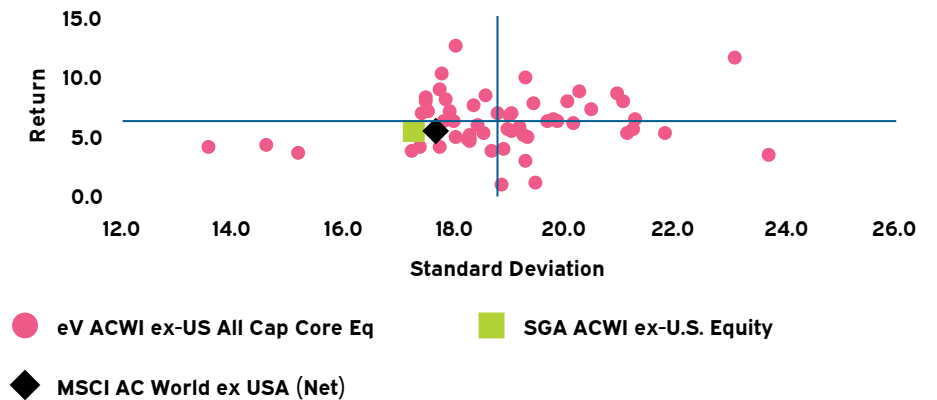
Growth of \$1 - Since Inception



Calendar Year Returns



Risk/Return - Since Inception



	QTD Return	QTD Risk
SGA ACWI ex-U.S. Equity	0.35	1.95
MSCI AC World ex USA (Net)	0.96	1.94

Performance shown is net of fees. Risk is measured as Standard Deviation.

Account Information

Account Name	Ramirez
Account Structure	Separate Account
Inception Date	01/30/2017
Asset Class	US Fixed Income
Benchmark	Blmbg. U.S. Aggregate Index
Peer Group	eV US Core Fixed Inc

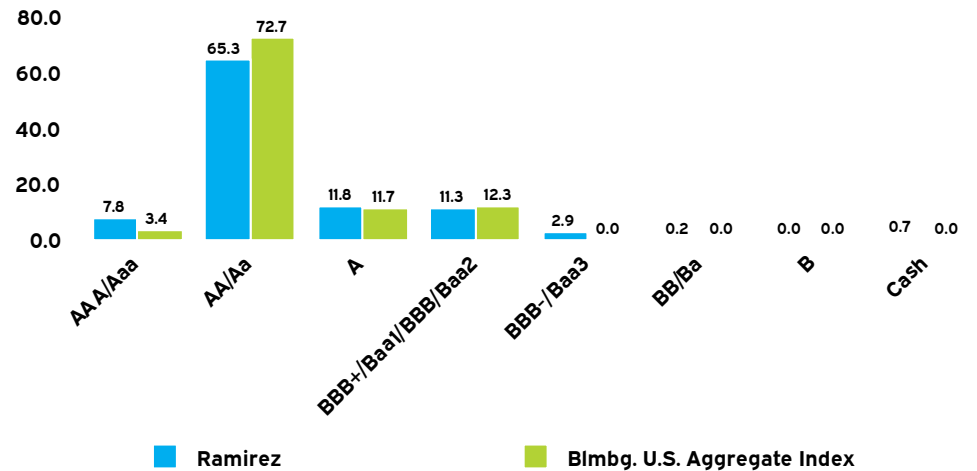
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Ramirez	0.1	-0.4	2.8	-2.9	0.0
Blmbg. U.S. Aggregate Index	0.1	-0.7	2.6	-3.0	-0.2

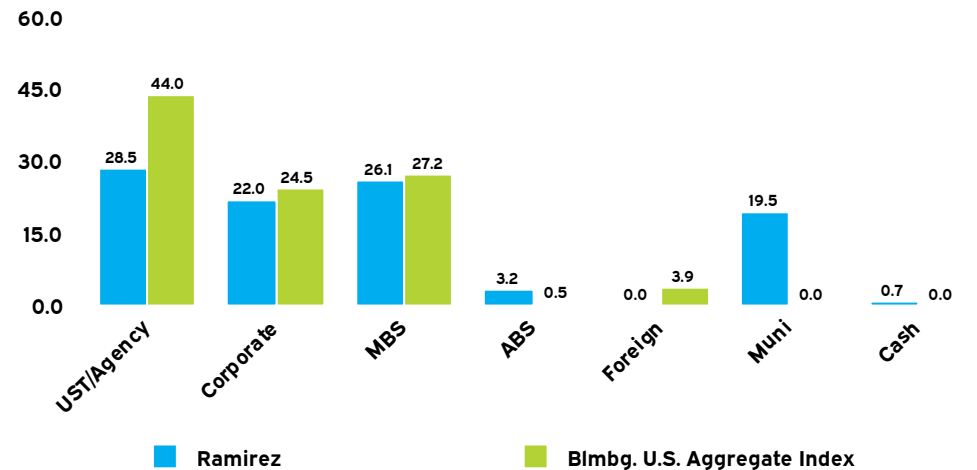
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	5.2	5.0
Average Duration	6.1	6.1
Average Quality	AA	AA
Weighted Average Maturity	9.1	8.9

Credit Quality Allocation



Sector Allocation



Performance shown is net of fees.

Wellington Core Bond | As of June 30, 2024

Account Information

Account Name	Wellington Core Bond
Account Structure	Commingled Fund
Inception Date	04/01/2021
Asset Class	US Fixed Income
Benchmark	Blmbg. U.S. Aggregate Index
Peer Group	eV US Core Fixed Inc

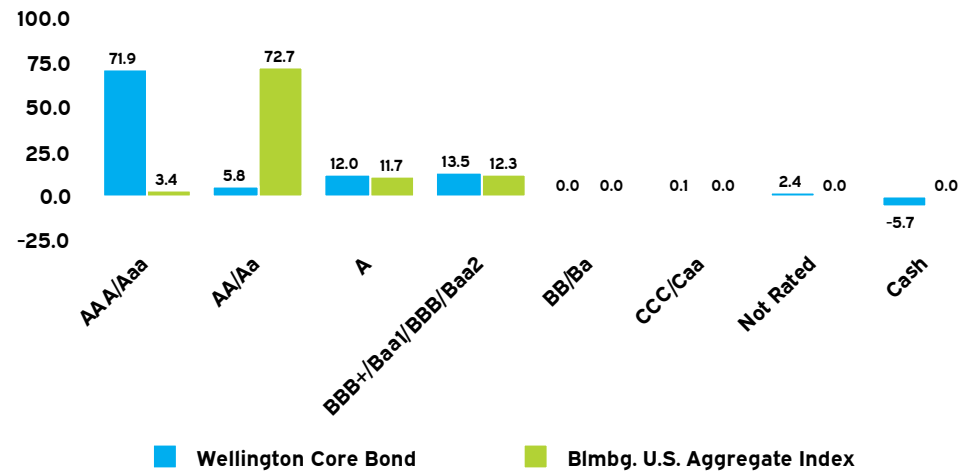
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Wellington Core Bond	0.4	0.2	4.2	-2.8	-
Blmbg. U.S. Aggregate Index	0.1	-0.7	2.6	-3.0	-0.2

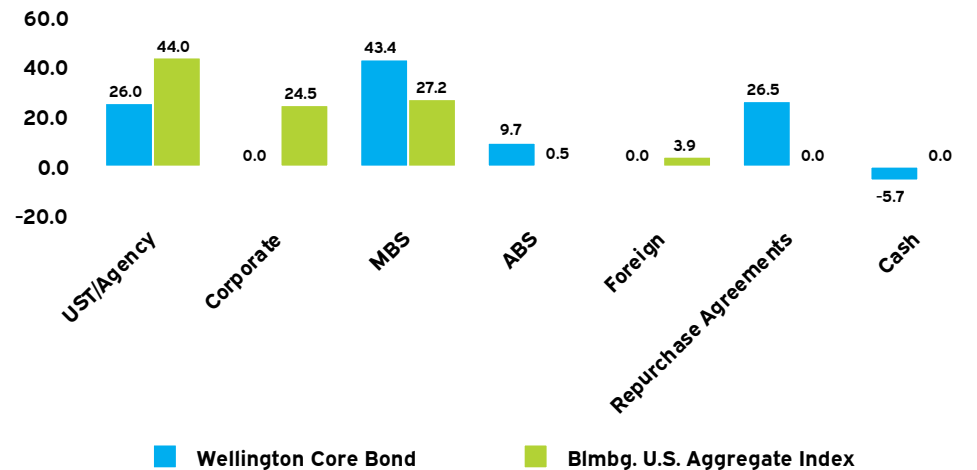
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	5.3	5.3
Average Duration	6.7	6.5
Average Quality	AA	AA
Weighted Average Maturity	-	-

Credit Quality Allocation



Sector Allocation



Performance shown is net of fees.

Account Information

Account Name	Reams
Account Structure	Separate Account
Inception Date	01/01/1998
Asset Class	US Fixed Income
Benchmark	Bloomberg Universal (Blend)
Peer Group	eV US Core Plus Fixed Inc

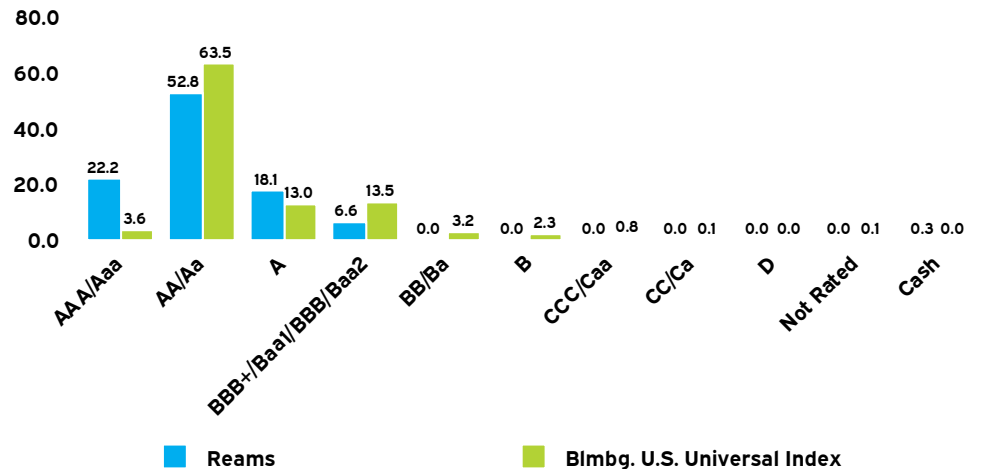
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Reams	0.3	-0.2	3.0	-2.2	2.4
Bimbg. U.S. Universal Index	0.2	-0.3	3.5	-2.7	0.1

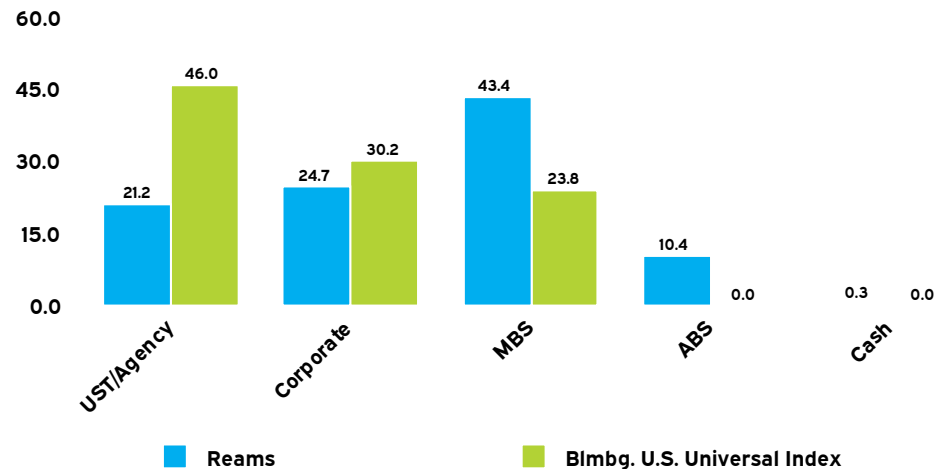
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	5.3	5.1
Average Duration	6.4	6.5
Average Quality	AA	AA
Weighted Average Maturity	9.4	7.5

Credit Quality Allocation



Sector Allocation



Performance shown is net of fees.

Account Information

Account Name	Polen Capital
Account Structure	Commingled Fund
Inception Date	02/01/2015
Asset Class	US Fixed Income
Benchmark	ICE BofA U.S. High Yield Index
Peer Group	eV US High Yield Fixed Inc

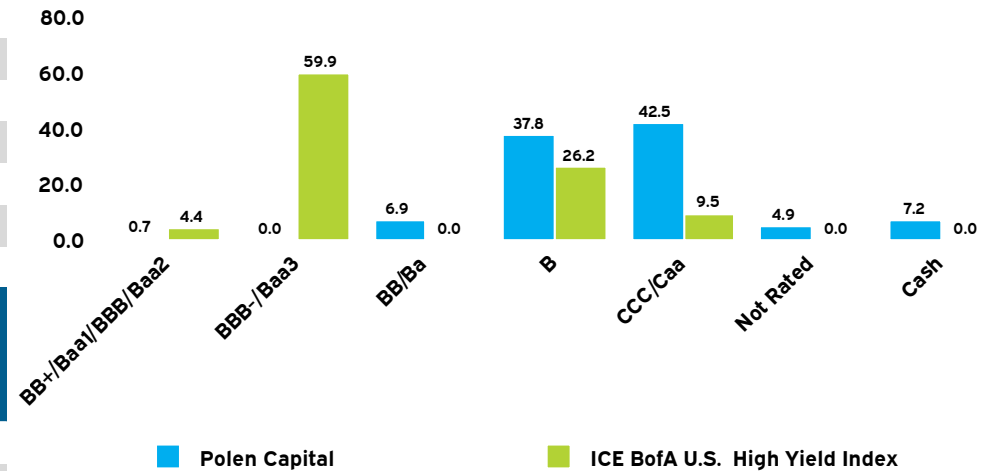
Portfolio Performance Summary

	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Polen Capital	1.0	4.0	9.6	3.2	4.8
ICE BofA U.S. High Yield Index	1.1	2.6	10.4	1.6	3.7

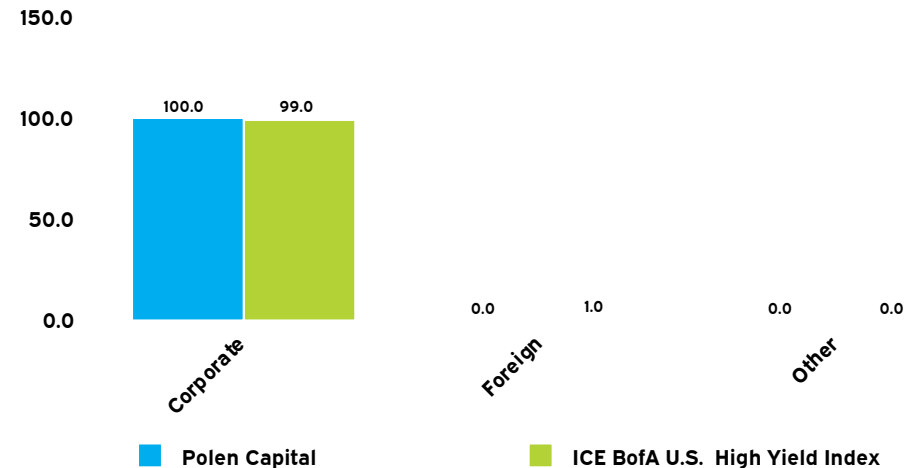
Portfolio Fixed Income Characteristics

	Q2-24 Portfolio	Q1-24 Portfolio
Yield To Maturity	9.7	9.2
Average Duration	2.1	2.2
Average Quality	B	B
Weighted Average Maturity	4.9	4.7

Credit Quality Allocation



Sector Allocation

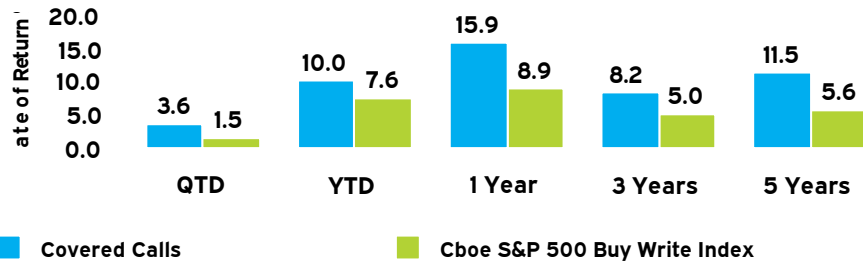


Performance shown is net of fees.

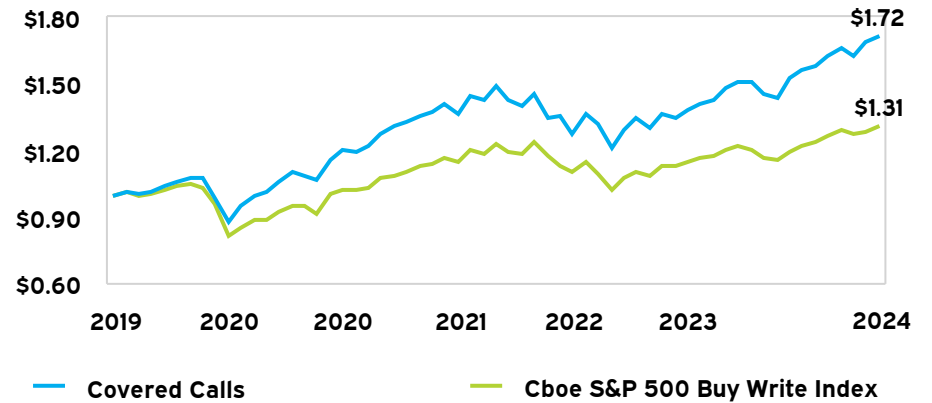
Covered Calls | As of June 30, 2024

	Return	Standard Deviation	Alpha	Beta	Information Ratio	Tracking Error	Up Capture	Down Capture	Inception Date
Covered Calls	9.6	11.4	3.3	1.0	0.9	4.0	125.3	105.4	04/01/2014
Cboe S&P 500 Buy Write Index	5.9	10.2	0.0	1.0	-	0.0	100.0	100.0	
Parametric BXM	7.6	9.3	2.4	0.9	0.5	3.1	100.6	85.9	04/01/2014
Cboe S&P 500 Buy Write Index	5.9	10.2	0.0	1.0	-	0.0	100.0	100.0	
Parametric DeltaShift	11.7	13.7	4.5	1.2	0.9	6.2	149.1	122.3	04/01/2014
Cboe S&P 500 Buy Write Index	5.9	10.2	0.0	1.0	-	0.0	100.0	100.0	

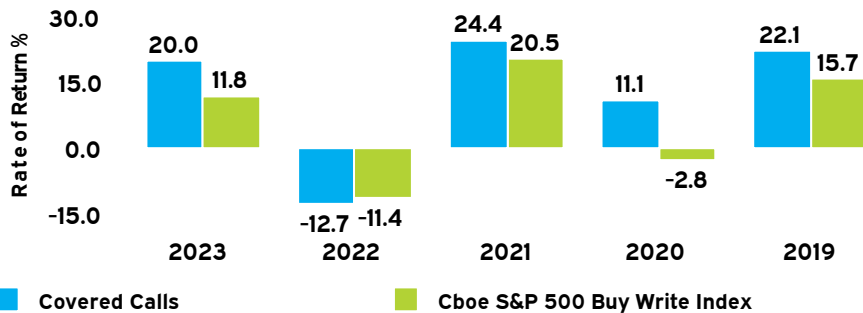
Trailing Period Performance



Growth of a Dollar



Calendar Year Performance



Performance shown is net of fees.

Crisis Risk Offset | As of June 30, 2024

	Return	Standard Deviation	Alpha	Beta	Information Ratio	Tracking Error	Up Capture	Down Capture	Inception Date
Crisis Risk Offset	-6.7	10.7	-6.8	0.8	-0.7	9.9	31.2	127.4	08/01/2018
Crisis Risk Offset Benchmark	0.7	5.4	0.0	1.0	-	0.0	100.0	100.0	
Kepos Alternative Risk Premia	8.3	6.7	1.7	0.9	0.1	5.0	97.9	77.7	02/01/2022
SG Multi Alternative Risk Premia Index	7.6	5.2	0.0	1.0	-	0.0	100.0	100.0	
Versor Trend Following	0.0	14.5	-5.1	1.0	-0.7	6.8	83.4	111.5	04/01/2022
SG Trend Index	5.5	12.6	0.0	1.0	-	0.0	100.0	100.0	
Vanguard Long-Term Treasury ETF	-4.3	15.1	0.0	1.0	0.0	1.1	101.0	100.9	07/01/2019
Blmbg. U.S. Government: Long Term Bond Index	-4.2	15.0	0.0	1.0	-	0.0	100.0	100.0	

Correlation Matrix

3 Months Ending June 30, 2024

	Crisis Risk Offset	MSCI AC World Index Value	S&P 500 Index	Blmbg. Global Aggregate Index
Crisis Risk Offset	1.00			
MSCI AC World Index Value	-0.01	1.00		
S&P 500 Index	-0.46	0.89	1.00	
Blmbg. Global Aggregate Index	-0.31	0.95	0.99	1.00

Trailing Period Performance



Performance shown is net of fees.

Benchmark History		
From Date	To Date	Benchmark
OPFRS Total Plan		
06/01/2022	Present	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA (Net), 31.0% Blmbg. US Universal Index, 2.0% Blmbg. US Corp: High Yield Index, 5.0% Cboe S&P 500 Buy Write Index, 10.0% Crisis Risk Offset Benchmark
01/01/2019	06/01/2022	40.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 31.0% Blmbg. US Universal Index, 5.0% Cboe S&P 500 Buy Write Index, 2.0% Blmbg. US Treasury: Long, 10.0% Crisis Risk Offset Benchmark
05/01/2016	01/01/2019	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. US Universal Index, 20.0% CBOE BXM
10/01/2015	05/01/2016	43.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. US Universal Index, 15.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
01/01/2014	10/01/2015	48.0% Russell 3000 Index, 12.0% MSCI AC World ex USA index, 20.0% Blmbg. US Universal Index, 10.0% CBOE BXM, 10.0% CPI - All Urban Consumers (unadjusted) +3%
03/01/2013	01/01/2014	40.0% Russell 3000 Index, 10.0% MSCI AC World ex USA index, 17.0% Blmbg. US Universal Index, 33.0% ICE BofA 3 Month US T-Bill
08/01/2012	03/01/2013	20.0% Russell 3000 Index, 7.0% MSCI AC World ex USA index, 18.0% Blmbg. US Universal Index, 55.0% ICE BofA 3 Month US T-Bill
10/01/2007	08/01/2012	53.0% Russell 3000 Index, 17.0% MSCI AC World ex USA index, 30.0% Blmbg. US Universal Index
04/01/2006	10/01/2007	35.0% Russell 3000 Index, 15.0% MSCI AC World ex USA index, 50.0% Blmbg. US Universal Index
01/01/2005	04/01/2006	35.0% Russell 3000 Index, 50.0% Blmbg. US Aggregate Index, 15.0% MSCI AC World ex USA index
04/01/1998	01/01/2005	20.0% Russell 1000 Value Index, 10.0% Russell 1000 Index, 5.0% Russell Midcap Index, 50.0% Blmbg. US Aggregate Index, 15.0% MSCI EAFE (Net)
09/01/1988	04/01/1998	40.0% S&P 500 Index, 55.0% Blmbg. US Aggregate Index, 5.0% FTSE 3 Month T-Bill

Benchmark History

From Date	To Date	Benchmark
Domestic Equity		
01/01/2005	Present	100.0% Russell 3000 Index
04/01/1998	01/01/2005	57.1% Russell 1000 Value Index, 28.6% Russell 1000 Index, 14.3% Russell Midcap Index
09/01/1988	04/01/1998	100.0% S&P 500 Index
International Equity		
01/01/2005	Present	100.0% MSCI AC World ex USA (Net)
01/01/1998	01/01/2005	100.0% MSCI EAFE Index
Fixed Income		
04/01/2006	Present	100.0% Blmbg. US Universal Index
01/01/1976	04/01/2006	100.0% Blmbg. US Aggregate Index
Covered Calls		
04/01/2014	Present	Cboe S&P 500 Buy Write Index
Crisis Risk Offset		
01/01/2023	Present	33.3% SG Trend Index, 33.3% SG Multi Alternative Risk Premia Index, 33.3% Blmbg. US Government: Long Term Bond Index
08/01/2018	01/01/2023	100.0% SG Multi Alternative Risk Premia Index
Cash		
03/01/2011	Present	FTSE 3 Month T-Bill

Manager Monitoring / Probation Status

Managers on Watch / Probation Status

Manager & Strategy	Concern Triggering Watch Status	Date of Corrective Action ¹	Months Since Placement	Performance ² Since Placement	Peer Group Rank Since Placement
Versor Trend Following	Organization / Performance	9/27/2023	9	-7.2	N/A
<i>Benchmark: SG Trend Index</i>	--	--	--	3.2	--

Investment Manager Monitoring Criteria³

Investment managers are evaluated on ongoing and periodic basis using both quantitative performance criteria and qualitative aspects of the managers. The quantitative criteria for different asset classes are as follows:

Asset Class	Short-term (Rolling 12 months)	Medium-term (Rolling 36 months)	Long-term (60 + months)
Active Domestic Equity	Fund return < benchmark return by 3.5%	Annualized Fund return < benchmark return by 1.75% for 6 consecutive months	VRR ⁴ < 0.97 for 6 consecutive months
Active International Equity	Fund return < benchmark return by 4.5%	Annualized Fund return < benchmark return by 2.0% for 6 consecutive months	VRR < 0.97 for 6 consecutive months
Passive International Equity	Tracking Error > 0.50%	Tracking Error > 0.45% for 6 consecutive months	Annualized Fund return < benchmark return by 0.4% for 6 consecutive months
Fixed Income	Fund return < benchmark return by 1.5%	Annualized Fund return < benchmark return by 1.0% for 6 consecutive months	VRR < 0.98 for 6 consecutive months

¹ Date when the Board voted to either monitor a manager at a heightened level or place it on probation.

² Performance Since Placement starts at the beginning of the full month following the date of corrective action. Performance shown is net of fees and annualized after one year mark.

³ Per Investment Policy Statement and Manager Guidelines ("IPS"), Revised 5/31/2023, section H. Currently, only Domestic Equity, International Equity, and Fixed Income have stated quantitative monitoring criteria in the IPS.

⁴ VRR (Value Relative Ratio) is calculated as manager cumulative return/ benchmark cumulative return.

Appendix

Additional Information

Performance Return Types: Performance shown is net of fees, except for OPFRS Total Plan, Domestic Equity, and International Equity Composites, which have a mix of gross and net of fees performance. Performance shown for OPFRS Total Plan and International Equity composite is gross of fees prior to January 2016. Performance shown for Domestic Equity composite is gross of fees prior to January 2017.

Inception Date: Since inception date and performance begin in the month following an investments initial funding.

Fiscal Year: Fiscal year begins on July 1.

Fair Value Pricing Methodology: Though Vanguard Developed Markets ETF is a passive strategy, short-term performance may appear to diverge from the index it tracks more than would be expected. This is due to Fair Value Pricing (FVP) adjustments that address the pricing discrepancies that may arise from time-zone differences among global securities markets. The resulting temporary divergence is expected to correct itself when the foreign markets reopen.

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

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.

The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.