

**PUBLIC SCHOOL FUND INVESTMENT BOARD**  
**MEETING AGENDA, MAY 13, 2024**

**VIDEO CONFERENCE VIA ZOOM LINK:**

Join Zoom Meeting

[https://us02web.zoom.us/j/81685352044?pwd=NGJYMWFhVFNoSGM1dIFPVzgrR  
VdwUT09](https://us02web.zoom.us/j/81685352044?pwd=NGJYMWFhVFNoSGM1dIFPVzgrR<br/>VdwUT09)

Meeting ID: 816 8535 2044

Passcode: JHvx50

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+12532158782,,81685352044#,,,,\*722453# US (Tacoma)

Meeting ID: 816 8535 2044

Passcode: 722453

**Public School Fund Investment Board Members**

|                        |  |
|------------------------|--|
| Dave Young             | - Colorado State Treasurer – Board Chair |
| Peter Calamari         | - Platte River Equity                    |
| Jerome DeHerrera, Esq. | - Achieve Law Group                      |
| Wendy Dominguez        | - Innovest Portfolio Solutions           |
| Christine Scanlan      | - State Land Board Commissioners         |

|       |  |                           |
|-------|--|---------------------------|
| I.    | Call to Order  | D. Young Noon             |
| II.   | Roll Call  | D. Young                  |
| III.  | Approval of Minutes from March 28, 2024 Board Meeting          | D. Young 12:03            |
| IV.   | August Meeting IPS Review                                      | E. Rothaus 12:04 (1 min)  |
| V.    | Market Update (Qtr. 1 – Ending March 31, 2024)                 | Callan 12:05 (10 min)     |
| VI.   | Performance Report (FY Qtr. 3 – Ending March 31, 2024)         | Callan 12:15 (15 min)     |
| VII.  | OML education and review of Communication and Open Records Act | K. Colburn 12:30 (15 min) |
| VIII. | Fund Manager Presentation: Janus – Short Duration              | Janus 12:45 (20 min)      |
| IX.   | Other Business   | E. Rothaus 1:05 (5 min)   |
|       | a. Legislative Update  |                           |
|       | b. RFP Update  |                           |
| X.    | Public Comment   | 1:10 (5 min)              |
| XI.   | Board Adjournment  |                           |

**Future Meeting Dates:**

|                    |      |
|--------------------|------|
| August TBD, 2024   | Noon |
| November TBD, 2024 | Noon |



Public School Fund Investment Board Meeting  
 Meeting Minutes March 28, 2024  
 Held Via Zoom

**Board Members in Attendance:**

Dave Young  
 Peter Calamari  
 Jerome DeHerrera  
 Wendy Dominguez  
 Christine Scanlan - Excused

**11:02 – 11:03 AM Welcome, Roll Call**

**11:03 – 11:06 AM Introduction of New Assistant Attorney General Peter Baumann**

Peter Baumann from the Attorney General's office introduced himself and was welcomed by the Board.

**11:06 – 11:07 AM Approval of Minutes from the November 13, 2023 Board Meeting**

Ms. Dominguez moved to approve the August 14, 2023 meeting minutes, which was seconded by Mr. DeHerrera.

- Dave Young – Yes
- Peter Calamari – Yes
- Jerome DeHerrera – Yes
- Wendy Dominguez – Yes
- Christine Scanlan – Excused

**11:07 – 11:17 AM Market Update**

Callan presented the update for Quarter 4 updates – Ending December 31, 2023

**11:17 – 11:32 PM Performance Report**

Ms. Becker-Wold from Callan presented the Fiscal Year Quarter 2 updates – Ending December 31, 2023

**11:32 – 11:50 AM Cash Deployment Update and Allocation Discussion**

Callan presented recommendations. There was a discussion between Board members, Callan, and Treasury Staff. Some items are on hold until a new portfolio administrator is hired.

**11:50 AM – 12:17 PM Fund Manager Presentation: Parametric**

Presentation by Dan Ryan and his team from Parametric

**12:17 – 12:34 PM Other Business**

- 2024 Legislative Update  
The Treasurer’s Office is talking to legislators regarding upcoming legislation. The bills will probably be introduced in April. Discussions involve the \$21 million and the BEST cap.
- Impact Investing Update  
One of the main forces driving this conversation forward is out on medical leave. It will be brought back to the Board once it starts moving again. It will not be during this legislative session.
- 2024 planning  
The next meeting is May 13<sup>th</sup> at Noon. Mr. Calamari’s term ends this year. The Treasurer’s Office is exploring options to fill the portfolio administrator position.

**12:34 – 12:36 PM Public Comment**

- Written Comments
  - o There were no written comments.
- Verbal Comments
  - o There were no verbal comments.

**The meeting was adjourned at 12:36 PM.**

May 2024



## **Colorado Public School Fund Investment Board**

First Quarter 2024

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**Janet Becker-Wold, CFA**  
Senior Vice President

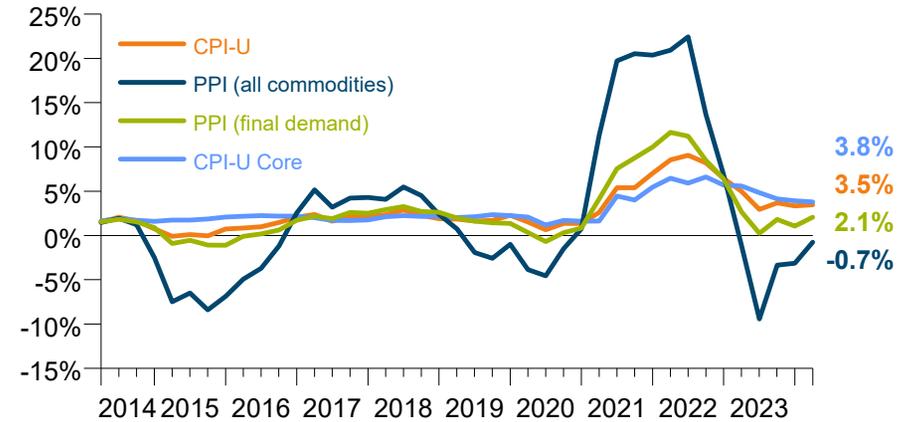
**Alexander Browning**  
Senior Vice President

# U.S. Economy—Summary

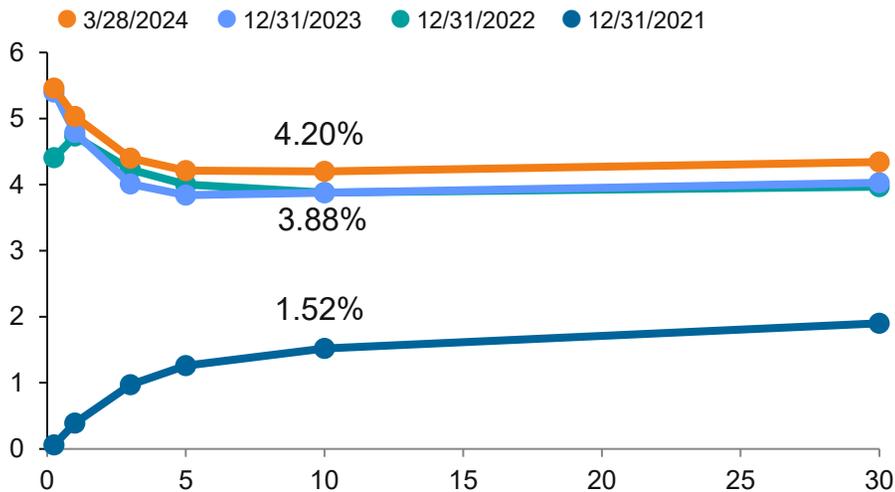
For periods ended 3/31/24

- GDP rose 1.6% in 1Q according to the “advance” estimate. A drop from the 4Q reading of 3.4%.
- Headline CPI increased 3.5% year-over-year in March, while core CPI (ex food and energy) increased 3.8% over the same period.
- The Fed held short-term rates steady at the January FOMC meeting, with a current target range of 5.25-5.50%.
- The unemployment rate was 3.9% in March, a 0.1% decline from February.

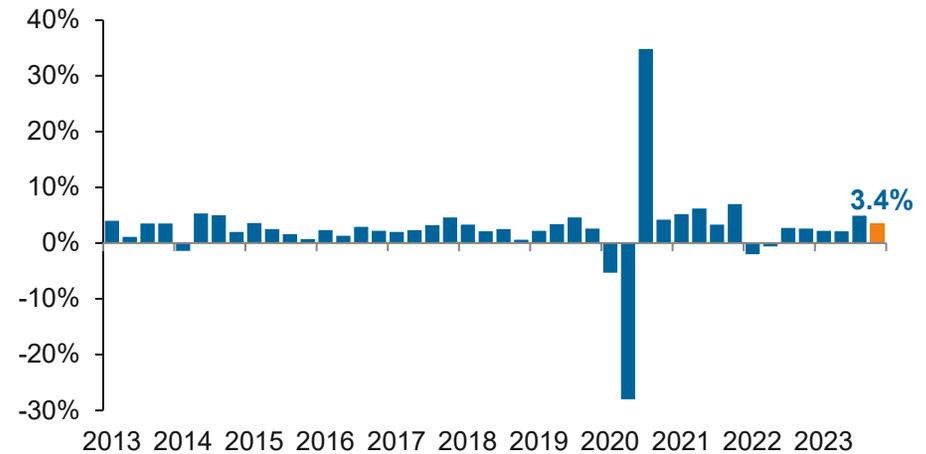
Inflation Year-Over-Year



U.S. Treasury Yield Curves



Quarterly Real GDP Growth



Sources: Bloomberg, Bureau of Labor Statistics, Callan

## Equity Markets Climb in 1Q, Bonds Falter

Stocks have recovered losses of 2022, bonds still have ground to make up

### S&P 500 climbed 10.6% in 1Q24

- Stocks maintained momentum from the end of last year when the index surged 11.7% in 4Q23.
- S&P 500 has fully recovered after falling 18.1% in 2022.

### Fixed income faltered in 1Q24

- The Bloomberg Aggregate fell 0.8% amid rising rates in the first quarter.
- Interest rates have been volatile as the markets assess when and how swiftly the Fed will begin easing.
- Grinding out the last of inflation to get to the Fed's broad 2% goal may take longer than many expected.

### Economy defies recession fears

- The 1.4% 1Q GDP reading was well below the expectation of 3%. Slowing growth and persistent inflation are delaying any move by the Fed to cut rates.

#### Returns for Periods ended 3/31/24

|                              | Quarter | 1 Year | 1/1/22 -<br>Current | 5 Years | 10 Years | 25 Years |
|------------------------------|---------|--------|---------------------|---------|----------|----------|
| <b>U.S. Equity</b>           |         |        |                     |         |          |          |
| Russell 3000                 | 10.02   | 29.29  | 5.15                | 14.34   | 12.33    | 8.01     |
| S&P 500                      | 10.56   | 29.88  | 6.13                | 15.05   | 12.96    | 7.78     |
| Russell 2000                 | 5.18    | 19.71  | -0.96               | 8.10    | 7.58     | 8.37     |
| <b>Global ex-U.S. Equity</b> |         |        |                     |         |          |          |
| MSCI World ex USA            | 5.59    | 15.29  | 2.94                | 7.48    | 4.81     | 4.78     |
| MSCI Emerging Markets        | 2.37    | 8.15   | -4.65               | 2.22    | 2.95     | --       |
| MSCI ACWI ex USA Small Cap   | 2.11    | 12.80  | -2.48               | 6.24    | 4.74     | 7.20     |
| <b>Fixed Income</b>          |         |        |                     |         |          |          |
| Bloomberg Aggregate          | -0.78   | 1.70   | -4.06               | 0.36    | 1.54     | 3.84     |
| 90-day T-Bill                | 1.29    | 5.24   | 3.45                | 2.02    | 1.38     | 1.91     |
| Bloomberg Long Gov/Credit    | -2.41   | -1.15  | -11.36              | -0.62   | 2.32     | 5.25     |
| Bloomberg Global Agg ex-US   | -3.21   | -0.71  | -7.85               | -2.49   | -1.38    | 2.34     |
| <b>Real Estate</b>           |         |        |                     |         |          |          |
| NCREIF Property Index        | -3.02   | -9.07  | -2.61               | 3.33    | 6.19     | 7.79     |
| FTSE Nareit Equity           | -0.20   | 10.54  | -6.56               | 4.15    | 6.61     | 9.48     |
| <b>Alternatives</b>          |         |        |                     |         |          |          |
| HFRI Fund Weighted           | 4.52    | 11.68  | 3.62                | 6.92    | 4.93     | 6.35     |
| Cambridge Private Equity*    | -0.42   | 4.17   | 2.69                | 14.59   | 14.27    | 13.87    |
| Bloomberg Commodity          | 2.19    | -0.56  | 4.01                | 6.38    | -1.56    | 2.70     |
| Gold Spot Price              | 8.04    | 12.70  | 9.40                | 11.51   | 5.72     | 8.64     |
| <b>CPI-U</b>                 | 1.82    | 3.48   | 5.18                | 4.20    | 2.83     | 2.58     |

\*Cambridge PE data as of 9/30/23.

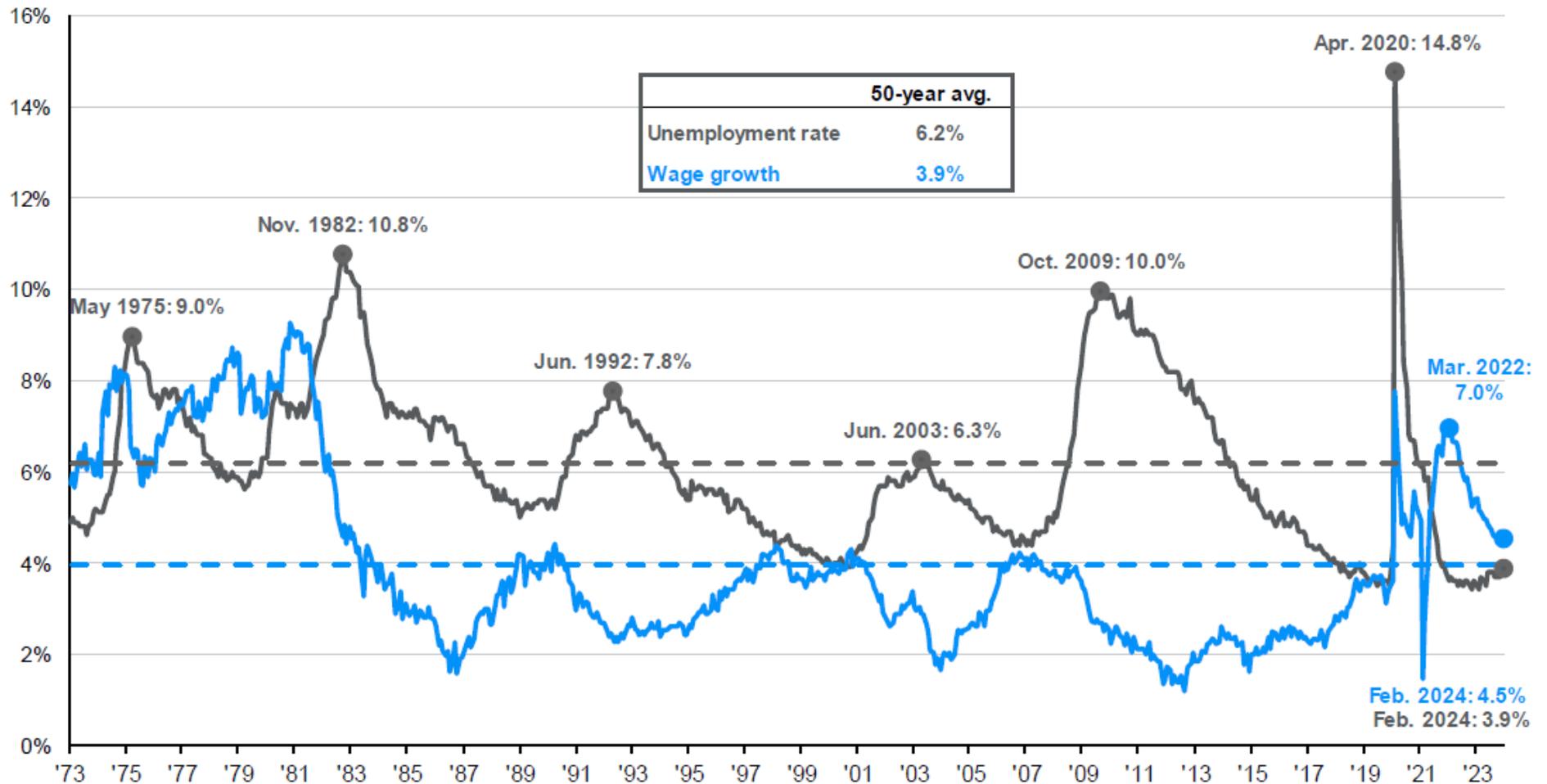
Sources: Bloomberg, Callan, Cambridge, FTSE Russell, HFRI, MSCI, NCREIF, S&P Dow Jones Indices

# Unemployment and Wages

The unemployment rate remains significantly below historic average

## Civilian unemployment rate and year-over-year wage growth

Private production and non-supervisory workers, seasonally adjusted, percent



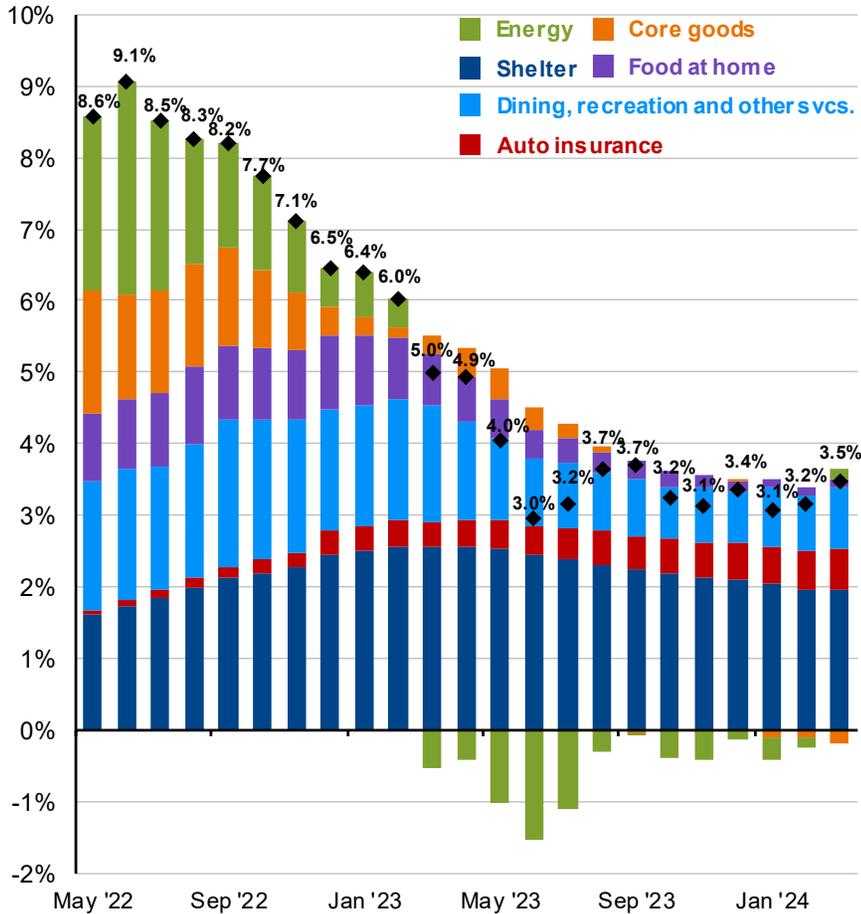
Source: BLS, FactSet, J.P. Morgan Asset Management. Private production and non-supervisory jobs represent just over 80% of total private nonfarm jobs. Guide to the Markets – U.S. Data are as of March 31, 2024.

# Contributors to Inflation by Component

Shelter remains the largest contributor to headline CPI

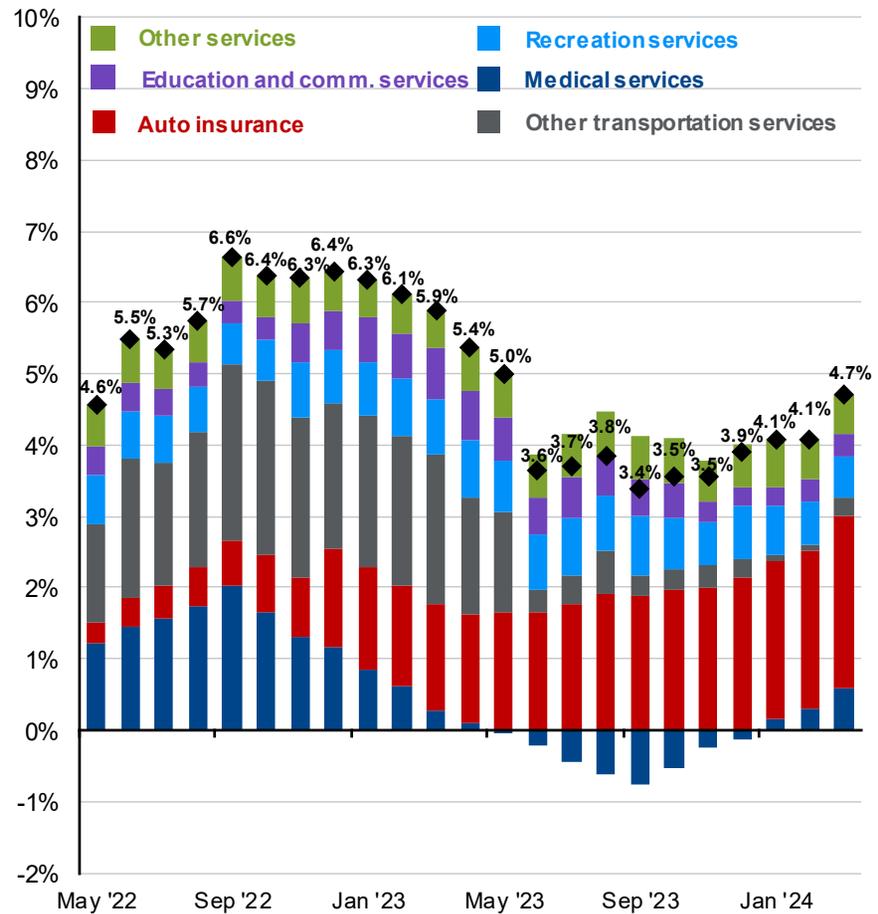
## Contributors to headline CPI inflation

Contribution to y/y % change in CPI, non-seasonally adjusted



## Contributors to core services ex-shelter CPI inflation\*

Contribution to y/y % change in custom CPI index, non-seasonally adj.



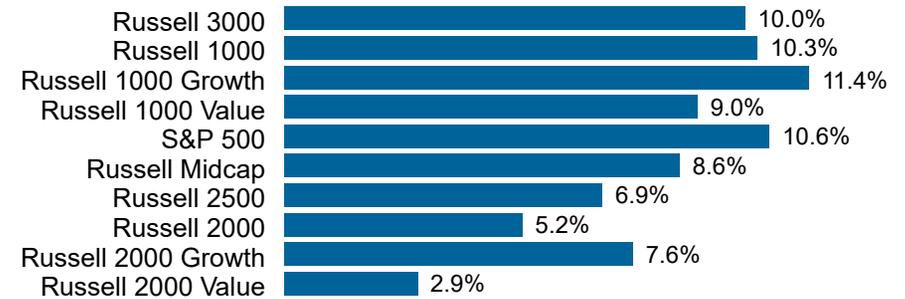
Source: JP Morgan Asset Management – data as of April 30, 2024

# U.S. Equity Performance: 1Q24

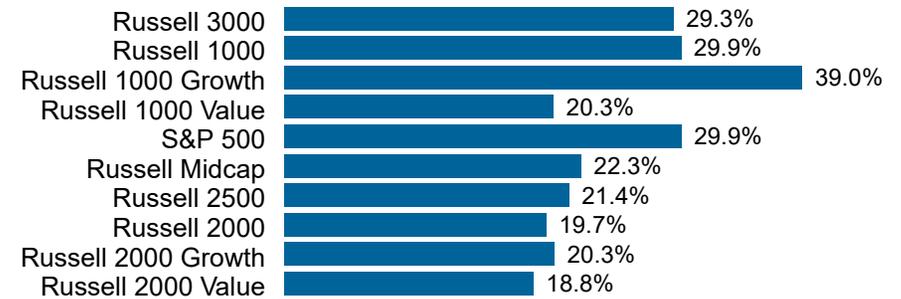
## The market exhibited a strong start to 2024

- The U.S. equity markets were off to an exceptional start with the S&P 500 posting a YTD gain of 11%, its best first quarter performance since 2019. Performance was buoyed by continued optimism around a “soft landing” scenario, strong corporate earnings, and the Fed’s projected interest rate cuts in mid-2024.
- Almost all of the 11 S&P 500 sectors posted gains in 1Q24. Real estate was the only sector that posted negative returns, which were challenged by the interest rate environment and continued negative sentiment around office real estate.
- The best-performing sector was Communication Services, which generated a nearly 16% return during the quarter. Energy, Financials, Information Technology, and Industrials also posted double-digit returns.
- Growth outpaced value across the market cap spectrum once again, and large cap stocks continued to outperform small cap stocks.

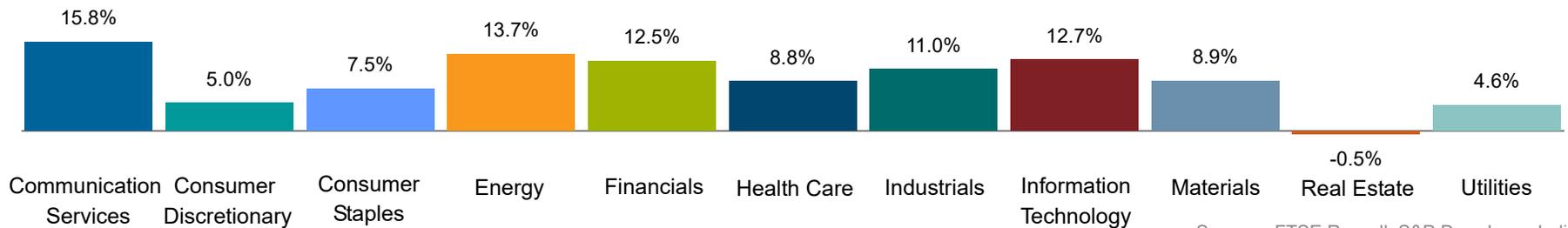
### U.S. Equity: Quarter Ended 3/31/24



### U.S. Equity: One Year Ended 3/31/24



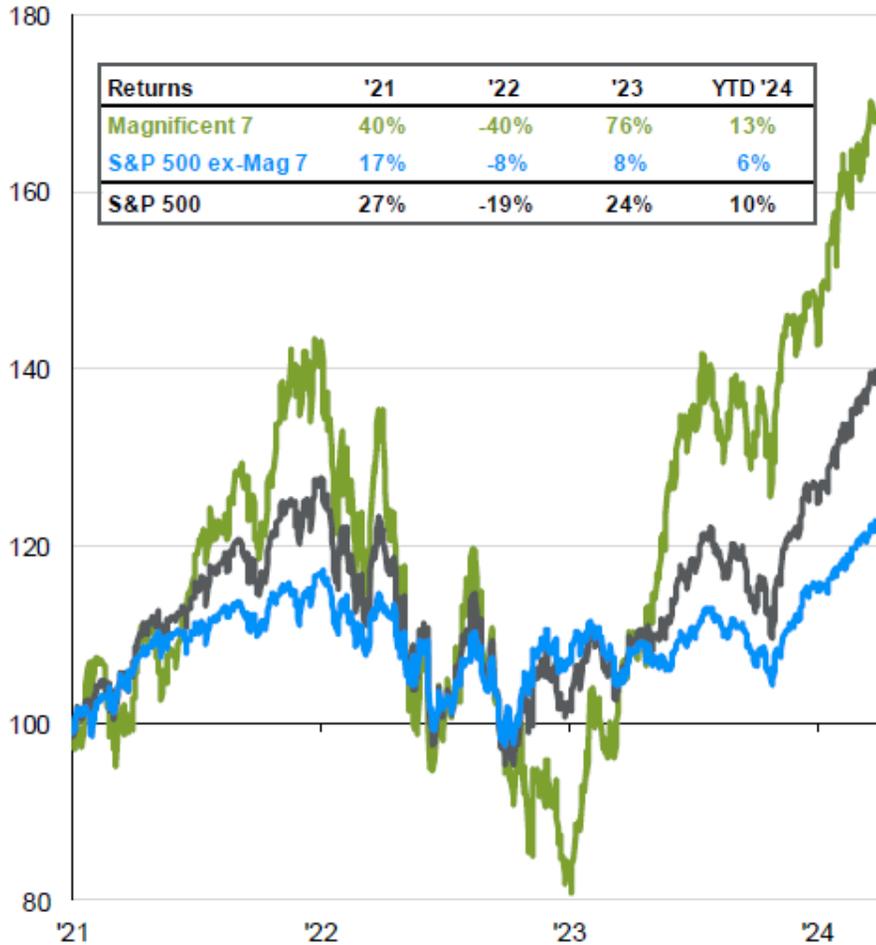
### Industry Sector Quarterly Performance (S&P 500) as of 3/31/24



Sources: FTSE Russell, S&P Dow Jones Indices

# Index Concentration Continues in U.S. Equity Markets

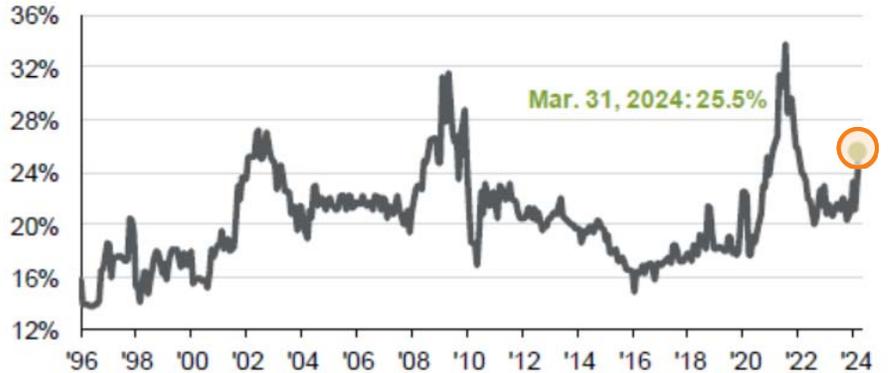
**Performance of “Magnificent 7” stocks in S&P 500\***  
Indexed to 100 on 1/1/2021, price return



**Weight of the top 10 stocks in the S&P 500**  
% of market capitalization of the S&P 500



**Earnings contribution of the top 10 in the S&P 500**  
Based on last 12 months' earnings



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

(Left) \*The Magnificent 7 includes AAPL, AMZN, GOOG, GOOGL, META, MSFT, NVDA, and TSLA.

(Right) The top 10 companies used for this analyses are updated monthly and are based on the 10 largest index constituents at the beginning of each month. As of 03/31/2024, the top 10 companies in the index were MSFT (7.2%), AAPL (5.6%), NVDA (5.1%), AMZN (3.7%), META (2.4%), GOOGL (2.0%), BRK.B (1.7%), GOOG (1.7%), LLY (1.4%), AVGO (1.3%), and JPM (1.3%). The remaining stocks represent the rest of the 492 companies in the S&P500.

Guide to the Markets – U.S. Data are as of March 31, 2024.

# Global/Global ex-U.S. Equity Performance: 1Q24

## Continued optimism lifts all markets, except China

### Broad market

- Broad markets delivered strong returns on the decreasing expected probability of a recession in the U.S. and optimism around artificial intelligence.
- International small caps continued to trail behind large caps in a higher interest rate environment, which tends to impact smaller companies with more significant borrowing needs.
- Japan performed well, beating the S&P 500 in the first quarter. This was driven by continued economic resiliency and a weakening yen, which has helped exports.

### Emerging markets

- Emerging markets underperformed developed markets.
- Exporting countries such as Peru and Columbia benefited from growing commodity prices.
- Turkey also performed well with a return to orthodox monetary policies.
- China struggled with increased regulatory scrutiny and a continued economic slowdown.

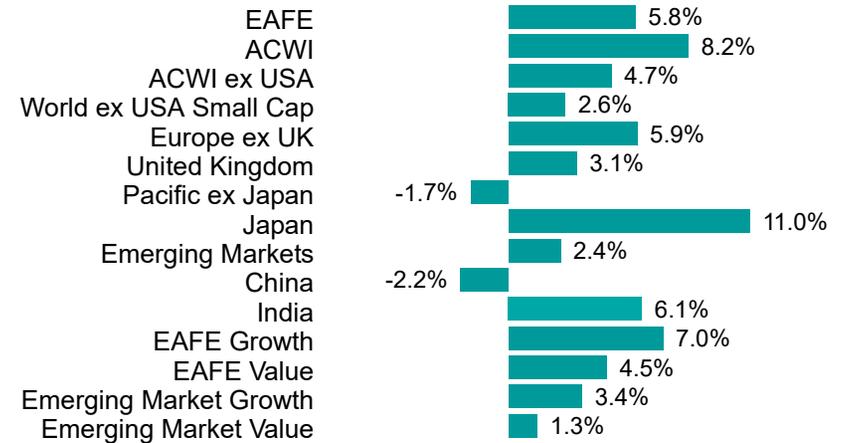
### Growth vs. value

- Energy's volatility continued; after struggling in Q4 of 2023, energy rebounded and helped deliver a stronger performance in the commodity-heavy value space.

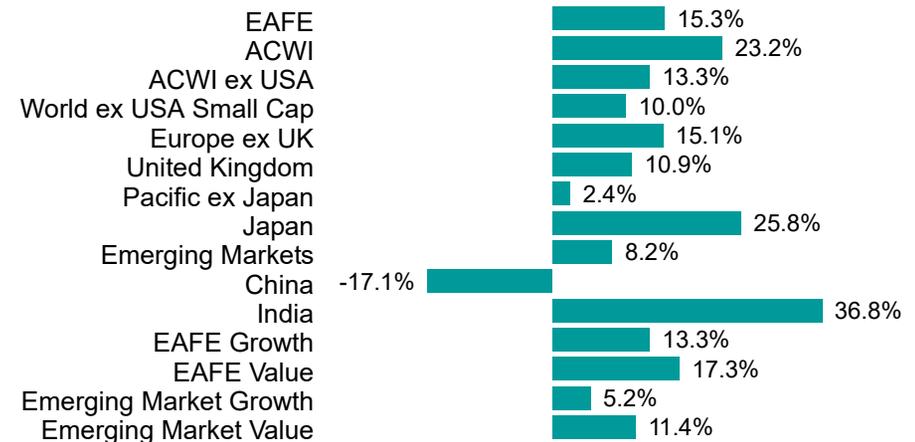
### U.S. dollar strength

- The U.S. dollar gained in Q1 as investors recalibrated their interest rate expectations, with conventional wisdom now indicating that the U.S. may only enact one rate cut in 2024.

### Global Equity Returns: Quarter Ended 3/31/24



### Global Equity Returns: One Year Ended 3/31/24



Source: MSCI

# U.S. Fixed Income Performance: 1Q24

## U.S. Treasury rates rose while risk appetite drove credit spreads tighter

### Macro Environment

- Markets' enthusiasm for multiple rate cuts starting in early 2024 was tempered by stronger-than-expected economic data.
- 10-year U.S. Treasury yield rose from 3.88% as of year-end to close the quarter at 4.21%.
- The yield curve remained inverted but less so than one year ago (2-year/10-year 42 bps vs 57 one year ago).

### Performance & Drivers

- The Aggregate Index returned -0.8% as rates rose.
- Investment grade corporates outperformed like-duration Treasuries while mortgages underperformed.
- Lower quality also outperformed with high yield corporates and leveraged loans posting the best returns.

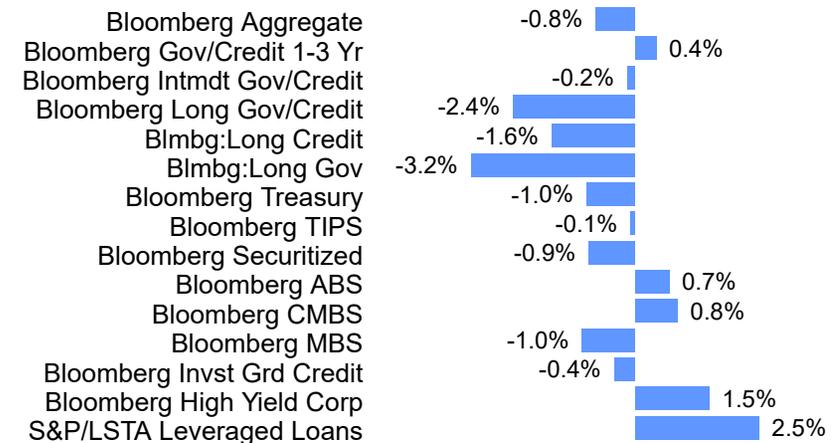
### Valuations

- Investment grade and high yield corporate spreads are now tighter than one standard deviation from the trailing 10-year average.

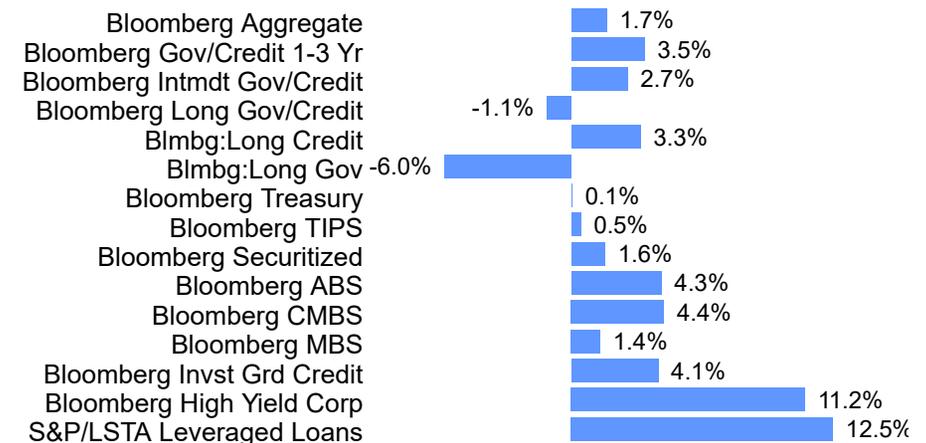
### Record Corporate Bond Issuance

- Highest first quarter of new issuance on record, with \$529 bn in investment grade corporate, surpassing 2020's \$479 bn.
- High yield quarterly issuance was just as significant with a volume of \$85 bn, a level not seen since 2021.
- Both were met with strong investor demand.

### U.S. Fixed Income Returns: Quarter Ended 3/31/24



### U.S. Fixed Income Returns: One Year Ended 3/31/24

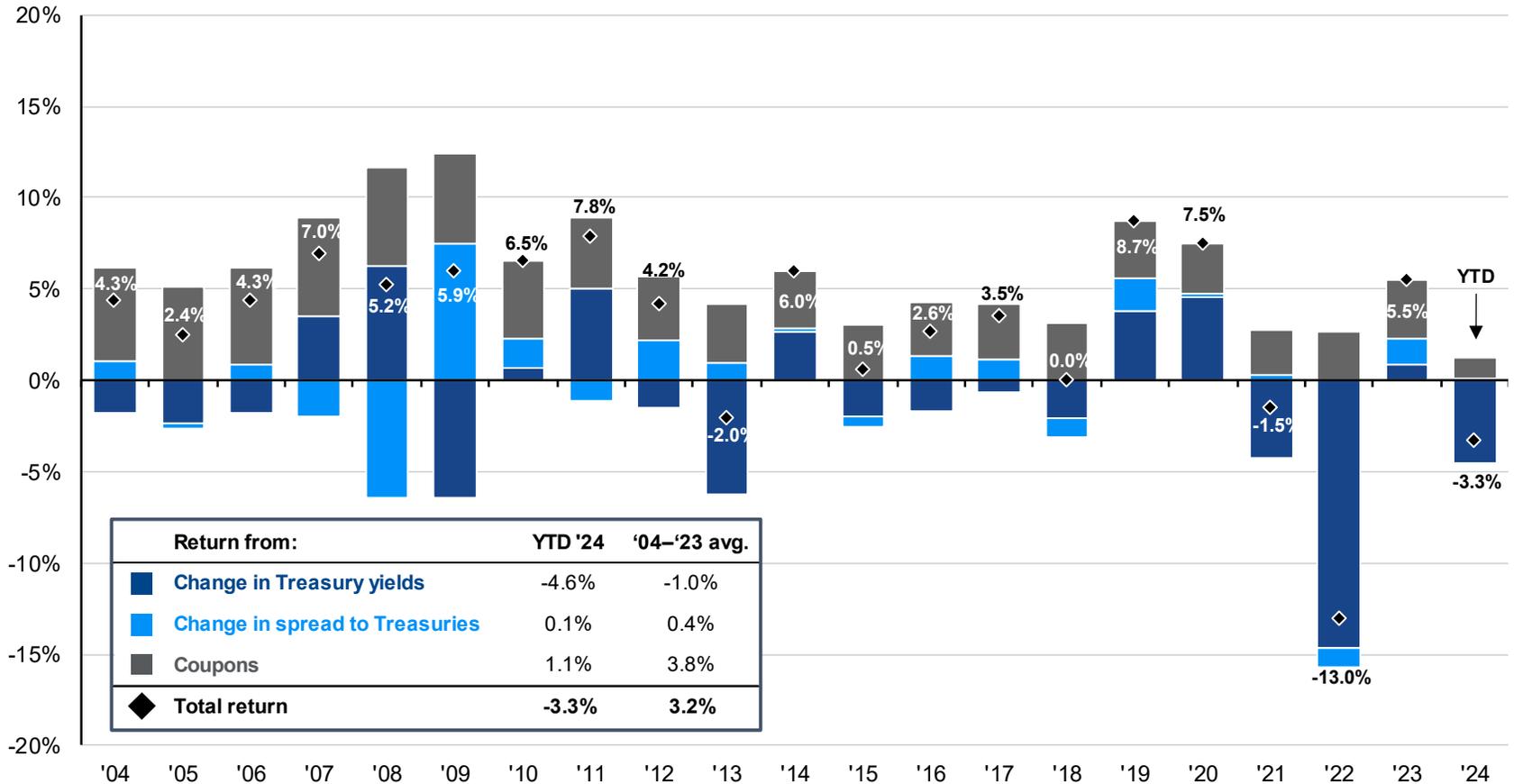


Sources: Bloomberg, Callan, S&P Dow Jones Indices

# Contribution to Bloomberg Aggregate Returns

## Bloomberg U.S. Aggregate annual total return

Total return broken into change in Treasury yields, change in bond spreads over Treasuries and coupon



The Bloomberg Aggregate has had a negative return in two of the last three calendar years and year-to-date. While coupons remain positive, changes in Treasury yields hurt returns in 2021, 2022 and year-to-date.

Source: JPM Morgan Asset Management. Data as of April 30, 2024.

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## Recent Activity and Plan Performance

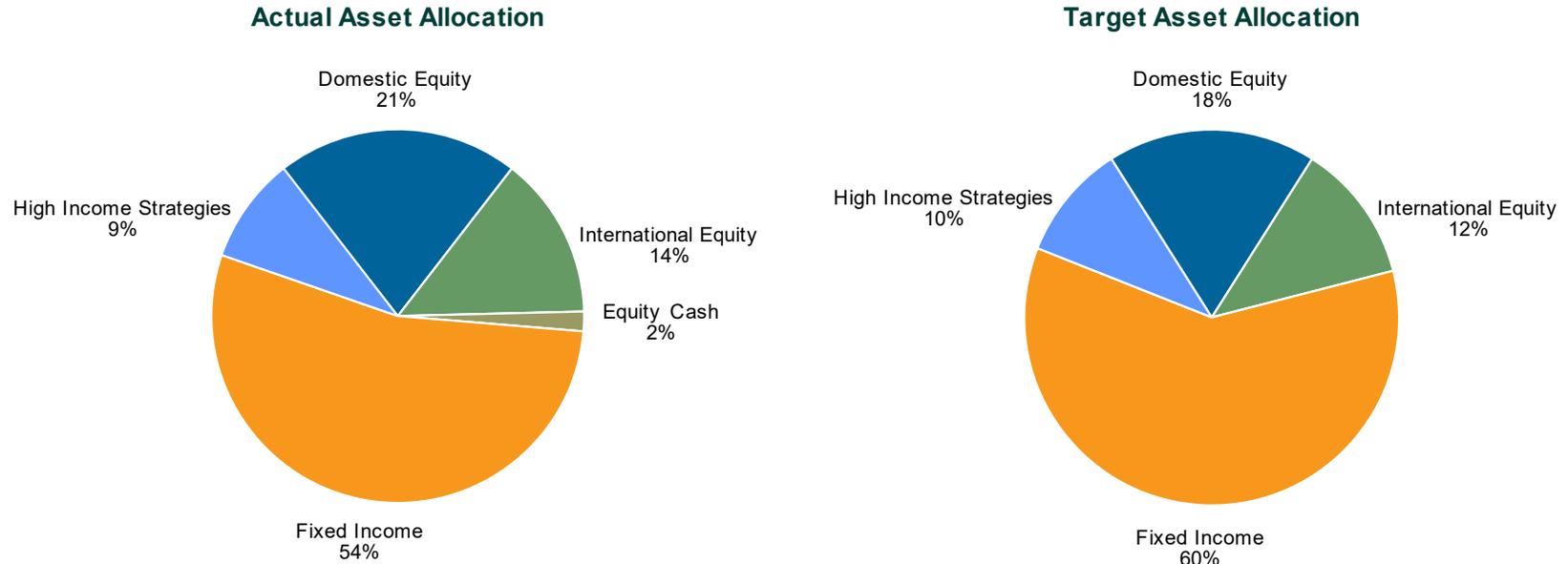
## Quarterly Total Fund Highlights

As of March 31, 2024

- ▶ **CO PSPF ended the quarter with \$1.6 billion in assets, up \$53.4 million from Q3 2023 including investment returns and net new investments.**
  - Net investment gains were \$39.4 million while net cash inflows were \$14.0 million during the quarter.
- ▶ **The Total Fund gained 2.65% for the quarter and rose 9.62% for the trailing year. Ahead of the benchmark in both periods.**
- ▶ **The Total Equity Composite returned 7.69% for the quarter and gained 22.65% for the year.**
  - U.S. Equity outperformed International Equity for the quarter with returns of 9.88% and 4.46%, respectively. For the year, U.S. equity was up 29.27% while International Equity gained 13.23%.
- ▶ **The Fixed Income Composite outperformed its benchmark by 34 basis points with a return of -0.29%. For the year, the portfolio was up 2.47%, ahead of the benchmark by 53 basis points.**
  - The Market Duration bond portfolio outperformed its benchmark by 29 basis points with a return of -0.49% in the quarter. The portfolio rose 2.00% for the year.
  - The JanusHenderson Short Duration bond portfolio exceeded its benchmark by 65 basis points with a return of 1.07%. The portfolio gained 5.65% for the year.
- ▶ **The High Income Strategies Composite surpassed its benchmark for the quarter by 9 basis points with a return of 2.02%. For the year, the Composite returned 10.33%, 1.04% behind the benchmark.**
  - The MacKay Shields' high yield bond portfolio rose 1.67% and 9.74% for the quarter and year, respectively.
  - The Principal Spectrum preferred securities portfolio returned 3.95% and 13.77% for the quarter and year, respectively.

# Total Fund Asset Allocation

As of March 31, 2024



| Asset Class            | \$000s<br>Actual | Weight<br>Actual | Target        | Percent<br>Difference | \$000s<br>Difference |
|------------------------|------------------|------------------|---------------|-----------------------|----------------------|
| Domestic Equity        | 327,240          | 21.1%            | 18.0%         | 3.1%                  | 47,945               |
| International Equity   | 218,567          | 14.1%            | 12.0%         | 2.1%                  | 32,370               |
| Equity Cash            | 26,144           | 1.7%             | 0.0%          | 1.7%                  | 26,144               |
| Fixed Income           | 837,224          | 54.0%            | 60.0%         | (6.0%)                | (93,758)             |
| High Income Strategies | 142,463          | 9.2%             | 10.0%         | (0.8%)                | (12,701)             |
| <b>Total</b>           | <b>1,551,637</b> | <b>100.0%</b>    | <b>100.0%</b> |                       |                      |

## Asset Distribution

|                                     | March 31, 2024         |               |                      | December 31, 2023    |                        |               |
|-------------------------------------|------------------------|---------------|----------------------|----------------------|------------------------|---------------|
|                                     | Market Value           | Weight        | Net New Inv.         | Inv. Return          | Market Value           | Weight        |
| <b>Total Equity (1)</b>             | <b>\$547,024,154</b>   | <b>35.25%</b> | <b>\$(7,168)</b>     | <b>\$38,973,580</b>  | <b>\$508,057,742</b>   | <b>33.91%</b> |
| <b>Domestic Equity</b>              | <b>\$327,239,733</b>   | <b>21.09%</b> | <b>\$(6,566,144)</b> | <b>\$29,643,718</b>  | <b>\$304,162,159</b>   | <b>20.30%</b> |
| iShares S&P 1500 ETF                | 327,239,733            | 21.09%        | (6,566,144)          | 29,643,718           | 304,162,159            | 20.30%        |
| <b>International Equity</b>         | <b>\$218,566,990</b>   | <b>14.09%</b> | <b>\$5,794,504</b>   | <b>\$9,326,694</b>   | <b>\$203,445,792</b>   | <b>13.58%</b> |
| iShares MSCI Emerging ETF           | 59,741,654             | 3.85%         | 3,251,319            | 1,248,073            | 55,242,262             | 3.69%         |
| iShares MSCI Canada ETF             | 16,706,579             | 1.08%         | (4,232,222)          | 704,242              | 20,234,559             | 1.35%         |
| iShares Core MSCI EAFE ETF          | 142,118,757            | 9.16%         | 6,775,407            | 7,374,378            | 127,968,972            | 8.54%         |
| Equity Cash                         | 1,217,431              | 0.08%         | 764,472              | 3,168                | 449,791                | 0.03%         |
| <b>Total Fixed Income</b>           | <b>\$837,224,092</b>   | <b>53.96%</b> | <b>\$(8,004,784)</b> | <b>\$(2,485,139)</b> | <b>\$847,714,015</b>   | <b>56.58%</b> |
| <b>Market Duration</b>              | <b>\$728,024,194</b>   | <b>46.92%</b> | <b>\$(6,684,979)</b> | <b>\$(3,610,063)</b> | <b>\$738,319,236</b>   | <b>49.28%</b> |
| Colorado Treasurer's Portfolio      | 728,024,194            | 46.92%        | (6,684,979)          | (3,610,063)          | 738,319,236            | 49.28%        |
| <b>Short Duration</b>               | <b>\$109,199,898</b>   | <b>7.04%</b>  | <b>\$(1,319,805)</b> | <b>\$1,124,925</b>   | <b>\$109,394,779</b>   | <b>7.30%</b>  |
| Janus Henderson (2)                 | 109,199,898            | 7.04%         | (1,319,805)          | 1,124,925            | 109,394,779            | 7.30%         |
| <b>High Income Strategies</b>       | <b>\$142,462,559</b>   | <b>9.18%</b>  | <b>\$(1,966,494)</b> | <b>\$2,782,837</b>   | <b>\$141,646,216</b>   | <b>9.45%</b>  |
| <b>High Yield Fixed Income</b>      | <b>\$120,521,840</b>   | <b>7.77%</b>  | <b>\$(1,700,487)</b> | <b>\$1,982,874</b>   | <b>\$120,239,453</b>   | <b>8.03%</b>  |
| Mackay Shield US High Yield (3)     | 120,521,840            | 7.77%         | (1,700,487)          | 1,982,874            | 120,239,453            | 8.03%         |
| <b>Preferred Securities</b>         | <b>\$21,940,719</b>    | <b>1.41%</b>  | <b>\$(266,007)</b>   | <b>\$799,962</b>     | <b>\$21,406,763</b>    | <b>1.43%</b>  |
| Principal Preferred Securities (3)  | 21,940,719             | 1.41%         | (266,007)            | 799,962              | 21,406,763             | 1.43%         |
| <b>Cash Available For Investing</b> | <b>\$24,926,674</b>    | <b>1.61%</b>  | <b>\$23,946,281</b>  | <b>\$109,198</b>     | <b>\$871,195</b>       | <b>0.06%</b>  |
| <b>Total Fund</b>                   | <b>\$1,551,637,479</b> | <b>100.0%</b> | <b>\$13,967,835</b>  | <b>\$39,380,476</b>  | <b>\$1,498,289,168</b> | <b>100.0%</b> |

The Fund ended the quarter at \$1.6 billion, a net increase of \$53.3 million from the third quarter.

There were net new investments of \$14.0 million and \$39.4 million in investment gains.

(1) Funded in December 2017.

(2) Funded in November 2018.

(3) Funded in July 2020.

## Manager & Composite Cumulative Returns

As of March 31, 2024

|                                      | Last<br>Quarter | Last<br>Year  | Last<br>3<br>Years | Last<br>5<br>Years | Last<br>10<br>Years |
|--------------------------------------|-----------------|---------------|--------------------|--------------------|---------------------|
| <b>Total Equity</b>                  | <b>7.69%</b>    | <b>22.65%</b> | <b>6.61%</b>       | <b>11.03%</b>      | -                   |
| 60% Russell 3000/40% ACWI ex US      | 7.89%           | 22.71%        | 6.66%              | 10.99%             | 9.10%               |
| <b>Domestic Equity</b>               | <b>9.88%</b>    | <b>29.27%</b> | <b>9.65%</b>       | <b>14.27%</b>      | -                   |
| Russell 3000 Index                   | 10.02%          | 29.29%        | 9.78%              | 14.34%             | 12.33%              |
| <b>International Equity</b>          | <b>4.46%</b>    | <b>13.23%</b> | <b>1.93%</b>       | <b>6.19%</b>       | -                   |
| MSCI ACWI ex US                      | 4.69%           | 13.26%        | 1.94%              | 5.97%              | 4.25%               |
| <b>Total Fixed Income</b>            | <b>(0.29%)</b>  | <b>2.47%</b>  | <b>(1.78%)</b>     | <b>0.74%</b>       | <b>1.90%</b>        |
| Total Fixed Income Benchmark (1)     | (0.63%)         | 1.94%         | (2.10%)            | 0.52%              | 1.43%               |
| <b>Market Duration</b>               | <b>(0.49%)</b>  | <b>2.00%</b>  | <b>(2.26%)</b>     | <b>0.47%</b>       | <b>1.79%</b>        |
| Colorado Treasurer's Portfolio (2)   | (0.49%)         | 2.00%         | (2.26%)            | 0.47%              | 1.79%               |
| PSPF Custom Benchmark (3)            | (0.78%)         | 1.70%         | (2.46%)            | 0.36%              | 1.36%               |
| <b>Short Duration</b>                | <b>1.07%</b>    | <b>5.65%</b>  | <b>1.28%</b>       | <b>2.23%</b>       | -                   |
| Janus Henderson Short Duration       | 1.07%           | 5.65%         | 1.28%              | 2.23%              | -                   |
| Blmbg Gov/Cred 1-3 Yr                | 0.42%           | 3.49%         | 0.25%              | 1.36%              | 1.29%               |
| 85% 1-3YR G/C; 15% 1-3YR BB (4)      | 0.57%           | 4.15%         | 0.67%              | 1.78%              | 1.70%               |
| <b>High Income Strategies</b>        | <b>2.02%</b>    | <b>10.33%</b> | <b>3.03%</b>       | -                  | -                   |
| High Income Strategies Benchmark (5) | 1.93%           | 11.37%        | 1.92%              | 4.10%              | 4.48%               |
| <b>High Yield Fixed Income</b>       | <b>1.67%</b>    | <b>9.74%</b>  | <b>3.32%</b>       | -                  | -                   |
| Mackay Shield US High Yield          | 1.67%           | 9.74%         | 3.32%              | -                  | -                   |
| Blmbg High Yield                     | 1.47%           | 11.15%        | 2.19%              | 4.21%              | 4.44%               |
| <b>Preferred Securities</b>          | <b>3.95%</b>    | <b>13.77%</b> | <b>1.37%</b>       | -                  | -                   |
| Principal Preferred Securities       | 3.95%           | 13.77%        | 1.37%              | -                  | -                   |
| ICE BofA US All Cap Secs             | 4.54%           | 12.57%        | 0.34%              | 3.43%              | 4.63%               |
| <b>Total Fund w/o CAI (6)</b>        | <b>2.65%</b>    | <b>9.62%</b>  | <b>1.33%</b>       | <b>3.82%</b>       | <b>3.40%</b>        |
| Total Fund Benchmark (6)             | 2.18%           | 8.88%         | 0.91%              | 3.66%              | 3.02%               |

Performance footnotes are detailed after the performance attribution exhibits.

## Manager & Composite Fiscal Year Returns

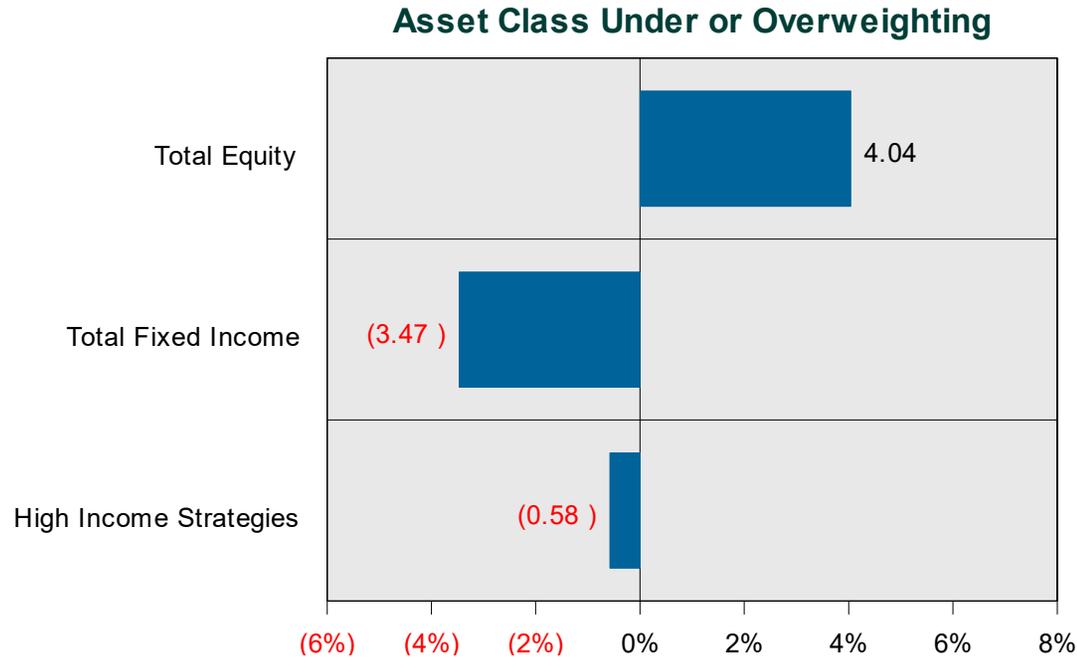
As of March 31, 2024

|                                      | 6/2023-<br>3/2024 | FY 2023        | FY 2022         | FY 2021        | FY 2020        |
|--------------------------------------|-------------------|----------------|-----------------|----------------|----------------|
| <b>Total Equity</b>                  | <b>15.58%</b>     | <b>16.33%</b>  | <b>(15.85%)</b> | <b>41.59%</b>  | <b>1.82%</b>   |
| 60% Russell 3000/40% ACWI ex US      | 15.76%            | 16.57%         | (16.06%)        | 40.77%         | 1.90%          |
| <b>Domestic Equity</b>               | <b>19.28%</b>     | <b>18.83%</b>  | <b>(13.95%)</b> | <b>44.30%</b>  | <b>6.40%</b>   |
| Russell 3000 Index                   | 19.29%            | 18.95%         | (13.87%)        | 44.16%         | 6.53%          |
| <b>International Equity</b>          | <b>10.21%</b>     | <b>12.28%</b>  | <b>(18.97%)</b> | <b>37.78%</b>  | <b>(4.71%)</b> |
| MSCI ACWI ex US                      | 10.56%            | 12.72%         | (19.42%)        | 35.72%         | (4.80%)        |
| <b>Total Fixed Income</b>            | <b>3.08%</b>      | <b>(0.04%)</b> | <b>(9.76%)</b>  | <b>(0.27%)</b> | <b>8.79%</b>   |
| Total Fixed Income Benchmark (1)     | 2.75%             | (0.75%)        | (9.46%)         | (0.26%)        | 8.28%          |
| <b>Market Duration</b>               | <b>2.82%</b>      | <b>(0.53%)</b> | <b>(10.55%)</b> | <b>(0.55%)</b> | <b>9.26%</b>   |
| Colorado Treasurer's Portfolio (2)   | 2.82%             | (0.53%)        | (10.55%)        | (0.55%)        | 9.26%          |
| PSPF Custom Benchmark (3)            | 2.56%             | (0.94%)        | (10.29%)        | (0.33%)        | 8.74%          |
| <b>Short Duration</b>                | <b>4.81%</b>      | <b>2.92%</b>   | <b>(4.33%)</b>  | <b>2.33%</b>   | <b>4.41%</b>   |
| Janus Henderson Short Duration       | 4.81%             | 2.92%          | (4.33%)         | 2.33%          | 4.41%          |
| Blmbg Gov/Cred 1-3 Yr                | 3.88%             | 0.52%          | (3.56%)         | 0.44%          | 4.20%          |
| 85% 1-3YR G/C; 15% 1-3YR BB (4)      | 4.28%             | 1.49%          | (3.83%)         | 1.70%          | 3.94%          |
| <b>High Income Strategies</b>        | <b>8.86%</b>      | <b>8.18%</b>   | <b>(9.38%)</b>  | -              | -              |
| High Income Strategies Benchmark (5) | 9.52%             | 7.93%          | (12.89%)        | 15.13%         | 0.46%          |
| <b>High Yield Fixed Income</b>       | <b>8.42%</b>      | <b>9.23%</b>   | <b>(9.09%)</b>  | -              | -              |
| Mackay Shield US High Yield          | 8.42%             | 9.23%          | (9.09%)         | -              | -              |
| Blmbg High Yield                     | 9.24%             | 9.06%          | (12.81%)        | 15.37%         | 0.03%          |
| <b>Preferred Securities</b>          | <b>11.33%</b>     | <b>2.29%</b>   | <b>(11.11%)</b> | -              | -              |
| Principal Preferred Securities       | 11.33%            | 2.29%          | (11.11%)        | -              | -              |
| ICE BofA US All Cap Secs             | 11.08%            | 1.66%          | (13.33%)        | 13.67%         | 2.86%          |
| <b>Total Fund w/o CAI (6)</b>        | <b>7.81%</b>      | <b>5.66%</b>   | <b>(11.58%)</b> | <b>8.30%</b>   | <b>7.37%</b>   |
| Total Fund Benchmark (6)             | 7.27%             | 5.18%          | (11.64%)        | 7.98%          | 7.87%          |

Performance footnotes are detailed after the performance attribution exhibits.

# One Quarter Performance Attribution

As of March 31, 2024



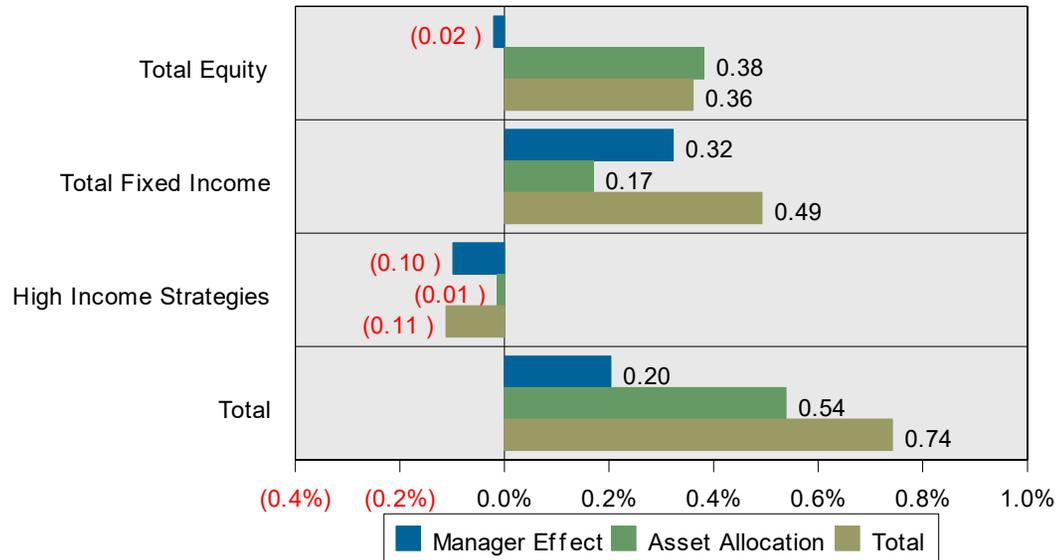
## Relative Attribution Effects for Quarter ended March 31, 2024

| Asset Class            | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|------------------------|-------------------------|-------------------------|---------------|---------------|----------------|------------------|-----------------------|
| Total Equity           | 34%                     | 30%                     | 7.69%         | 7.89%         | (0.07%)        | 0.23%            | 0.17%                 |
| Total Fixed Income     | 57%                     | 60%                     | (0.29%)       | (0.63%)       | 0.19%          | 0.10%            | 0.29%                 |
| High Income Strategies | 9%                      | 10%                     | 2.02%         | 1.93%         | 0.01%          | 0.00%            | 0.01%                 |
| <b>Total</b>           |                         |                         | <b>2.65%</b>  | <b>2.18%</b>  | <b>+ 0.13%</b> | <b>+ 0.33%</b>   | <b>0.46%</b>          |

# One Year Performance Attribution

As of March 31, 2024

## One Year Relative Attribution Effects



## One Year Relative Attribution Effects

| Asset Class            | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|------------------------|-------------------------|-------------------------|---------------|---------------|----------------|------------------|-----------------------|
| Total Equity           | 33%                     | 30%                     | 22.65%        | 22.71%        | (0.02%)        | 0.38%            | 0.36%                 |
| Total Fixed Income     | 58%                     | 60%                     | 2.47%         | 1.94%         | 0.32%          | 0.17%            | 0.49%                 |
| High Income Strategies | 10%                     | 10%                     | 10.33%        | 11.37%        | (0.10%)        | (0.01%)          | (0.11%)               |
| <b>Total</b>           |                         |                         | <b>9.62%</b>  | <b>8.88%</b>  | <b>+ 0.20%</b> | <b>+ 0.54%</b>   | <b>0.74%</b>          |

## Performance Footnotes

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- (1) Current quarter's Total Fixed Income Benchmark consists of 87.5% Bloomberg U.S. Aggregate and 12.5% Bloomberg Gov/Credit 1-3 Yrs.
  - (2) Includes cash returns starting July 2017.
  - (3) The PSPF Fixed Income Portfolio Custom Benchmark consisted of 37% U.S. Treasury 1-10 Year Index, 34% Mortgages 0-10 Year WAL Index, 19% AAA U.S. Agencies 1-10 Year Index and 10% U.S. Corporates AAA Rated 1-10 Years Index through March 31, 2017, 100% Bloomberg U.S. Aggregate, thereafter.
  - (4) Benchmark consists of 85% Bloomberg 1-3 Year Government/Credit Index and 15% BofAML 1-3 Year BB US Cash Pay High Yield Index.
  - (5) Benchmark consists of 85% Blmbg High Yield Index and 15% ICE BofA US All Cap Secs Index.
  - (6) Current quarter's Total Fund Benchmark consists of 18.0% Russell 3000, 12.0% MSCI ACWI ex US, 52.5% Bloomberg U.S. Aggregate, 7.5% Bloomberg Gov/Credit 1-3 Yrs, 8.5% Bloomberg US High Yield and 1.5% ICE BofA U.S. All Capital Securities Index.
- \*All composites and manager returns are shown gross-of-fees.

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## Callan Update

## Published Research Highlights: 1Q24

### STAR Report Executive Summary: Year-End 2023



### A Primer on Investable Types of Rental Housing



### The Callan Periodic Table Collection: Year-End 2023



### Callan 2024-2033 Capital Markets Assumptions



### Recent Blog Posts

#### SEC Releases Final Climate Disclosure Rule

Kristin Bradbury

#### A Strong Finish to 2023 Bodes Well for Hedge Funds in 2024

Joe McGuane

#### The Magnificent Seven and Large Cap Portfolios

Nicole Wubbena

### Additional Reading

*Alternatives Focus* quarterly newsletter

Active vs. Passive quarterly charts

*Capital Markets Review* quarterly newsletter

Monthly Updates to the Periodic Table

*Market Pulse Flipbook* quarterly markets update

*Real Estate Indicators* market outlook

# Callan Institute Events

Upcoming conferences, workshops, and webinars

## Callan College

### Intro to Investments—Learn the Fundamentals

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with basic investment theory, terminology, and practices.

- June 18-19, 2024 – In-Person Session in Chicago
- September 24-26, 2024 – Virtual Session via Zoom

### Intro to Alternatives

This course is for institutional investors, including trustees and staff members of public plans, corporate plans, and nonprofits. This session familiarizes trustees and staff with alternative investments like private equity, hedge funds, and real estate, and how they can play a key role in any portfolio. You will learn about the importance of allocations to alternatives and how to consider integrating, evaluating, and monitoring them.

- August 21-22, 2024 – Virtual Session via Zoom

Please visit our website at [callan.com/events-education](https://callan.com/events-education) as we add dates to our 2024 calendar!

## Mark Your Calendar

### 2024 Regional Workshops

- June 25, 2024 – Atlanta
- June 27, 2024 – San Francisco
- October 22, 2024 – Denver
- October 23, 2024 – Chicago

*Watch your email for further details and an invitation.*

## Webinars & Research Café Sessions

### Webinar: Market Intelligence

April 26, 2024 – Virtual Session via Zoom

### Webinar: Fee Study Results (National Conference)

May 16, 2024 – Virtual Session via Zoom

# Introducing CODE: Callan On-Demand Education

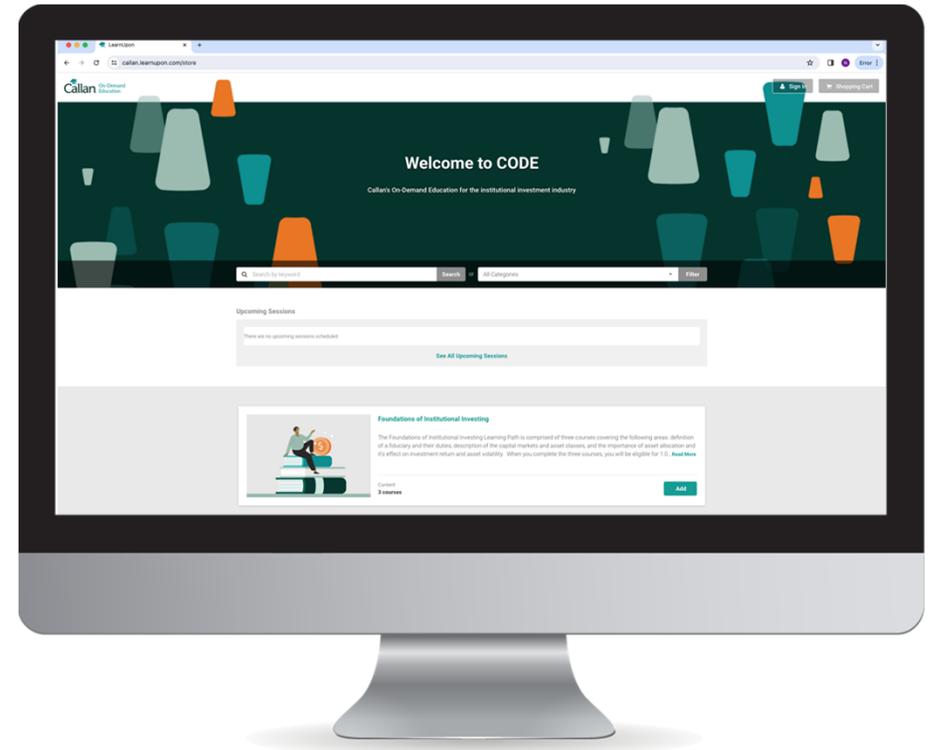


- ▶ Variety of educational courses
- ▶ Interactive and engaging
- ▶ Self-guided modules
- ▶ Eligible for continuing education credits
- ▶ Learning at your own pace

CODE courses are designed for investment professionals of all levels—and they're self-guided. Access them anytime, from anywhere, and get continuing education credits for each completed course.

CODE is for you, your colleagues, your new hires, and your interns. It's for anyone interested in learning about institutional investing.

[callan.com/code](https://callan.com/code)



## 3 Reasons to Take CODE Courses

- 1 Become a better fiduciary
- 2 Showcase your skills and knowledge
- 3 Learn from Callan's investment experts

## Callan Updates

Firm updates by the numbers, as of March 31, 2024

### Total Associates: ~210

#### Ownership

- ▶ 100% employees
- ▶ ~70% of employees are equity owners
- ▶ ~55% of shareholders identify as women or minority

Total General and Investment Consultants: 50+

Total Specialty and Research Consultants: 60+

Total CFA/CAIA/FRMs: 55+

Total Institutional Investor Clients: 475+

Provides advisory services to institutional investor clients with assets over \$4+ trillion

### Introducing CODE: Callan On-Demand Education

Launched an online education platform featuring courses on a broad range of institutional investing topics

Learn more at [callan.com/CODE](https://callan.com/CODE)

**“Our philosophy with this platform is to make the whole industry more educated and have a better understanding of how decisions actually happen. If we can do that, we'll get better outcomes for stakeholders and beneficiaries.”**

— CEO and Chief Research Officer Greg Allen on why we built the Callan On-Demand Education (CODE) platform



# Diversity, Equity & Belonging (DEB)

Building a diverse workforce, pursuing equitable outcomes, and creating a sense of belonging

## Five-Year Strategic Plan: Key Areas



### DEB Leadership:

Greg Allen, Executive Sponsor, and Lauren Mathias, Champion

### DEB Council:

Citlali Cuevas, Laura Dawson, Mike Joecken, Lindsay Jones, Paola Cardenales, Erik Partida, Juan Pablo Piz, Avery Robinson, Jeff Salyer, Álvaro Vega, Nicole Wubbena

**Client DEB projects:** *Investment manager Callan DEI Score trends, investment manager team and employee demographics review versus peers, diverse-owned manager searches, incorporating diversity in an IPS, and review of DEI in DC plans.*

### Accomplishments

- ▶ Inclusive culture education for all
- ▶ Engagement surveys
- ▶ Inclusive interviewing and resume review guides
- ▶ Equitable policies for promotion and partnership
- ▶ Enhanced pay equity and supplier diversity policies
- ▶ Pronoun education
- ▶ DEB Awareness Calendar
- ▶ Buddy program to align onboarding with belonging best practices



### Near-Term Future Plans

- ▶ Ongoing education
- ▶ Employee resource groups (ERGs)
- ▶ Mentorship program
- ▶ Callan DEB Advancement Report
- ▶ 2024 Asset Manager DEI Study



## Important Disclosures

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Callan's performance measurement service reports estimated returns for a portfolio and compares them against relevant benchmarks and peer groups, as appropriate; such service may also report on historical portfolio holdings, comparing them to holdings of relevant benchmarks and peer groups, as appropriate ("portfolio holdings analysis"). To the extent that Callan's reports include a portfolio holdings analysis, Callan relies entirely on holdings, pricing, characteristics, and risk data provided by third parties including custodian banks, record keepers, pricing services, index providers, and investment managers. Callan reports the performance and holdings data as received and does not attempt to audit or verify the holdings data. Callan is not responsible for the accuracy or completeness of the performance or holdings data received from third parties and such data may not have been verified for accuracy or completeness.

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Any decision made on the basis of this document is sole responsibility of the client, as the intended recipient, and it is incumbent upon the client to make an independent determination of the suitability and consequences of such a decision.

Callan undertakes no obligation to update the information contained herein except as specifically requested by the client.

Past performance is no guarantee of future results.

March 31, 2024

**CO Public School Permanent Fund**

**Investment Measurement Service  
Quarterly Review**

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**March 31, 2024**

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**U.S. EQUITIES**

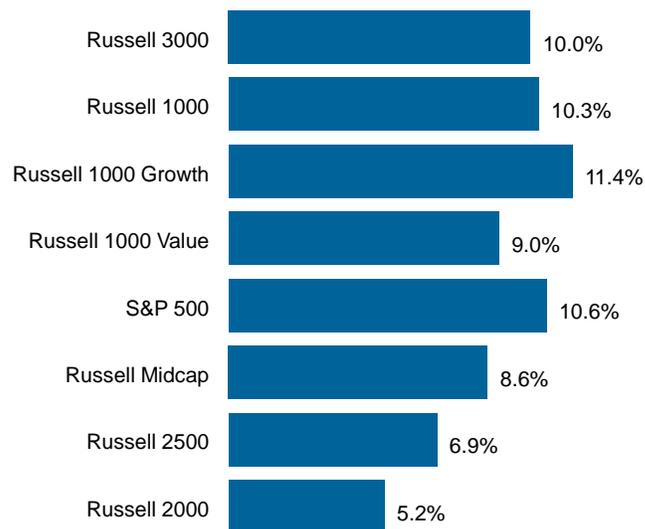
**Best first quarter in 5 years**

- The U.S. equity markets were off to an exceptional start with the S&P 500 posting a YTD gain of 11%, its best first quarter since 2019. Performance was buoyed by continued optimism around a “soft landing” scenario, strong corporate earnings, and the Fed’s projected interest rate cuts in mid-2024.
- Almost all of the 11 S&P 500 sectors posted gains in 1Q24. Real estate was the only sector that posted losses, challenged by the interest rate environment and continued negative sentiment around office real estate.
- The best-performing sector was Communication Services, which generated a nearly 16% return during the quarter. Energy, Financials, Information Technology, and Industrials also posted double-digit returns.

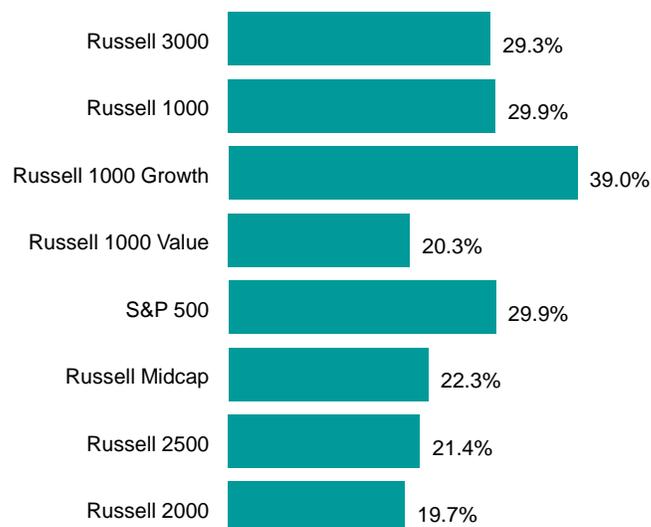
**Large cap stocks dominate again**

- Growth outpaced value across the market cap spectrum once again, and large cap stocks continued to outperform small cap stocks.
- The “Magnificent Seven” in aggregate continues to outpace the other constituents of the S&P 500 in terms of earnings growth and total returns.
- However, signs point to the broadening of returns within the index including: 1) The narrowing of dispersion in the premium gap of returns/earnings growth; as of 3/31/24, the premium gap of returns/earnings growth between the “Magnificent Seven” and the other 493 stocks in the index was 10%. In recent periods, the gap has been >25%; 2) Only two stocks of the “Magnificent Seven” (Meta and NVIDIA) were among the top 10 performers within the index for the quarter.
- Returns within the “Magnificent Seven” cohort also show signs of disaggregation. Three stocks—Tesla, Apple, and Alphabet—exhibited negative to single-digit returns vs. other constituents, which generated low to high double-digit returns in 1Q24. In 2023, the entire cohort demonstrated positive double- and triple-digit returns.

**U.S. Equity: Quarterly Returns**

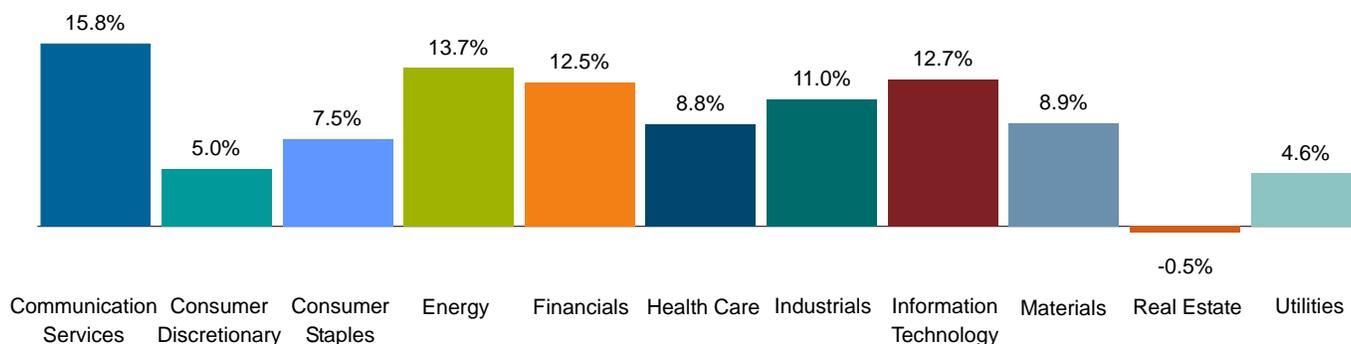


**U.S. Equity: One-Year Returns**



Sources: FTSE Russell, S&P Dow Jones Indices

**S&P Sector Returns, Quarter Ended 3/31/24**



Source: S&P Dow Jones Indices

**GLOBAL EQUITIES**

**Another strong quarter for Japan**

- Broad markets delivered strong returns on the decreasing expected probability of a recession in the U.S. and continued optimism around artificial intelligence.
- Small caps once again trailed large caps in a higher interest rate environment, which tends to more negatively impact smaller companies with more significant borrowing needs.
- Japan performed well yet again, beating the S&P 500 in 1Q24, driven by continued stock buybacks, economic resiliency, and a weakening yen, which helped exports.

**Emerging markets struggle but exporters thrive**

- Emerging markets underperformed developed markets as China struggled with increased regulatory scrutiny and a continued economic slowdown.
- Exporting countries such as Peru and Colombia benefited from increasing commodity prices. Turkey also performed well with a return to orthodox monetary policies after experimenting with counterintuitive methodologies.

**Value benefits from rising commodity prices**

- Energy’s volatility continued; after struggling in 4Q23, energy rebounded and helped deliver stronger performance in the commodity-heavy value space.

**U.S. dollar gains as rate cut expectations fall**

- The U.S. dollar rose in 1Q as investors recalibrated their interest rate expectations, with conventional wisdom now indicating that the U.S. may only enact one rate cut in 2024.

**Positive tailwinds**

- End of deflation
- Most prolonged stint of consumption gains since mid-1990s
- Increase in exports (positive impact to GDP)
- Reforms support the Japanese equity market through increased M&A and improved corporate governance

**Slow growth in China**

- Sluggish growth continues, with weak home sales and deflationary pressures.

**Market valuation in China**

- With Chinese markets now down 60% from a high-water mark in early 2021, Chinese equities are at decade-low allocations in global portfolios.

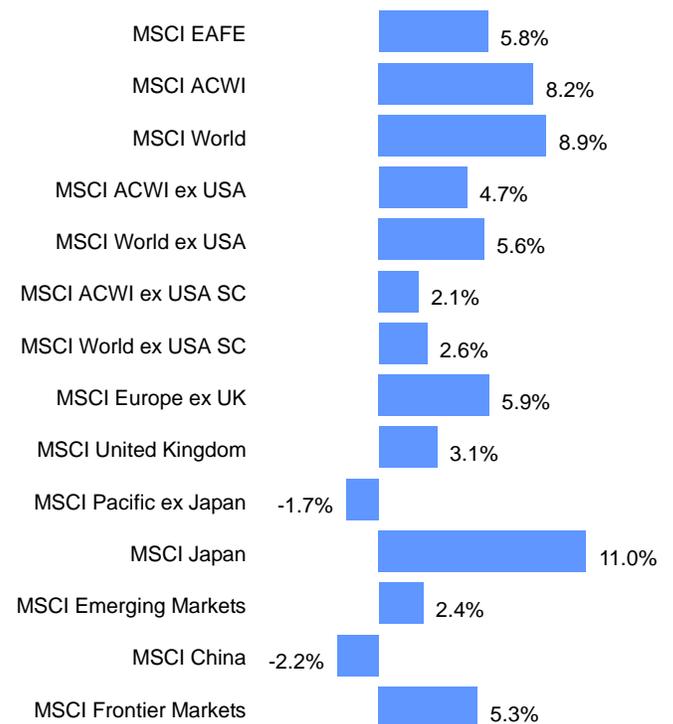
**Fast growth in India**

- Highest real GDP growth and one of the only major countries with accelerating GDP growth.

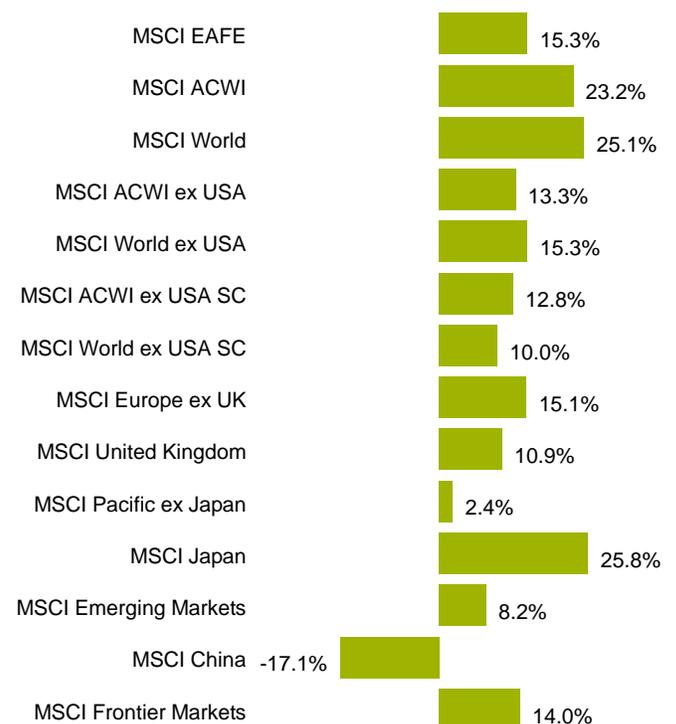
**Market valuation in India**

- The MSCI India Index traded at 22.1 times forward earnings — above its 10-year average of 18.9 times.

**Global Equity: Quarterly Returns**



**Global Equity: One-Year Returns**



Source: MSCI

**U.S. FIXED INCOME**

**Big increase in 10-year Treasury yield**

- Markets’ enthusiasm for multiple rate cuts starting in early 2024 was tempered by stronger-than-expected economic data.
- 10-year U.S. Treasury yield rose from 3.88% as of year-end to close the quarter at 4.21%.
- The yield curve remained inverted but less so than one year ago (2-year/10-year 42 bps vs. 57 one year ago).

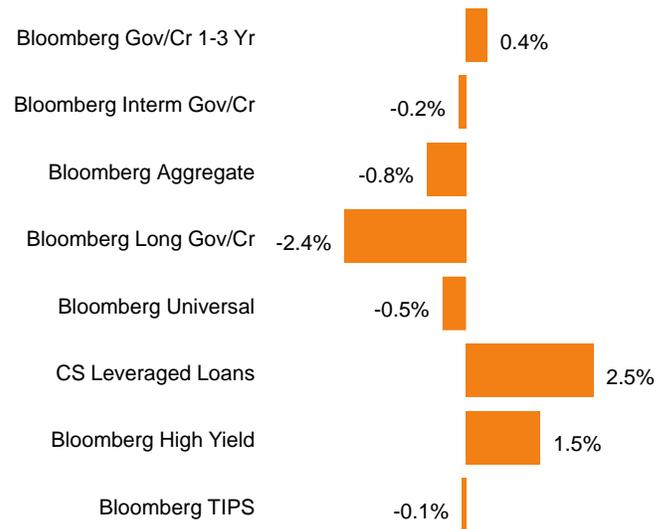
**Aggregate falls as rates climb**

- The Bloomberg US Aggregate Bond Index fell 0.8% as rates rose.
- Investment grade corporates outperformed like-duration Treasuries, while mortgages underperformed.
- Lower quality also outperformed, with high yield corporates and leveraged loans posting the highest returns.
- Investment grade and high yield corporate spreads are now tighter than one standard deviation from the trailing 10-year average.

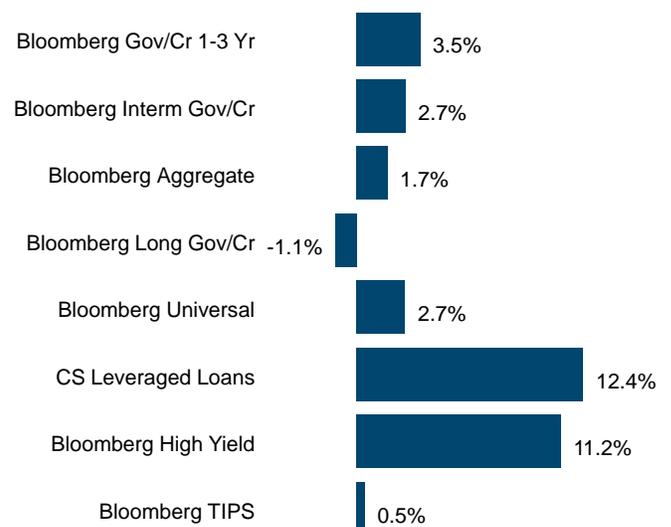
**Record corporate bond issuance**

- Highest first quarter of new issuance on record, with \$529 billion in investment grade corporates, surpassing 2020’s \$479 billion.
- High yield quarterly issuance was just as significant with a volume of \$85 billion, a level not seen since 2021.
- Both were met with strong investor demand.
- Corporate bond spreads continued to tighten across all qualities amid strong investor demand. Investment grade credit OAS declined 8 bps to 85 bps, while high yield corporates fell 24 bps, crossing the 300 bp level for the first time since January 2022.
- Investment grade credit spreads are now in the lowest 13<sup>th</sup> percentile over the last 20 years, while high yield bonds are in the 8<sup>th</sup> percentile. Bank loans are relatively more attractive, with spreads in the 42<sup>nd</sup> percentile since June 2008.
- However, all-in yields continue to provide high levels of income, with investment grade credit in the 77<sup>th</sup> percentile over the last 20 years, while high yield is in the 58<sup>th</sup> percentile. Bank loan yields, which are benefitting from the inverted yield curve, are in the 81<sup>st</sup> percentile since June 2008.

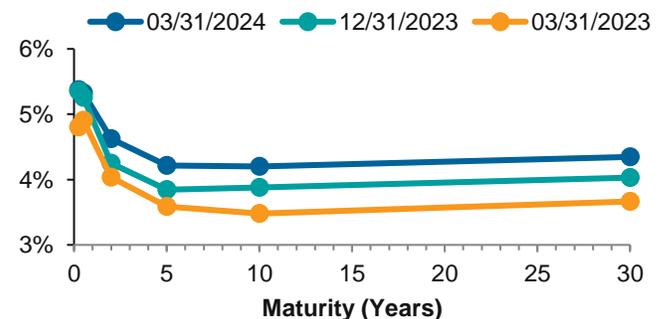
**U.S. Fixed Income: Quarterly Returns**



**U.S. Fixed Income: One-Year Returns**



**U.S. Treasury Yield Curves**



Sources: Bloomberg, Credit Suisse

**MUNICIPAL BONDS**

**Municipal bonds posted fairly flat returns in 1Q**

- Yields rose, but less than for U.S. Treasuries.
- 10-year AAA municipal bond yield closed at 2.52%, up from 2.27% as of year-end.
- 10-year U.S. Treasury yield rose to 4.20% from 3.88%.
- Strong demand easily absorbed robust issuance.

**BBBs performed best for quarter and year**

- AAA: -0.8%
- AA: -0.6%
- A: +0.1%
- BBB: +0.6%
- High Yield: +1.5%

**Valuations vs. U.S. Treasuries remained rich**

- 10-year AAA Muni/10-year U.S. Treasury yield ratio 60%
- Well below 10-year median of 86%

**GLOBAL FIXED INCOME**

**Central banks close to rate cuts**

- Central banks largely kept rates on hold but are getting closer to rate cuts as inflation moderates.
- Switzerland was the first to raise rates with a 25 bps increase.
- Japan was the last to exit negative interest rate policy, raising rates from -0.1% to a range of 0.0%-0.1%.

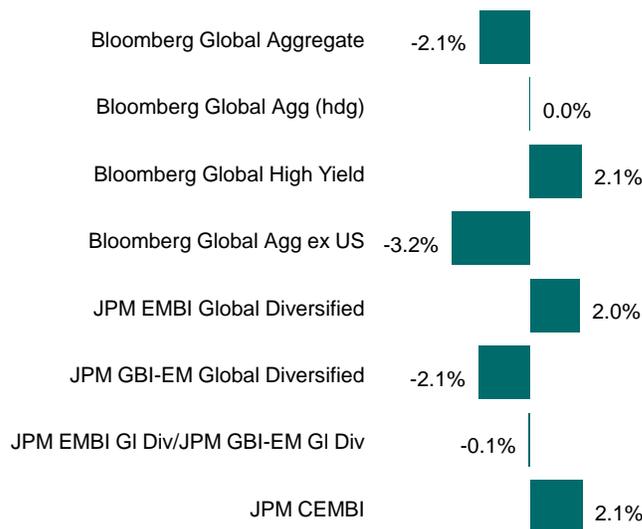
**U.S. dollar strengthened**

- Major currencies weakened relative to the dollar, a reversal of fortune from 4Q23.
- Hedged investors saw better returns.

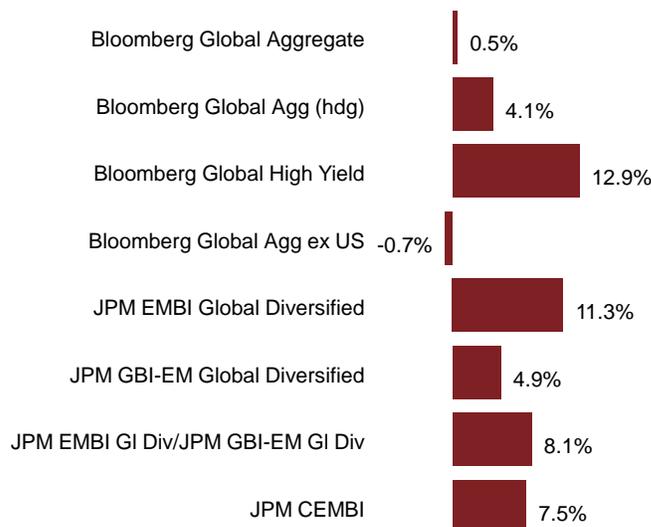
**Emerging markets were mixed**

- Hard currency EM debt performed relatively well, especially high yield. The JPM EMBI Global Diversified Index rose 2.0%, with the high yield component up 4.9%.
- Local currencies generally lost ground to the U.S. dollar, hurting returns for the JPM GBI-EM Global Diversified Index.

**Global Fixed Income: Quarterly Returns**



**Global Fixed Income: One-Year Returns**



**Change in 10-Year Global Government Bond Yields**

**4Q23 to 1Q24**

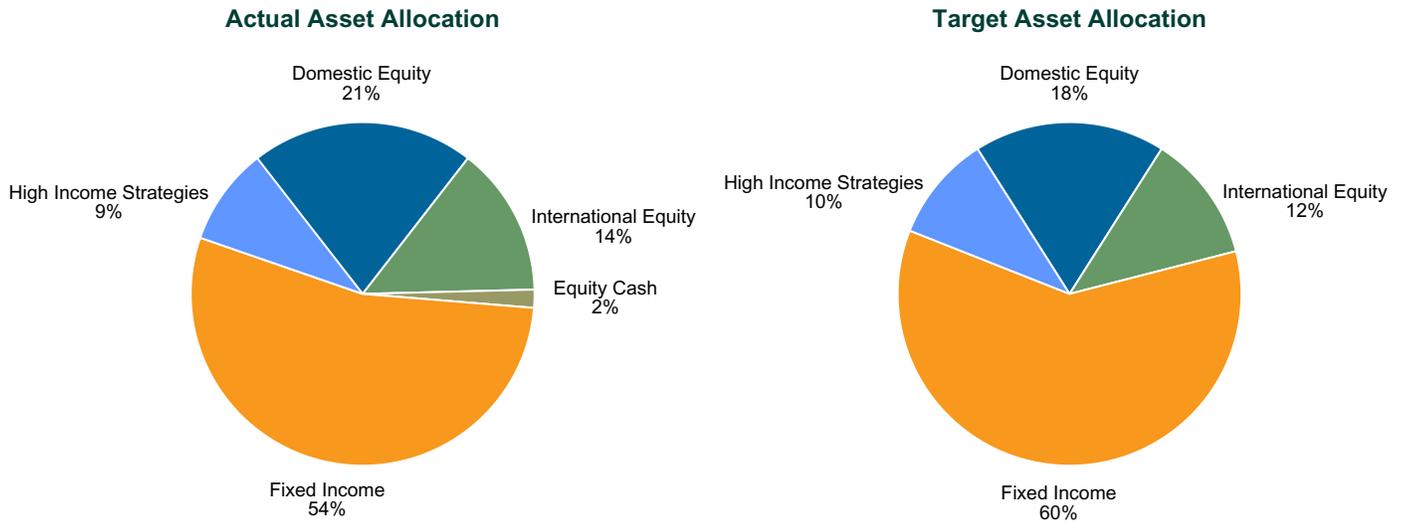


Sources: Bloomberg, JP Morgan



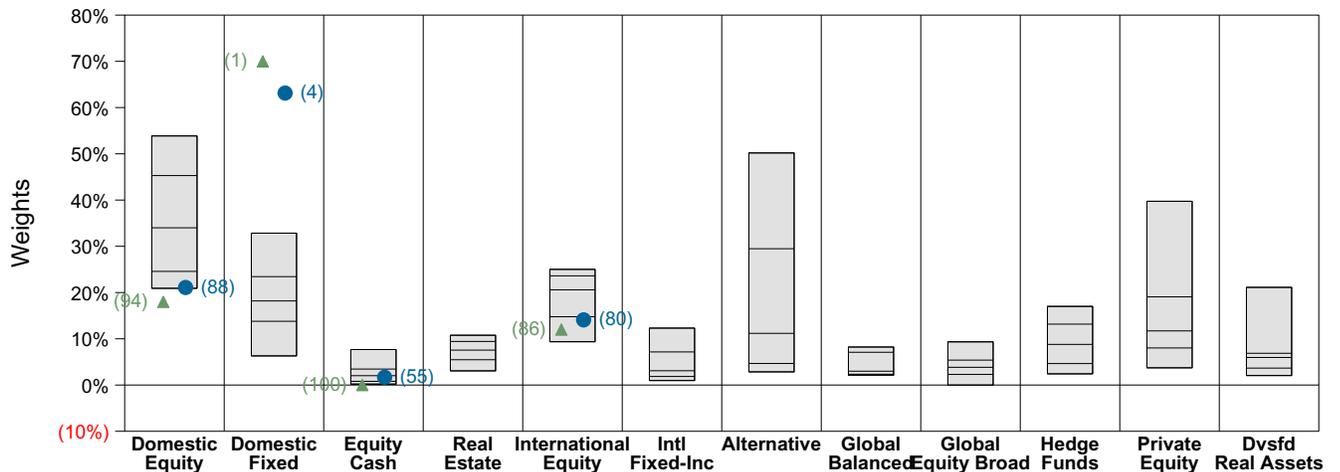
## Actual vs Target Asset Allocation As of March 31, 2024

The top left chart shows the Fund's asset allocation as of March 31, 2024. The top right chart shows the Fund's target asset allocation as outlined in the investment policy statement. The bottom chart ranks the fund's asset allocation and the target allocation versus the Callan Endow/Foundation - Mid (100M-1B).



| Asset Class            | \$000s Actual | Weight Actual | Target | Percent Difference | \$000s Difference |
|------------------------|---------------|---------------|--------|--------------------|-------------------|
| Domestic Equity        | 327,240       | 21.1%         | 18.0%  | 3.1%               | 47,945            |
| International Equity   | 218,567       | 14.1%         | 12.0%  | 2.1%               | 32,370            |
| Equity Cash            | 26,144        | 1.7%          | 0.0%   | 1.7%               | 26,144            |
| Fixed Income           | 837,224       | 54.0%         | 60.0%  | (6.0%)             | (93,758)          |
| High Income Strategies | 142,463       | 9.2%          | 10.0%  | (0.8%)             | (12,701)          |
| Total                  | 1,551,637     | 100.0%        | 100.0% |                    |                   |

### Asset Class Weights vs Callan Endow/Foundation - Mid (100M-1B)



|                 | Domestic Equity | Domestic Fixed | Equity Cash | Real Estate | International Equity | Intl Fixed-Inc | Alternative | Global Balanced | Global Equity Broad | Hedge Funds | Private Equity | Dvsfd Real Assets |
|-----------------|-----------------|----------------|-------------|-------------|----------------------|----------------|-------------|-----------------|---------------------|-------------|----------------|-------------------|
| 10th Percentile | 53.87           | 32.84          | 7.68        | 10.77       | 25.02                | 12.31          | 50.19       | 8.22            | 9.34                | 17.01       | 39.74          | 21.13             |
| 25th Percentile | 45.29           | 23.44          | 3.46        | 9.43        | 23.61                | 7.16           | 29.48       | 7.09            | 5.39                | 13.17       | 19.07          | 6.87              |
| Median          | 34.01           | 18.19          | 2.03        | 7.55        | 20.59                | 3.09           | 11.18       | 2.99            | 3.84                | 8.79        | 11.71          | 5.96              |
| 75th Percentile | 24.57           | 13.78          | 0.80        | 5.47        | 14.77                | 1.85           | 4.66        | 2.34            | 2.29                | 4.65        | 8.02           | 3.66              |
| 90th Percentile | 20.91           | 6.30           | 0.21        | 3.06        | 9.36                 | 0.97           | 2.84        | 2.13            | 0.00                | 2.42        | 3.72           | 2.05              |

|        |         |       |      |   |       |   |   |   |   |   |   |   |
|--------|---------|-------|------|---|-------|---|---|---|---|---|---|---|
| Fund   | ● 21.09 | 63.14 | 1.68 | - | 14.09 | - | - | - | - | - | - | - |
| Target | ▲ 18.00 | 70.00 | 0.00 | - | 12.00 | - | - | - | - | - | - | - |

% Group Invested: Domestic Equity 95.16%, Domestic Fixed 93.55%, Equity Cash 80.65%, Real Estate 50.00%, International Equity 88.71%, Intl Fixed-Inc 11.29%, Alternative 67.74%, Global Balanced 9.68%, Global Equity Broad 9.68%, Hedge Funds 29.03%, Private Equity 38.71%, Dvsfd Real Assets 22.58%

\* Current Quarter Target = 52.5% Blmbg:Aggregate, 18.0% Russell 3000 Index, 12.0% MSCI ACWI xUS (Net), 8.5% Blmbg HY Corp, 7.5% Blmbg Gov/Cred 1-3 Yr and 1.5% ICE All US Cap Secs.

## Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of March 31, 2024, with the distribution as of December 31, 2023. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

### Asset Distribution Across Investment Managers

|                                     | March 31, 2024         |               | Net New Inv.         | Inv. Return          | December 31, 2023      |               |
|-------------------------------------|------------------------|---------------|----------------------|----------------------|------------------------|---------------|
|                                     | Market Value           | Weight        |                      |                      | Market Value           | Weight        |
| <b>Total Equity (1)</b>             | <b>\$547,024,154</b>   | <b>35.25%</b> | <b>\$(7,168)</b>     | <b>\$38,973,580</b>  | <b>\$508,057,742</b>   | <b>33.91%</b> |
| <b>Domestic Equity</b>              | <b>\$327,239,733</b>   | <b>21.09%</b> | <b>\$(6,566,144)</b> | <b>\$29,643,718</b>  | <b>\$304,162,159</b>   | <b>20.30%</b> |
| iShares S&P 1500 ETF                | 327,239,733            | 21.09%        | (6,566,144)          | 29,643,718           | 304,162,159            | 20.30%        |
| <b>International Equity</b>         | <b>\$218,566,990</b>   | <b>14.09%</b> | <b>\$5,794,504</b>   | <b>\$9,326,694</b>   | <b>\$203,445,792</b>   | <b>13.58%</b> |
| iShares MSCI Emerging ETF           | 59,741,654             | 3.85%         | 3,251,319            | 1,248,073            | 55,242,262             | 3.69%         |
| iShares MSCI Canada ETF             | 16,706,579             | 1.08%         | (4,232,222)          | 704,242              | 20,234,559             | 1.35%         |
| iShares Core MSCI EAFE ETF          | 142,118,757            | 9.16%         | 6,775,407            | 7,374,378            | 127,968,972            | 8.54%         |
| Equity Cash                         | 1,217,431              | 0.08%         | 764,472              | 3,168                | 449,791                | 0.03%         |
| <b>Total Fixed Income</b>           | <b>\$837,224,092</b>   | <b>53.96%</b> | <b>\$(8,004,784)</b> | <b>\$(2,485,139)</b> | <b>\$847,714,015</b>   | <b>56.58%</b> |
| <b>Market Duration</b>              | <b>\$728,024,194</b>   | <b>46.92%</b> | <b>\$(6,684,979)</b> | <b>\$(3,610,063)</b> | <b>\$738,319,236</b>   | <b>49.28%</b> |
| Colorado Treasurer's Portfolio      | 728,024,194            | 46.92%        | (6,684,979)          | (3,610,063)          | 738,319,236            | 49.28%        |
| <b>Short Duration</b>               | <b>\$109,199,898</b>   | <b>7.04%</b>  | <b>\$(1,319,805)</b> | <b>\$1,124,925</b>   | <b>\$109,394,779</b>   | <b>7.30%</b>  |
| Janus Henderson (2)                 | 109,199,898            | 7.04%         | (1,319,805)          | 1,124,925            | 109,394,779            | 7.30%         |
| <b>High Income Strategies</b>       | <b>\$142,462,559</b>   | <b>9.18%</b>  | <b>\$(1,966,494)</b> | <b>\$2,782,837</b>   | <b>\$141,646,216</b>   | <b>9.45%</b>  |
| <b>High Yield Fixed Income</b>      | <b>\$120,521,840</b>   | <b>7.77%</b>  | <b>\$(1,700,487)</b> | <b>\$1,982,874</b>   | <b>\$120,239,453</b>   | <b>8.03%</b>  |
| Mackay Shield US High Yield (3)     | 120,521,840            | 7.77%         | (1,700,487)          | 1,982,874            | 120,239,453            | 8.03%         |
| <b>Preferred Securities</b>         | <b>\$21,940,719</b>    | <b>1.41%</b>  | <b>\$(266,007)</b>   | <b>\$799,962</b>     | <b>\$21,406,763</b>    | <b>1.43%</b>  |
| Principal Preferred Securities (3)  | 21,940,719             | 1.41%         | (266,007)            | 799,962              | 21,406,763             | 1.43%         |
| <b>Cash Available For Investing</b> | <b>\$24,926,674</b>    | <b>1.61%</b>  | <b>\$23,946,281</b>  | <b>\$109,198</b>     | <b>\$871,195</b>       | <b>0.06%</b>  |
| <b>Total Fund</b>                   | <b>\$1,551,637,479</b> | <b>100.0%</b> | <b>\$13,967,835</b>  | <b>\$39,380,476</b>  | <b>\$1,498,289,168</b> | <b>100.0%</b> |

(1) Funded in December 2017.

(2) Funded in November 2018.

(3) Funded in July 2020.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended March 31, 2024. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

### Returns for Periods Ended March 31, 2024

|                                      | Last<br>Quarter | Last<br>Year  | Last<br>3<br>Years | Last<br>5<br>Years | Last<br>10<br>Years |
|--------------------------------------|-----------------|---------------|--------------------|--------------------|---------------------|
| <b>Total Equity</b>                  | <b>7.69%</b>    | <b>22.65%</b> | <b>6.61%</b>       | <b>11.03%</b>      | -                   |
| 60% Russell 3000/40% ACWI ex US      | 7.89%           | 22.71%        | 6.66%              | 10.99%             | 9.10%               |
| <b>Domestic Equity</b>               | <b>9.88%</b>    | <b>29.27%</b> | <b>9.65%</b>       | <b>14.27%</b>      | -                   |
| Russell 3000 Index                   | 10.02%          | 29.29%        | 9.78%              | 14.34%             | 12.33%              |
| <b>International Equity</b>          | <b>4.46%</b>    | <b>13.23%</b> | <b>1.93%</b>       | <b>6.19%</b>       | -                   |
| MSCI ACWI ex US                      | 4.69%           | 13.26%        | 1.94%              | 5.97%              | 4.25%               |
| <b>Total Fixed Income</b>            | <b>(0.29%)</b>  | <b>2.47%</b>  | <b>(1.78%)</b>     | <b>0.74%</b>       | <b>1.90%</b>        |
| Total Fixed Income Benchmark (1)     | (0.63%)         | 1.94%         | (2.10%)            | 0.52%              | 1.43%               |
| <b>Market Duration</b>               | <b>(0.49%)</b>  | <b>2.00%</b>  | <b>(2.26%)</b>     | <b>0.47%</b>       | <b>1.79%</b>        |
| Colorado Treasurer's Portfolio (2)   | (0.49%)         | 2.00%         | (2.26%)            | 0.47%              | 1.79%               |
| PSPF Custom Benchmark (3)            | (0.78%)         | 1.70%         | (2.46%)            | 0.36%              | 1.36%               |
| <b>Short Duration</b>                | <b>1.07%</b>    | <b>5.65%</b>  | <b>1.28%</b>       | <b>2.23%</b>       | -                   |
| Janus Henderson Short Duration       | 1.07%           | 5.65%         | 1.28%              | 2.23%              | -                   |
| Blmbg Gov/Cred 1-3 Yr                | 0.42%           | 3.49%         | 0.25%              | 1.36%              | 1.29%               |
| 85% 1-3YR G/C; 15% 1-3YR BB (4)      | 0.57%           | 4.15%         | 0.67%              | 1.78%              | 1.70%               |
| <b>High Income Strategies</b>        | <b>2.02%</b>    | <b>10.33%</b> | <b>3.03%</b>       | -                  | -                   |
| High Income Strategies Benchmark (5) | 1.93%           | 11.37%        | 1.92%              | 4.10%              | 4.48%               |
| <b>High Yield Fixed Income</b>       | <b>1.67%</b>    | <b>9.74%</b>  | <b>3.32%</b>       | -                  | -                   |
| Mackay Shield US High Yield          | 1.67%           | 9.74%         | 3.32%              | -                  | -                   |
| Blmbg High Yield                     | 1.47%           | 11.15%        | 2.19%              | 4.21%              | 4.44%               |
| <b>Preferred Securities</b>          | <b>3.95%</b>    | <b>13.77%</b> | <b>1.37%</b>       | -                  | -                   |
| Principal Preferred Securities       | 3.95%           | 13.77%        | 1.37%              | -                  | -                   |
| ICE BofA US All Cap Secs             | 4.54%           | 12.57%        | 0.34%              | 3.43%              | 4.63%               |
| <b>Total Fund w/o CAI (6)</b>        | <b>2.65%</b>    | <b>9.62%</b>  | <b>1.33%</b>       | <b>3.82%</b>       | <b>3.40%</b>        |
| Total Fund Benchmark (6)             | 2.18%           | 8.88%         | 0.91%              | 3.66%              | 3.02%               |

(1) Current quarter's Total Fixed Income Benchmark consists of 87.5% Bloomberg U.S. Aggregate and 12.5% Bloomberg Gov/Credit 1-3 Yrs.

(2) Includes cash returns starting July 2017.

(3) The PSPF Fixed Income Portfolio Custom Benchmark consisted of 37% U.S. Treasury 1-10 Year Index, 34% Mortgages 0-10 Year WAL Index, 19% AAA U.S. Agencies 1-10 Year Index and 10% U.S. Corporates AAA Rated 1-10 Years Index through March 31, 2017, 100% Bloomberg U.S. Aggregate, thereafter.

(4) Benchmark consists of 85% Bloomberg 1-3 Year Government/Credit Index and 15% BofAML 1-3 Year BB US Cash Pay High Yield Index.

(5) Benchmark consists of 85% Blmbg High Yield Index and 15% ICE BofA US All Cap Secs Index.

(6) Current quarter's Total Fund Benchmark consists of 18% Russell 3000, 12% MSCI ACWI ex US, 52.5% Bloomberg U.S. Aggregate, 7.5% Bloomberg Gov/Credit 1-3 Yrs, 8.5% Bloomberg US High Yield and 1.5% ICE BofA U.S. All Capital Securities Index. See pg. 22 for full benchmark history.

The Total Fund return calculations do not include Cash Available for Investing.

\*All composites and manager returns are shown gross-of-fees.

## Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended June 30. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

|                                      | 6/2023-<br>3/2024 | FY 2023        | FY 2022         | FY 2021        | FY 2020        |
|--------------------------------------|-------------------|----------------|-----------------|----------------|----------------|
| <b>Total Equity</b>                  | <b>15.58%</b>     | <b>16.33%</b>  | <b>(15.85%)</b> | <b>41.59%</b>  | <b>1.82%</b>   |
| 60% Russell 3000/40% ACWI ex US      | 15.76%            | 16.57%         | (16.06%)        | 40.77%         | 1.90%          |
| <b>Domestic Equity</b>               | <b>19.28%</b>     | <b>18.83%</b>  | <b>(13.95%)</b> | <b>44.30%</b>  | <b>6.40%</b>   |
| Russell 3000 Index                   | 19.29%            | 18.95%         | (13.87%)        | 44.16%         | 6.53%          |
| <b>International Equity</b>          | <b>10.21%</b>     | <b>12.28%</b>  | <b>(18.97%)</b> | <b>37.78%</b>  | <b>(4.71%)</b> |
| MSCI ACWI ex US                      | 10.56%            | 12.72%         | (19.42%)        | 35.72%         | (4.80%)        |
| <b>Total Fixed Income</b>            | <b>3.08%</b>      | <b>(0.04%)</b> | <b>(9.76%)</b>  | <b>(0.27%)</b> | <b>8.79%</b>   |
| Total Fixed Income Benchmark (1)     | 2.75%             | (0.75%)        | (9.46%)         | (0.26%)        | 8.28%          |
| <b>Market Duration</b>               | <b>2.82%</b>      | <b>(0.53%)</b> | <b>(10.55%)</b> | <b>(0.55%)</b> | <b>9.26%</b>   |
| Colorado Treasurer's Portfolio (2)   | 2.82%             | (0.53%)        | (10.55%)        | (0.55%)        | 9.26%          |
| PSPF Custom Benchmark (3)            | 2.56%             | (0.94%)        | (10.29%)        | (0.33%)        | 8.74%          |
| <b>Short Duration</b>                | <b>4.81%</b>      | <b>2.92%</b>   | <b>(4.33%)</b>  | <b>2.33%</b>   | <b>4.41%</b>   |
| Janus Henderson Short Duration       | 4.81%             | 2.92%          | (4.33%)         | 2.33%          | 4.41%          |
| Blmbg Gov/Cred 1-3 Yr                | 3.88%             | 0.52%          | (3.56%)         | 0.44%          | 4.20%          |
| 85% 1-3YR G/C; 15% 1-3YR BB (4)      | 4.28%             | 1.49%          | (3.83%)         | 1.70%          | 3.94%          |
| <b>High Income Strategies</b>        | <b>8.86%</b>      | <b>8.18%</b>   | <b>(9.38%)</b>  | -              | -              |
| High Income Strategies Benchmark (5) | 9.52%             | 7.93%          | (12.89%)        | 15.13%         | 0.46%          |
| <b>High Yield Fixed Income</b>       | <b>8.42%</b>      | <b>9.23%</b>   | <b>(9.09%)</b>  | -              | -              |
| Mackay Shield US High Yield          | 8.42%             | 9.23%          | (9.09%)         | -              | -              |
| Blmbg High Yield                     | 9.24%             | 9.06%          | (12.81%)        | 15.37%         | 0.03%          |
| <b>Preferred Securities</b>          | <b>11.33%</b>     | <b>2.29%</b>   | <b>(11.11%)</b> | -              | -              |
| Principal Preferred Securities       | 11.33%            | 2.29%          | (11.11%)        | -              | -              |
| ICE BofA US All Cap Secs             | 11.08%            | 1.66%          | (13.33%)        | 13.67%         | 2.86%          |
| <b>Total Fund w/o CAI (6)</b>        | <b>7.81%</b>      | <b>5.66%</b>   | <b>(11.58%)</b> | <b>8.30%</b>   | <b>7.37%</b>   |
| Total Fund Benchmark (6)             | 7.27%             | 5.18%          | (11.64%)        | 7.98%          | 7.87%          |

(1) Current quarter's Total Fixed Income Benchmark consists of 87.5% Bloomberg U.S. Aggregate and 12.5% Bloomberg Gov/Credit 1-3 Yrs.

(2) Includes cash returns starting July 2017.

(3) The PSPF Fixed Income Portfolio Custom Benchmark consisted of 37% U.S. Treasury 1-10 Year Index, 34% Mortgages 0-10 Year WAL Index, 19% AAA U.S. Agencies 1-10 Year Index and 10% U.S. Corporates AAA Rated 1-10 Years Index through March 31, 2017, 100% Bloomberg U.S. Aggregate, thereafter.

(4) Benchmark consists of 85% Bloomberg 1-3 Year Government/Credit Index and 15% BofAML 1-3 Year BB US Cash Pay High Yield Index.

(5) Benchmark consists of 85% Blmbg High Yield Index and 15% ICE BofA US All Cap Secs Index.

(6) Current quarter's Total Fund Benchmark consists of 18% Russell 3000, 12% MSCI ACWI ex US, 52.5% Bloomberg U.S. Aggregate, 7.5% Bloomberg Gov/Credit 1-3 Yrs, 8.5% Bloomberg US High Yield and 1.5% ICE BofA U.S. All Capital Securities Index. See pg. 22 for full benchmark history.

The Total Fund return calculations do not include Cash Available for Investing.

\*All composites and manager returns are shown gross-of-fees.

## Total Fund Benchmark Definition

| Inception to Dec 31, 2017 |                             |      |
|---------------------------|-----------------------------|------|
| Market Duration           | PFSF Fixed Income Benchmark | 100% |

| January 1st, 2018 - December 31th, 2018 |                                    |        |
|---|------------------------------------|--------|
| US Equity                               | Russell 3000 Index                 | 12.00% |
| International Equity                    | MSCI ACWI ex US                    | 8.00%  |
| Market Duration                         | Bloomberg Barclays Aggregate       | 72.00% |
| Short Duration                          | Bloomberg Barclays Gov/Cred 1-3 Yr | 8.00%  |

| January 1st, 2019 - September 30th, 2020 |                                    |        |
|--|------------------------------------|--------|
| US Equity                                | Russell 3000 Index                 | 12.00% |
| International Equity                     | MSCI ACWI ex US                    | 8.00%  |
| Market Duration                          | Bloomberg Barclays Aggregate       | 72.00% |
| Short Duration                           | Bloomberg Barclays Gov/Cred 1-3 Yr | 8.00%  |

| October 1st, 2020 - March 31st, 2021 |  |        |
|--------------------------------------|--|--------|
| US Equity                            | Russell 3000 Index                         | 12.00% |
| International Equity                 | MSCI ACWI ex US                            | 8.00%  |
| Market Duration                      | Bloomberg Barclays Aggregate               | 67.50% |
| Short Duration                       | Bloomberg Barclays Gov/Cred 1-3 Yr         | 7.50%  |
| High Yield                           | Bloomberg Barclays US High Yield           | 4.25%  |
| Preferred Securities                 | ICE BofA U.S. All Capital Securities Index | 0.75%  |

| April 1st, 2021 - June 30th, 2021 |  |        |
|-----------------------------------|--|--------|
| US Equity                         | Russell 3000 Index                         | 14.70% |
| International Equity              | MSCI ACWI ex US                            | 9.80%  |
| Market Duration                   | Bloomberg Barclays Aggregate               | 61.50% |
| Short Duration                    | Bloomberg Barclays Gov/Cred 1-3 Yr         | 7.50%  |
| High Yield                        | Bloomberg Barclays US High Yield           | 5.50%  |
| Preferred Securities              | ICE BofA U.S. All Capital Securities Index | 1.00%  |

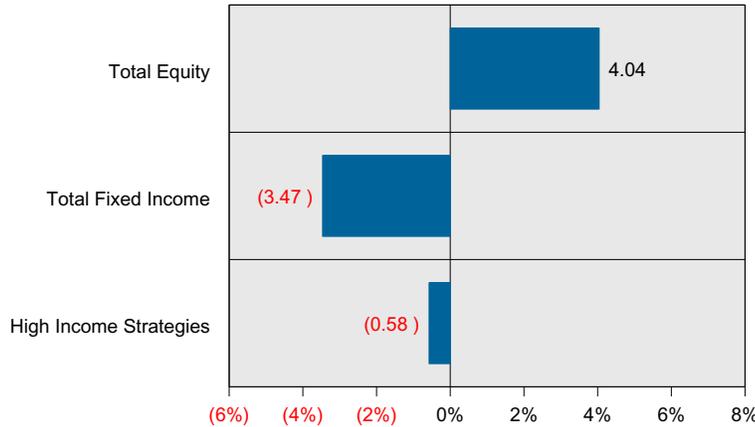
| July 1st, 2021 - September 30, 2021 |  |        |
|-------------------------------------|--|--------|
| US Equity                           | Russell 3000 Index                         | 16.35% |
| International Equity                | MSCI ACWI ex US                            | 10.90% |
| Market Duration                     | Bloomberg Barclays Aggregate               | 57.00% |
| Short Duration                      | Bloomberg Barclays Gov/Cred 1-3 Yr         | 7.50%  |
| High Yield                          | Bloomberg Barclays US High Yield           | 7.00%  |
| Preferred Securities                | ICE BofA U.S. All Capital Securities Index | 1.25%  |

| October 1st, 2021 - Current |  |        |
|-----------------------------|--|--------|
| US Equity                   | Russell 3000 Index                         | 18.00% |
| International Equity        | MSCI ACWI ex US                            | 12.00% |
| Market Duration             | Bloomberg Barclays Aggregate               | 52.50% |
| Short Duration              | Bloomberg Barclays Gov/Cred 1-3 Yr         | 7.50%  |
| High Yield                  | Bloomberg Barclays US High Yield           | 8.50%  |
| Preferred Securities        | ICE BofA U.S. All Capital Securities Index | 1.50%  |

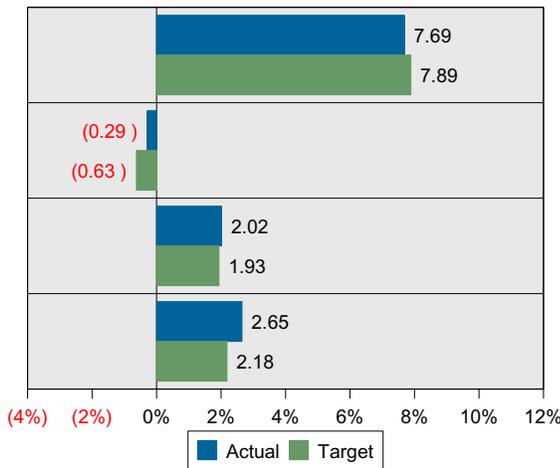
## Quarterly Total Fund Relative Attribution - March 31, 2024

The following analysis approaches Total Fund Attribution from the perspective of relative return. Relative return attribution separates and quantifies the sources of total fund excess return relative to its target. This excess return is separated into two relative attribution effects: Asset Allocation Effect and Manager Selection Effect. The Asset Allocation Effect represents the excess return due to the actual total fund asset allocation differing from the target asset allocation. Manager Selection Effect represents the total fund impact of the individual managers excess returns relative to their benchmarks.

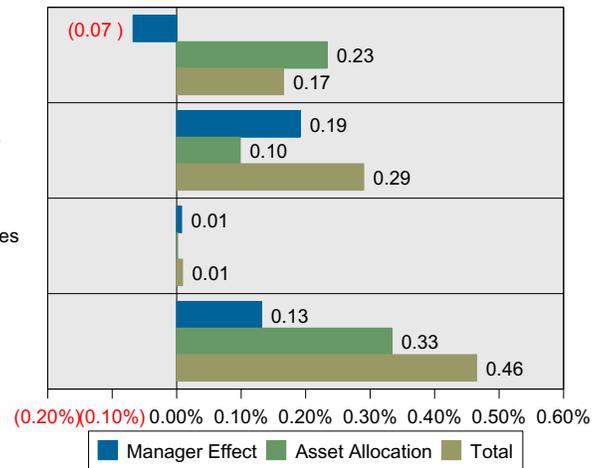
### Asset Class Under or Overweighting



### Actual vs Target Returns



### Relative Attribution by Asset Class



### Relative Attribution Effects for Quarter ended March 31, 2024

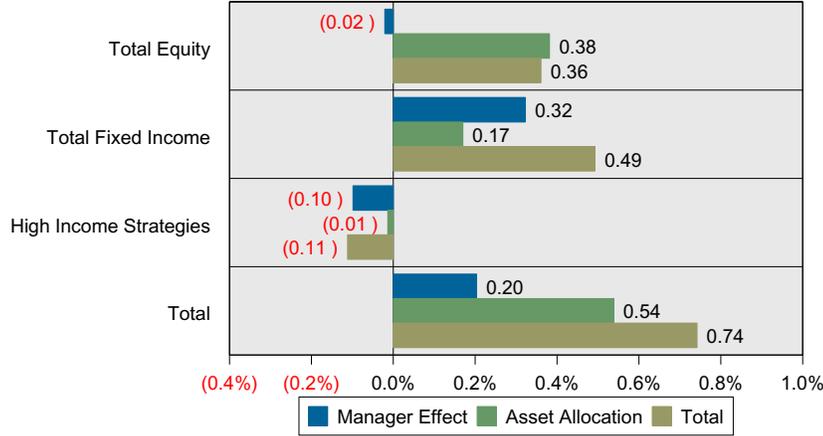
| Asset Class            | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|------------------------|-------------------------|-------------------------|---------------|---------------|----------------|------------------|-----------------------|
| Total Equity           | 34%                     | 30%                     | 7.69%         | 7.89%         | (0.07%)        | 0.23%            | 0.17%                 |
| Total Fixed Income     | 57%                     | 60%                     | (0.29%)       | (0.63%)       | 0.19%          | 0.10%            | 0.29%                 |
| High Income Strategies | 9%                      | 10%                     | 2.02%         | 1.93%         | 0.01%          | 0.00%            | 0.01%                 |
| <b>Total</b>           |                         |                         | <b>2.65%</b>  | <b>2.18%</b>  | <b>+ 0.13%</b> | <b>+ 0.33%</b>   | <b>0.46%</b>          |

\* Current Quarter Target = 52.5% Blmbg:Aggregate, 18.0% Russell 3000 Index, 12.0% MSCI ACWI xUS (Net), 8.5% Blmbg HY Corp, 7.5% Blmbg Gov/Cred 1-3 Yr and 1.5% ICE All US Cap Secs.

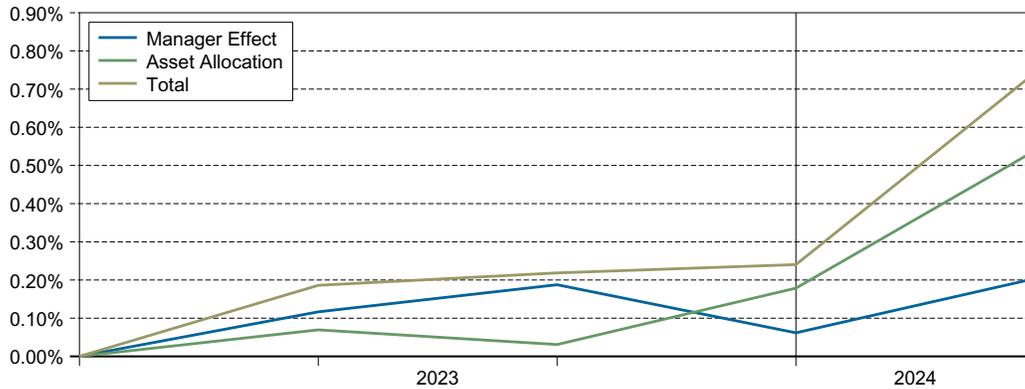
## Cumulative Total Fund Relative Attribution - March 31, 2024

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### One Year Relative Attribution Effects



### Cumulative Relative Attribution Effects



### One Year Relative Attribution Effects

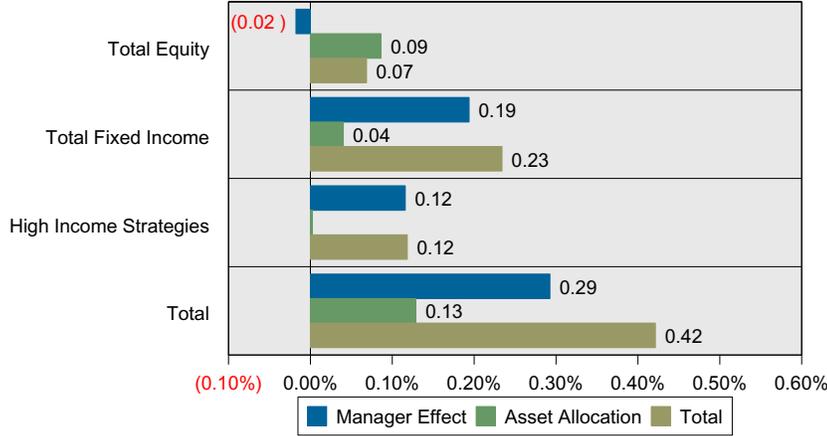
| Asset Class            | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |
|------------------------|-------------------------|-------------------------|---------------|---------------|----------------|------------------|-----------------------|
| Total Equity           | 33%                     | 30%                     | 22.65%        | 22.71%        | (0.02%)        | 0.38%            | 0.36%                 |
| Total Fixed Income     | 58%                     | 60%                     | 2.47%         | 1.94%         | 0.32%          | 0.17%            | 0.49%                 |
| High Income Strategies | 10%                     | 10%                     | 10.33%        | 11.37%        | (0.10%)        | (0.01%)          | (0.11%)               |
| <b>Total</b>           |                         |                         | <b>9.62%</b>  | <b>8.88%</b>  | <b>+ 0.20%</b> | <b>+ 0.54%</b>   | <b>0.74%</b>          |

\* Current Quarter Target = 52.5% Blmgb:Aggregate, 18.0% Russell 3000 Index, 12.0% MSCI ACWI xUS (Net), 8.5% Blmgb HY Corp, 7.5% Blmgb Gov/Cred 1-3 Yr and 1.5% ICE All US Cap Secs.

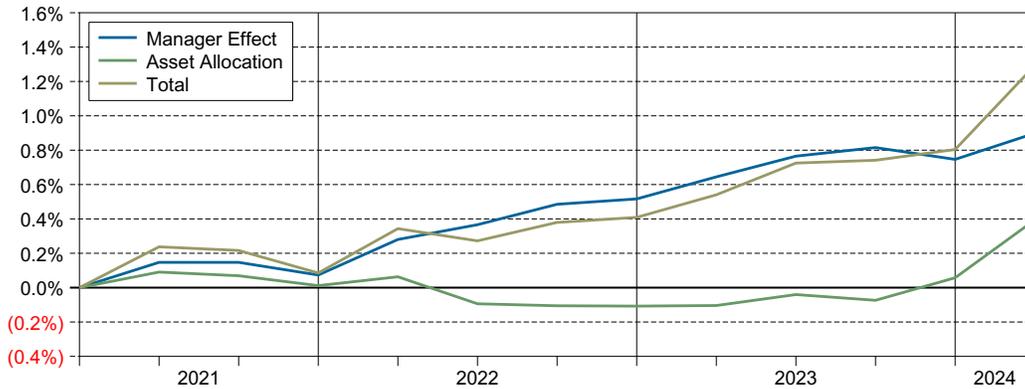
## Cumulative Total Fund Relative Attribution - March 31, 2024

The charts below accumulate the Total Fund Attribution Analysis (shown earlier) over multiple periods to examine the cumulative sources of excess total fund performance relative to target. These cumulative results quantify the longer-term sources of total fund excess return relative to target by asset class. These relative attribution effects separate the cumulative sources of total fund excess return into Asset Allocation Effect and Manager Selection Effect.

### Three Year Annualized Relative Attribution Effects



### Cumulative Relative Attribution Effects



### Three Year Annualized Relative Attribution Effects

| Asset Class            | Effective Actual Weight | Effective Target Weight | Actual Return | Target Return | Manager Effect | Asset Allocation | Total Relative Return |              |
|------------------------|-------------------------|-------------------------|---------------|---------------|----------------|------------------|-----------------------|--------------|
| Total Equity           | 30%                     | 29%                     | 6.61%         | 6.66%         | (0.02%)        | 0.09%            | 0.07%                 |              |
| Total Fixed Income     | 60%                     | 61%                     | (1.78%)       | (2.10%)       | 0.19%          | 0.04%            | 0.23%                 |              |
| High Income Strategies | 9%                      | 10%                     | 3.03%         | 1.92%         | 0.12%          | 0.00%            | 0.12%                 |              |
| <b>Total</b>           |                         |                         | <b>1.33%</b>  |               | <b>= 0.91%</b> | <b>+ 0.29%</b>   | <b>+ 0.13%</b>        | <b>0.42%</b> |

\* Current Quarter Target = 52.5% Blmbg:Aggregate, 18.0% Russell 3000 Index, 12.0% MSCI ACWI xUS (Net), 8.5% Blmbg HY Corp, 7.5% Blmbg Gov/Cred 1-3 Yr and 1.5% ICE All US Cap Secs.

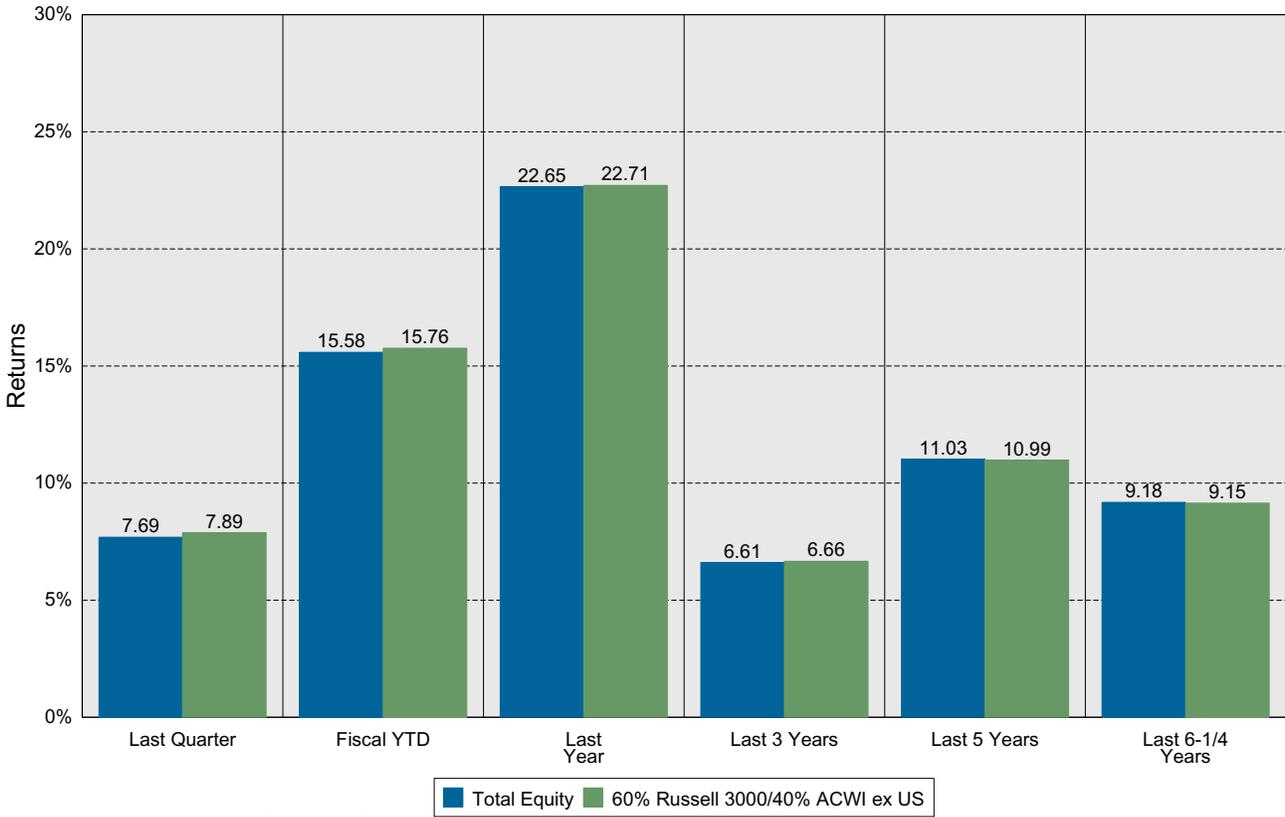


48  
**Total Equity**  
**Period Ended March 31, 2024**

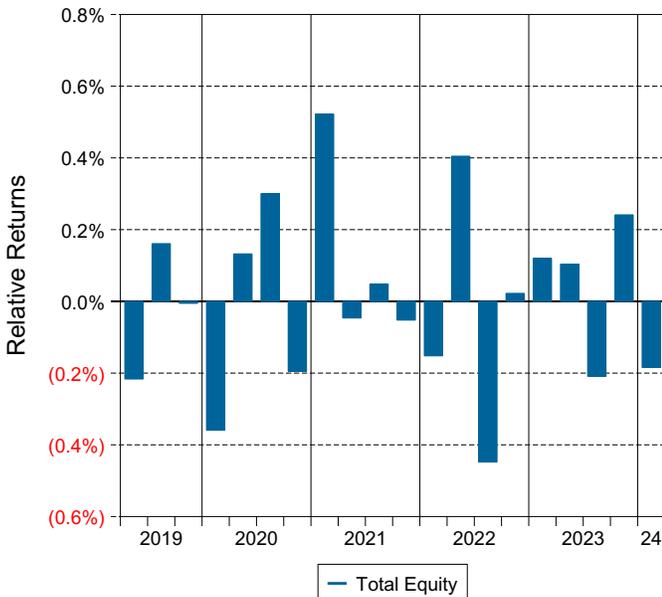
**Inception Date**  
 Parametric was funded December 12th, 2017.

**Quarterly Summary and Highlights**

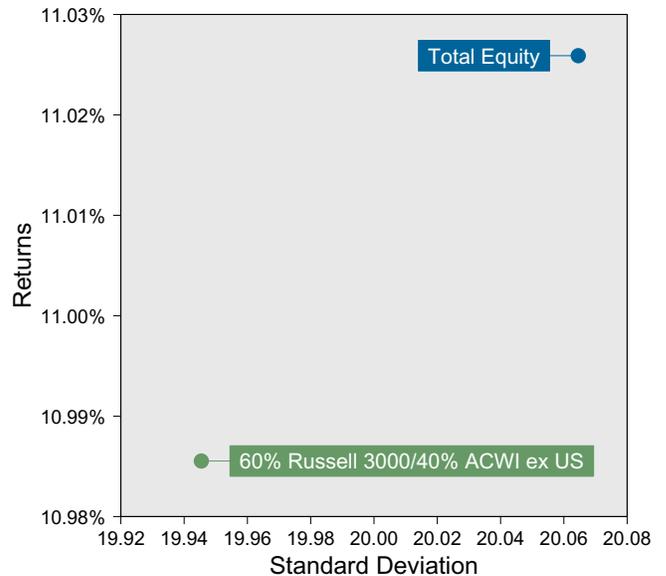
- Total Equity's portfolio underperformed the 60% Russell 3000/40% ACWI ex US by 0.20% for the quarter and underperformed the 60% Russell 3000/40% ACWI ex US for the year by 0.06%.



**Relative Returns vs  
 60% Russell 3000/40% ACWI ex US**



**Annualized Five Year Risk vs Return**

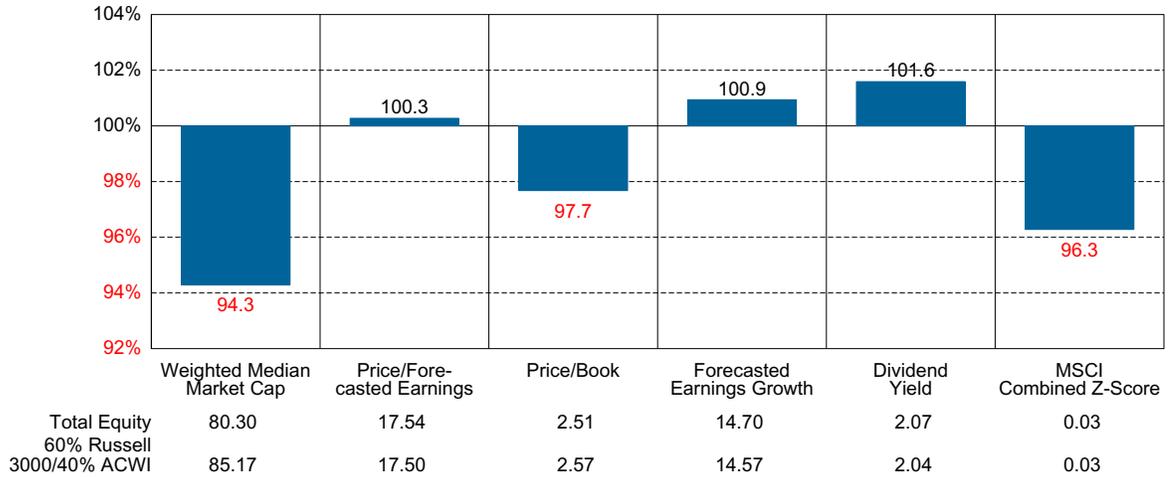


# Total Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics relative to the benchmark's portfolio characteristics.

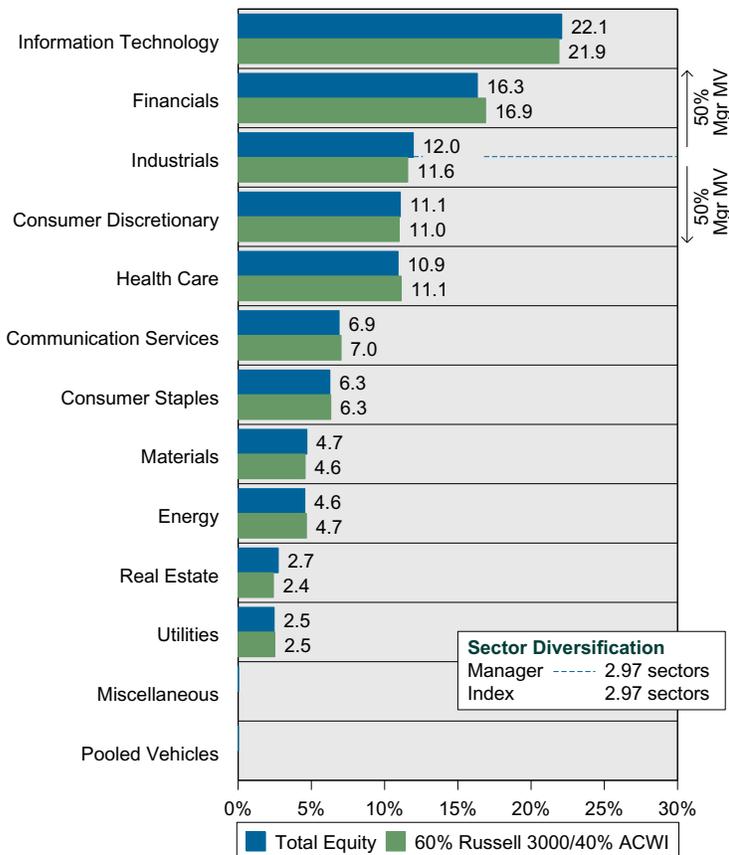
### Portfolio Characteristics Relative to 60% Russell 3000/40% ACWI as of March 31, 2024



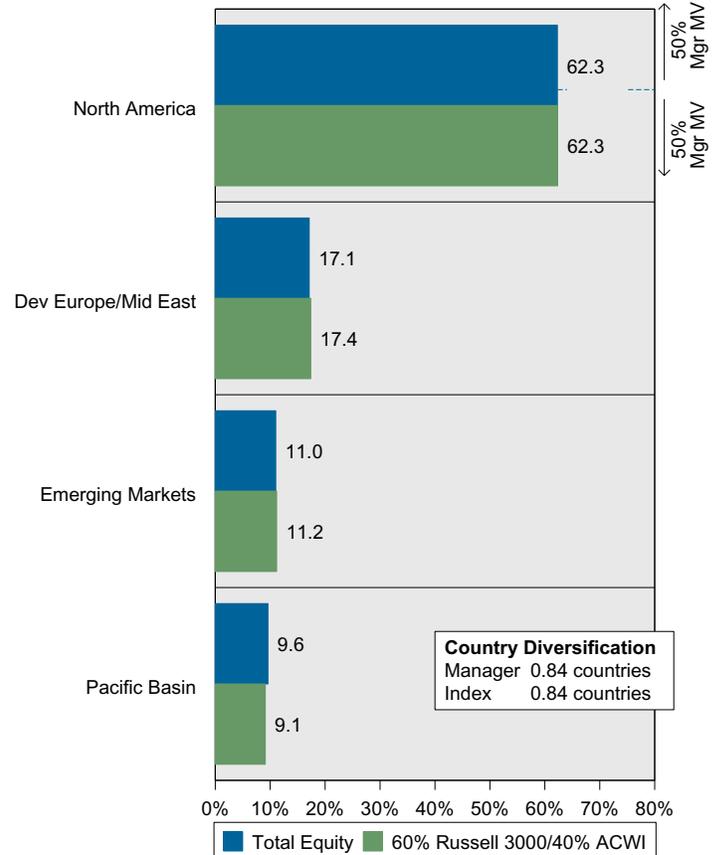
## Sector Weights

The graph below contrasts the manager's sector weights for the most recent quarter with those of the benchmark. The regional allocation chart also compares the manager's geographical region weights with those of the benchmark.

### Sector Allocation March 31, 2024



### Regional Allocation March 31, 2024



# Domestic Equity Period Ended March 31, 2024

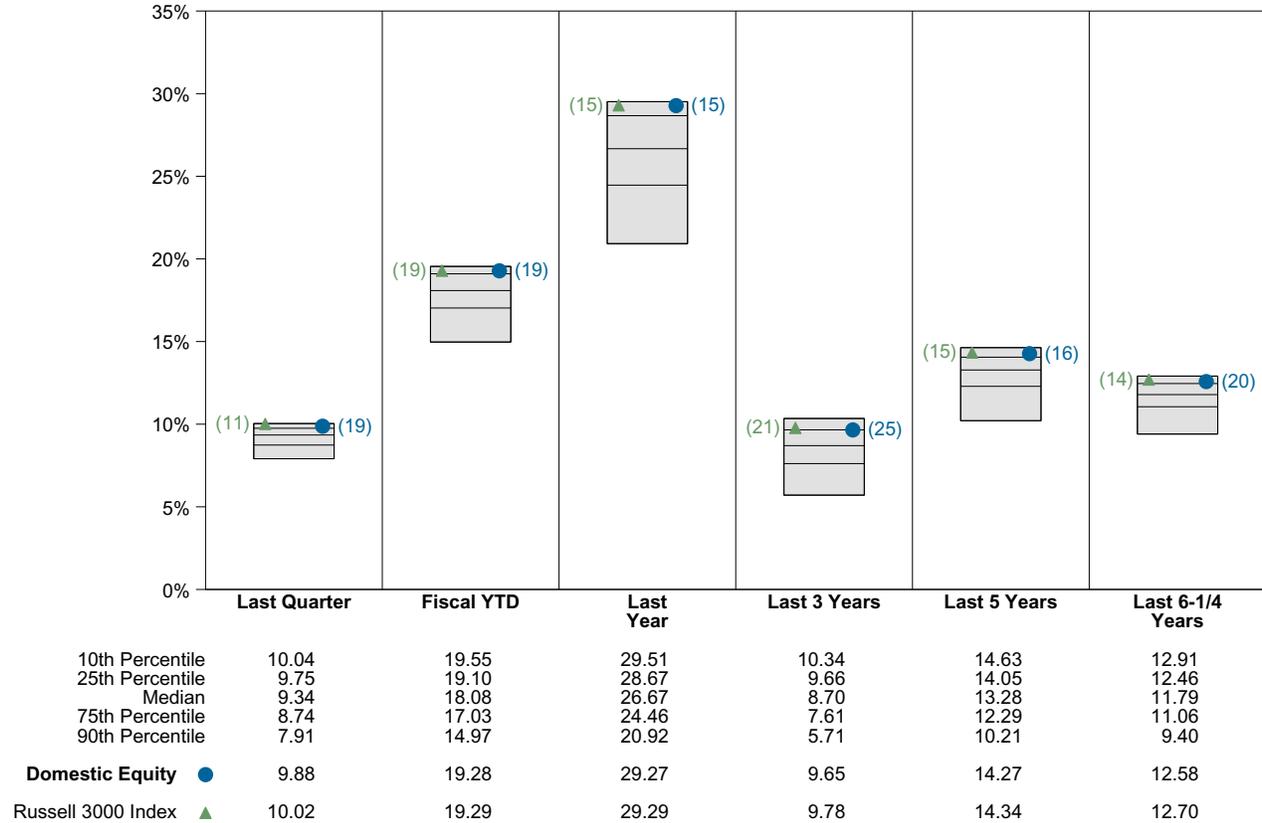
## Inception Date

Parametric was funded December 12th, 2017.

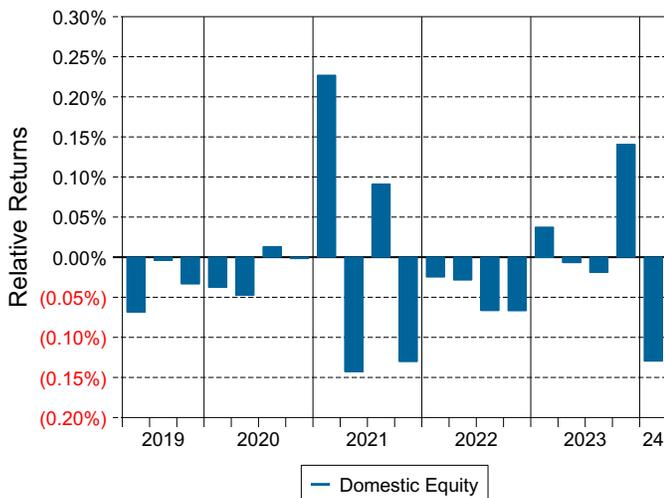
## Quarterly Summary and Highlights

- Domestic Equity's portfolio posted a 9.88% return for the quarter placing it in the 19 percentile of the EF- Domestic Equity group for the quarter and in the 15 percentile for the last year.
- Domestic Equity's portfolio underperformed the Russell 3000 Index by 0.14% for the quarter and underperformed the Russell 3000 Index for the year by 0.02%.

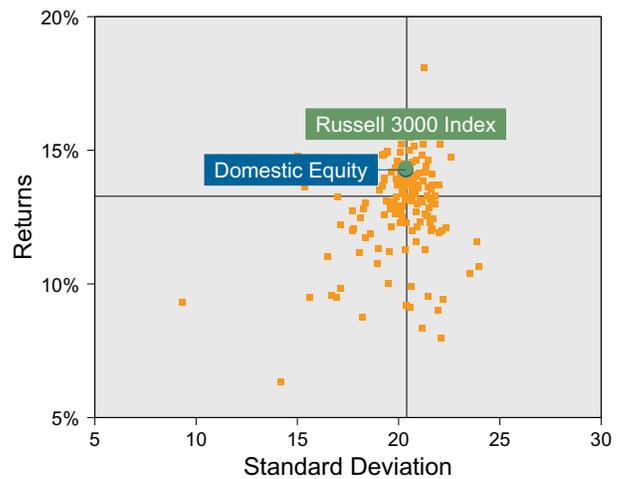
## Performance vs EF- Domestic Equity (Gross)



Relative Return vs Russell 3000 Index



EF- Domestic Equity (Gross)  
Annualized Five Year Risk vs Return

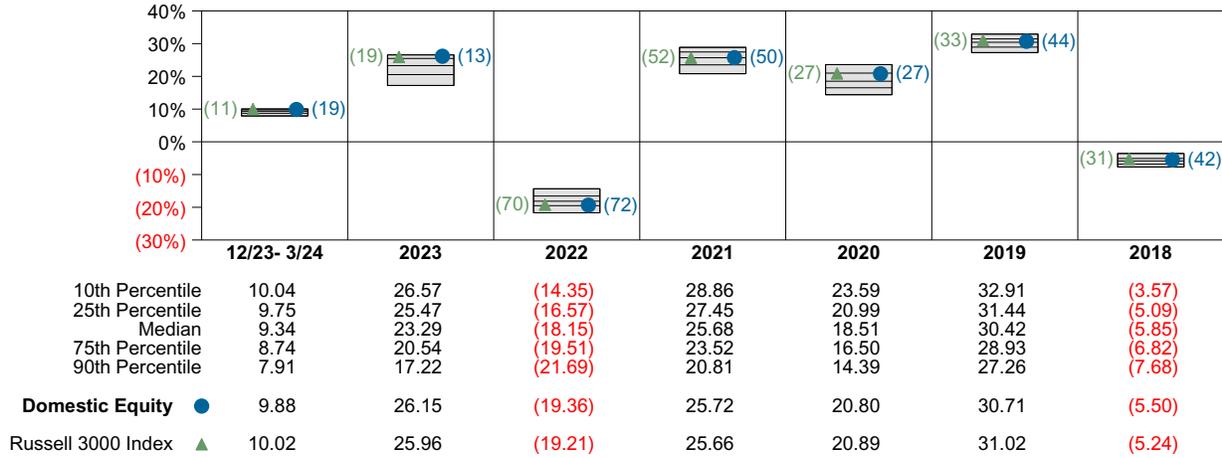


# Domestic Equity Return Analysis Summary

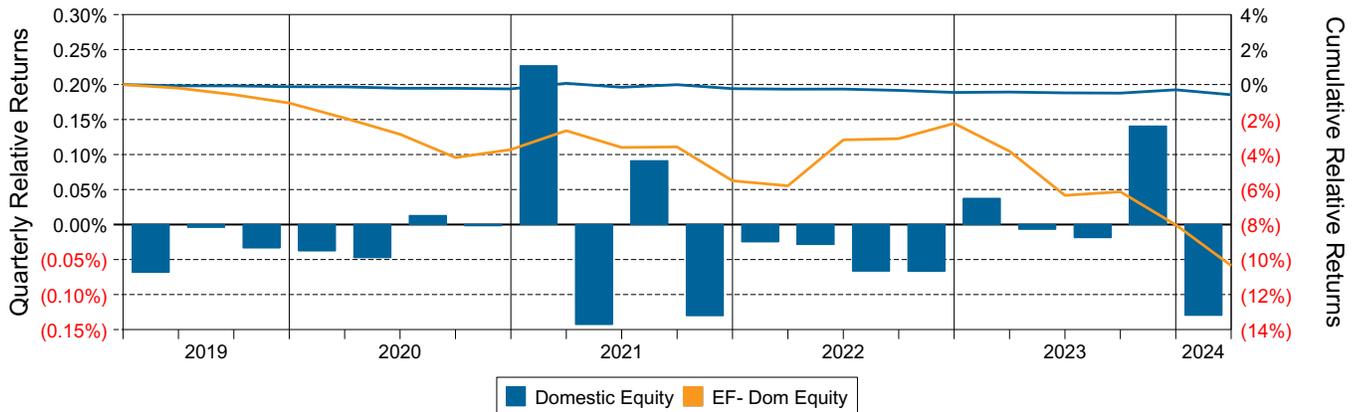
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

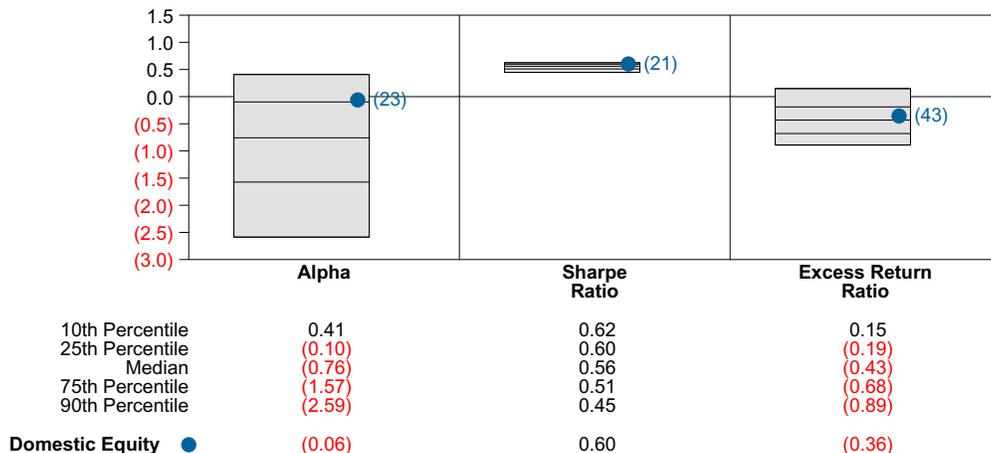
### Performance vs EF- Domestic Equity (Gross)



### Cumulative and Quarterly Relative Returns vs Russell 3000 Index



### Risk Adjusted Return Measures vs Russell 3000 Index Rankings Against EF- Domestic Equity (Gross) Five Years Ended March 31, 2024

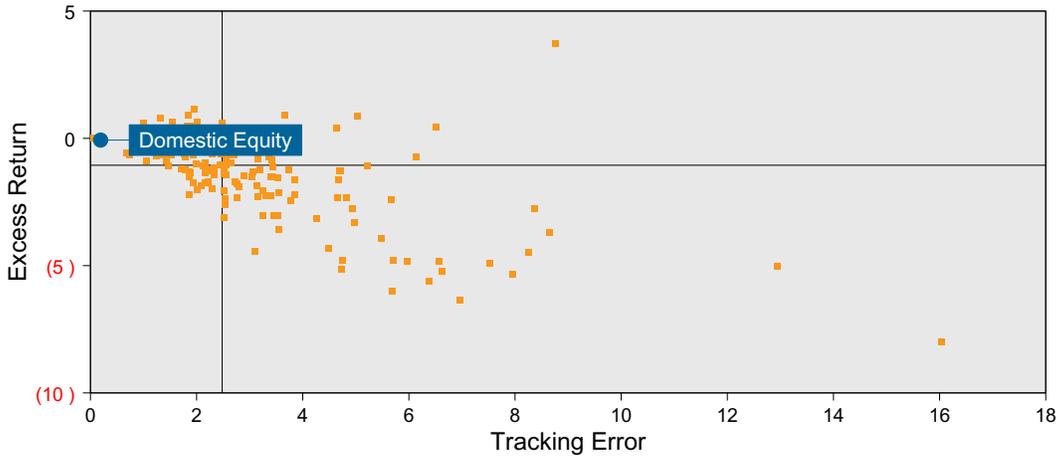


# Domestic Equity Risk Analysis Summary

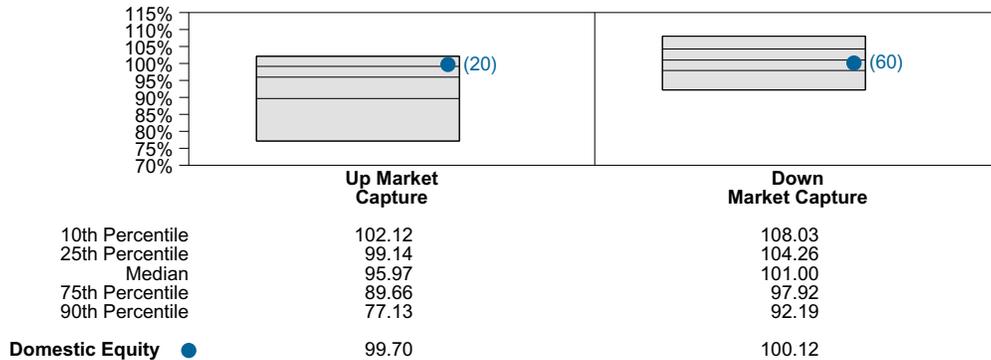
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

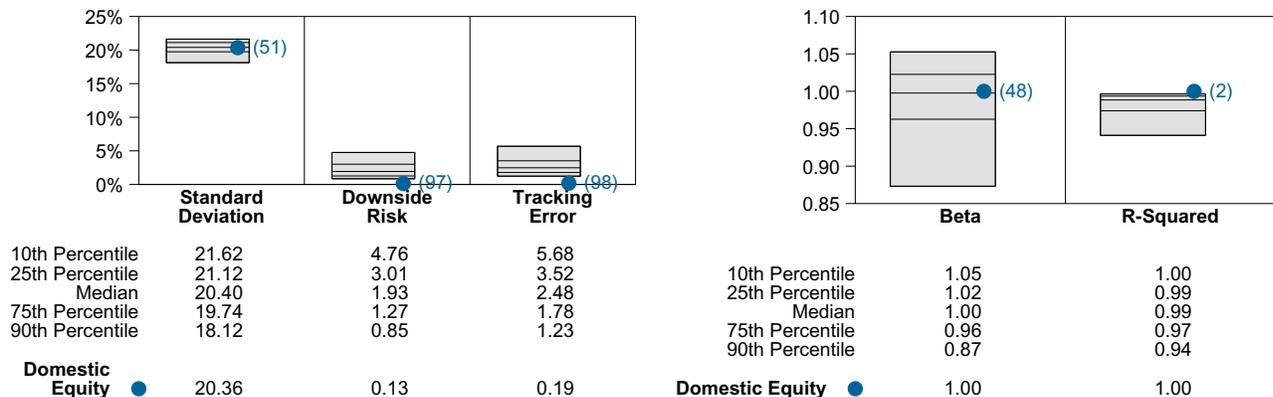
### Risk Analysis vs EF- Domestic Equity (Gross) Five Years Ended March 31, 2024



### Market Capture vs Russell 3000 Index Rankings Against EF- Domestic Equity (Gross) Five Years Ended March 31, 2024



### Risk Statistics Rankings vs Russell 3000 Index Rankings Against EF- Domestic Equity (Gross) Five Years Ended March 31, 2024

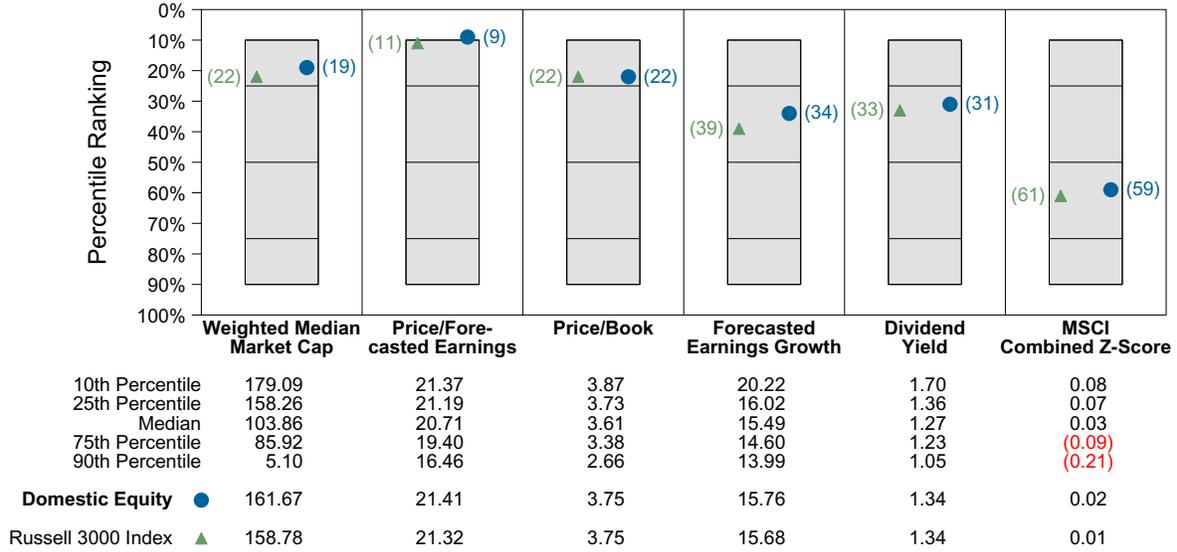


# Domestic Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

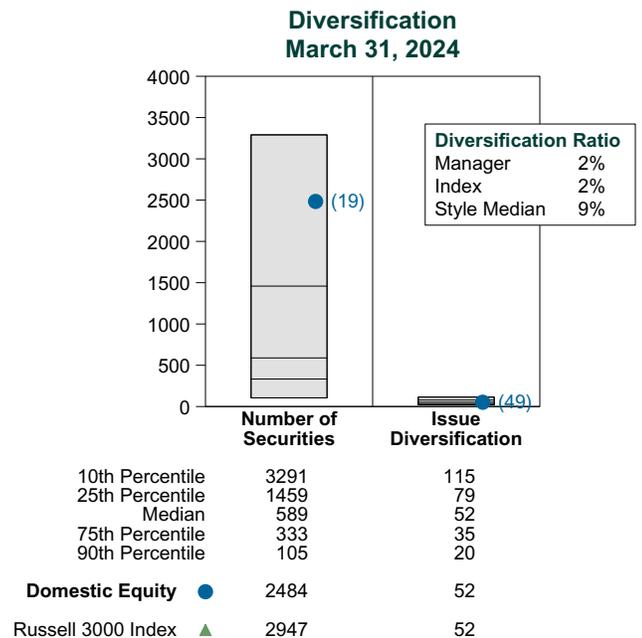
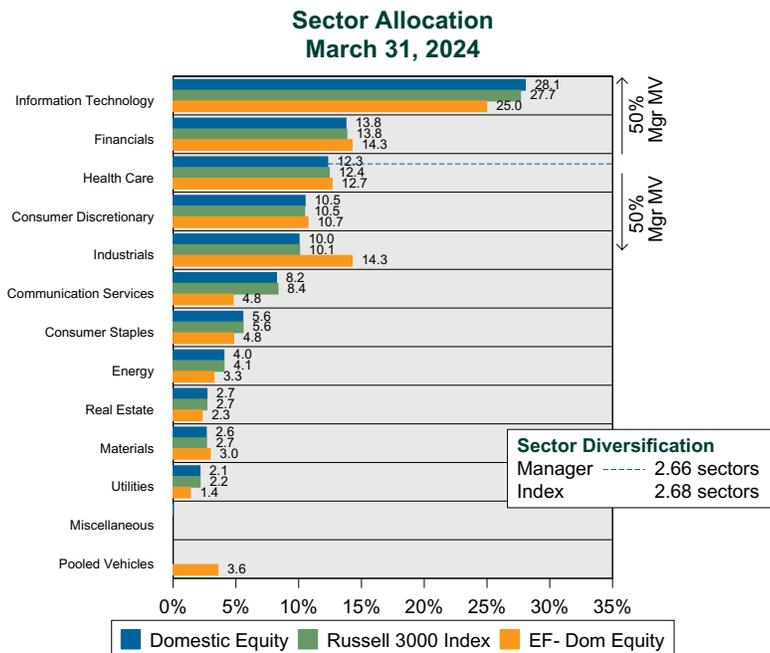
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against EF- Domestic Equity as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. Diversification by number and concentration of holdings are also compared to the benchmark and peer group. Issue Diversification represents by count, and Diversification Ratio by percent, the number of holdings that account for half of the portfolio's market value.



# International Equity Period Ended March 31, 2024

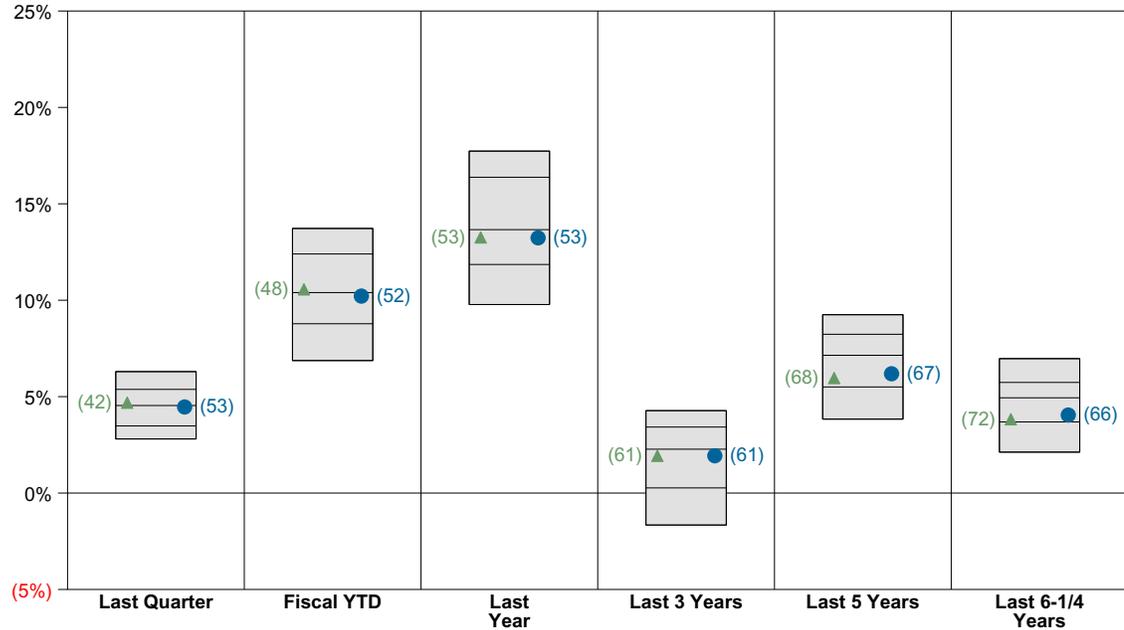
## Inception Date

Parametric was funded December 12th, 2017.

## Quarterly Summary and Highlights

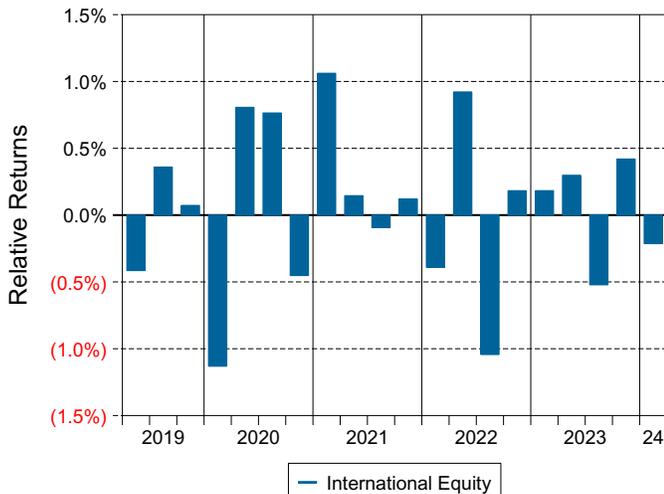
- International Equity's portfolio posted a 4.46% return for the quarter placing it in the 53 percentile of the EF-International Equity group for the quarter and in the 53 percentile for the last year.
- International Equity's portfolio underperformed the MSCI ACWI ex US by 0.22% for the quarter and underperformed the MSCI ACWI ex US for the year by 0.02%.

## Performance vs EF- International Equity (Gross)

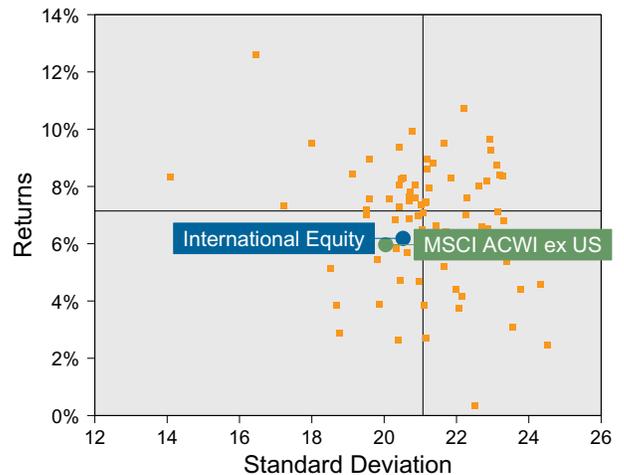


|                               |      |       |       |        |      |      |
|-------------------------------|------|-------|-------|--------|------|------|
| 10th Percentile               | 6.30 | 13.72 | 17.73 | 4.27   | 9.25 | 6.97 |
| 25th Percentile               | 5.38 | 12.40 | 16.38 | 3.42   | 8.23 | 5.74 |
| Median                        | 4.54 | 10.40 | 13.66 | 2.27   | 7.14 | 4.94 |
| 75th Percentile               | 3.48 | 8.78  | 11.85 | 0.27   | 5.50 | 3.69 |
| 90th Percentile               | 2.81 | 6.87  | 9.78  | (1.66) | 3.83 | 2.12 |
| <b>International Equity</b> ● | 4.46 | 10.21 | 13.23 | 1.93   | 6.19 | 4.05 |
| <b>MSCI ACWI ex US</b> ▲      | 4.69 | 10.56 | 13.26 | 1.94   | 5.97 | 3.83 |

## Relative Return vs MSCI ACWI ex US



## EF- International Equity (Gross) Annualized Five Year Risk vs Return

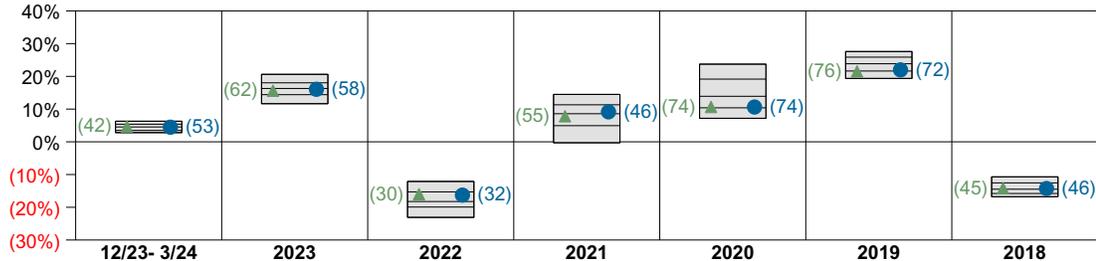


# International Equity Return Analysis Summary

## Return Analysis

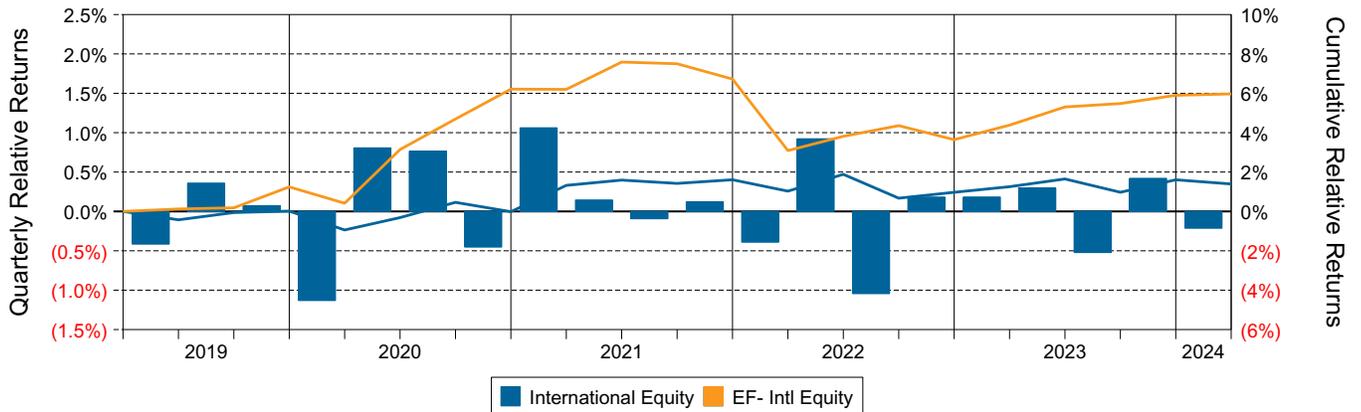
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs EF- International Equity (Gross)

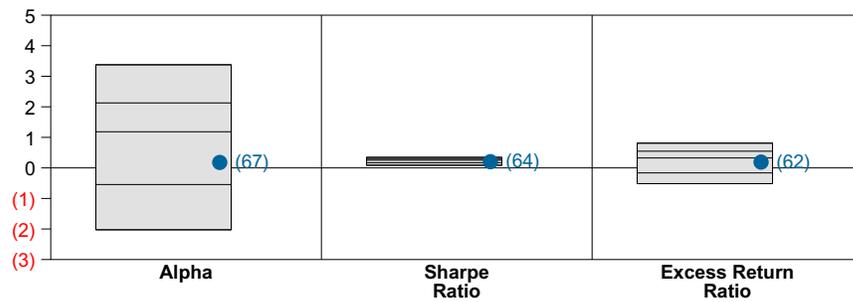


|                             |             |              |                |             |              |              |                |
|-----------------------------|-------------|--------------|----------------|-------------|--------------|--------------|----------------|
| 10th Percentile             | 6.30        | 20.62        | (12.10)        | 14.48       | 23.73        | 27.59        | (10.70)        |
| 25th Percentile             | 5.38        | 18.03        | (15.30)        | 11.31       | 19.16        | 25.87        | (12.55)        |
| Median                      | 4.54        | 16.30        | (18.25)        | 8.58        | 13.91        | 23.85        | (14.49)        |
| 75th Percentile             | 3.48        | 14.41        | (19.93)        | 4.93        | 10.39        | 21.63        | (15.79)        |
| 90th Percentile             | 2.81        | 11.64        | (23.09)        | (0.29)      | 7.19         | 19.36        | (16.78)        |
| <b>International Equity</b> | <b>4.46</b> | <b>16.05</b> | <b>(16.29)</b> | <b>9.16</b> | <b>10.62</b> | <b>21.98</b> | <b>(14.28)</b> |
| <b>MSCI ACWI ex US</b>      | <b>4.69</b> | <b>15.62</b> | <b>(16.00)</b> | <b>7.82</b> | <b>10.65</b> | <b>21.51</b> | <b>(14.20)</b> |

### Cumulative and Quarterly Relative Returns vs MSCI ACWI ex US



### Risk Adjusted Return Measures vs MSCI ACWI ex US Rankings Against EF- International Equity (Gross) Five Years Ended March 31, 2024



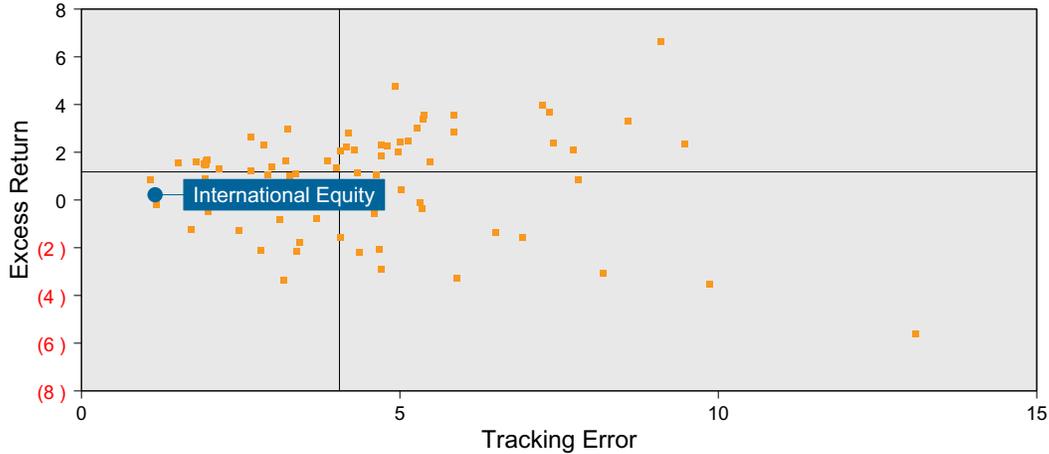
|                             |             |             |             |
|-----------------------------|-------------|-------------|-------------|
| 10th Percentile             | 3.38        | 0.35        | 0.81        |
| 25th Percentile             | 2.13        | 0.29        | 0.55        |
| Median                      | 1.18        | 0.25        | 0.33        |
| 75th Percentile             | (0.54)      | 0.17        | (0.16)      |
| 90th Percentile             | (2.03)      | 0.09        | (0.52)      |
| <b>International Equity</b> | <b>0.18</b> | <b>0.20</b> | <b>0.19</b> |

# International Equity Risk Analysis Summary

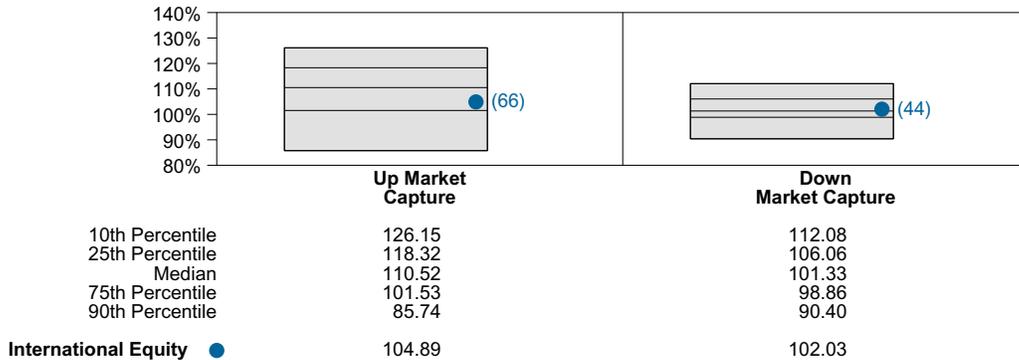
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows Up and Down Market Capture. The last two charts show the ranking of the manager's risk statistics versus the peer group.

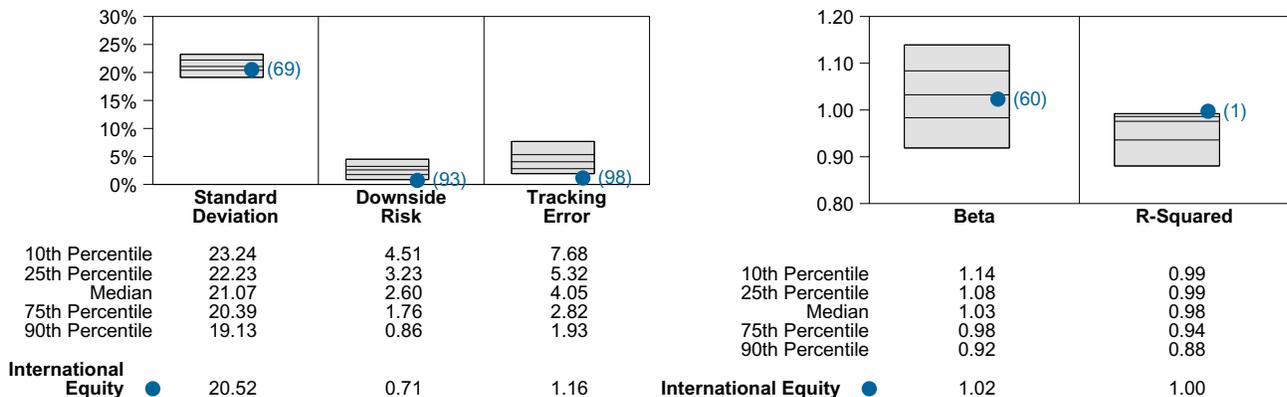
### Risk Analysis vs EF- International Equity (Gross) Five Years Ended March 31, 2024



### Market Capture vs MSCI ACWI ex US Rankings Against EF- International Equity (Gross) Five Years Ended March 31, 2024



### Risk Statistics Rankings vs MSCI ACWI ex US Rankings Against EF- International Equity (Gross) Five Years Ended March 31, 2024

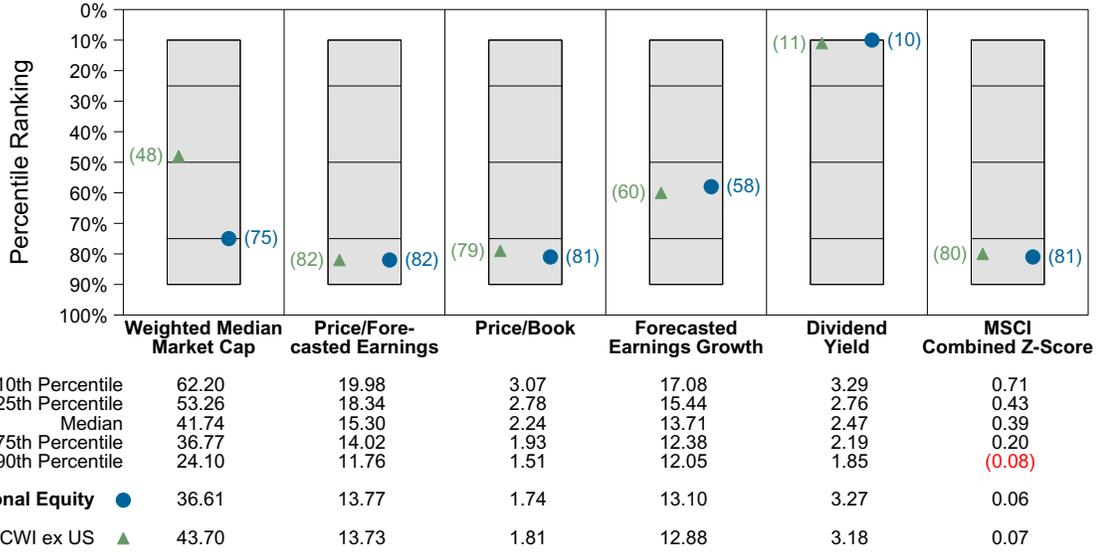


# International Equity Equity Characteristics Analysis Summary

## Portfolio Characteristics

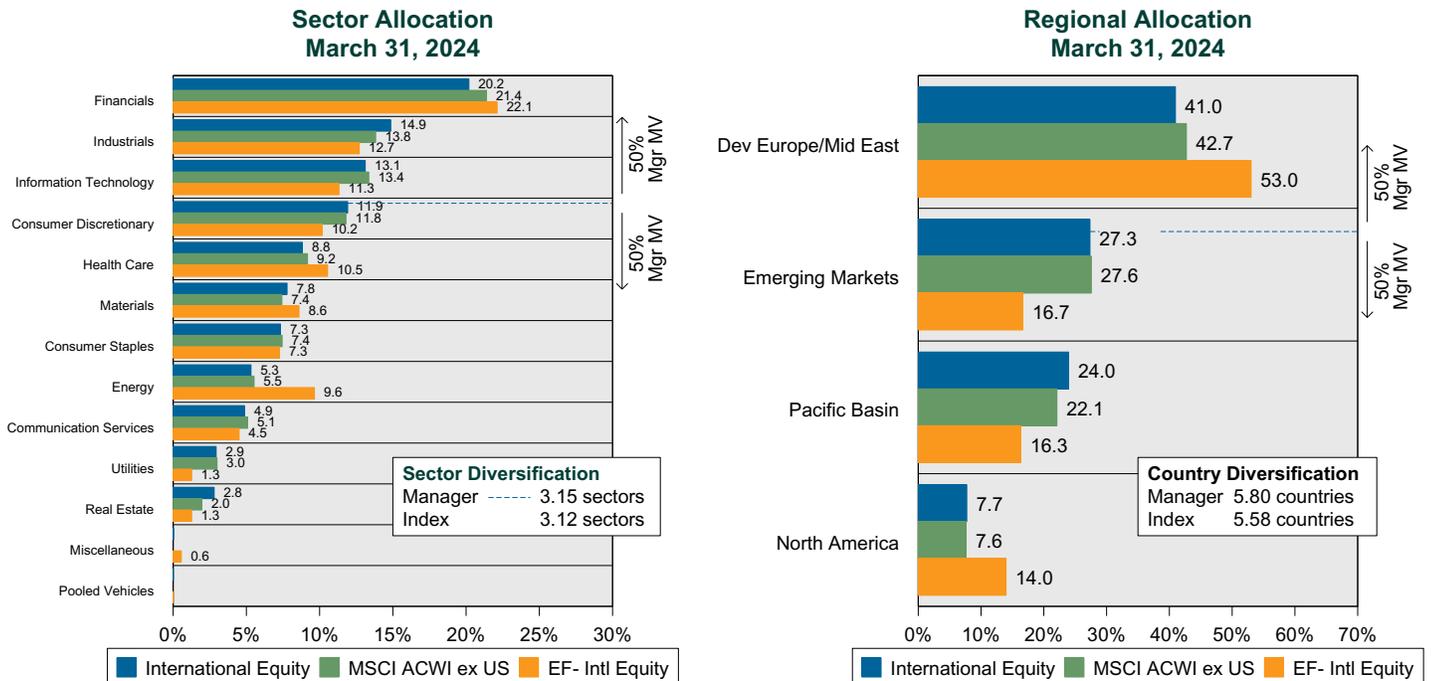
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Portfolio Characteristics Percentile Rankings Rankings Against EF- International Equity as of March 31, 2024



## Sector Weights

The graph below contrasts the manager's sector weights with those of the benchmark and median sector weights across the members of the peer group. The magnitude of sector weight differences from the index and the manager's sector diversification are also shown. The regional allocation chart compares the manager's geographical region weights with those of the benchmark as well as the median region weights of the peer group.





# Total Fixed Income Period Ended March 31, 2024

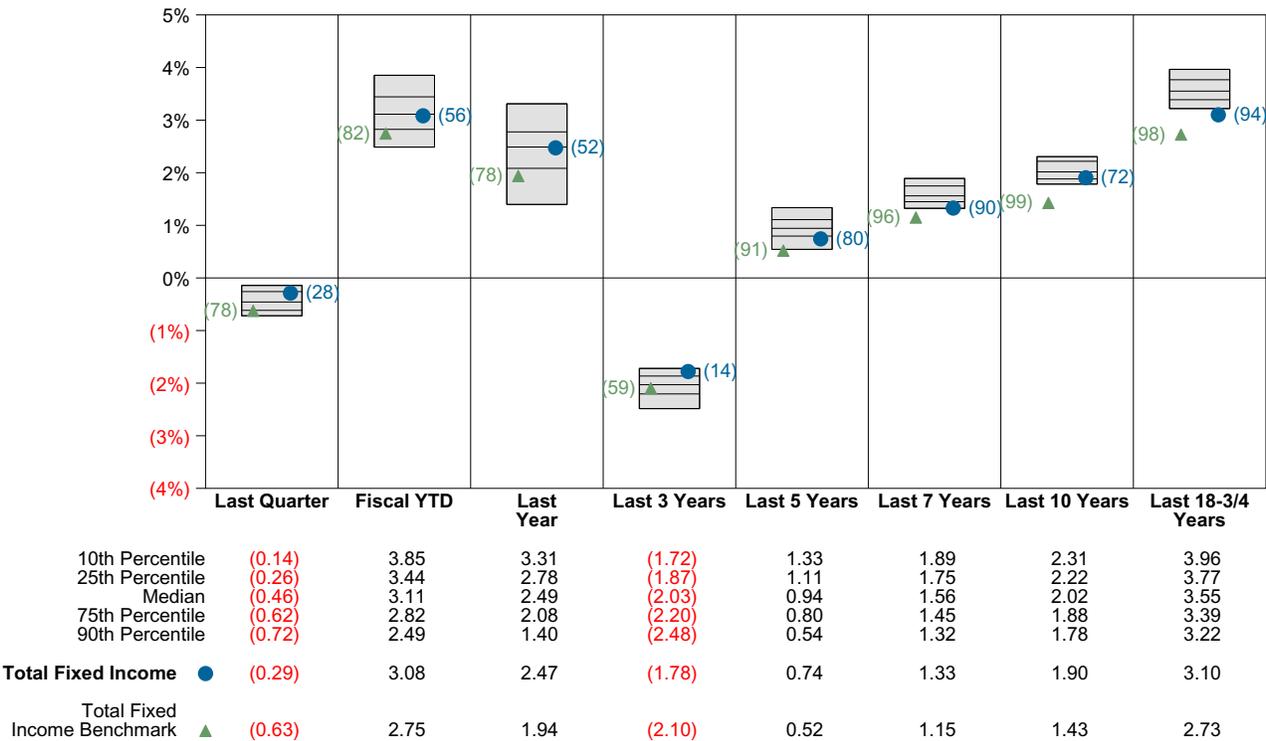
## Benchmark Definition

Total Fixed Income Benchmark consists of 100% PFSF Fixed Income Benchmark through December 31, 2018 , 90% Bloomberg U.S. Aggregate and 10% Bloomberg Gov/Credit 1-3 Yrs through March 31, 2021, 89% Bloomberg U.S. Aggregate and 11% Bloomberg Gov/Credit 1-3 Yrs through June 30, 2021 and 87.5% Bloomberg U.S. Aggregate and 12.5% Bloomberg Gov/Credit 1-3 Yrs, thereafter.

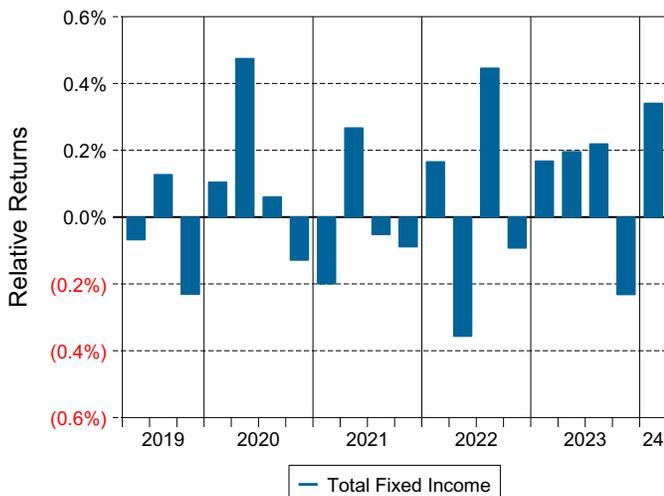
## Quarterly Summary and Highlights

- Total Fixed Income's portfolio posted a (0.29)% return for the quarter placing it in the 28 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 52 percentile for the last year.
- Total Fixed Income's portfolio outperformed the Total Fixed Income Benchmark by 0.34% for the quarter and outperformed the Total Fixed Income Benchmark for the year by 0.53%.

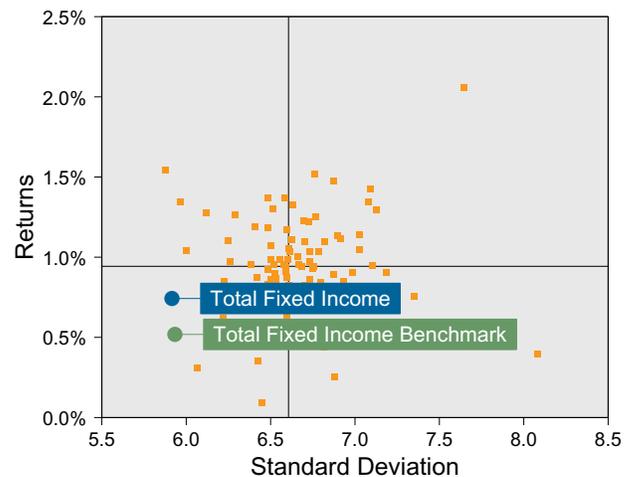
## Performance vs Callan Core Bond Fixed Income (Gross)



## Relative Returns vs Total Fixed Income Benchmark



## Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return

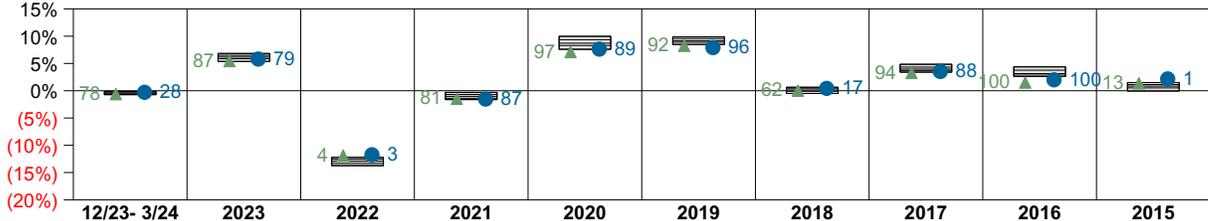


# Total Fixed Income Return Analysis Summary

## Return Analysis

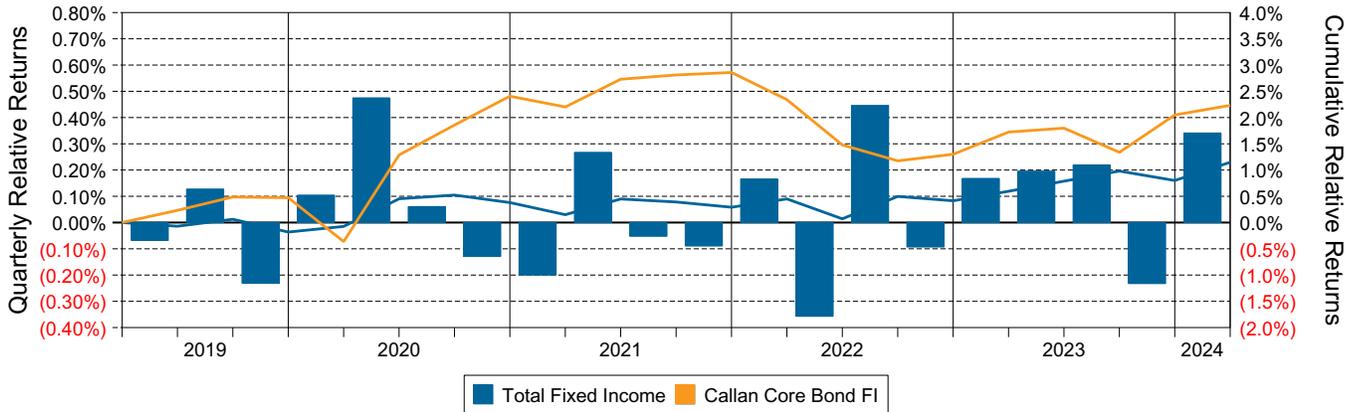
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Core Bond Fixed Income (Gross)

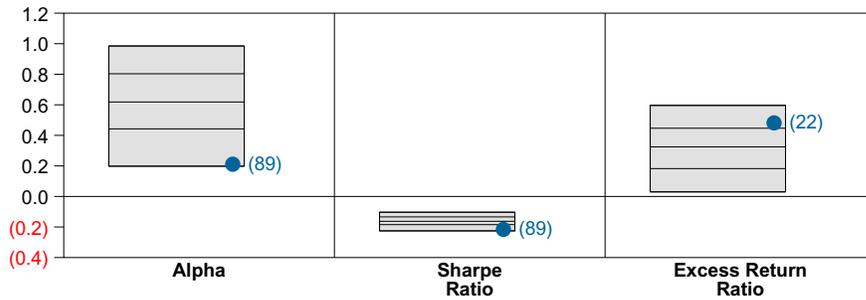


|                              | 12/23- 3/24   | 2023        | 2022           | 2021          | 2020        | 2019        | 2018        | 2017        | 2016        | 2015        |
|------------------------------|---------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 10th Percentile              | (0.14)        | 6.83        | (12.22)        | (0.31)        | 9.97        | 9.88        | 0.64        | 4.85        | 4.38        | 1.50        |
| 25th Percentile              | (0.26)        | 6.49        | (12.53)        | (0.69)        | 9.36        | 9.57        | 0.35        | 4.34        | 3.77        | 1.14        |
| Median                       | (0.46)        | 6.17        | (12.91)        | (1.03)        | 8.71        | 9.17        | 0.10        | 3.96        | 3.14        | 0.84        |
| 75th Percentile              | (0.62)        | 5.88        | (13.32)        | (1.39)        | 8.29        | 8.88        | (0.11)      | 3.71        | 2.85        | 0.52        |
| 90th Percentile              | (0.72)        | 5.36        | (13.73)        | (1.62)        | 7.60        | 8.48        | (0.50)      | 3.41        | 2.59        | (0.04)      |
| <b>Total Fixed Income</b>    | <b>(0.29)</b> | <b>5.80</b> | <b>(11.73)</b> | <b>(1.53)</b> | <b>7.63</b> | <b>7.90</b> | <b>0.43</b> | <b>3.52</b> | <b>2.00</b> | <b>2.17</b> |
| Total Fixed Income Benchmark | (0.63)        | 5.43        | (11.88)        | (1.46)        | 7.08        | 8.24        | 0.01        | 3.25        | 1.50        | 1.37        |

### Cumulative and Quarterly Relative Returns vs Total Fixed Income Benchmark



### Risk Adjusted Return Measures vs Total Fixed Income Benchmark Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024



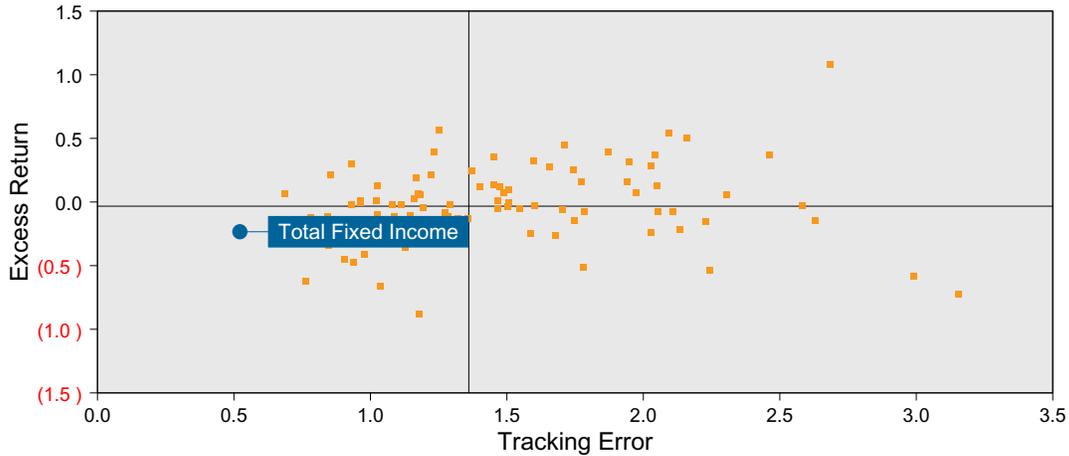
|                           |             |               |             |
|---------------------------|-------------|---------------|-------------|
| 10th Percentile           | 0.98        | (0.10)        | 0.60        |
| 25th Percentile           | 0.80        | (0.13)        | 0.45        |
| Median                    | 0.62        | (0.16)        | 0.32        |
| 75th Percentile           | 0.44        | (0.18)        | 0.18        |
| 90th Percentile           | 0.20        | (0.23)        | 0.03        |
| <b>Total Fixed Income</b> | <b>0.21</b> | <b>(0.22)</b> | <b>0.48</b> |

# Total Fixed Income Risk Analysis Summary

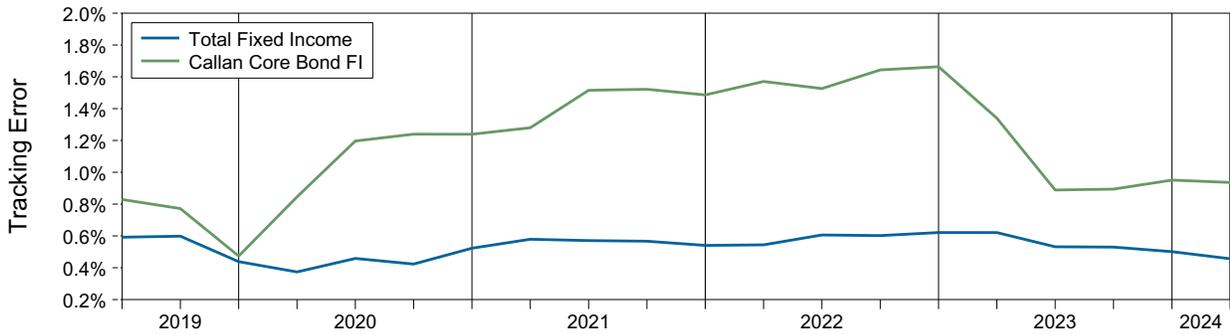
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

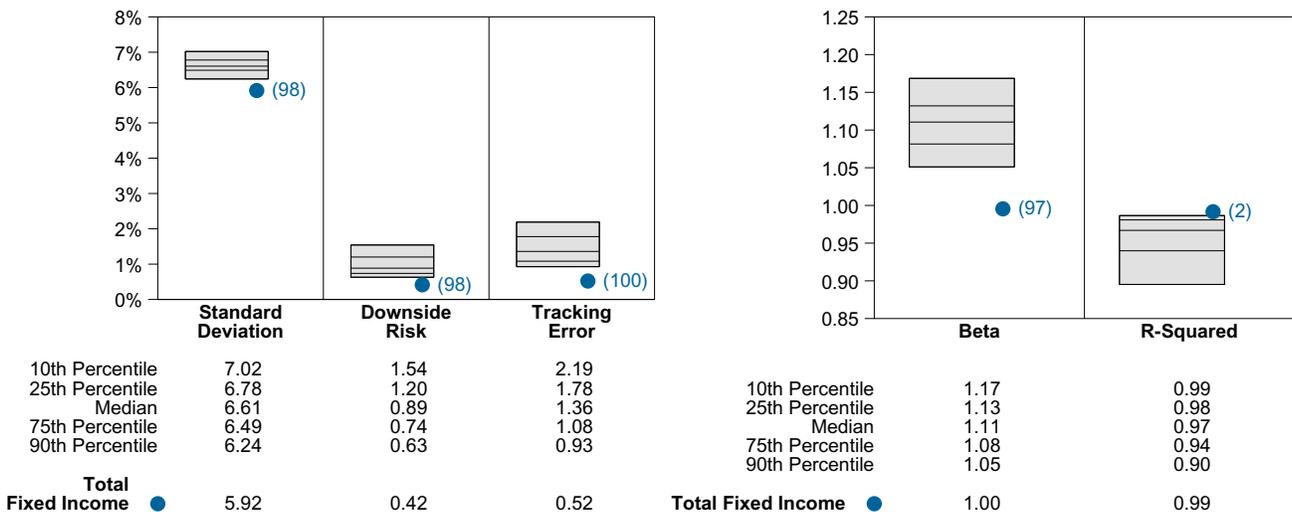
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024



### Rolling 12 Quarter Tracking Error vs Total Fixed Income Benchmark



### Risk Statistics Rankings vs Total Fixed Income Benchmark Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024

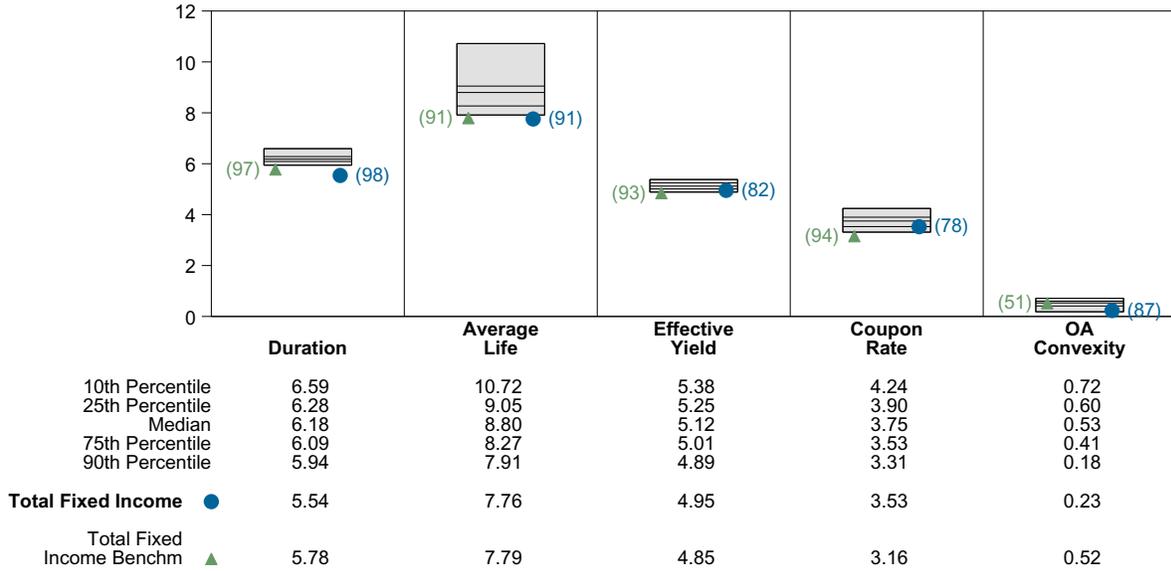


# Total Fixed Income Bond Characteristics Analysis Summary

## Portfolio Characteristics

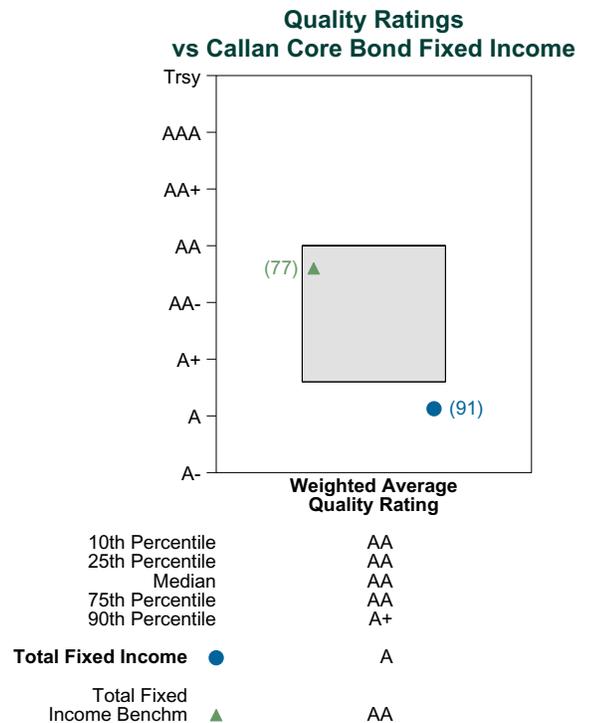
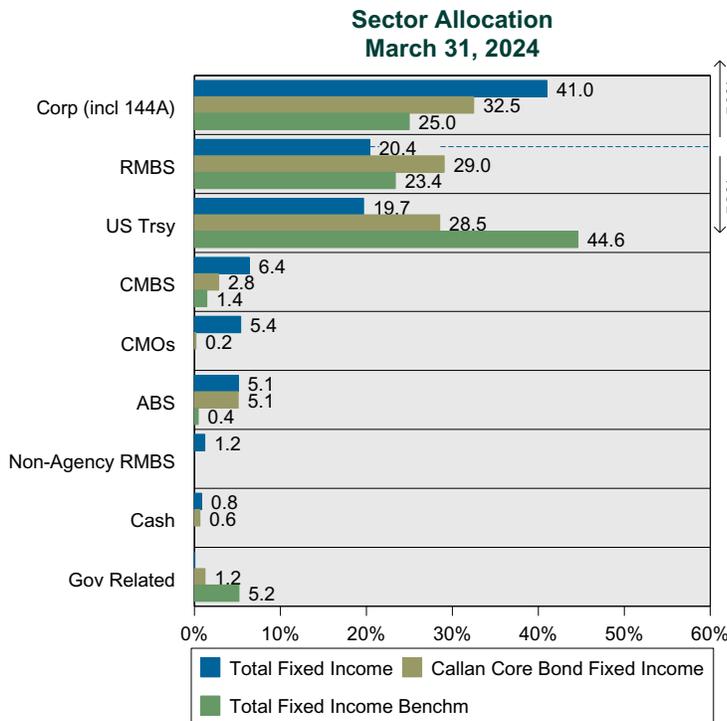
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of March 31, 2024



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

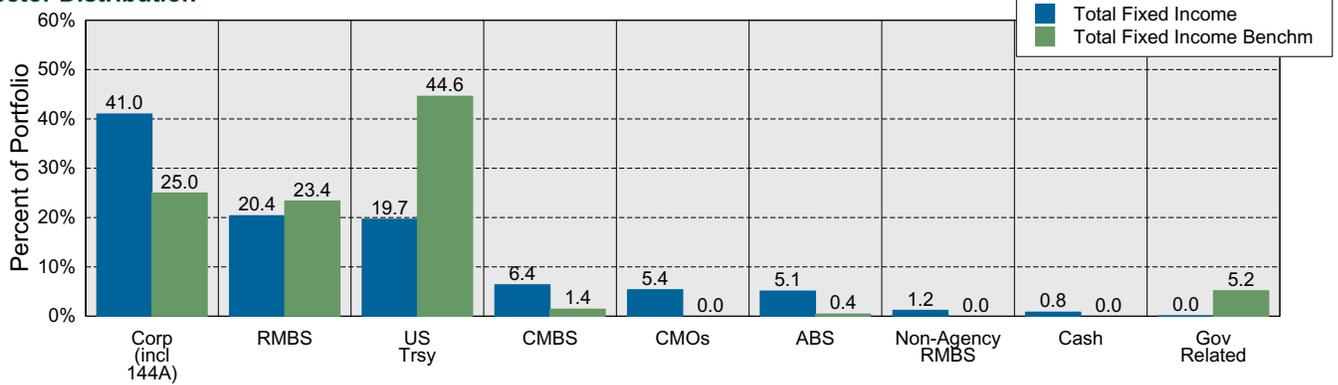


# Total Fixed Income Portfolio Characteristics Summary As of March 31, 2024

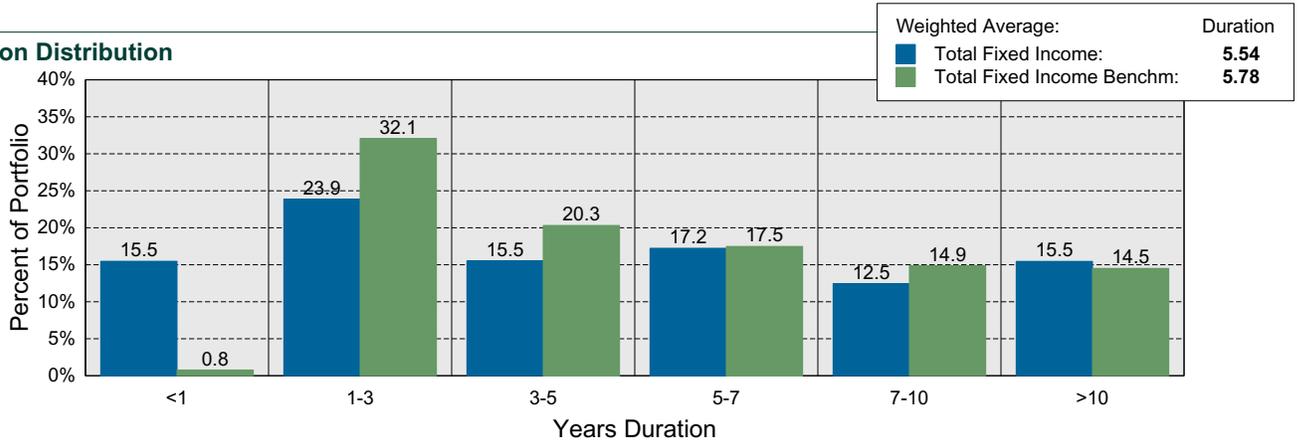
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

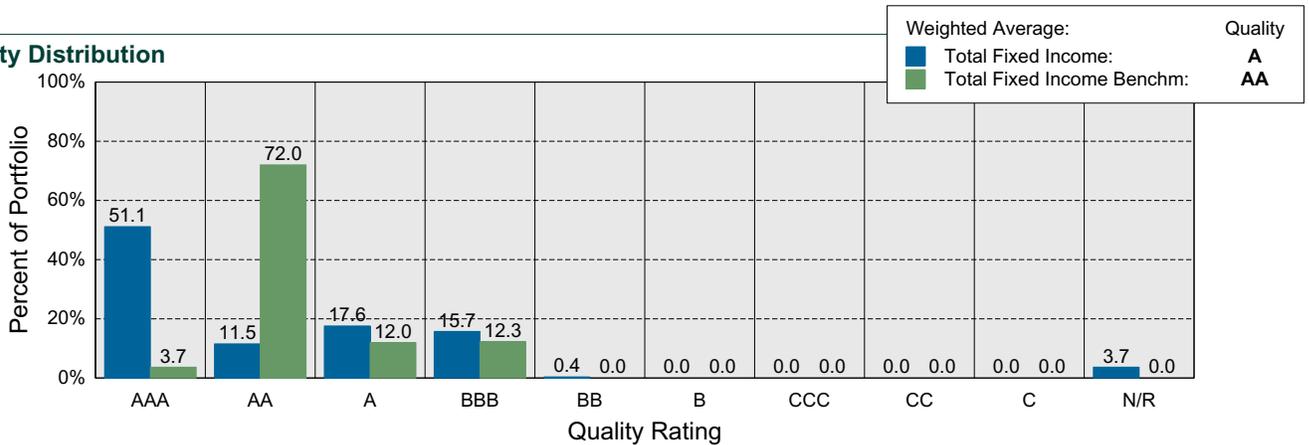
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Colorado Treasurer's Portfolio Period Ended March 31, 2024

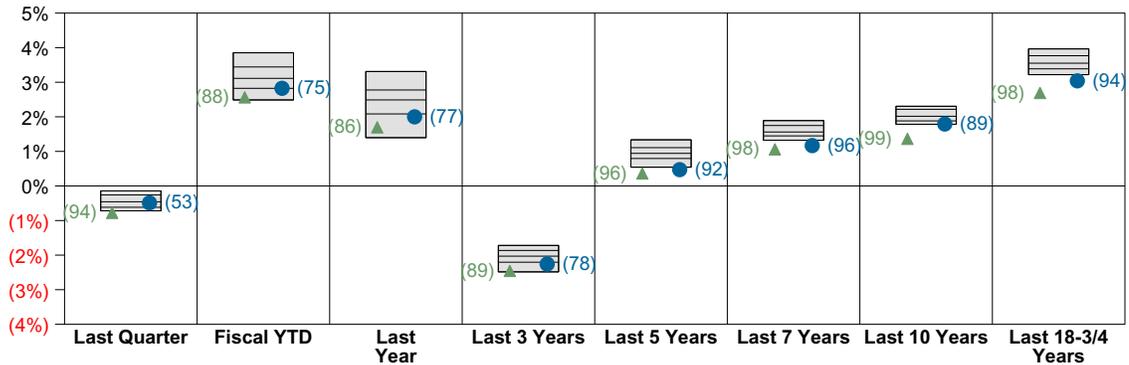
## Investment Philosophy

The Fixed Income Portfolio is managed by the Colorado State Treasury and was initially funded in 3Q 2005. The PSPF Custom Benchmark consisted of 37% U.S. Treasury 1-10 Year Index, 34% Mortgages 0-10 Year WAL Index, 19% AAA U.S. Agencies 1-10 Year Index and 10% U.S. Corporates AAA Rated 1-10 Years Index through March 31, 2017 and the Bloomberg U.S. Aggregate thereafter. It is important to note that the Fixed Income Portfolio has historically been managed under a buy and hold mandate for investment yield. The Callan Core Bond Fixed Income Manager Universe used to construct the floating bar chart exhibit below, representing 77 core fixed income managers and products, is largely composed of products following a total return mandate. The School Fund bond portfolio is subject to statutorily imposed net loss restrictions. As such, relative performance comparison of the Fixed Income Portfolio to this universe may not be entirely representative of relative performance.

## Quarterly Summary and Highlights

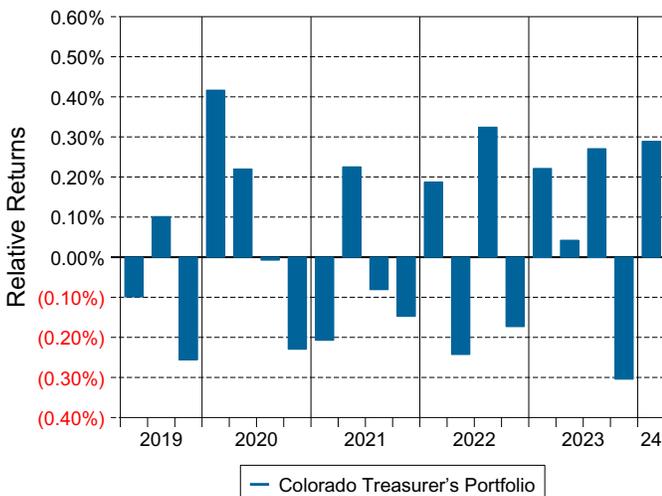
- Colorado Treasurer's Portfolio's portfolio posted a (0.49)% return for the quarter placing it in the 53 percentile of the Callan Core Bond Fixed Income group for the quarter and in the 77 percentile for the last year.
- Colorado Treasurer's Portfolio's portfolio outperformed the PSPF Bond Custom Benchmark by 0.29% for the quarter and outperformed the PSPF Bond Custom Benchmark for the year by 0.30%.

## Performance vs Callan Core Bond Fixed Income (Gross)

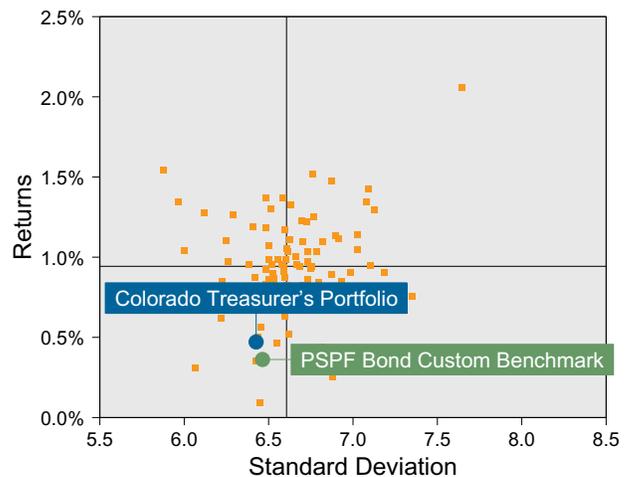


|                                       | Last Quarter  | Fiscal YTD  | Last Year   | Last 3 Years  | Last 5 Years | Last 7 Years | Last 10 Years | Last 18-3/4 Years |
|---------------------------------------|---------------|-------------|-------------|---------------|--------------|--------------|---------------|-------------------|
| 10th Percentile                       | (0.14)        | 3.85        | 3.31        | (1.72)        | 1.33         | 1.89         | 2.31          | 3.96              |
| 25th Percentile                       | (0.26)        | 3.44        | 2.78        | (1.87)        | 1.11         | 1.75         | 2.22          | 3.77              |
| Median                                | (0.46)        | 3.11        | 2.49        | (2.03)        | 0.94         | 1.56         | 2.02          | 3.55              |
| 75th Percentile                       | (0.62)        | 2.82        | 2.08        | (2.20)        | 0.80         | 1.45         | 1.88          | 3.39              |
| 90th Percentile                       | (0.72)        | 2.49        | 1.40        | (2.48)        | 0.54         | 1.32         | 1.78          | 3.22              |
| <b>Colorado Treasurer's Portfolio</b> | <b>(0.49)</b> | <b>2.82</b> | <b>2.00</b> | <b>(2.26)</b> | <b>0.47</b>  | <b>1.17</b>  | <b>1.79</b>   | <b>3.04</b>       |
| <b>PSPF Bond Custom Benchmark</b>     | <b>(0.78)</b> | <b>2.56</b> | <b>1.70</b> | <b>(2.46)</b> | <b>0.36</b>  | <b>1.06</b>  | <b>1.36</b>   | <b>2.69</b>       |

## Relative Returns vs PSPF Bond Custom Benchmark



## Callan Core Bond Fixed Income (Gross) Annualized Five Year Risk vs Return

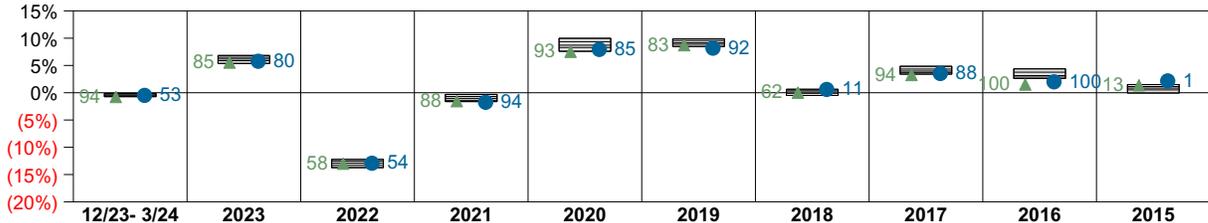


# Colorado Treasurer's Portfolio Return Analysis Summary

## Return Analysis

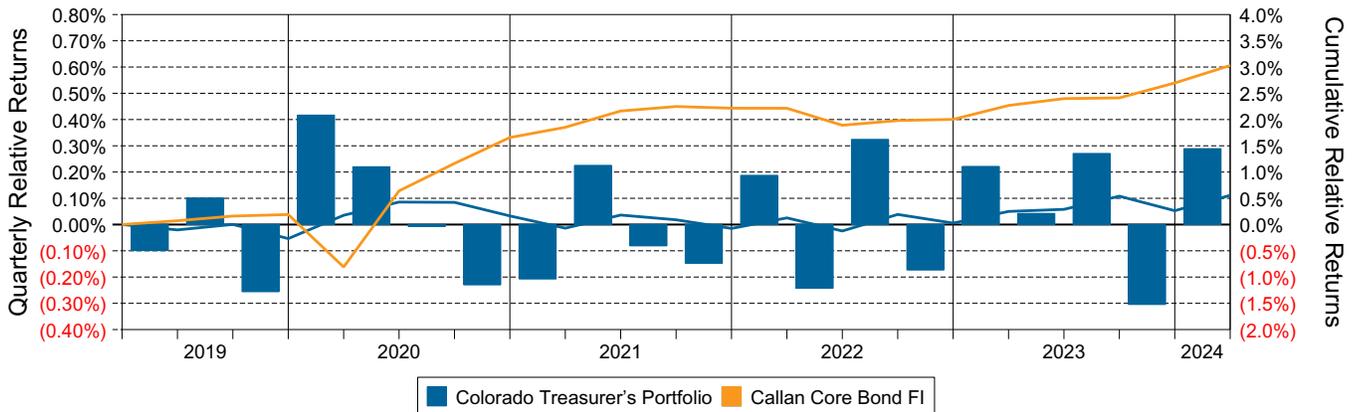
The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

### Performance vs Callan Core Bond Fixed Income (Gross)

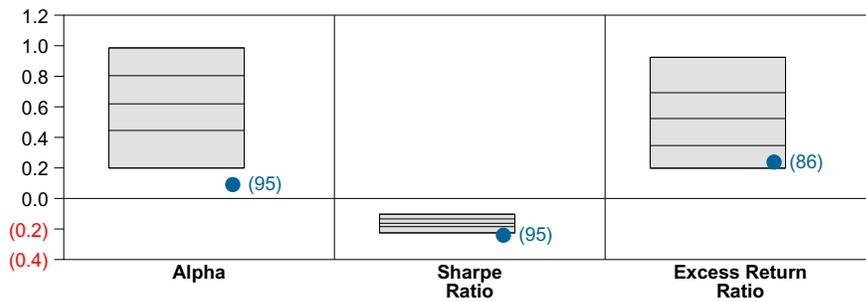


|                                       | 12/23- 3/24 | 2023 | 2022    | 2021   | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|---------------------------------------|-------------|------|---------|--------|------|------|------|------|------|------|
| <b>Colorado Treasurer's Portfolio</b> | ● (0.49)    | 5.77 | (12.93) | (1.75) | 7.94 | 8.17 | 0.60 | 3.52 | 2.00 | 2.17 |
| <b>PSPF Bond Custom Benchmark</b>     | ▲ (0.78)    | 5.53 | (13.01) | (1.54) | 7.51 | 8.72 | 0.01 | 3.25 | 1.50 | 1.37 |

### Cumulative and Quarterly Relative Returns vs PSPF Bond Custom Benchmark



### Risk Adjusted Return Measures vs PSPF Bond Custom Benchmark Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024



|                 |      |        |      |
|-----------------|------|--------|------|
| 10th Percentile | 0.99 | (0.10) | 0.92 |
| 25th Percentile | 0.80 | (0.13) | 0.69 |
| Median          | 0.62 | (0.16) | 0.52 |
| 75th Percentile | 0.45 | (0.18) | 0.35 |
| 90th Percentile | 0.20 | (0.23) | 0.20 |

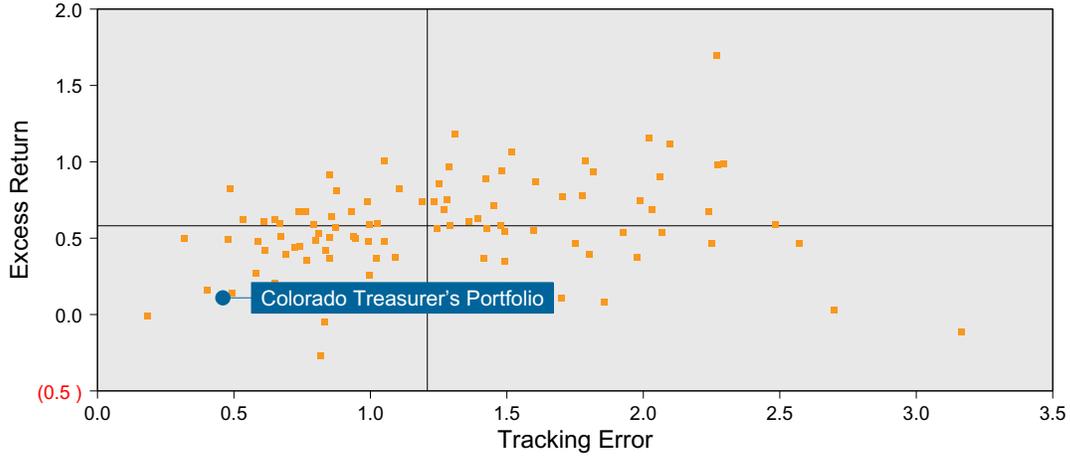
**Colorado Treasurer's Portfolio** ● 0.09 (0.24) 0.24

# Colorado Treasurer's Portfolio Risk Analysis Summary

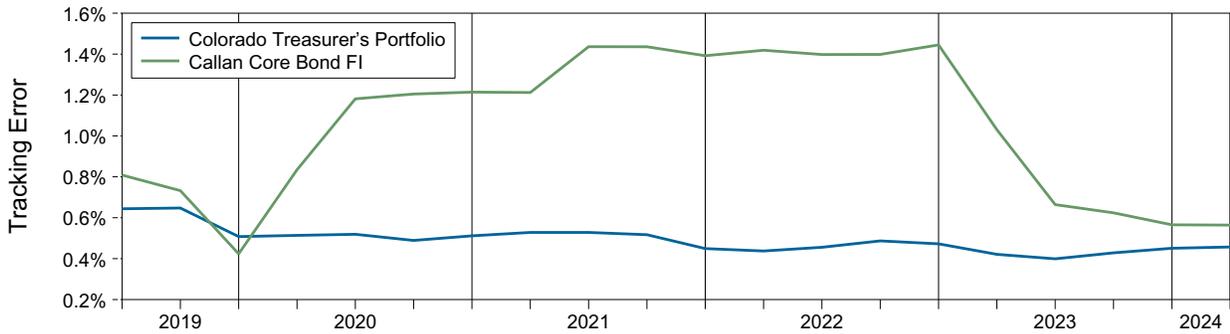
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

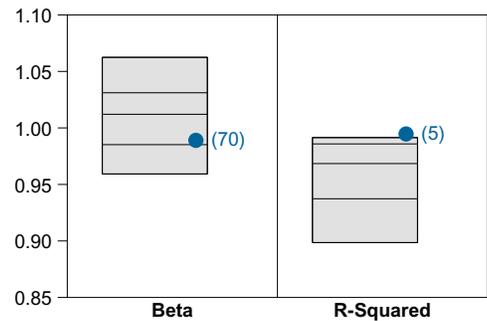
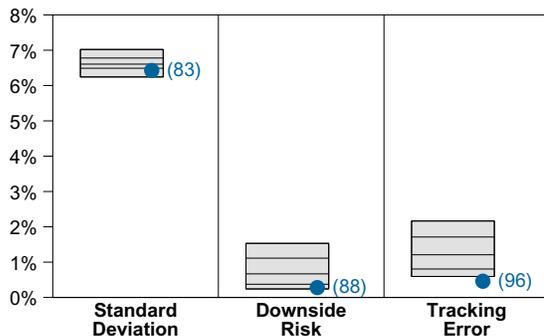
### Risk Analysis vs Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024



### Rolling 12 Quarter Tracking Error vs PSPF Bond Custom Benchmark



### Risk Statistics Rankings vs PSPF Bond Custom Benchmark Rankings Against Callan Core Bond Fixed Income (Gross) Five Years Ended March 31, 2024



10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

7.02  
6.78  
6.61  
6.49  
6.24

1.53  
1.11  
0.67  
0.37  
0.24

2.17  
1.71  
1.21  
0.81  
0.59

10th Percentile  
25th Percentile  
Median  
75th Percentile  
90th Percentile

1.06  
1.03  
1.01  
0.99  
0.96

0.99  
0.99  
0.97  
0.94  
0.90

Colorado Treasurer's Portfolio ●

6.43

0.28

0.46

Colorado Treasurer's Portfolio ●

0.99

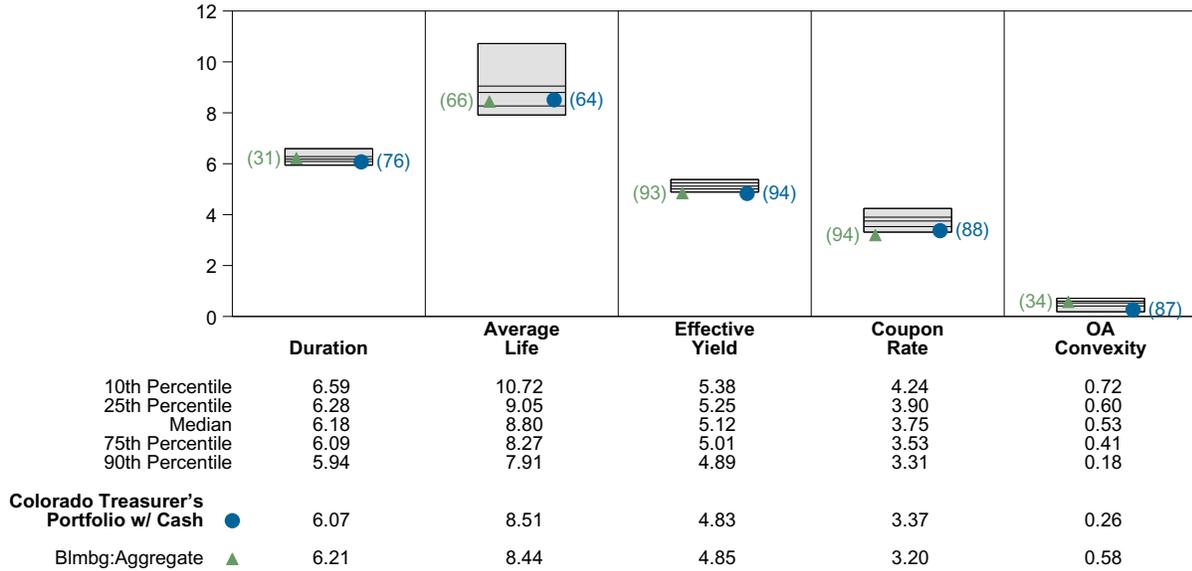
0.99

# Colorado Treasurer's Portfolio w/ Cash Bond Characteristics Analysis Summary

## Portfolio Characteristics

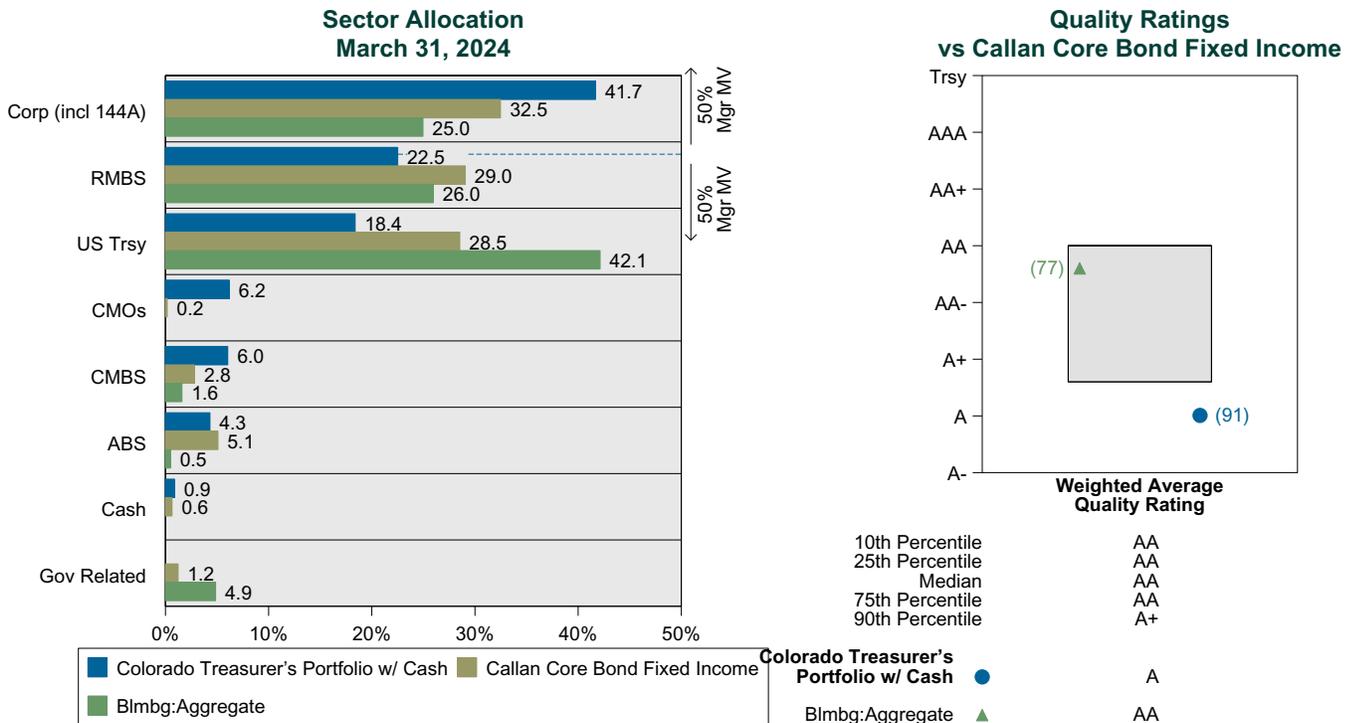
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style. Fixed Income Portfolio characteristics includes Cash Pool allocation.

## Fixed Income Portfolio Characteristics Rankings Against Callan Core Bond Fixed Income as of March 31, 2024



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

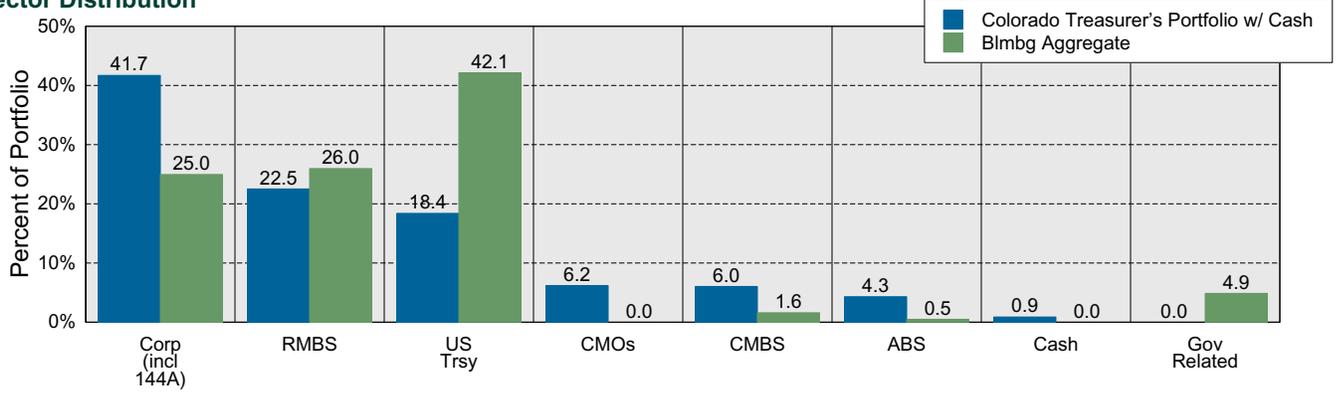


# Colorado Treasurer's Portfolio w/ Cash Portfolio Characteristics Summary As of March 31, 2024

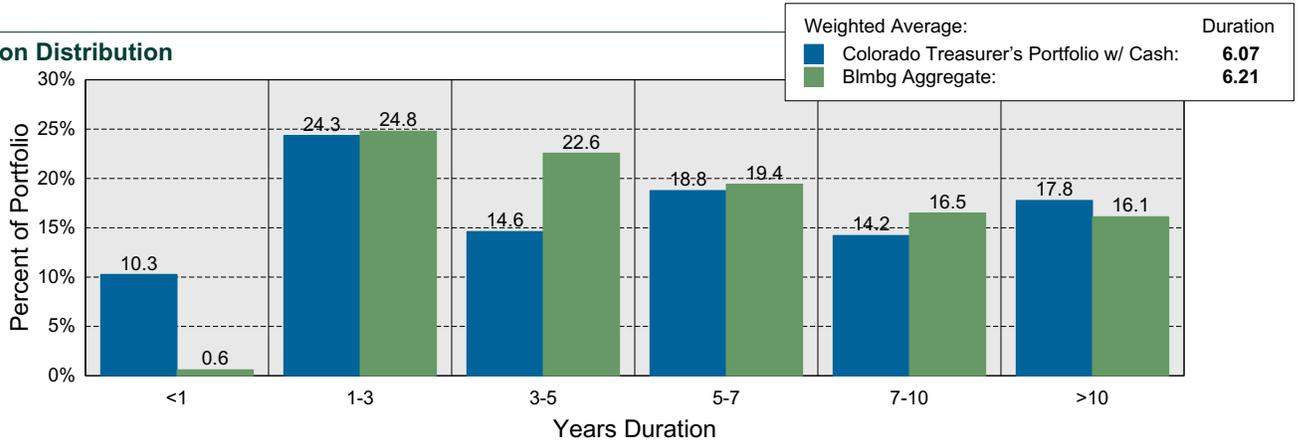
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

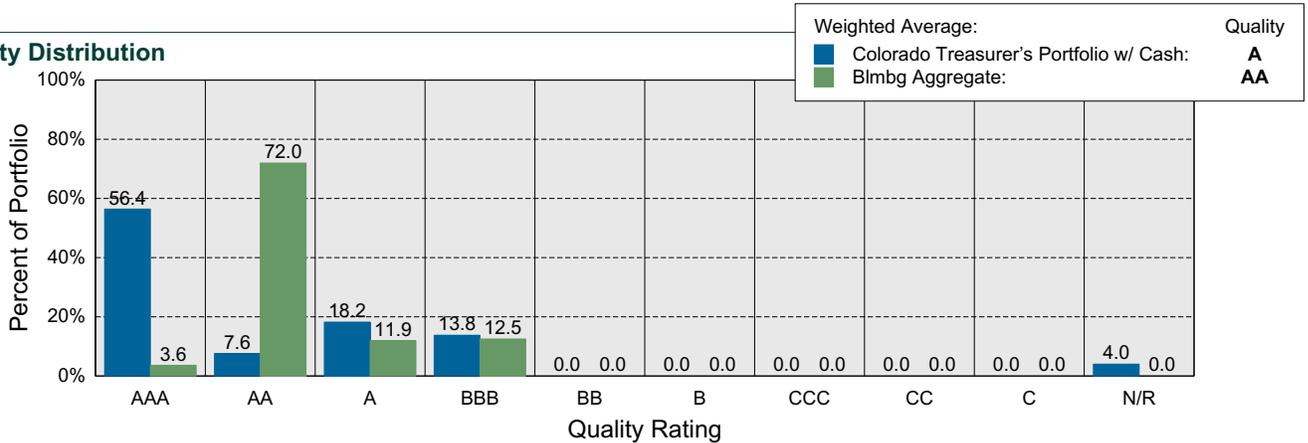
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Janus Henderson Short Duration Period Ended March 31, 2024

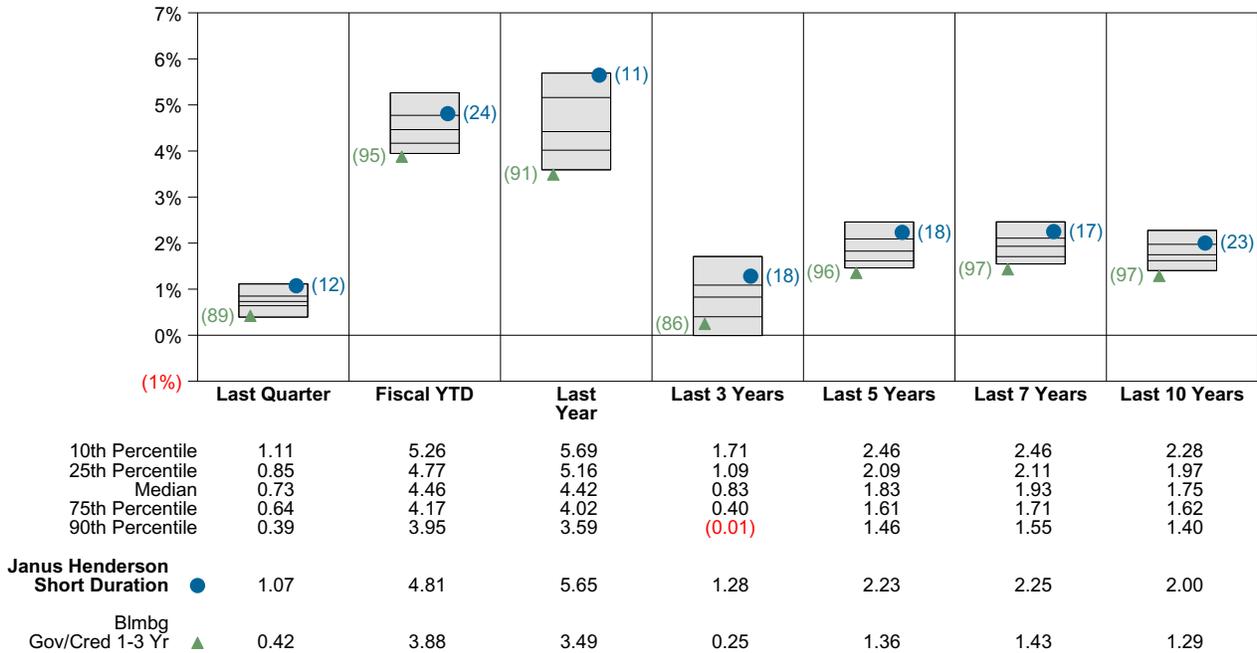
## Investment Philosophy

Janus Henderson believes a bottom-up, fundamentally driven investment process that focuses on credit-oriented investments can generate risk-adjusted outperformance over time. A comprehensive bottom-up view drives decision-making at a macro level, enabling them to make informed decisions about allocations to all sectors of the fixed income universe. The Short Duration Fixed Income strategy emphasizes risk-adjusted performance and capital preservation with value generated principally from prudent credit selection and credit sector positioning. The Janus Henderson short duration portfolio was funded November 9th, 2018. Prior returns represent the manager's composite returns.

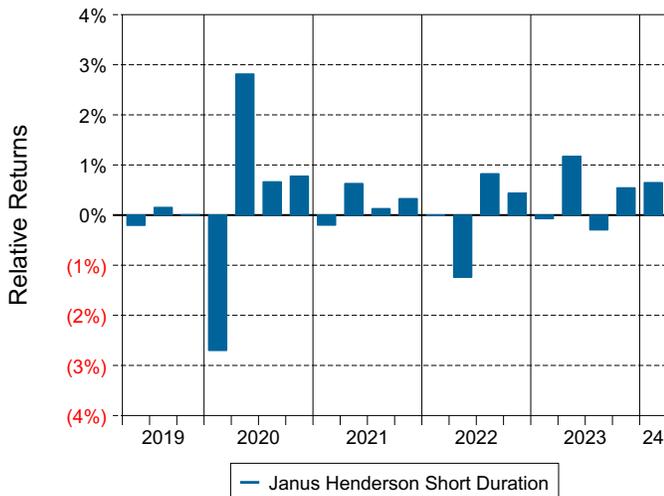
## Quarterly Summary and Highlights

- Janus Henderson Short Duration's portfolio posted a 1.07% return for the quarter placing it in the 12 percentile of the Callan Short Term Fixed Income group for the quarter and in the 11 percentile for the last year.
- Janus Henderson Short Duration's portfolio outperformed the Blmbg Gov/Cred 1-3 Yr by 0.65% for the quarter and outperformed the Blmbg Gov/Cred 1-3 Yr for the year by 2.16%.

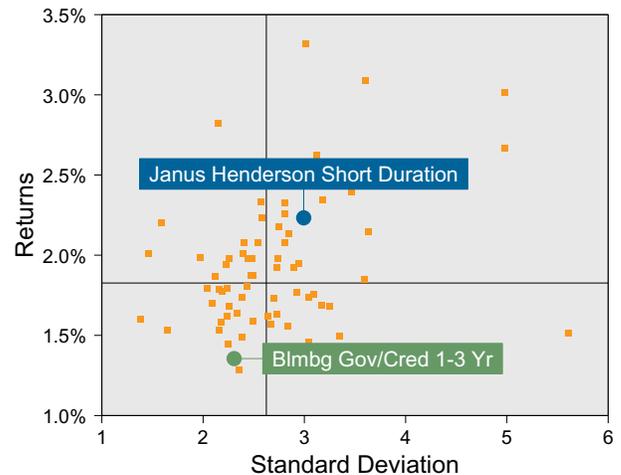
## Performance vs Callan Short Term Fixed Income (Gross)



## Relative Return vs Blmbg Gov/Cred 1-3 Yr



## Callan Short Term Fixed Income (Gross) Annualized Five Year Risk vs Return

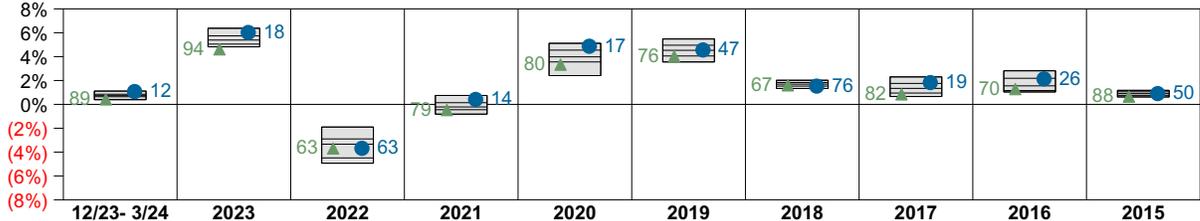


# Janus Henderson Short Duration Return Analysis Summary

## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

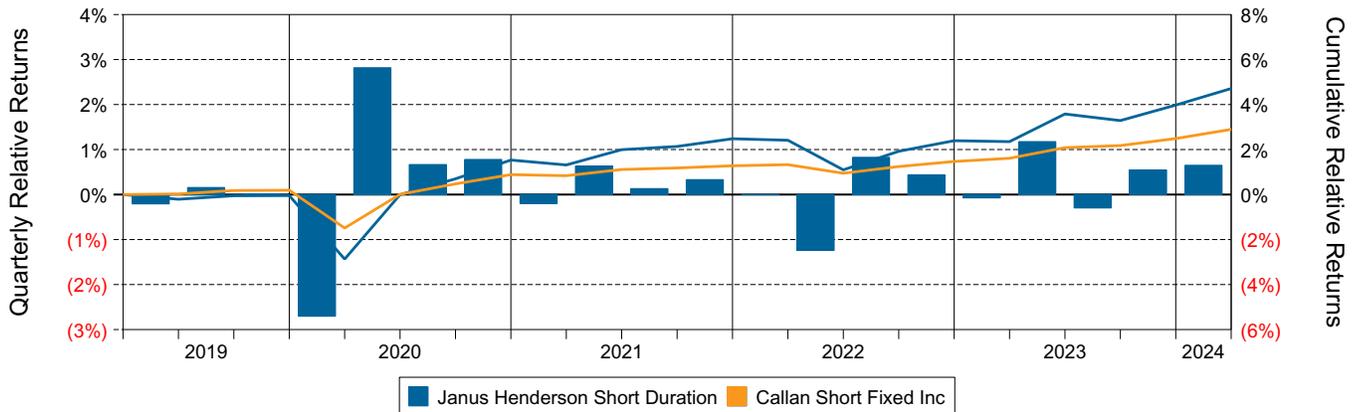
### Performance vs Callan Short Term Fixed Income (Gross)



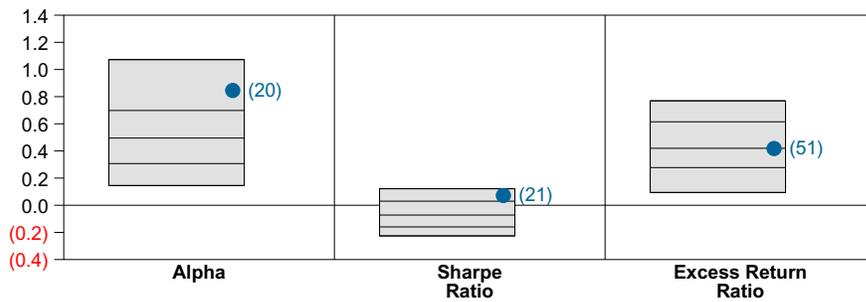
|                 |      |      |        |        |      |      |      |      |      |      |
|-----------------|------|------|--------|--------|------|------|------|------|------|------|
| 10th Percentile | 1.11 | 6.38 | (1.90) | 0.75   | 5.12 | 5.48 | 2.02 | 2.30 | 2.81 | 1.18 |
| 25th Percentile | 0.85 | 5.74 | (2.90) | 0.14   | 4.55 | 4.96 | 1.83 | 1.76 | 2.19 | 1.05 |
| Median          | 0.73 | 5.39 | (3.34) | (0.22) | 3.98 | 4.53 | 1.69 | 1.34 | 1.55 | 0.90 |
| 75th Percentile | 0.64 | 5.05 | (4.49) | (0.45) | 3.56 | 4.06 | 1.53 | 0.95 | 1.16 | 0.76 |
| 90th Percentile | 0.39 | 4.82 | (4.93) | (0.82) | 2.41 | 3.56 | 1.33 | 0.66 | 1.04 | 0.62 |

|                                       |   |      |      |        |        |      |      |      |      |      |      |
|---------------------------------------|---|------|------|--------|--------|------|------|------|------|------|------|
| <b>Janus Henderson Short Duration</b> | ● | 1.07 | 6.02 | (3.68) | 0.41   | 4.87 | 4.56 | 1.53 | 1.82 | 2.13 | 0.90 |
| Blmbg Gov/Cred 1-3 Yr                 | ▲ | 0.42 | 4.61 | (3.69) | (0.47) | 3.33 | 4.03 | 1.60 | 0.84 | 1.28 | 0.65 |

### Cumulative and Quarterly Relative Returns vs Blmbg Gov/Cred 1-3 Yr



### Risk Adjusted Return Measures vs Blmbg Gov/Cred 1-3 Yr Rankings Against Callan Short Term Fixed Income (Gross) Five Years Ended March 31, 2024



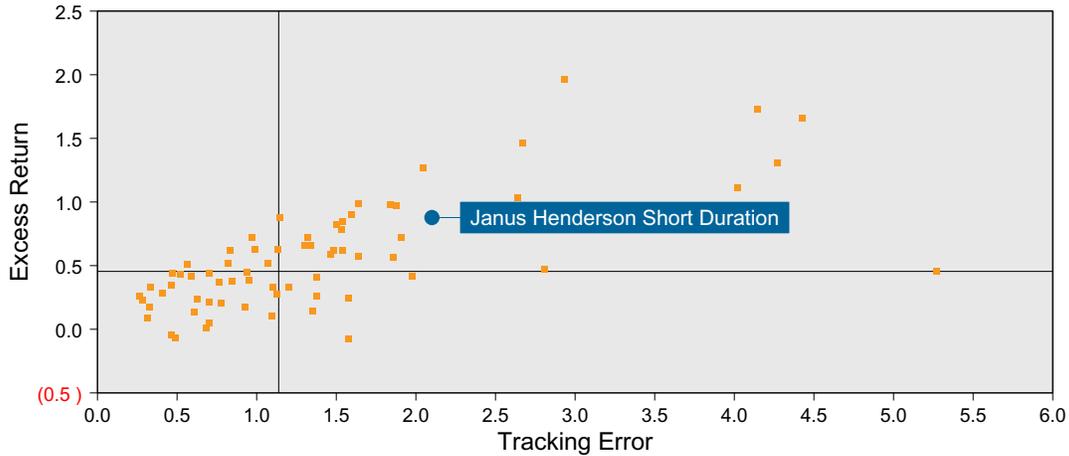
|                                       |      |        |      |      |
|---------------------------------------|------|--------|------|------|
| 10th Percentile                       | 1.07 | 0.12   | 0.77 |      |
| 25th Percentile                       | 0.70 | 0.03   | 0.61 |      |
| Median                                | 0.49 | (0.07) | 0.42 |      |
| 75th Percentile                       | 0.31 | (0.16) | 0.28 |      |
| 90th Percentile                       | 0.15 | (0.23) | 0.09 |      |
| <b>Janus Henderson Short Duration</b> | ●    | 0.85   | 0.07 | 0.42 |

71  
**Janus Henderson Short Duration  
 Risk Analysis Summary**

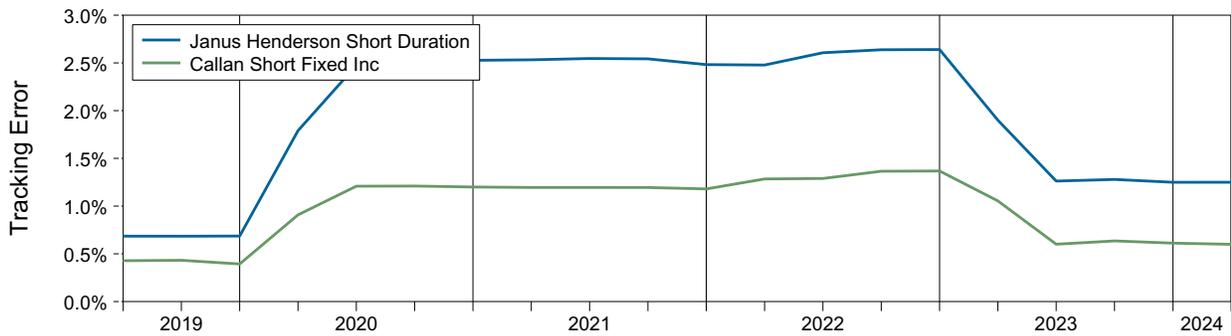
**Risk Analysis**

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

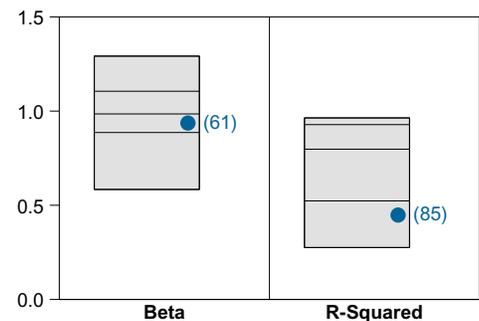
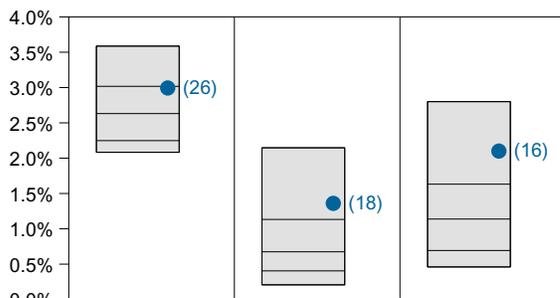
**Risk Analysis vs Callan Short Term Fixed Income (Gross)  
 Five Years Ended March 31, 2024**



**Rolling 12 Quarter Tracking Error vs Blmbg Gov/Cred 1-3 Yr**



**Risk Statistics Rankings vs Blmbg Gov/Cred 1-3 Yr  
 Rankings Against Callan Short Term Fixed Income (Gross)  
 Five Years Ended March 31, 2024**



10th Percentile  
 25th Percentile  
 Median  
 75th Percentile  
 90th Percentile

3.59  
 3.02  
 2.63  
 2.25  
 2.08

2.15  
 1.13  
 0.67  
 0.40  
 0.21

2.80  
 1.63  
 1.14  
 0.69  
 0.46

10th Percentile  
 25th Percentile  
 Median  
 75th Percentile  
 90th Percentile

1.29  
 1.11  
 0.98  
 0.89  
 0.58

0.96  
 0.93  
 0.80  
 0.52  
 0.28

Janus Henderson Short Duration ●

2.99

1.36

2.10

Janus Henderson Short Duration ●

0.94

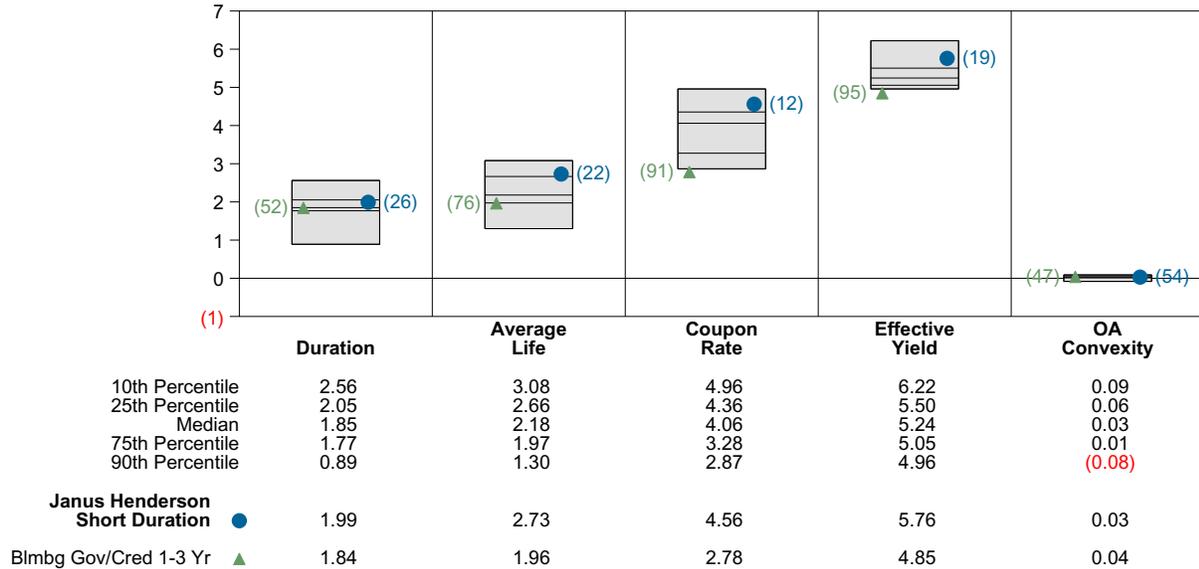
0.45

72  
**Janus Henderson Short Duration  
 Bond Characteristics Analysis Summary**

**Portfolio Characteristics**

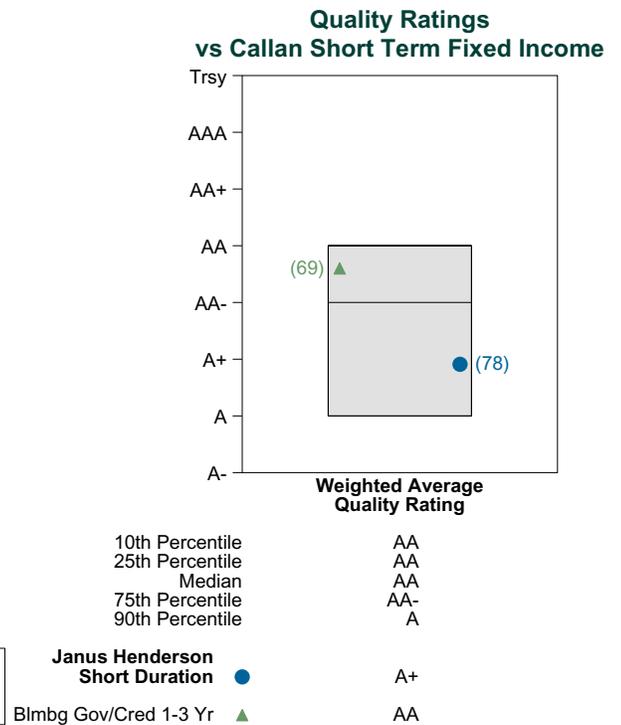
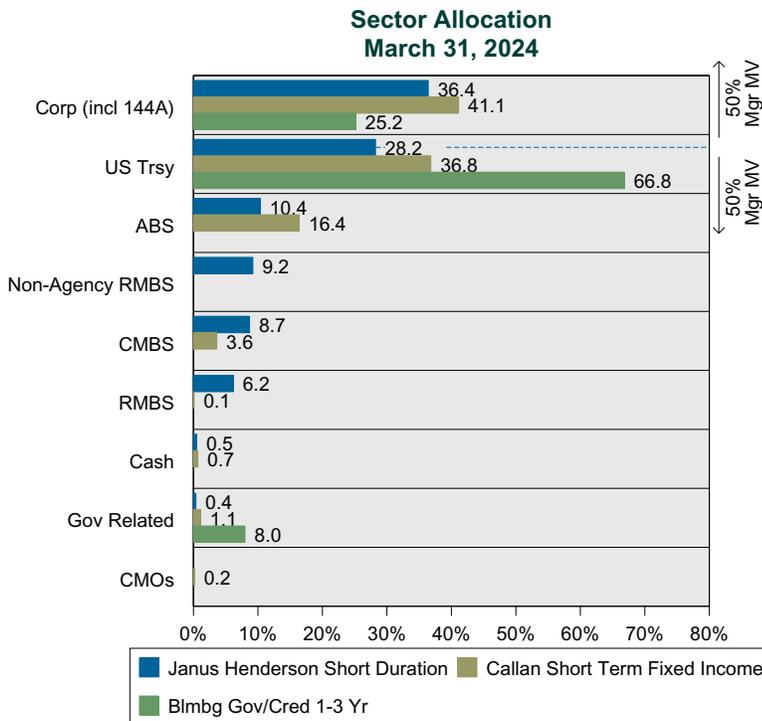
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style. Fixed Income Portfolio characteristics includes Cash Pool allocation.

**Fixed Income Portfolio Characteristics  
 Rankings Against Callan Short Term Fixed Income  
 as of March 31, 2024**



**Sector Allocation and Quality Ratings**

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

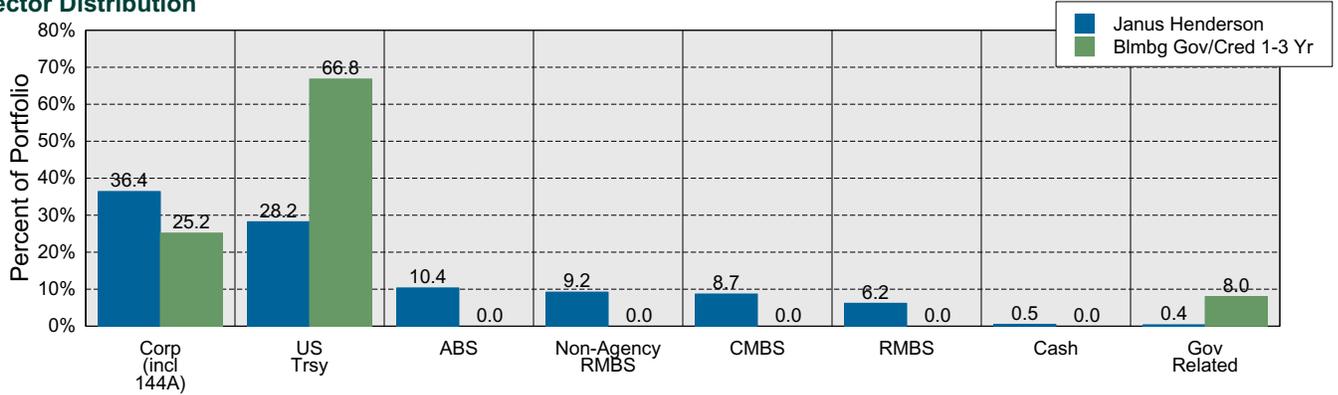


# Janus Henderson Portfolio Characteristics Summary As of March 31, 2024

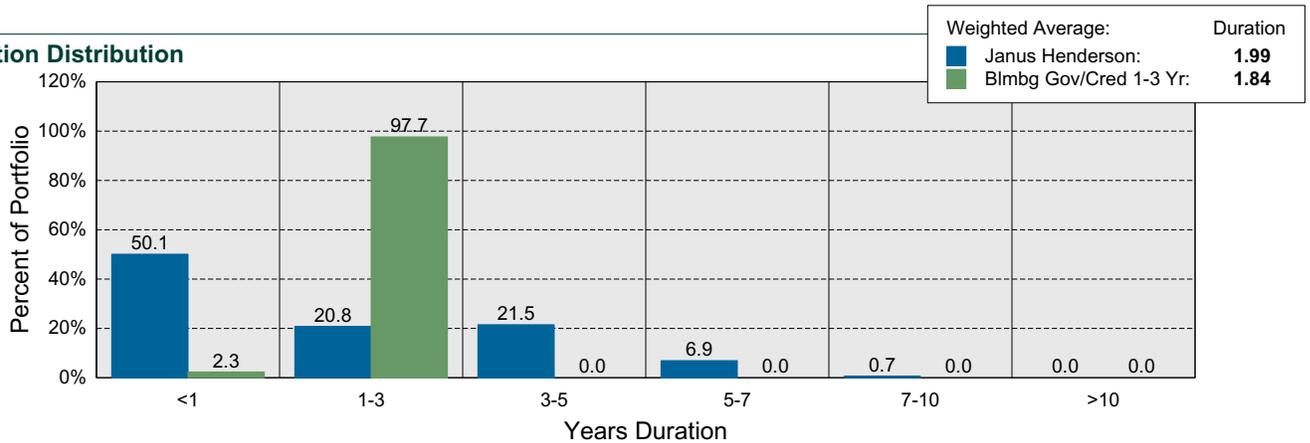
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

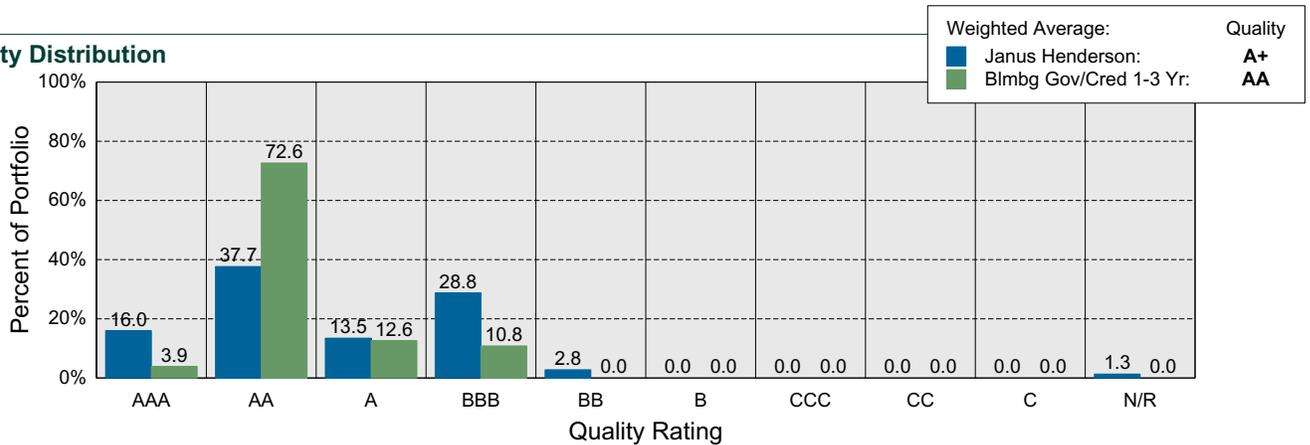
### Sector Distribution



### Duration Distribution



### Quality Distribution





75  
**High Income Strategies**  
**Period Ended March 31, 2024**

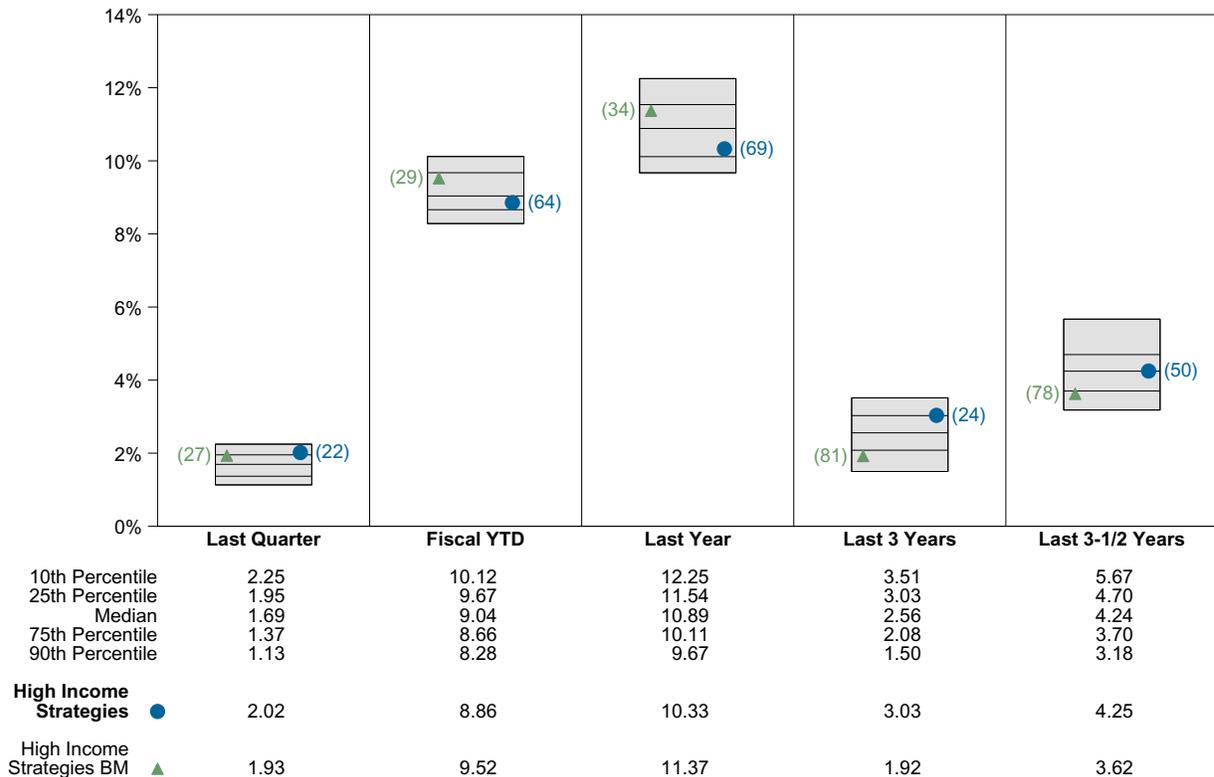
**Benchmark Definition**

The High Income Strategies Benchmark consists of 85% Blmbg High Yield Index and 15% ICE BofA US All Cap Secs Index.

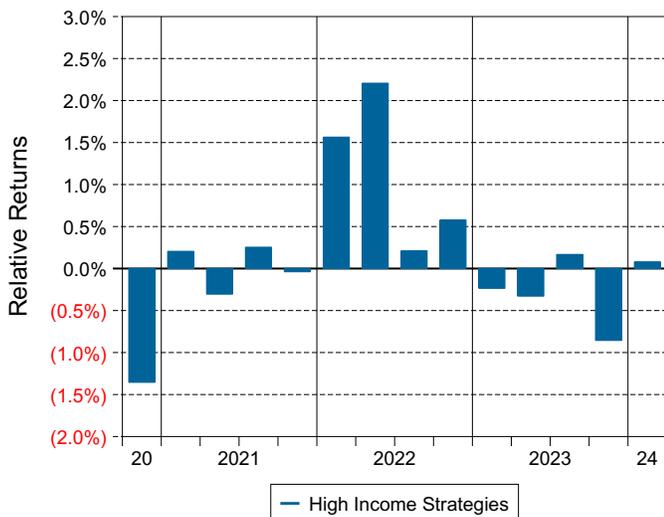
**Quarterly Summary and Highlights**

- High Income Strategies’s portfolio posted a 2.02% return for the quarter placing it in the 22 percentile of the Callan High Yield Fixed Income group for the quarter and in the 69 percentile for the last year.
- High Income Strategies’s portfolio outperformed the High Income Strategies BM by 0.08% for the quarter and underperformed the High Income Strategies BM for the year by 1.04%.

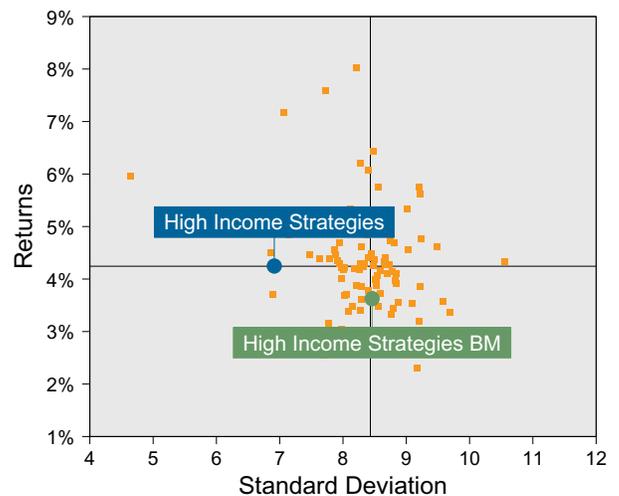
**Performance vs Callan High Yield Fixed Income (Gross)**



**Relative Return vs High Income Strategies BM**



**Callan High Yield Fixed Income (Gross) Annualized Three and One-Half Year Risk vs Return**

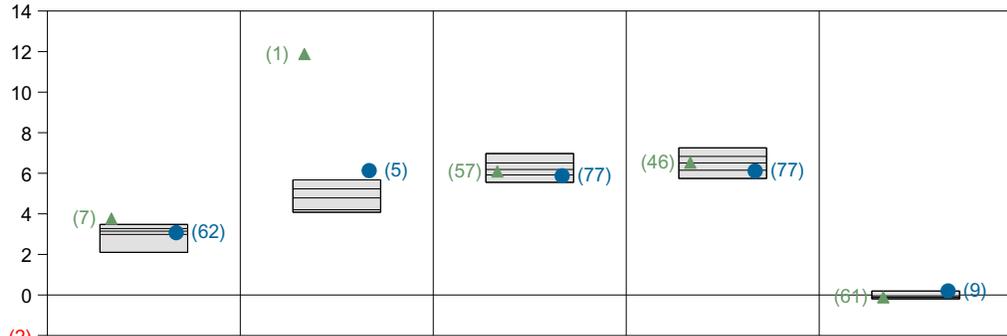


# High Income Strategies Bond Characteristics Analysis Summary

## Portfolio Characteristics

This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style. Fixed Income Portfolio characteristics includes Cash Pool allocation.

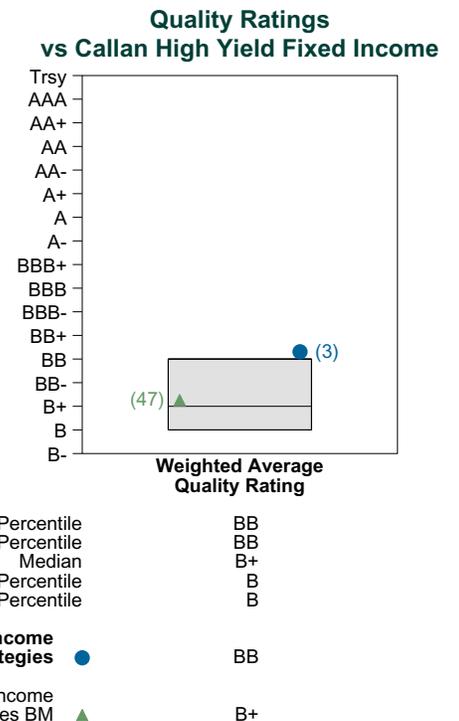
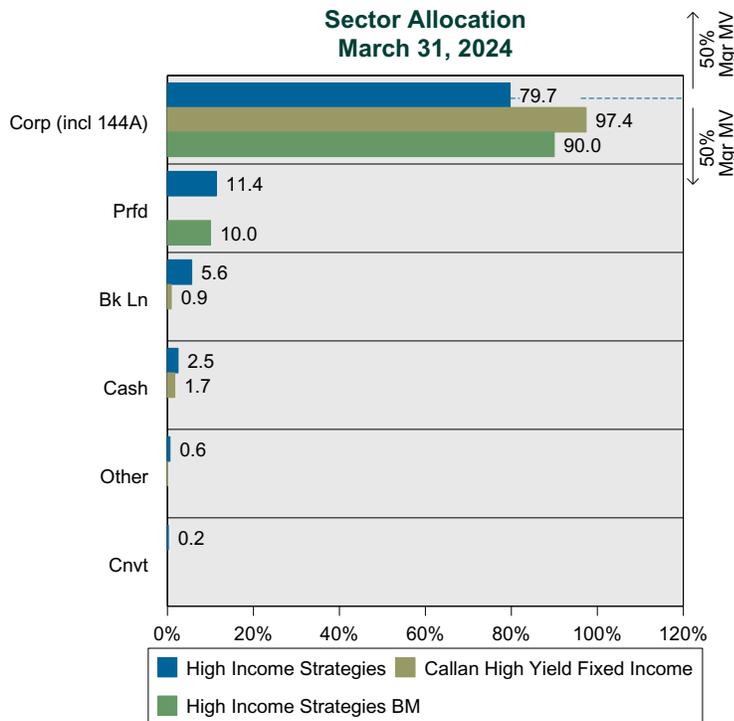
## Fixed Income Portfolio Characteristics Rankings Against Callan High Yield Fixed Income as of March 31, 2024



|                                 | Duration | Average Life | Coupon Rate | Current Yield | OA Convexity |
|---------------------------------|----------|--------------|-------------|---------------|--------------|
| 10th Percentile                 | 3.48     | 5.67         | 6.97        | 7.25          | 0.20         |
| 25th Percentile                 | 3.28     | 5.23         | 6.51        | 6.83          | (0.04)       |
| Median                          | 3.14     | 4.78         | 6.18        | 6.51          | (0.11)       |
| 75th Percentile                 | 2.99     | 4.20         | 5.92        | 6.15          | (0.13)       |
| 90th Percentile                 | 2.10     | 4.08         | 5.55        | 5.74          | (0.19)       |
| <b>High Income Strategies</b> ● | 3.07     | 6.13         | 5.87        | 6.11          | 0.20         |
| High Income Strategies BM ▲     | 3.77     | 11.88        | 6.09        | 6.53          | (0.11)       |

## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

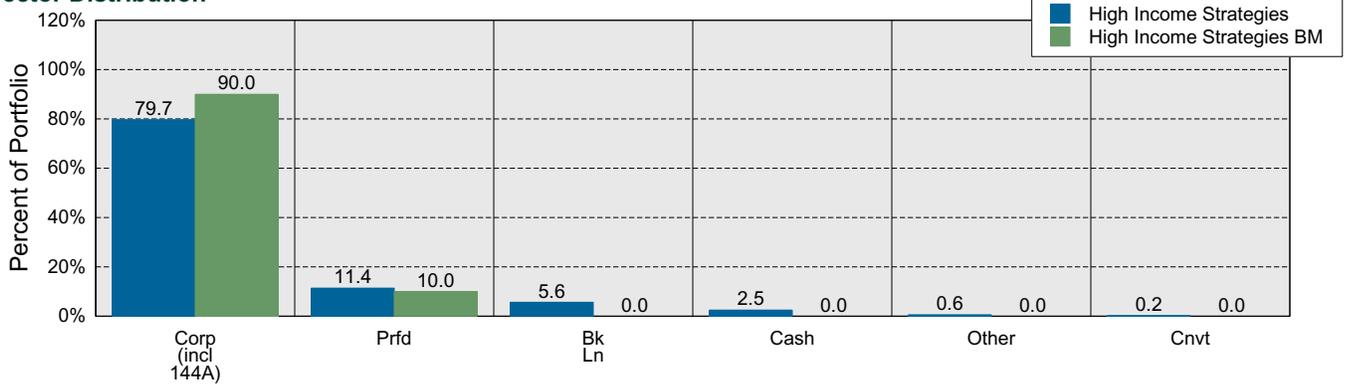


# High Income Strategies Portfolio Characteristics Summary As of March 31, 2024

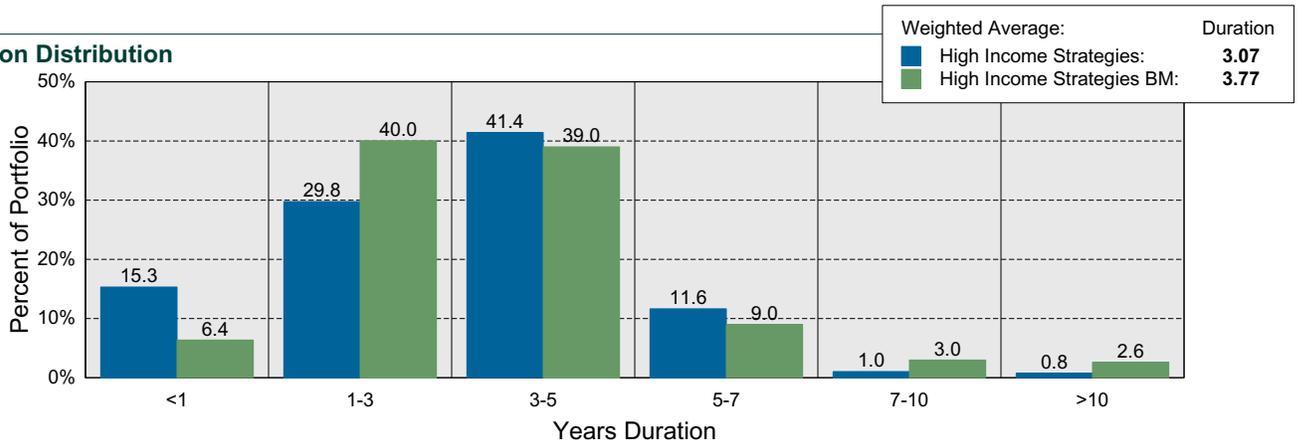
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

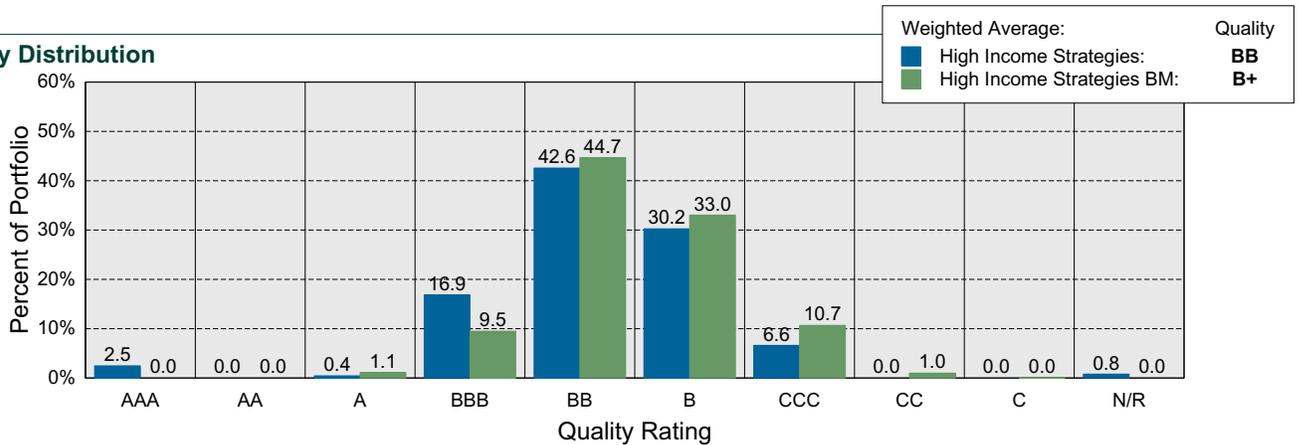
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Mackay Shield US High Yield Period Ended March 31, 2024

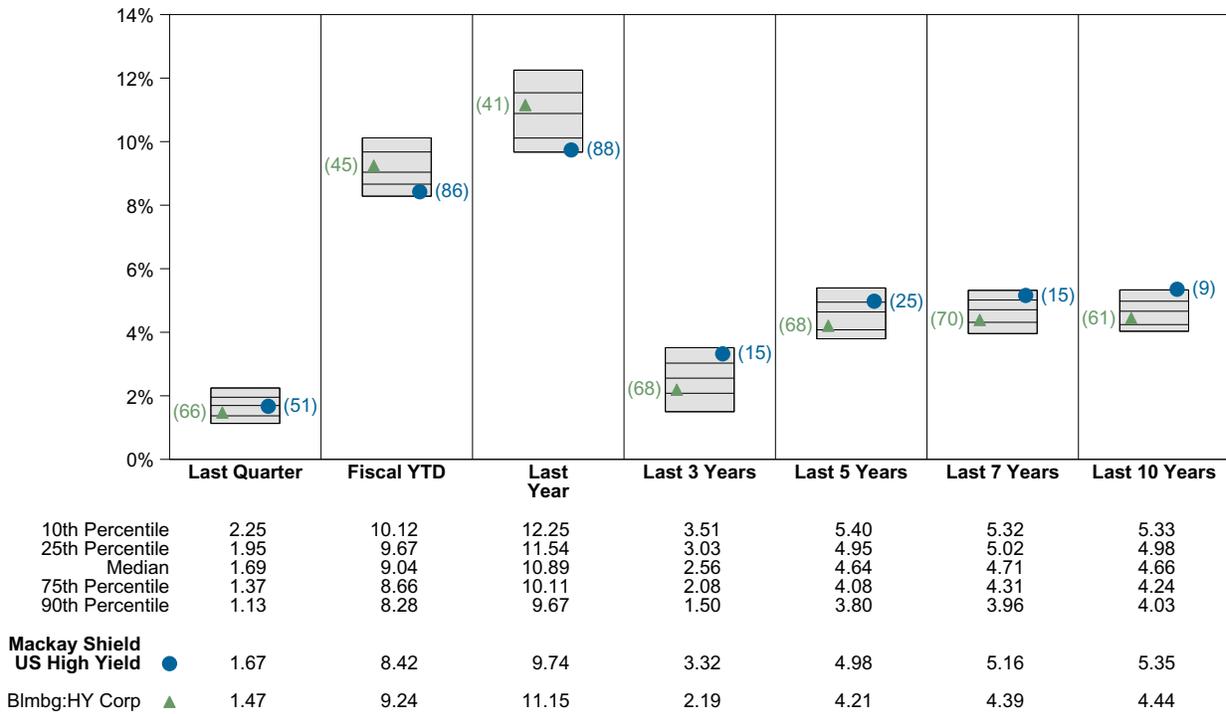
## Investment Philosophy

Mackay relies on rigorous fundamental analysis to select companies with strong free cash flow and asset coverage in its quest to maximize yield, adjusted for default risk. The strategy is well diversified with sector and quality weights a residual of the security selection process. Mackay believes that long-term value is best created by avoiding downside risk (i.e. defaults) while selecting companies with attractive valuations and a catalyst for spread compression. Mackay Shield US High Yield was funded July 24, 2020. Returns prior to inception reflect the manager's high yield composite returns.

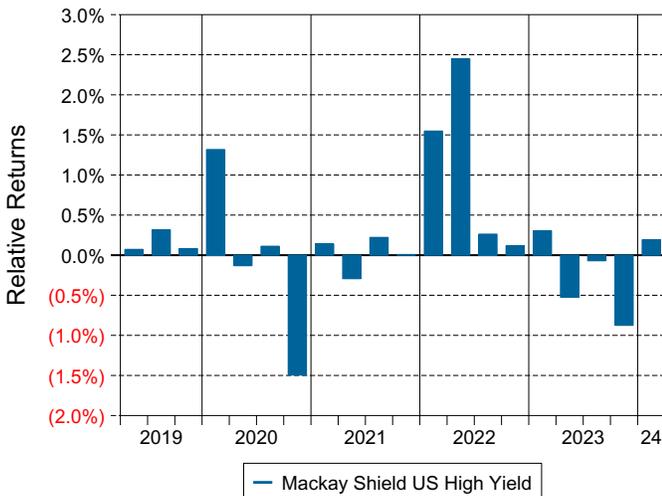
## Quarterly Summary and Highlights

- Mackay Shield US High Yield's portfolio posted a 1.67% return for the quarter placing it in the 51 percentile of the Callan High Yield Fixed Income group for the quarter and in the 88 percentile for the last year.
- Mackay Shield US High Yield's portfolio outperformed the Blmbg:HY Corp by 0.20% for the quarter and underperformed the Blmbg:HY Corp for the year by 1.41%.

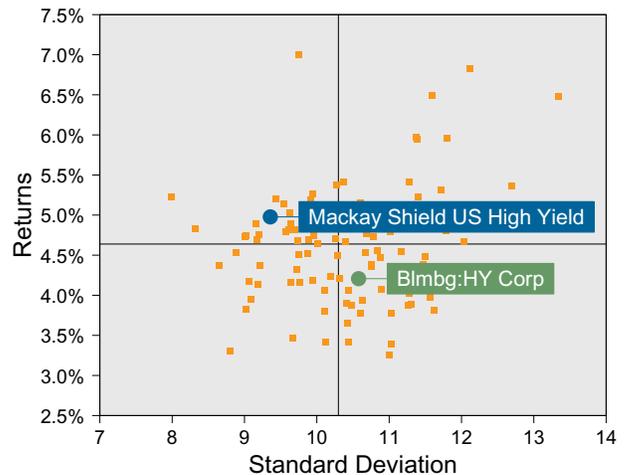
## Performance vs Callan High Yield Fixed Income (Gross)



## Relative Return vs Blmbg:HY Corp



## Callan High Yield Fixed Income (Gross) Annualized Five Year Risk vs Return

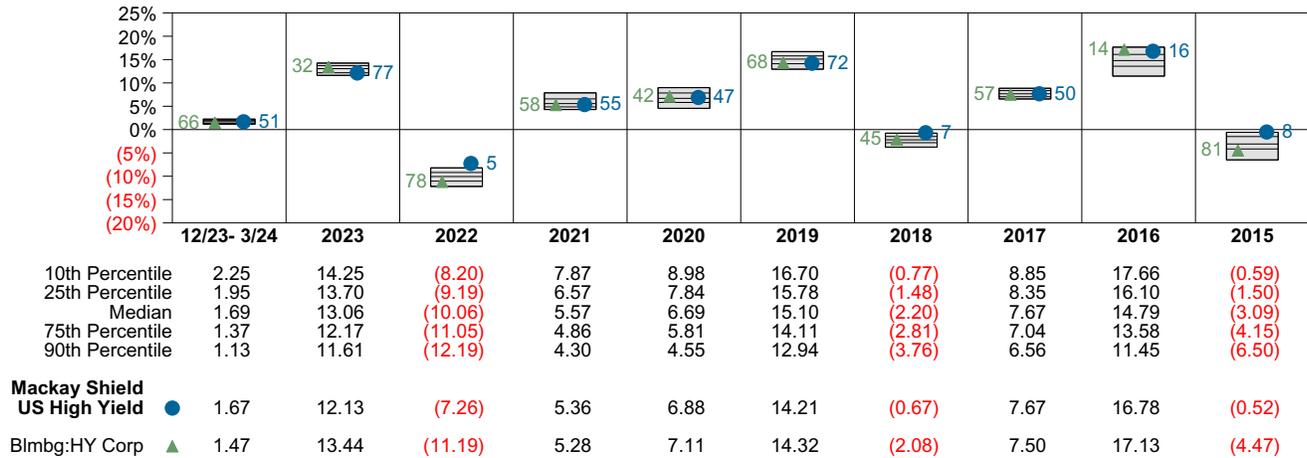


# Mackay Shield US High Yield Return Analysis Summary

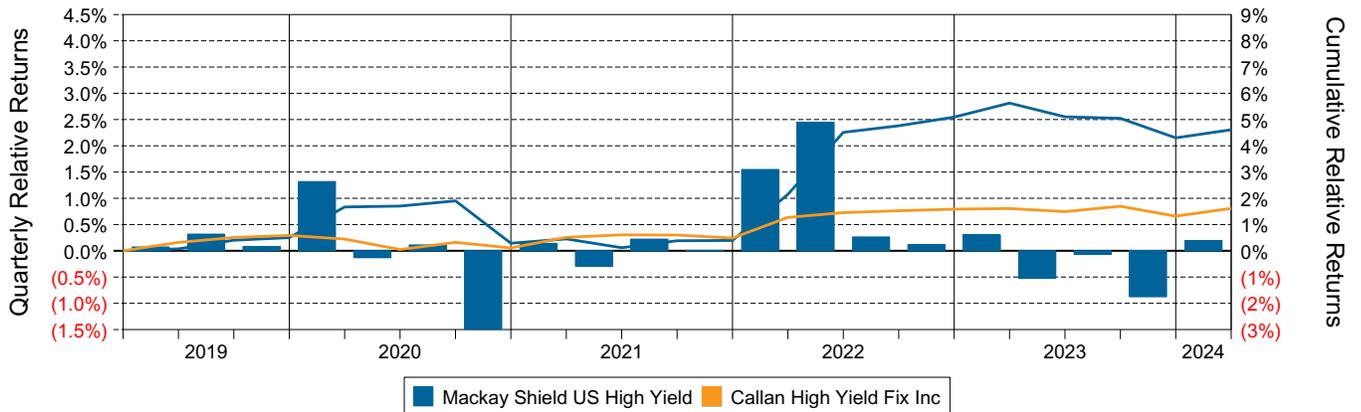
## Return Analysis

The graphs below analyze the manager's return on both a risk-adjusted and unadjusted basis. The first chart illustrates the manager's ranking over different periods versus the appropriate style group. The second chart shows the historical quarterly and cumulative manager returns versus the appropriate market benchmark. The last chart illustrates the manager's ranking relative to their style using various risk-adjusted return measures.

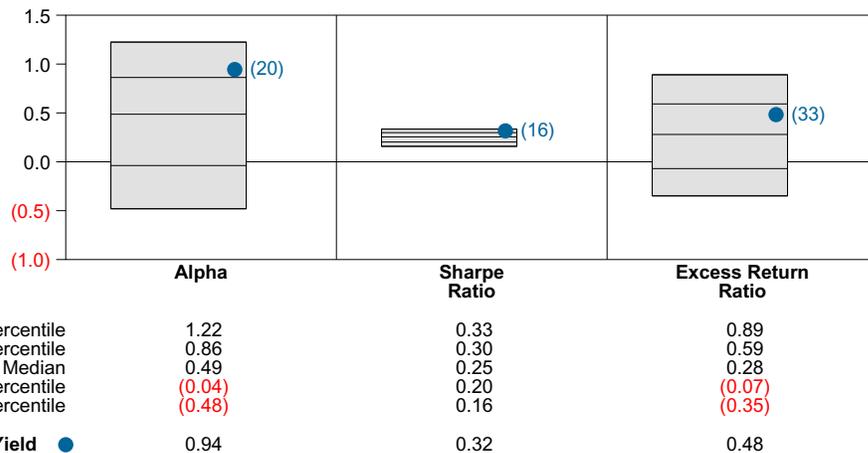
### Performance vs Callan High Yield Fixed Income (Gross)



### Cumulative and Quarterly Relative Returns vs Blmbg:HY Corp



### Risk Adjusted Return Measures vs Blmbg:HY Corp Rankings Against Callan High Yield Fixed Income (Gross) Five Years Ended March 31, 2024

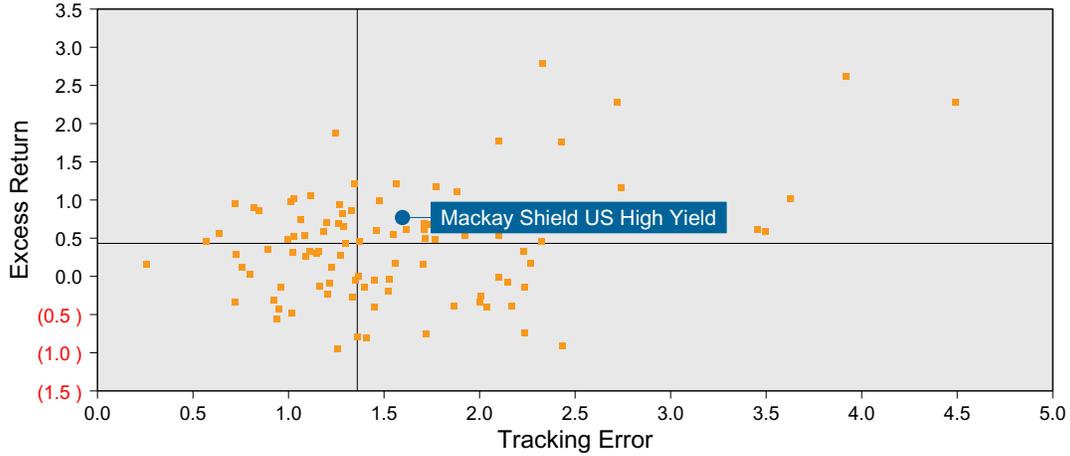


# Mackay Shield US High Yield Risk Analysis Summary

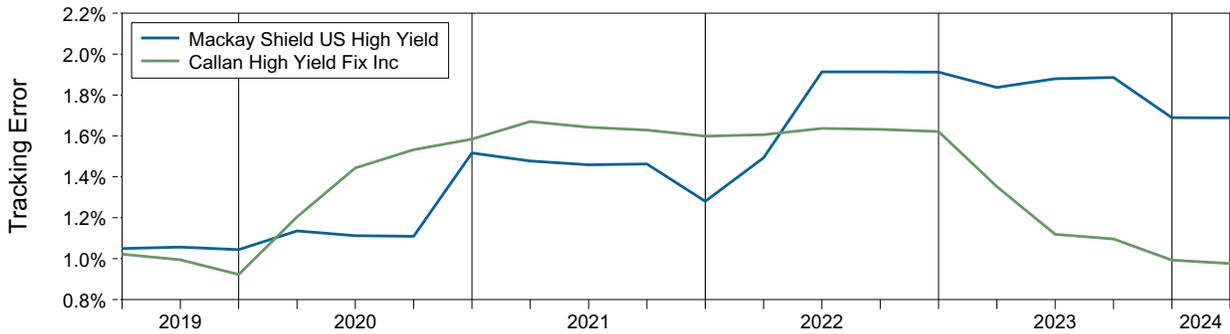
## Risk Analysis

The graphs below analyze the risk or variation of a manager's return pattern. The first scatter chart illustrates the relationship, called Excess Return Ratio, between excess return and tracking error relative to the benchmark. The second chart shows tracking error patterns versus the benchmark over time. The last two charts show the ranking of the manager's risk statistics versus the peer group.

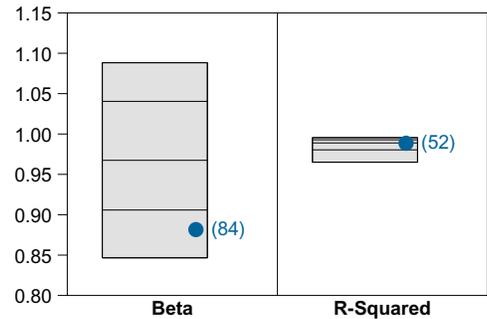
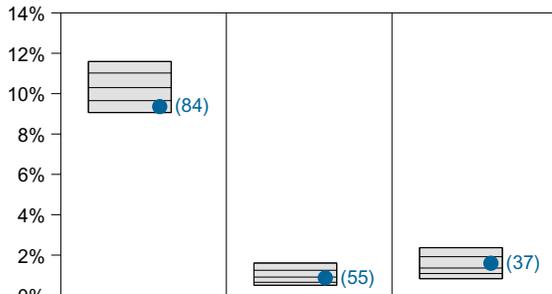
### Risk Analysis vs Callan High Yield Fixed Income (Gross) Five Years Ended March 31, 2024



### Rolling 12 Quarter Tracking Error vs Blmbg:HY Corp



### Risk Statistics Rankings vs Blmbg:HY Corp Rankings Against Callan High Yield Fixed Income (Gross) Five Years Ended March 31, 2024



|                 | Standard Deviation | Downside Risk | Tracking Error |
|-----------------|--------------------|---------------|----------------|
| 10th Percentile | 11.59              | 1.61          | 2.36           |
| 25th Percentile | 11.02              | 1.25          | 1.92           |
| Median          | 10.30              | 0.91          | 1.36           |
| 75th Percentile | 9.65               | 0.65          | 1.09           |
| 90th Percentile | 9.06               | 0.51          | 0.83           |

|                 | Beta | R-Squared |
|-----------------|------|-----------|
| 10th Percentile | 1.09 | 1.00      |
| 25th Percentile | 1.04 | 0.99      |
| Median          | 0.97 | 0.99      |
| 75th Percentile | 0.91 | 0.98      |
| 90th Percentile | 0.85 | 0.97      |

**Mackay Shield US High Yield** ● 9.36 0.87 1.60

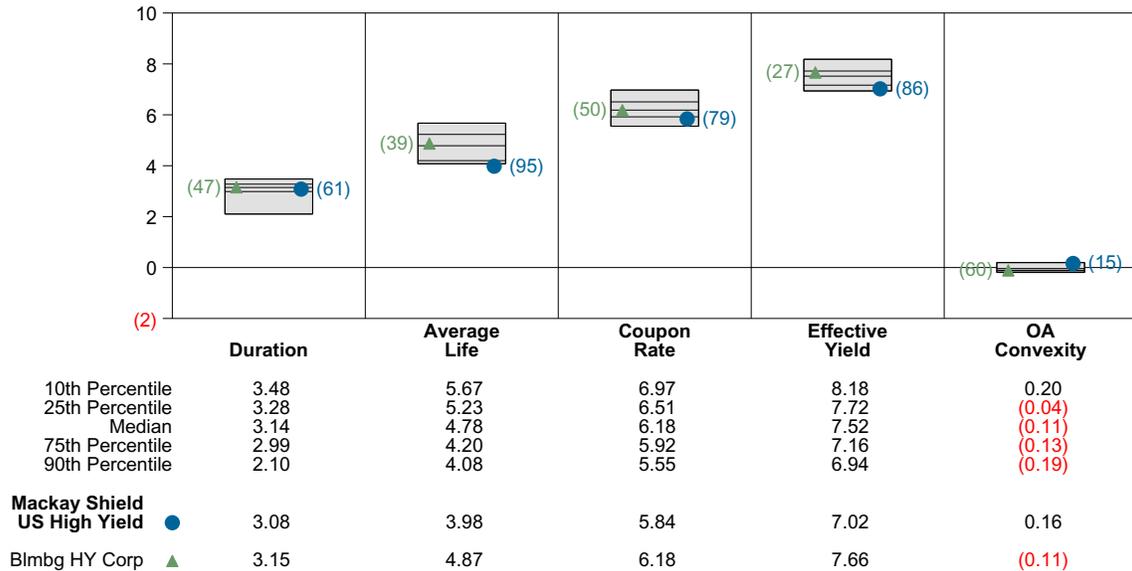
**Mackay Shield US High Yield** ● 0.88 0.99

# Mackay Shield US High Yield Bond Characteristics Analysis Summary

## Portfolio Characteristics

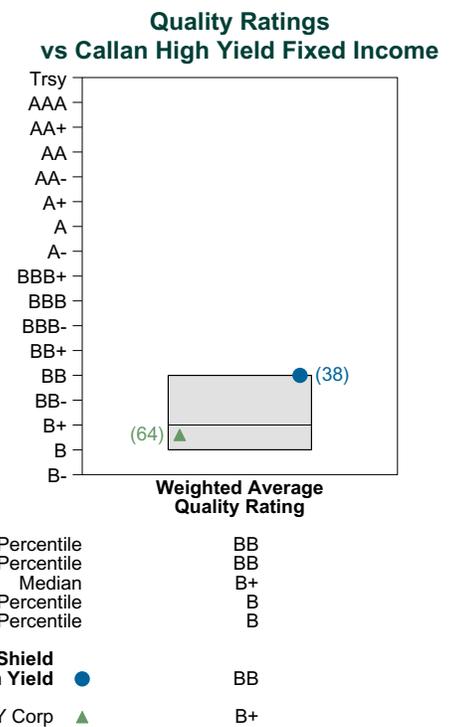
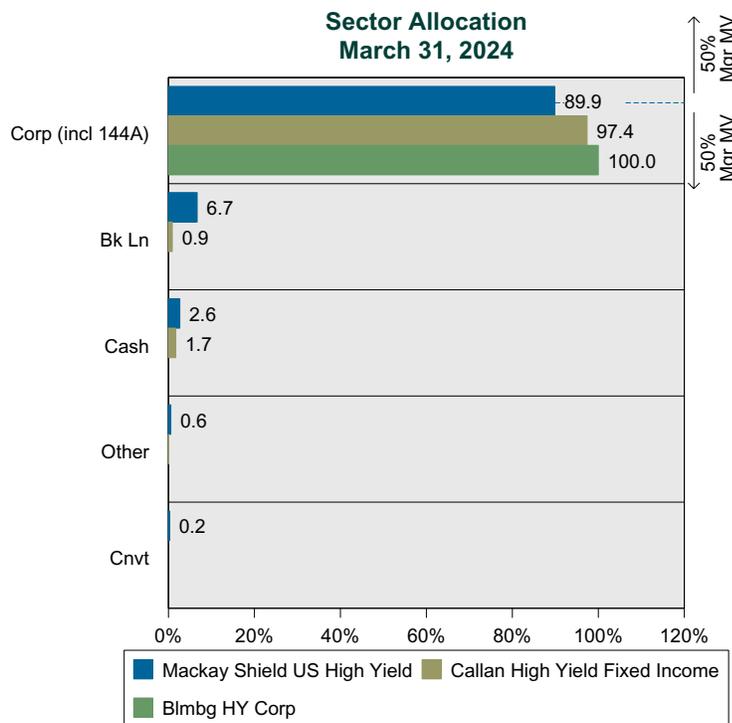
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style. Fixed Income Portfolio characteristics includes Cash Pool allocation.

## Fixed Income Portfolio Characteristics Rankings Against Callan High Yield Fixed Income as of March 31, 2024



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector allocation with the average allocation across all the members of the manager's style. The second graph compares the manager's weighted average quality rating with the range of quality ratings for the style.

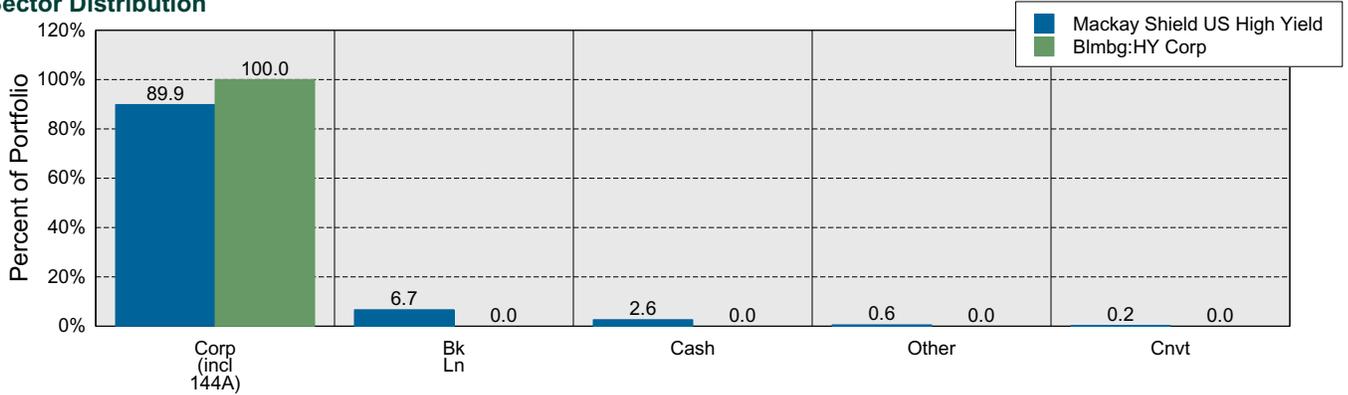


# Mackay Shield US High Yield Portfolio Characteristics Summary As of March 31, 2024

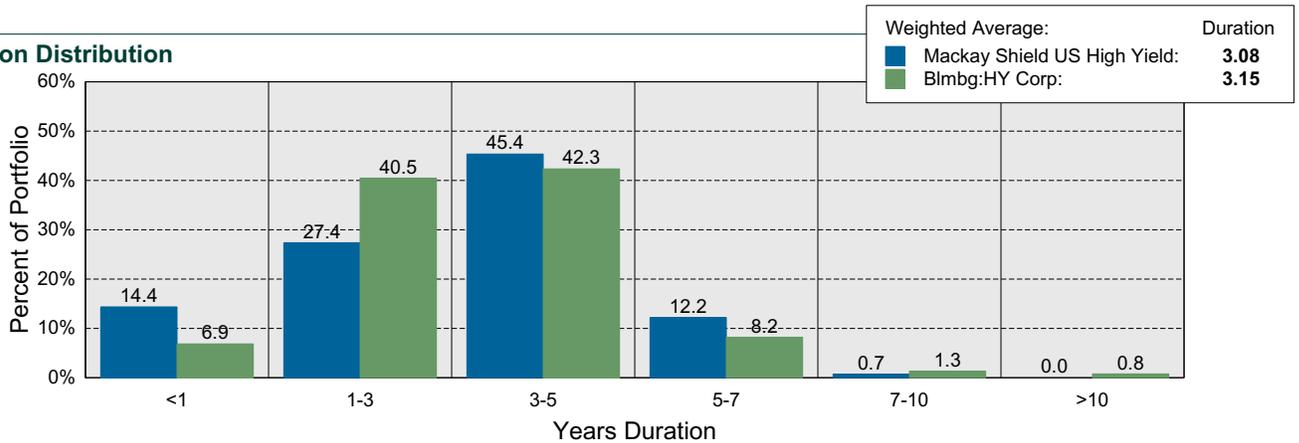
## Portfolio Structure Comparison

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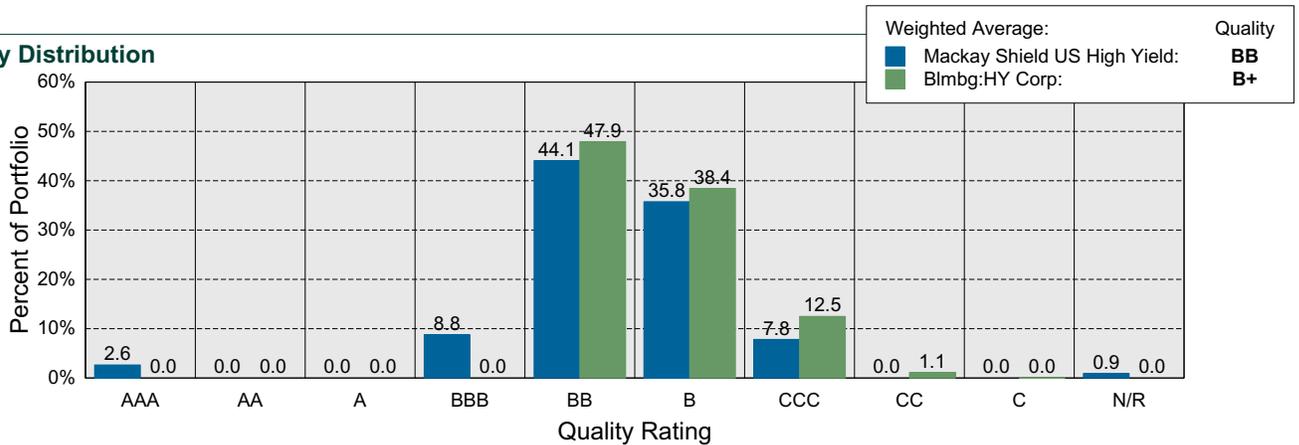
### Sector Distribution



### Duration Distribution



### Quality Distribution



# Principal Preferred Securities Period Ended March 31, 2024

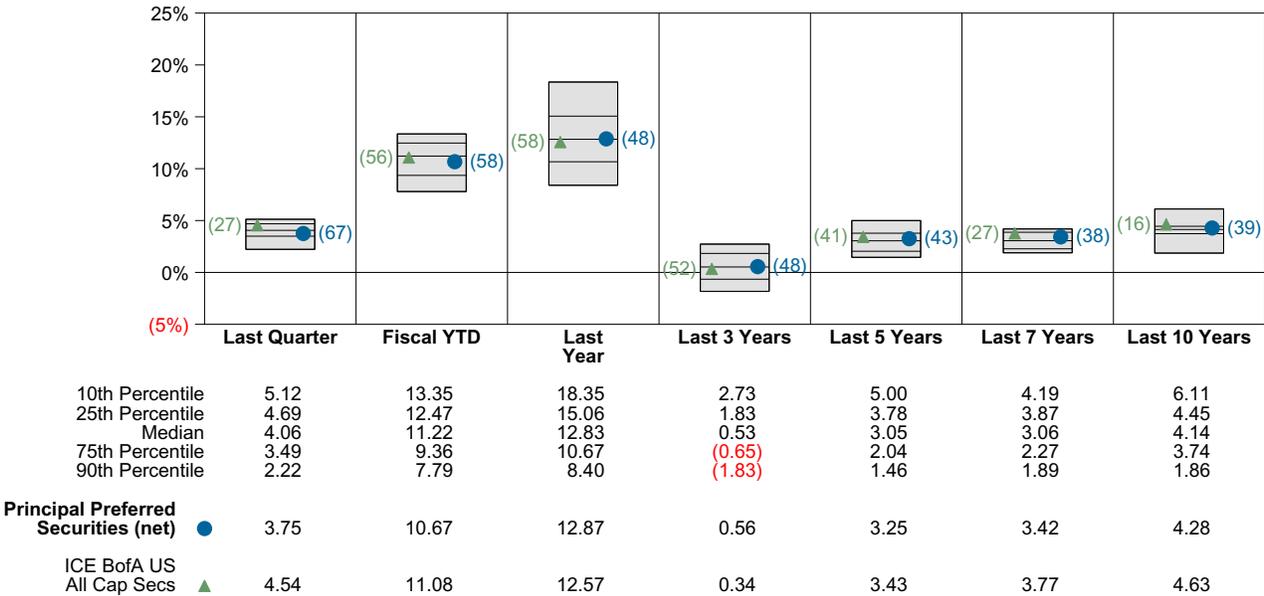
## Investment Philosophy

Spectrum is a wholly owned subsidiary of Principal Global Investors. The firm has an exclusive focus on preferred securities globally. The firm employs an active approach to managing this sector with an emphasis on income as well as total return. Preferred securities are structurally subordinated fixed income investments that come in many flavors, each with unique structures and with many different labels. Common characteristics, however, are that they are subordinate to senior investment grade debt, pay a specified coupon, and are callable by the issuer. Credit quality typically ranges from BBB+ to BB. Coupon payments can be deferrable, non-deferrable and cumulative or non-cumulative. These attributes make the instruments complex and active management requires skill and experience in this sector. Principal Preferred Securities was funded July 30, 2020. Returns prior to inception reflect the Principal Preferred Securities mutual fund historical returns.

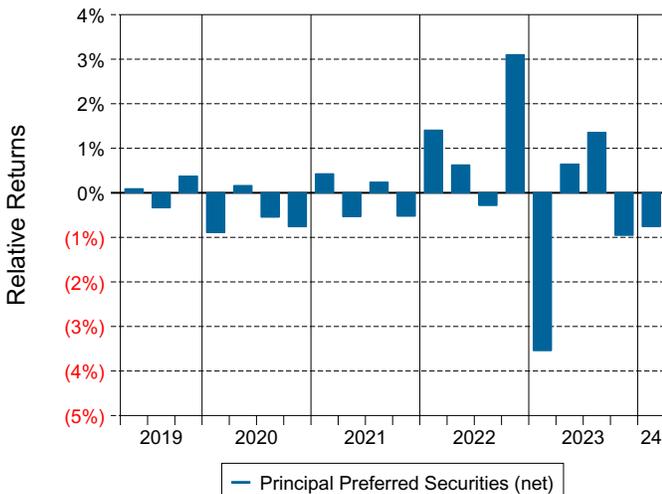
## Quarterly Summary and Highlights

- Principal Preferred Securities (net)'s portfolio posted a 3.75% return for the quarter placing it in the 67 percentile of the Morningstar Preferred Stock Funds group for the quarter and in the 48 percentile for the last year.
- Principal Preferred Securities (net)'s portfolio underperformed the ICE BofA US All Cap Secs by 0.79% for the quarter and outperformed the ICE BofA US All Cap Secs for the year by 0.30%.

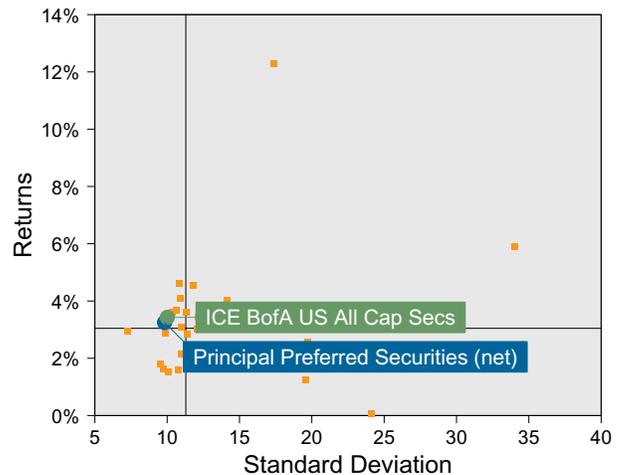
## Performance vs Morningstar Preferred Stock Funds (Net)



## Relative Return vs ICE BofA US All Cap Secs



## Morningstar Preferred Stock Funds (Net) Annualized Five Year Risk vs Return

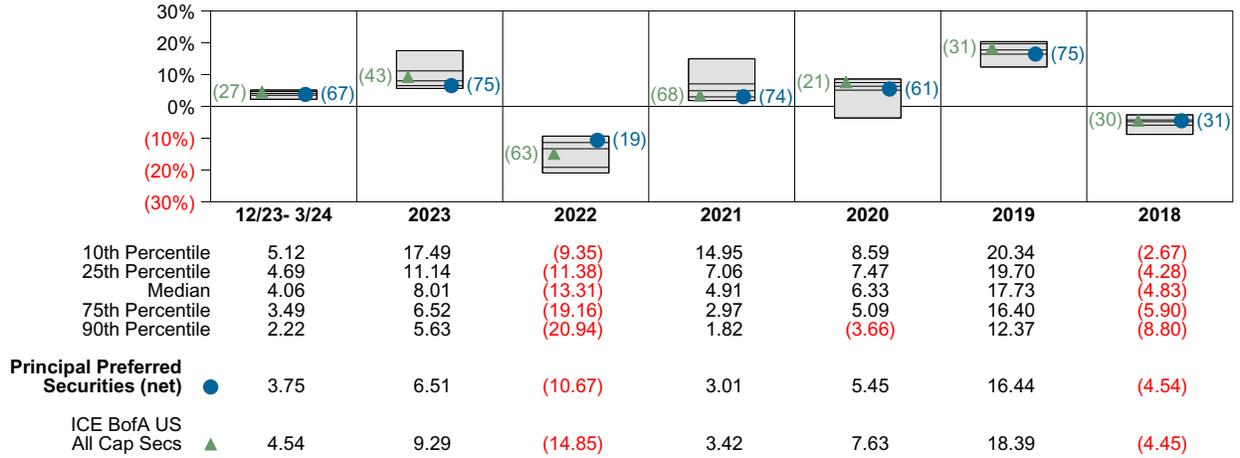


# Principal Preferred Securities Return Analysis Summary

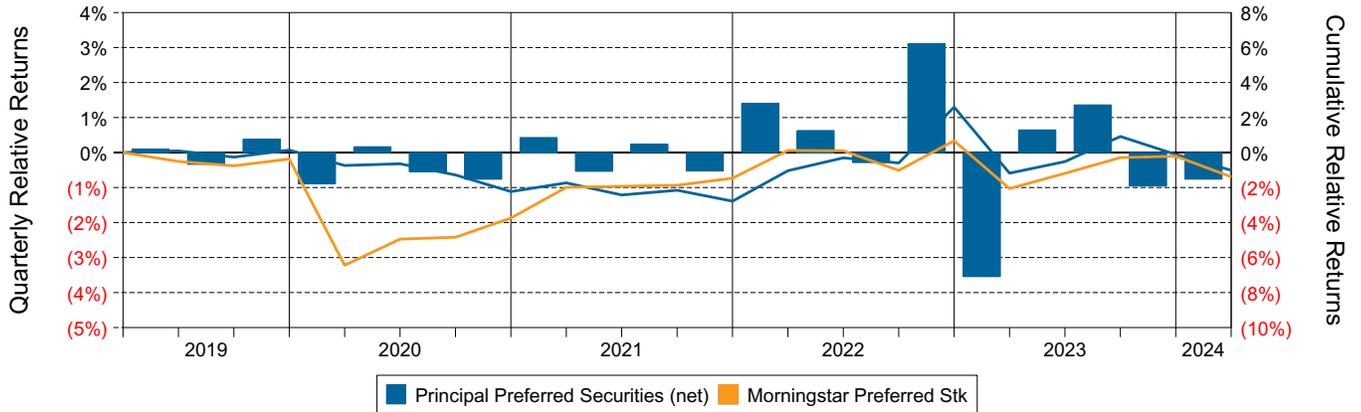
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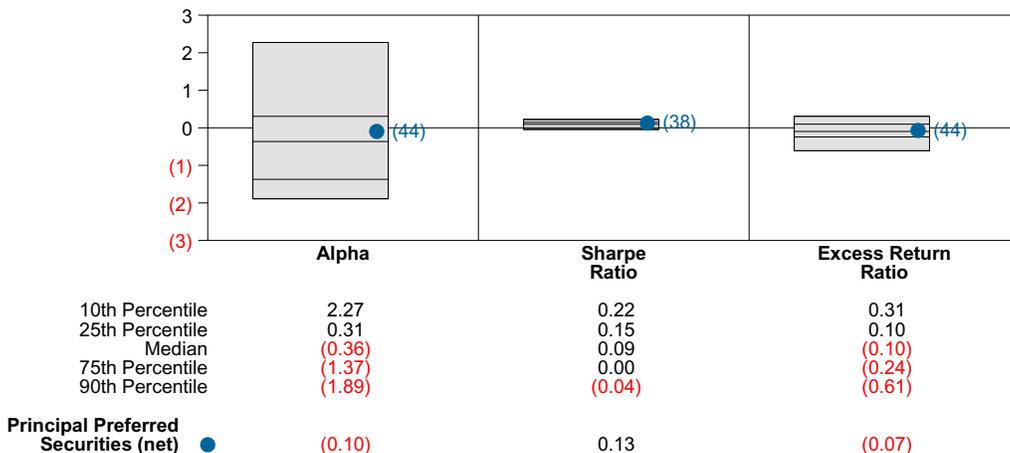
### Performance vs Morningstar Preferred Stock Funds (Net)



### Cumulative and Quarterly Relative Returns vs ICE BofA US All Cap Secs



### Risk Adjusted Return Measures vs ICE BofA US All Cap Secs Rankings Against Morningstar Preferred Stock Funds (Net) Five Years Ended March 31, 2024

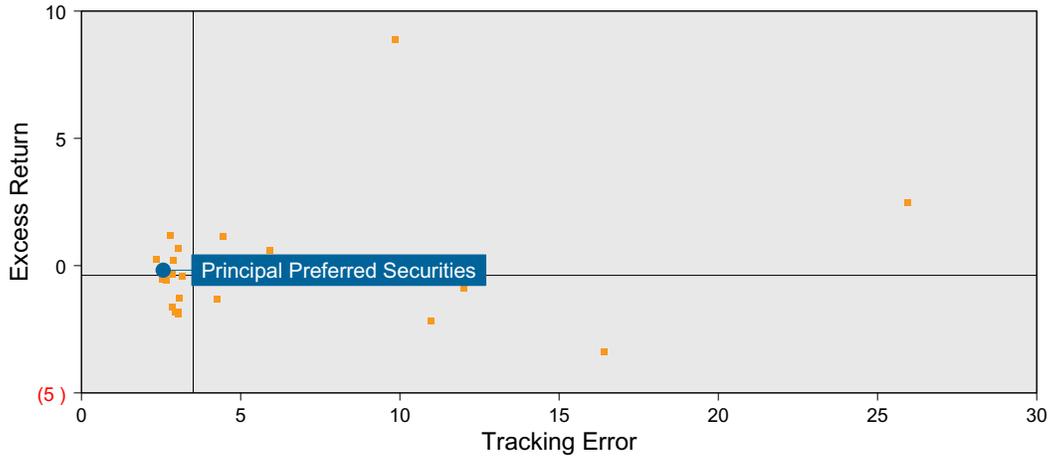


# Principal Preferred Securities Risk Analysis Summary

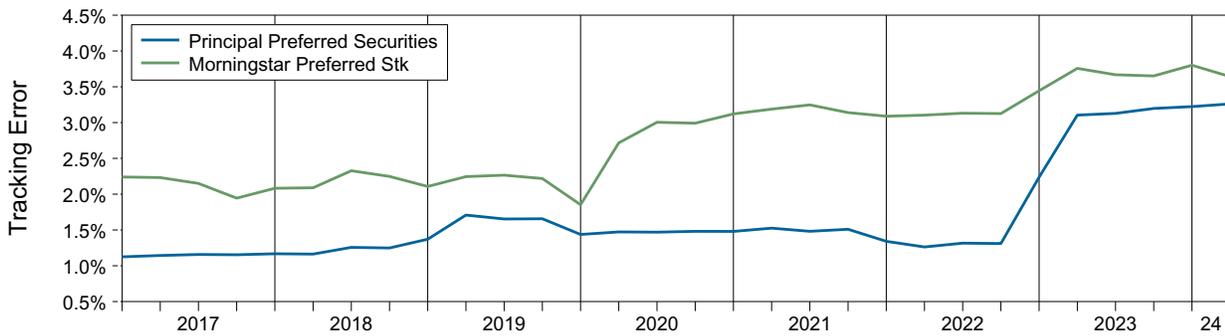
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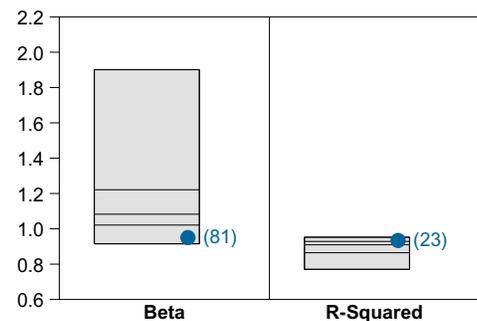
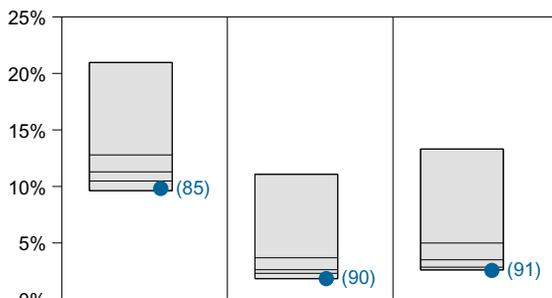
### Risk Analysis vs Morningstar Preferred Stock Funds (Net) Five Years Ended March 31, 2024



### Rolling 12 Quarter Tracking Error vs ICE BofA US All Cap Secs



### Risk Statistics Rankings vs ICE BofA US All Cap Secs Rankings Against Morningstar Preferred Stock Funds (Net) Five Years Ended March 31, 2024



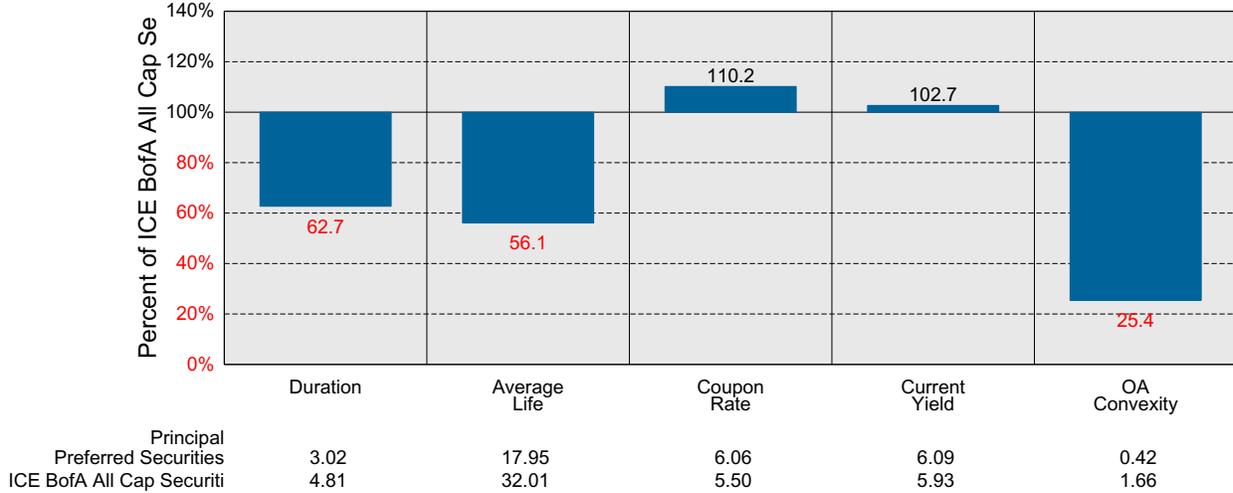
|                                       | Standard Deviation | Downside Risk | Tracking Error | Beta        | R-Squared   |
|---------------------------------------|--------------------|---------------|----------------|-------------|-------------|
| 10th Percentile                       | 20.97              | 11.07         | 13.31          | 1.90        | 0.95        |
| 25th Percentile                       | 12.79              | 3.69          | 4.99           | 1.22        | 0.93        |
| Median                                | 11.29              | 2.63          | 3.51           | 1.08        | 0.91        |
| 75th Percentile                       | 10.48              | 2.31          | 2.86           | 1.02        | 0.86        |
| 90th Percentile                       | 9.62               | 1.84          | 2.61           | 0.92        | 0.77        |
| <b>Principal Preferred Securities</b> | <b>9.82</b>        | <b>1.84</b>   | <b>2.57</b>    | <b>0.95</b> | <b>0.93</b> |

# Principal Preferred Securities Bond Characteristics Analysis Summary

## Portfolio Characteristics

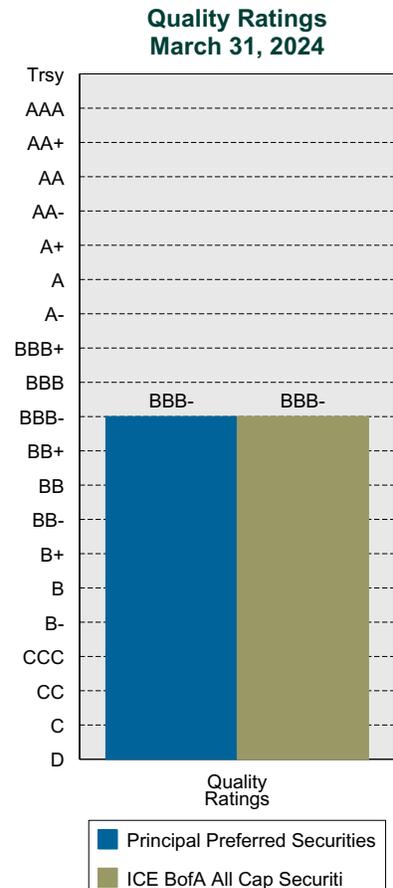
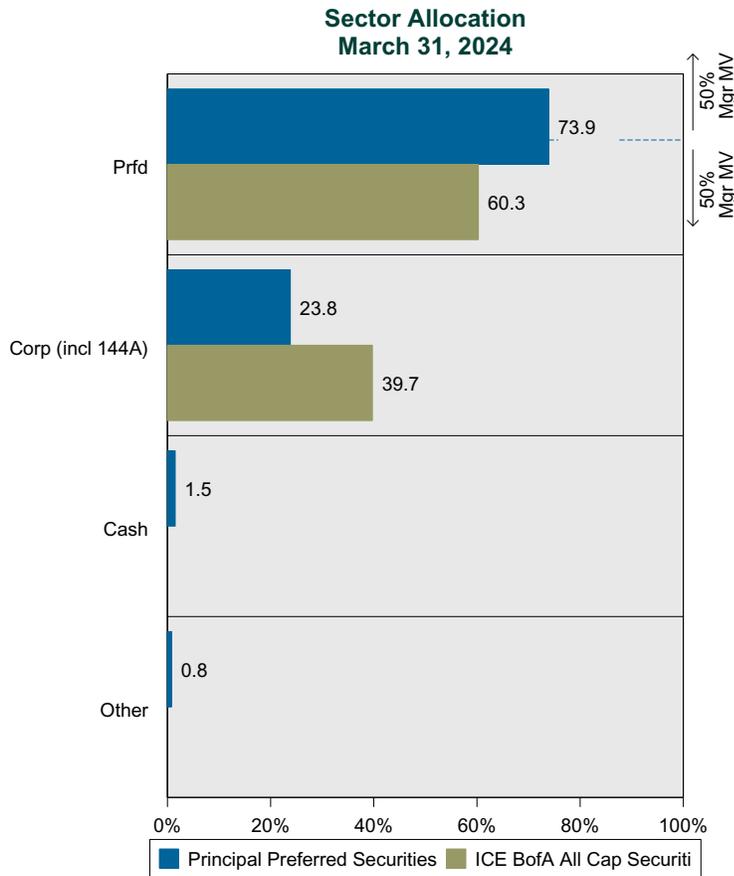
This graph compares the manager's portfolio characteristics with the range of characteristics for the portfolios which make up the manager's style group. This analysis illustrates whether the manager's current holdings are consistent with other managers employing the same style. Fixed Income Portfolio characteristics includes Cash Pool allocation.

## Portfolio Characteristics Relative to ICE BofA All Cap Securiti as of March 31, 2024



## Sector Allocation and Quality Ratings

The first graph compares the manager's sector weights for the most recent quarter with those of the benchmark. The second graph compares the manager's weighted average quality rating with those of the benchmark.

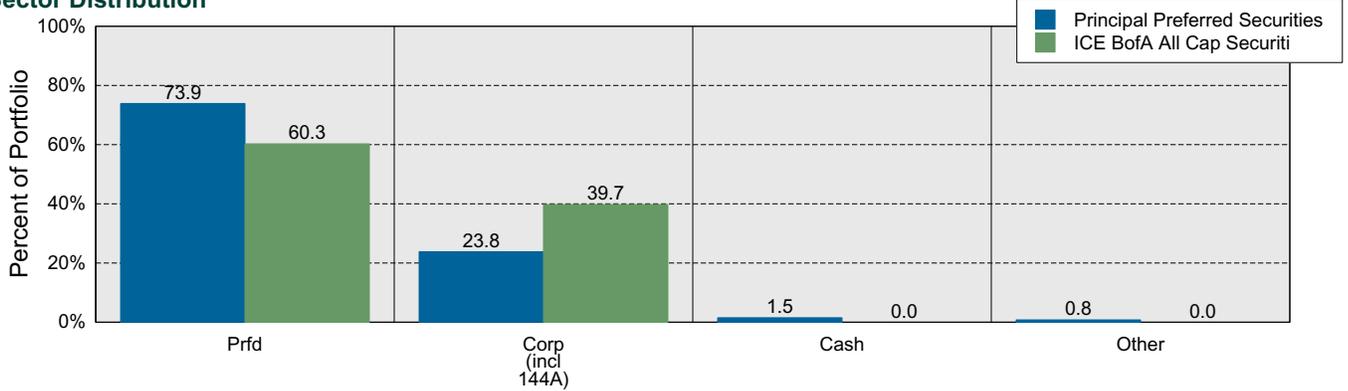


# Principal Preferred Securities Portfolio Characteristics Summary As of March 31, 2024

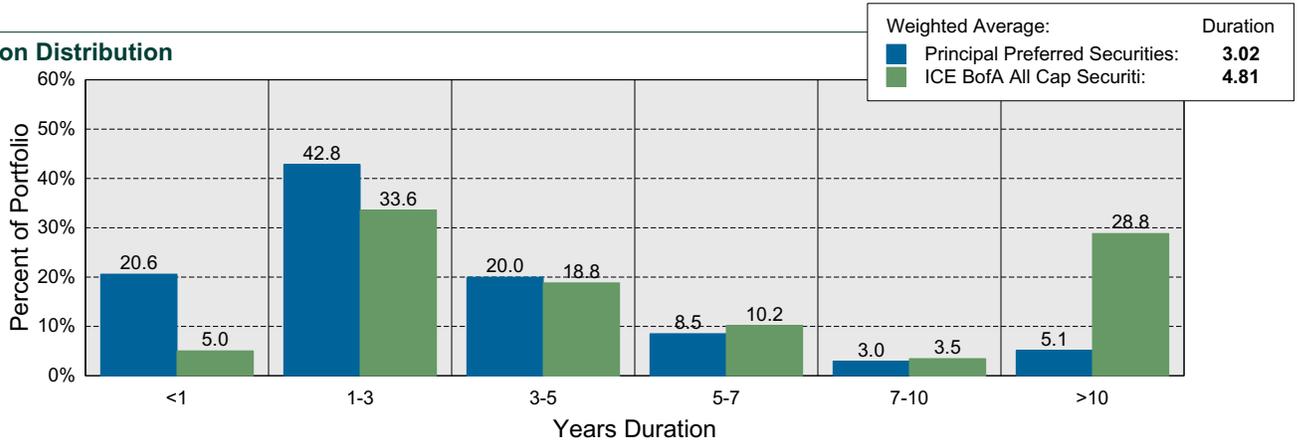
## Portfolio Structure Comparison

The charts below compare the structure of the portfolio to that of the index from the three perspectives that have the greatest influence on return. The first chart compares the two portfolios across sectors. The second chart compares the duration distribution. The last chart compares the distribution across quality ratings.

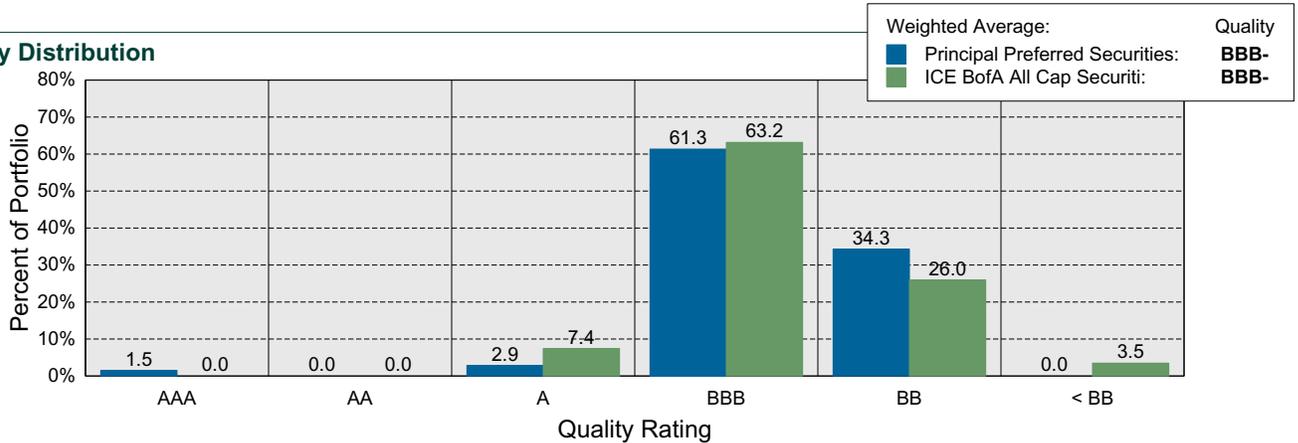
### Sector Distribution



### Duration Distribution



### Quality Distribution





## Quarterly Highlights

The Callan Institute provides research to update clients on the latest industry trends, carefully structured educational programs to enhance the knowledge of industry professionals, and events to enhance dialogue among investing professionals. Visit [www.callan.com/research-library](http://www.callan.com/research-library) to see all of our publications, and [www.callan.com/blog](http://www.callan.com/blog) to view our blog. For more information contact Barb Gerraty at 415-274-3093 / [institute@callan.com](mailto:institute@callan.com).

## New Research from Callan's Experts

**[2024-2033 Capital Markets Assumptions](#)** | View our interactive webpage and charticle outlining our 10-year assumptions. Our white paper and associated webinar also detail the process involved in creating our assumptions and the reasoning behind them.

**[Callan Periodic Table of Investment Returns: Year-end 2023](#)** | The Periodic Table of Investment Returns depicts annual returns for key asset classes, ranked from best to worst performance for each calendar year.

**[Rental Housing Primer: 1Q24 RAR](#)** | Callan's Aaron Quach provides analysis of the key subsectors within the rental housing sector.

**[STAR Report Executive Summary: Year-End 2023](#)** | The Style, Trend, Analysis & Research (STAR) report provides in-depth analysis of asset flows across public strategies and discussion of alternatives.

### Webinar Replays

**[Research Café: ESG Interview Series](#)** | This session features Tom Shingler, Callan ESG practice leader, interviewing Chris Fidler, from the Codes & Standards team at the CFA Institute.

### Blog Highlights

**[SEC Releases Final Climate Disclosure Rule](#)** | The objective for these rules is to aid investors in making relatable comparisons of companies by providing transparency into the potential financial effects of climate-related risks.

**[A Strong Finish to 2023 Bodes Well for Hedge Funds in 2024](#)** | Hedge funds finished off 2023 on a strong note with the HFRI Fund Weighted Composite ending 8.1% higher and the Callan Institutional Hedge Fund Peer Group gaining 7.5%.

**[The Magnificent Seven and Large Cap Portfolios](#)** | The Seven's presence, both in weight and attribution, affected just about every investment managers' large cap portfolio.

### Quarterly Updates

**[Private Equity Update, 4Q23](#)** | A high-level summary of private equity activity in the quarter through all the investment stages

**[Active vs. Passive Charts, 4Q23](#)** | A comparison of active managers alongside relevant benchmarks over the long term

**[Market Pulse, 4Q23](#)** | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

**[Capital Markets Review, 4Q23](#)** | Analysis and a broad overview of the economy and public and private markets activity each quarter across a wide range of asset classes

**[Hedge Fund Update, 4Q23](#)** | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

**[Real Assets Update, 4Q23](#)** | A summary of market activity for real assets and private real estate during the quarter

**[Private Credit Update, 4Q23](#)** | A review of performance and fundraising activity for private credit during the quarter

**[Callan Target Date Index™, 4Q23](#)** | Tracks the performance and asset allocation of available target date mutual funds and CITs

**[Callan DC Index™, 4Q23](#)** | Provides underlying fund performance, asset allocation, and cash flows of more than 100 large defined contribution plans representing approximately \$400 billion in assets.

## Events

A complete list of all upcoming events can be found on our website: [callan.com/events-education](https://callan.com/events-education).

Please mark your calendar and look forward to upcoming invitations:

### June Regional Workshops

June 25, 2024 – Atlanta

June 27, 2024 – San Francisco

For more information about events, please contact Barb Gerraty: 415-274-3093 / [gerraty@callan.com](mailto:gerraty@callan.com)

## Education: By the Numbers

50+

Unique pieces of research the Institute generates each year

525

Attendees (on average) of the Institute's annual National Conference

4,845

Total attendees of the "Callan College" since 1994

## Education

Founded in 1994, the "Callan College" offers educational sessions for industry professionals involved in the investment decision-making process.

### Introduction to Investments

June 11-12, 2024 – Chicago

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities.

### Alternative Investments

Aug. 21-22, 2024 – Virtual

Alternative investments like private equity, hedge funds, and real estate can play a key role in any portfolio. In our "Callan College" on Alternatives, you will learn about the importance of allocations to alternatives, and how to consider integrating, evaluating, and monitoring them.

Our virtual sessions are held over two to three days with virtual modules of 2.5-3 hours, while in-person sessions run either a full day or one-and-a-half days. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including registration can be found at: [callan.com/events-education](https://callan.com/events-education)



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."

Greg Allen, CEO and Chief Research Officer



## List of Callan’s Investment Manager Clients

Confidential – For Callan Client Use Only

Callan takes its fiduciary and disclosure responsibilities to clients very seriously. We recognize that there are numerous potential conflicts of interest encountered in the investment consulting industry, and that it is our responsibility to manage those conflicts effectively and in the best interest of our clients. At Callan, we employ a robust process to identify, manage, monitor, and disclose potential conflicts on an ongoing basis.

The list below is an important component of our conflicts management and disclosure process. It identifies those investment managers that pay Callan fees for educational, consulting, software, database, or reporting products and services. We update the list quarterly because we believe that our fund sponsor clients should know the investment managers that do business with Callan, particularly those investment manager clients that the fund sponsor clients may be using or considering using. Please note that if an investment manager receives a product or service on a complimentary basis (e.g., attending an educational event), they are not included in the list below. Callan is committed to ensuring that we do not consider an investment manager’s business relationship with Callan, or lack thereof, in performing evaluations for or making suggestions or recommendations to its other clients. Please refer to Callan’s ADV Part 2A for a more detailed description of the services and products that Callan makes available to investment manager clients through our Institutional Consulting Group, Independent Adviser Group, and Fund Sponsor Consulting Group. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Fund sponsor clients may request a copy of the most currently available list at any time. Fund sponsor clients may also request specific information regarding the fees paid to Callan by particular fund manager clients. Per company policy, information requests regarding fees are handled exclusively by Callan’s Compliance department.

| Manager Name                        |
|-------------------------------------|
| abrdn                               |
| Acadian Asset Management LLC        |
| Adams Street Partners, LLC          |
| Aegon Asset Management              |
| AllianceBernstein                   |
| Allspring Global Investments, LLC   |
| Altrinsic Global Advisors, LLC      |
| American Century Investments        |
| Amundi US, Inc.                     |
| Antares Capital LP                  |
| Apollo Global Management, Inc.      |
| AQR Capital Management              |
| Ares Management LLC                 |
| ARGA Investment Management, LP      |
| Ariel Investments, LLC              |
| Aristotle Capital Management, LLC   |
| Artemis Real Estate Partners        |
| Atlanta Capital Management Co., LLC |

| Manager Name                                 |
|--|
| Audax Private Debt                           |
| AXA Investment Managers                      |
| Baillie Gifford International, LLC           |
| Baird Advisors                               |
| Barings LLC                                  |
| Baron Capital Management, Inc.               |
| Barrow, Hanley, Mewhinney & Strauss, LLC     |
| Belle Haven Investment L.P.                  |
| BentallGreenOak                              |
| Beutel, Goodman & Company Ltd.               |
| Black Creek Investment Management Inc.       |
| BlackRock                                    |
| Blackstone Group (The)                       |
| Blue Owl Capital, Inc.                       |
| BNY Mellon Asset Management                  |
| Boston Partners                              |
| Brandes Investment Partners, L.P.            |
| Brandywine Global Investment Management, LLC |

| Manager Name                                   |
|--|
| Brookfield Asset Management Inc.               |
| Brown Brothers Harriman & Company              |
| Brown Investment Advisory & Trust Company      |
| Capital Group                                  |
| CastleArk Management, LLC                      |
| Cercano Management LLC                         |
| CIBC Asset Management Inc.                     |
| CIM Group, LP                                  |
| Clarion Partners                               |
| ClearBridge Investments, LLC                   |
| Cohen & Steers Capital Management, Inc.        |
| Columbia Threadneedle Investments NA           |
| Comvest Partners                               |
| CQS  |
| Crescent Capital Group LP                      |
| Dana Investment Advisors, Inc.                 |
| D.E. Shaw Investment Management, LLC           |
| DePrince, Race & Zollo, Inc.                   |
| Diamond Hill Capital Management, Inc.          |
| Dimensional Fund Advisors L.P.                 |
| Doubleline                                     |
| DWS  |
| EARNEST Partners, LLC                          |
| Fayez Sarofim & Company                        |
| Federated Hermes, Inc.                         |
| Fidelity Institutional Asset Management        |
| Fiera Capital Corporation                      |
| First Eagle Investment Management, LLC         |
| First Hawaiian Bank Wealth Management Division |
| Fisher Investments                             |
| Franklin Templeton                             |
| Fred Alger Management, LLC                     |
| GAMCO Investors, Inc.                          |
| GlobeFlex Capital, L.P.                        |
| Goldman Sachs                                  |
| Golub Capital                                  |
| GW&K Investment Management                     |
| Harbor Capital Group Trust                     |
| Hardman Johnston Global Advisors LLC           |
| Haven Global Partners, LLC                     |

| Manager Name                                      |
|---|
| Heitman LLC                                       |
| Hotchkis & Wiley Capital Management, LLC          |
| HPS Investment Partners, LLC                      |
| IFM Investors                                     |
| Impax Asset Management LLC                        |
| Income Research + Management                      |
| Insight Investment                                |
| Intercontinental Real Estate Corporation          |
| Invesco   |
| J.P. Morgan                                       |
| Janus   |
| Jennison Associates LLC                           |
| Jensen Investment Management                      |
| Jobs Peak Advisors                                |
| Kayne Anderson Rudnick Investment Management, LLC |
| King Street Capital Management, L.P.              |
| Kohlberg Kravis Roberts & Co. L.P. (KKR)          |
| Lazard Asset Management                           |
| LGIM America                                      |
| Lincoln National Corporation                      |
| Longview Partners                                 |
| Loomis, Sayles & Company, L.P.                    |
| Lord, Abbett & Company                            |
| Los Angeles Capital Management                    |
| LSV Asset Management                              |
| MacKay Shields LLC                                |
| Macquarie Asset Management                        |
| Manulife Investment Management                    |
| Marathon Asset Management, L.P.                   |
| Mawer Investment Management Ltd.                  |
| MetLife Investment Management                     |
| MFS Investment Management                         |
| Mondrian Investment Partners Limited              |
| Montag & Caldwell, LLC                            |
| Morgan Stanley Investment Management              |
| MUFG Bank, Ltd.                                   |
| Natixis Investment Managers                       |
| Neuberger Berman                                  |
| Newton Investment Management                      |
| Northern Trust Asset Management                   |

| Manager Name                                      |
|---|
| Nuveen  |
| Oaktree Capital Management, L.P.                  |
| Orbis Investment Management Limited               |
| P/E Investments                                   |
| Pacific Investment Management Company             |
| Parametric Portfolio Associates LLC               |
| Parnassus Investments                             |
| Partners Group (USA) Inc.                         |
| Pathway Capital Management, LP                    |
| Peregrine Capital Management, LLC                 |
| PGIM DC Solutions                                 |
| PGIM Fixed Income                                 |
| PGIM Quantitative Solutions LLC                   |
| Pictet Asset Management                           |
| PineBridge Investments                            |
| Polen Capital Management, LLC                     |
| PPM America, Inc.                                 |
| Pretium Partners, LLC                             |
| Principal Asset Management                        |
| Pzena Investment Management, LLC                  |
| Raymond James Investment Management               |
| RBC Global Asset Management                       |
| Regions Financial Corporation                     |
| S&P Dow Jones Indices                             |
| Sands Capital Management                          |
| Schroder Investment Management North America Inc. |

| Manager Name                             |
|--|
| Segall Bryant & Hamill                   |
| SLC Management                           |
| Sprucegrove Investment Management Ltd.   |
| Star Mountain Capital, LLC               |
| State Street Global Advisors             |
| Strategic Global Advisors, LLC           |
| T. Rowe Price Associates, Inc.           |
| TA Realty                                |
| TD Global Investment Solutions           |
| The TCW Group, Inc.                      |
| Thompson, Siegel & Walmsley LLC          |
| TPG Angelo Gordon                        |
| UBS Asset Management                     |
| VanEck                                   |
| Versus Capital Group                     |
| Victory Capital Management Inc.          |
| Virtus Investment Partners, Inc.         |
| Vontobel Asset Management                |
| Voya                                     |
| Walter Scott & Partners Limited          |
| WCM Investment Management                |
| Wellington Management Company LLP        |
| Western Asset Management Company LLC     |
| Westfield Capital Management Company, LP |
| William Blair & Company LLC              |
| Xponance, Inc.                           |

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Callan undertakes no obligation to update the information contained herein except as specifically requested by the client.

Past performance is no guarantee of future results.

# SHORT DURATION FIXED INCOME

Portfolio Review as of March 31, 2024

**Presentation to:**  
State of Colorado  
Public School Fund Investment Board



## Callan

**Presented by:**

**Greg Wilensky, CFA**  
Head of U.S. Fixed Income,  
Portfolio Manager

**Lindsey Camp**  
Director, Client Relations  
North America Institutional

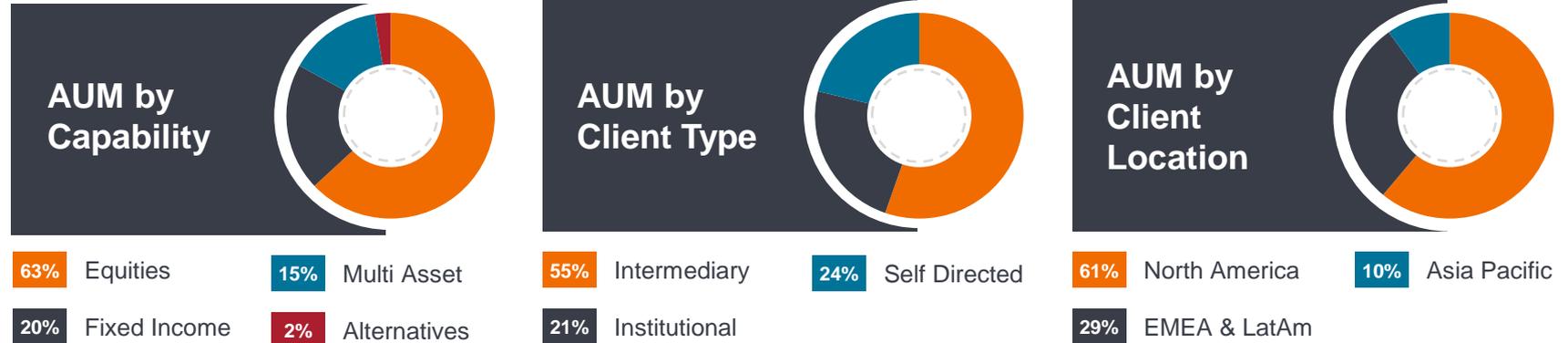
**May 13, 2024**

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# Janus Henderson Investors

Assets under management: \$352.6B | £279.1B | €326.5B



## KEY STATISTICS

- **Over 2,000**  
Employees worldwide
- **24**  
Offices worldwide
- **13 years**  
average portfolio managers firm tenure
- **23 years**  
average portfolio managers industry experience

Source: Janus Henderson Investors, as of March 31, 2024.  
Note: AUM data excludes Exchange-Traded Note (ETN) assets.

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# Fixed income platform



**\$89.0B**

assets under management

**Jim Cielinski, CFA**

Global Head of Fixed Income  
41 years experience

**Jessica Leoncini**

Head of Fixed Income Client  
Portfolio Management  
20 years experience

**45 year**

History of fixed  
income investing

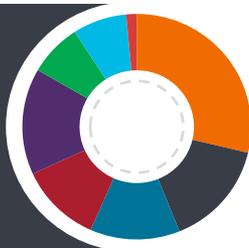
**6 locations**

London, Denver, Copenhagen,  
Newport Beach, Sydney, Melbourne

**114**

Investment  
professionals

**AUM by  
capability**



|     |                           |         |
|-----|---------------------------|---------|
| 29% | Core/Core Plus            | \$25.6B |
| 15% | Australian Fixed Interest | \$13.5B |
| 13% | Corporate Credit          | \$11.3B |
| 12% | Global Bonds              | \$10.3B |
| 15% | Securitized Credit        | \$13.6B |
| 7%  | Global Short Duration     | \$6.7B  |
| 8%  | Multi-Sector Credit       | \$6.8B  |
| 1%  | Emerging Markets          | \$1.3B  |

| Core / Core Plus                  | Australian Fixed Interest           | Corporate Credit                    | Global Bonds  |
|-----------------------------------|-------------------------------------|-------------------------------------|---|
| Greg Wilensky, CFA                | Jay Sivapalan, CFA                  | Jim Cielinski, CFA<br>Tom Ross, CFA | John Pattullo<br>Jenna Barnard, CFA                                   |
| Global Short Duration & Liquidity | Securitized Credit                  | Multi-Sector Credit                 | Emerging Markets Debt   |
| Daniel Siluk                      | John Kerschner, CFA<br>Colin Fleury | John Lloyd                          | Bent Lystbaek<br>Jacob Nielsen<br>Thomas Haugaard<br>Sorin Pirău, CFA |

Source: Janus Henderson Investors, as of March 31, 2024.

Note: The fixed income sleeve of the Balanced strategy is included in the Core/Core Plus capability and total AUM. Totals may not sum due to rounding.

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# Investment team

Short Duration – \$1.3B assets under management



**Greg Wilensky, CFA**  
Head of U.S. Fixed Income, Portfolio Manager  
31 years experience



**Michael Keough**  
Portfolio Manager  
18 years experience



**Phil Gronniger, CFA**  
Client Portfolio Manager  
26 years experience



**Corporate Credit** ▾

18 analysts | 17 years average experience

**Mike Talaga, CFA**  
Head of Credit Research

**Securitized** ▾

10 analysts | 14 years average experience

**John Kerschner, CFA**  
Head of U.S. Securitized Products,  
Portfolio Manager

**Colin Fleury**  
Head of Secured Credit, Portfolio Manager

**Quantitative** ▾

4 analysts | 13 years average experience

**Erin Noel, CFA**  
Data strategist



**Fixed Income Trading**

15 traders  
23 years average experience

**Fixed Income Risk Management**

8 analysts  
14 years average experience

**Equity Central Research**

36 analysts  
17 years average experience

**Responsibility Team**

26 professionals  
10 years average experience

Source: Janus Henderson Investors, as of March 31, 2024.

Note: Global Securitized and Equity Research include individuals who are considered both analysts and portfolio managers. Years of experience refers to industry experience.

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# Executive summary

## State of Colorado Public School Fund Investment Board

| Performance (%)   | Q1 2024      | 1 Year       | 3 Year       | 5 Year       | Since Inception |
|---|--------------|--------------|--------------|--------------|-----------------|
| COS100 Account (Gross)  | 1.11         | 5.72         | 1.28         | 2.23         | 2.45            |
| COS100 Account (Net)  | 1.07         | 5.53         | 1.08         | 2.03         | 2.25            |
| BBG 1-3 Yr Gov't/Credit Index                                   | 0.42         | 3.49         | 0.25         | 1.35         | 1.70            |
| BBG 1-3 Yr Gov't/Credit (85%) / ICE BofA Cash HY BB 1-3Yr (15%) | 0.45         | 4.15         | 0.67         | 1.77         | 2.10            |
| <b>Difference (Gross vs. Primary Index)</b>                     | <b>+0.69</b> | <b>+2.23</b> | <b>+1.03</b> | <b>+0.88</b> | <b>+0.75</b>    |
| <b>Difference (Net vs. Primary Index)</b>                       | <b>+0.65</b> | <b>+2.04</b> | <b>+0.83</b> | <b>+0.68</b> | <b>+0.55</b>    |

### Summary Information

|                             |             |
|-----------------------------|-------------|
| Inception Date              | Nov 9, 2018 |
| Strategy Assets             | \$1.3B      |
| Yield-to-Worst              | 5.8%        |
| Effective Duration          | 2.0         |
| Duration Time Spread (DTS)* | 2.3         |
| Tracking Error (3 year)     | 0.9         |
| Standard Deviation (3 year) | 2.5         |

### Attribution – One Year

#### Spread Risk

- Our overweight spread risk positioning was a key contributor to performance over the one-year period.

#### Interest Rate Management

- Duration positioning relative to the benchmark contributed to performance.

#### Sector Allocation and Security Selection

- Asset allocation and security selection both contributed to performance.
- Our overweight to securitized credit was positive, while security selection within investment grade corporate bonds also contributed. Security selection within Agency MBS detracted.

### Positioning

- We entered the period with more spread risk than the benchmark. We further increased our spread risk as the economic outlook improved. This increase primarily came via purchases of investment grade corporate bonds which offer incremental yield and limited downside risk.
- We entered the period with a modest duration underweight and increased duration to end the period with a modest overweight duration position.

### Sector Allocation

#### Weight %

|                            |      |
|----------------------------|------|
| Treasuries                 | 28.2 |
| Investment Grade Corporate | 34.6 |
| High Yield Corporate       | 1.8  |
| Inflation Linked           | —    |
| Agency MBS                 | 6.2  |
| Non-Agency MBS             | 9.8  |
| ABS                        | 8.0  |
| CMBS                       | 8.7  |
| CLO                        | 1.8  |
| Government Related         | 0.4  |
| Cash & Equivalents         | 0.5  |

Source: Janus Henderson Investors, as of March 31, 2024.

Note: Inception date: November 9, 2018. Returns for one year or greater are annualized. \*Duration Times Spread (DTS) is a method for measuring spread risk. It is calculated by simply multiplying three readily available bond characteristics: the spread-duration, the weight and the credit spread.

**Past performance cannot guarantee future results.**

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# Quarter in review – Q1 2024

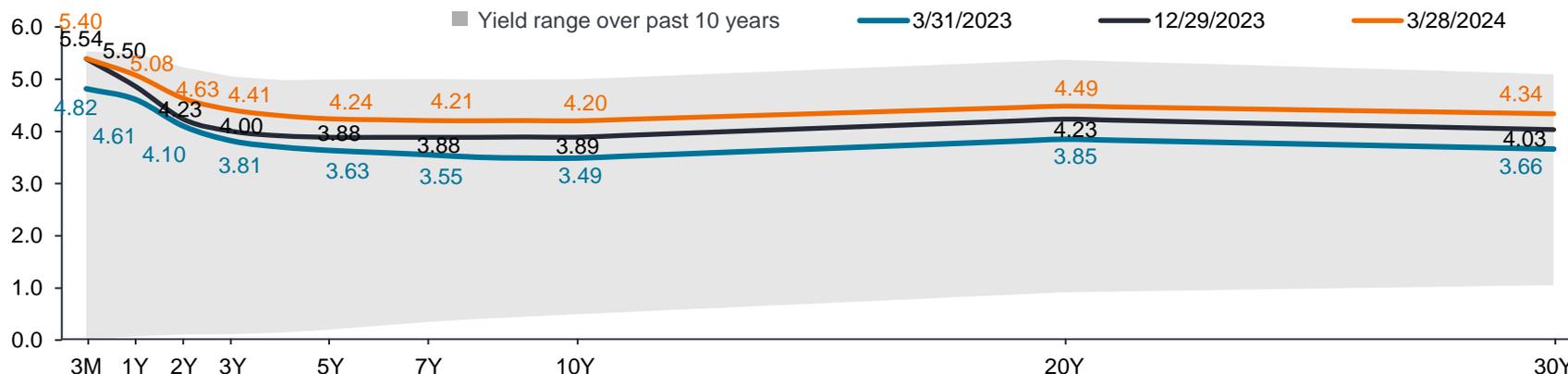
## Key Takeaways

- The Fed elected to leave rates steady at 5.25% to 5.50% at its March meeting. However, the central bank remained firmly committed to its dovish policy pivot, while also suggesting that a tapering of quantitative tightening is in the cards fairly soon.
- The yield on the 10-year U.S. Treasury ended the quarter at 4.20%, versus 3.88% at the end of December. Corporate investment-grade and high-yield credit spreads tightened, as investors increased their risk appetite on strong corporate earnings and forward guidance.

## Valuations (Option Adjusted Spread)

| Index                                  | 12/31/23   | 3/31/24    | Change (bps) | Change (%) |
|--|------------|------------|--------------|------------|
| Investment Grade Corporate Bond Index  | 99         | 90         | -9           | -9         |
| <b>High Yield Corporate Bond Index</b> | <b>323</b> | <b>299</b> | <b>-24</b>   | <b>-7</b>  |
| CMBS Index                             | 126        | 96         | -30          | -24        |
| ABS Index                              | 68         | 55         | -13          | -19        |

## U.S. Yield Curve (%)



| Curve            | 3 Month | 1 Year | 2 Year | 3 Year | 5 Year | 7 Year | 10 Year | 20 Year | 30 Year |
|------------------|---------|--------|--------|--------|--------|--------|---------|---------|---------|
| Change (Q4 / Q1) | 0.01    | 0.22   | 0.40   | 0.41   | 0.36   | 0.33   | 0.32    | 0.25    | 0.31    |
| Change (1-year)  | 0.58    | 0.47   | 0.53   | 0.60   | 0.61   | 0.66   | 0.72    | 0.64    | 0.68    |

Source: Bloomberg, as of March 31, 2024.

Note: Total excess performance compares the excess return of a grouping in the portfolio to the excess return of that grouping in the benchmark and the excess return of that grouping in the benchmark to the benchmark overall, factoring in any difference in weight. Excess return is calculated by comparing the performance of a security to a hypothetical duration-matched security with no credit risk, and rolling up securities by grouping and is not a presentation of actual performance.

# Performance attribution – overview

## Public School Fund Investment Board

One year attribution (3/31/23 – 3/31/24)

|  | Attribution (bps) |
|--|-------------------|
| Yield Curve  | 61.0              |
| Total Excess Return  | 161.6             |
| <ul style="list-style-type: none"> <li>▪ Asset Allocation</li> </ul>   | 115.1             |
| <ul style="list-style-type: none"> <li>▪ Security Selection</li> </ul> | 46.5              |
| Other  | 6.5               |
| <b>Total</b>   | <b>229.1</b>      |

## Key Takeaways – Performance Drivers

### One Year Performance:

Public School Fund Investment Board (gross) 5.72% vs. Bloomberg 1-3 Year Gov't/Credit Index 3.49%

- Our overweight allocation to credit spread risk was the main contributor to performance.
- Positioning to securitized credit (CMBS, ABS, non-Agency MBS and CLOs) was positive.
- Security selection within investment grade corporate bonds contributed to performance. Security selection within Agency MBS detracted.
- Duration and curve positioning contributed.

Source: Janus Henderson Investors analysis, as of March 31, 2024.

Note: Performance attribution and contribution reflect returns gross of advisory fees and do not represent actual returns as they are based on end of day holdings. Attribution is calculated by geometrically linking daily returns for the portfolio and index. Contribution represents the weighted contribution to overall performance for the time period held. Yield Curve reflects performance driven by changes in the yield curve and the effect of yield that comes from the yield curve, as opposed to yield derived from credit risk.

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# Performance attribution

## Excess return by asset class

### Public School Fund Investment Board

One year attribution (3/31/23 – 3/31/24)

| Sectors         | Average Weight (%) |              |            | Total Return (%) |           | Excess Return (bps) |           | Contribution to Return (bps) |           | Relative Performance Effects (bps) |             |              |
|-----------------|--------------------|--------------|------------|------------------|-----------|---------------------|-----------|------------------------------|-----------|------------------------------------|-------------|--------------|
|                 | Portfolio          | Benchmark    | Relative   | Portfolio        | Benchmark | Portfolio           | Benchmark | Portfolio                    | Benchmark | Allocation                         | Selection   | Total        |
| Corporates – IG | 26.9               | 24.9         | 2.0        | 6.5              | 5.0       | 338.3               | 186.9     | 188.4                        | 124.5     | 1.6                                | 44.1        | 45.7         |
| CMBS            | 7.7                | —            | 7.7        | 10.1             | —         | 494.6               | —         | 77.9                         | —         | 34.8                               | —           | 34.8         |
| CMO             | 7.9                | —            | 7.9        | 8.3              | —         | 491.5               | —         | 65.8                         | —         | 33.9                               | —           | 33.9         |
| ABS             | 6.9                | —            | 6.9        | 7.3              | —         | 310.9               | —         | 52.8                         | —         | 19.2                               | —           | 19.2         |
| Treasuries      | 40.5               | 66.0         | -25.6      | 3.9              | 2.9       | 0.0                 | 0.0       | 148.7                        | 195.1     | 12.3                               | 0.0         | 12.3         |
| CLO             | 1.9                | —            | 1.9        | 10.3             | —         | 492.5               | —         | 18.9                         | —         | 8.3                                | —           | 8.3          |
| Gov't. Related  | 0.5                | 9.0          | -8.5       | 7.0              | 3.4       | 421.0               | 11.8      | 3.5                          | 29.4      | 3.1                                | 2.4         | 5.5          |
| Corporates – HY | 1.0                | 0.0          | 1.0        | 5.7              | 4.0       | 270.2               | 150.3     | 6.2                          | 0.2       | 2.7                                | 0.0         | 2.7          |
| TBA Cash Adjust | -0.9               | —            | -0.9       | —                | —         | —                   | —         | —                            | —         | 0.5                                | —           | 0.5          |
| Agency MBS      | 5.9                | —            | 5.9        | 1.8              | —         | 34.1                | —         | 7.2                          | —         | -0.6                               | —           | -0.6         |
| Cash            | 1.6                | 0.1          | 1.5        | 5.5              | —         | 0.0                 | —         | 8.8                          | —         | -0.8                               | 0.0         | -0.8         |
| <b>Total</b>    | <b>100.0</b>       | <b>100.0</b> | <b>0.0</b> |                  |           |                     |           |                              |           | <b>115.1</b>                       | <b>46.5</b> | <b>161.6</b> |

Source: Janus Henderson Investors, as of March 31, 2024.

Note: Performance attribution and contribution reflect returns gross of advisory fees and do not represent actual returns as they are based on end of day holdings. Attribution is calculated by geometrically linking daily returns for the portfolio and index. Contribution represents the weighted contribution to overall performance for the time period held.

Total excess performance compares the excess return of a grouping in the portfolio to the excess return of that grouping in the benchmark and the excess return of that grouping in the benchmark to the benchmark overall, factoring in any difference in weight. Excess return is calculated by comparing the performance of a security to a hypothetical duration-matched security with no credit risk, and rolling up securities by grouping and is not a presentation of actual performance.

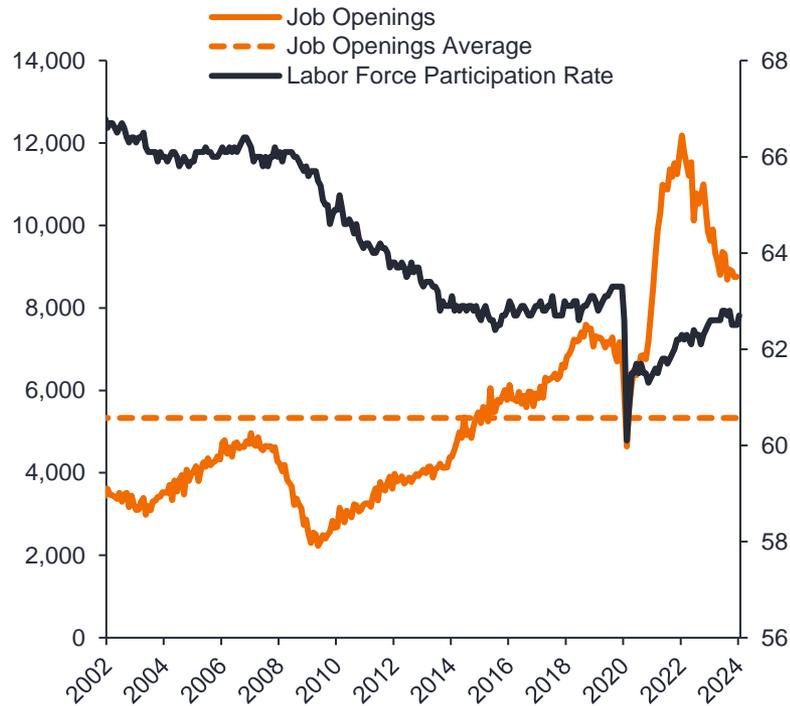
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# Outlook and positioning

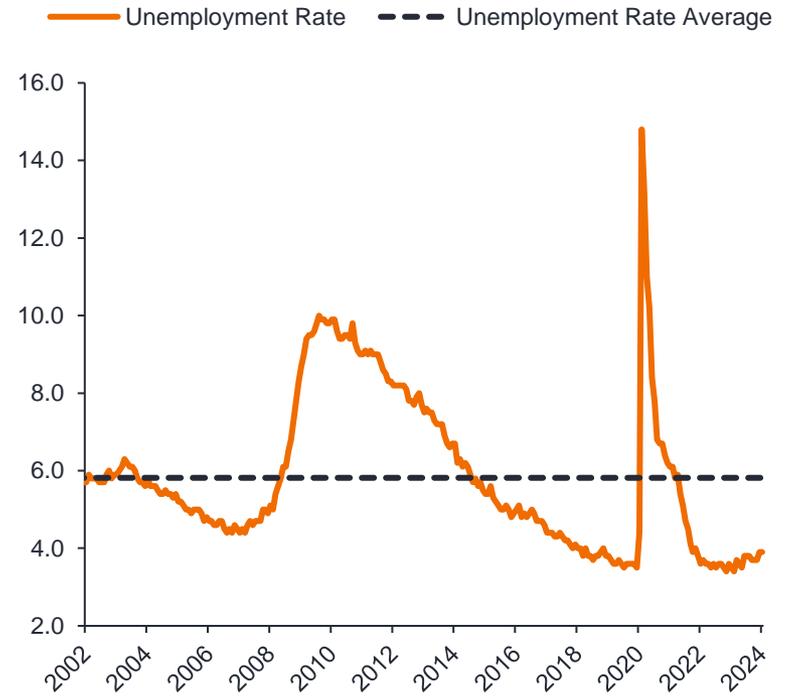
# Labor market continues to be resilient

## Labor market data more balanced with increase in workforce

**Labor force participation and Job openings**  
(3/31/02 – 3/31/24)



**Unemployment rate**  
(3/31/02 – 3/31/24)



Source: JOLTS as of February 29, 2024.

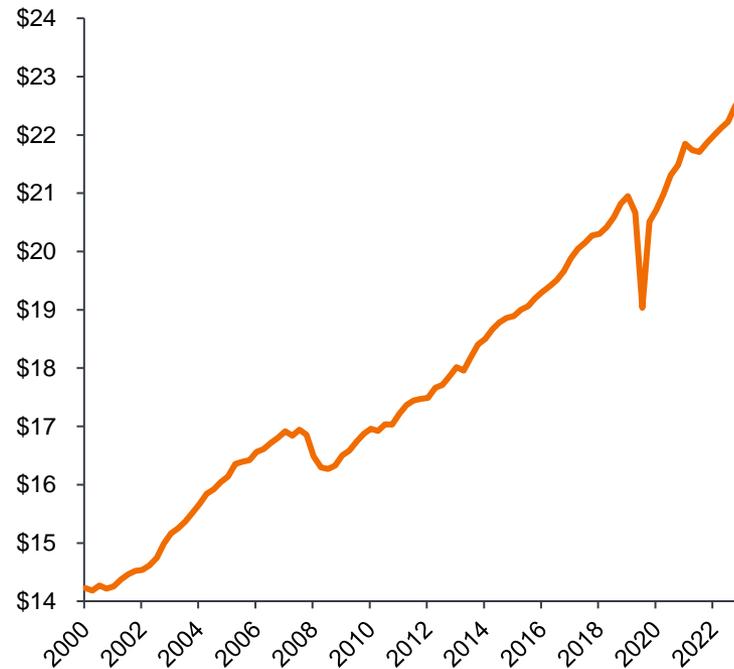
Source: Bureau of Labor Statistics as of March 31, 2024.

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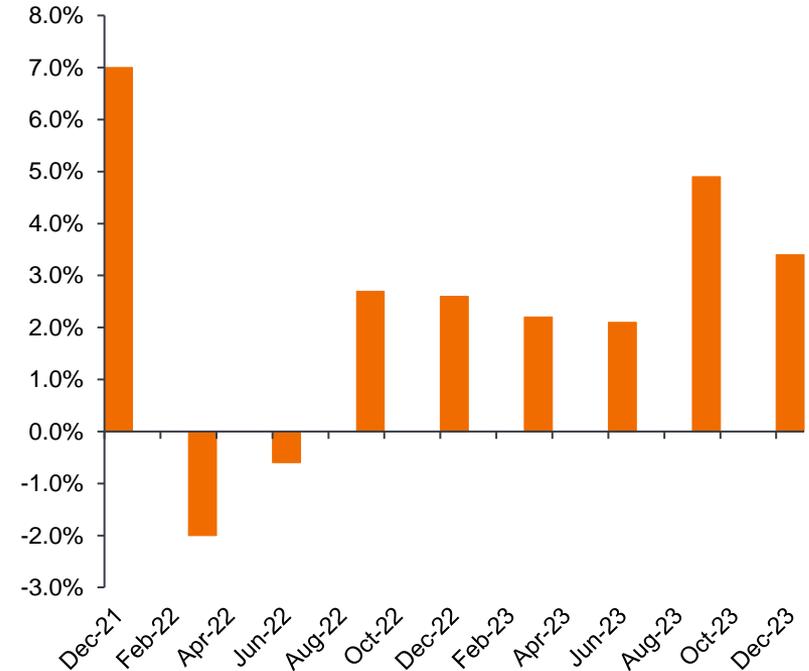
# US Economy

Moderation anticipated yet growth has been resilient

**Real GDP Growth (Trillions \$)**  
(12/31/00 – 12/31/23)



**Real GDP Growth (QoQ)**  
(12/31/21 – 12/31/23)



Source: Bloomberg, as of December 31, 2023.

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# Household and corporate fundamentals

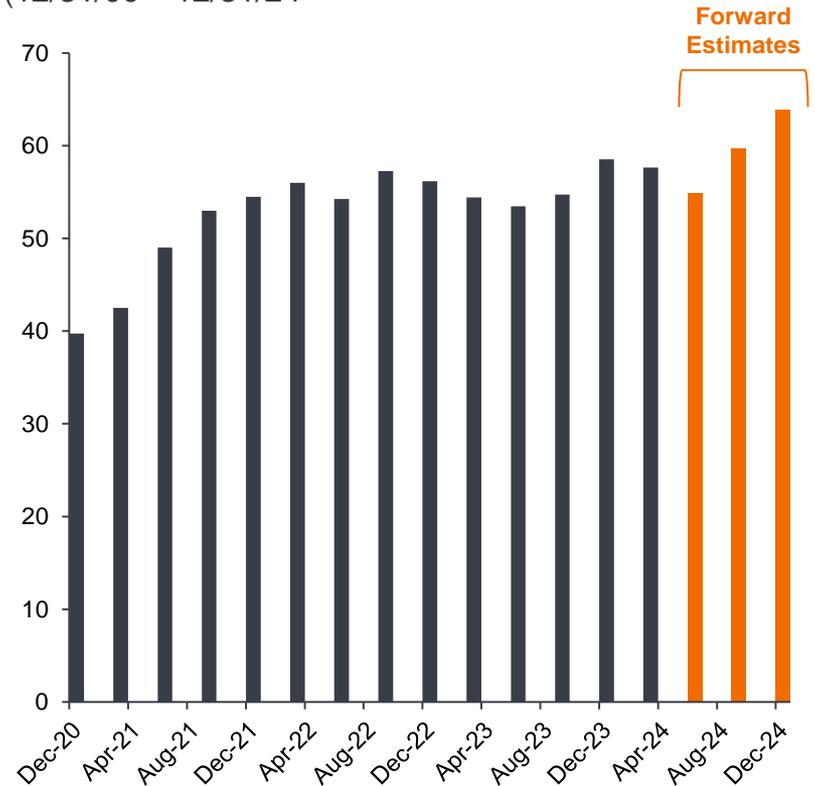
## Robust earnings and resilient consumer driving growth

**Real average hourly earnings (\$) and Consumer spending**  
(2/28/13 – 2/29/24)



Source: Bloomberg, as of February 29, 2024.

**Earnings/Share (S&P500)**  
(12/31/00 – 12/31/24)

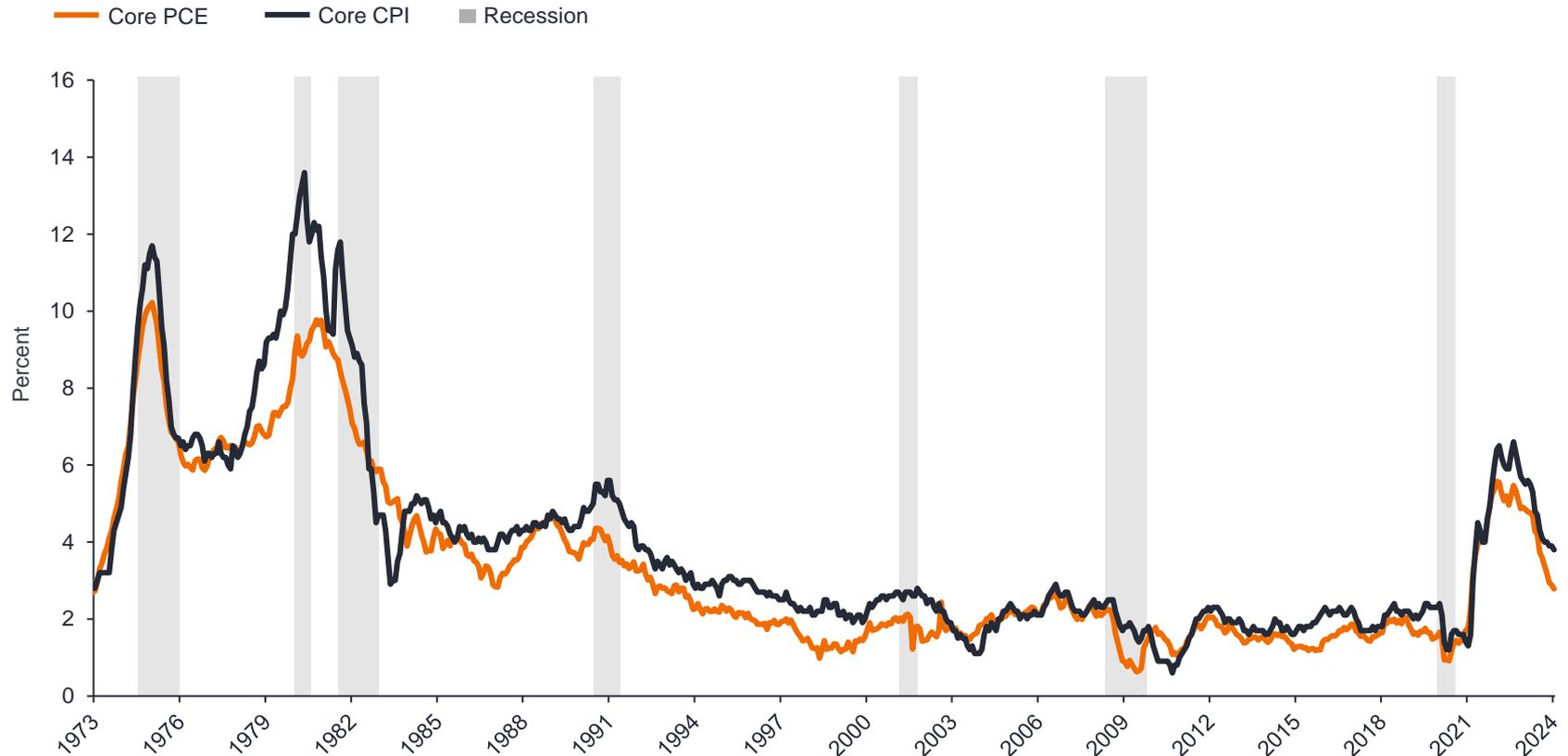


Source: New York Fed Consumer Credit Panel/Equifax, as of February 29, 2024.

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# US inflation trend remains intact

Recent “bumps” unlikely to change ultimate destination



Source: Bureau of Labor Statistics, as of February 28, 2024.

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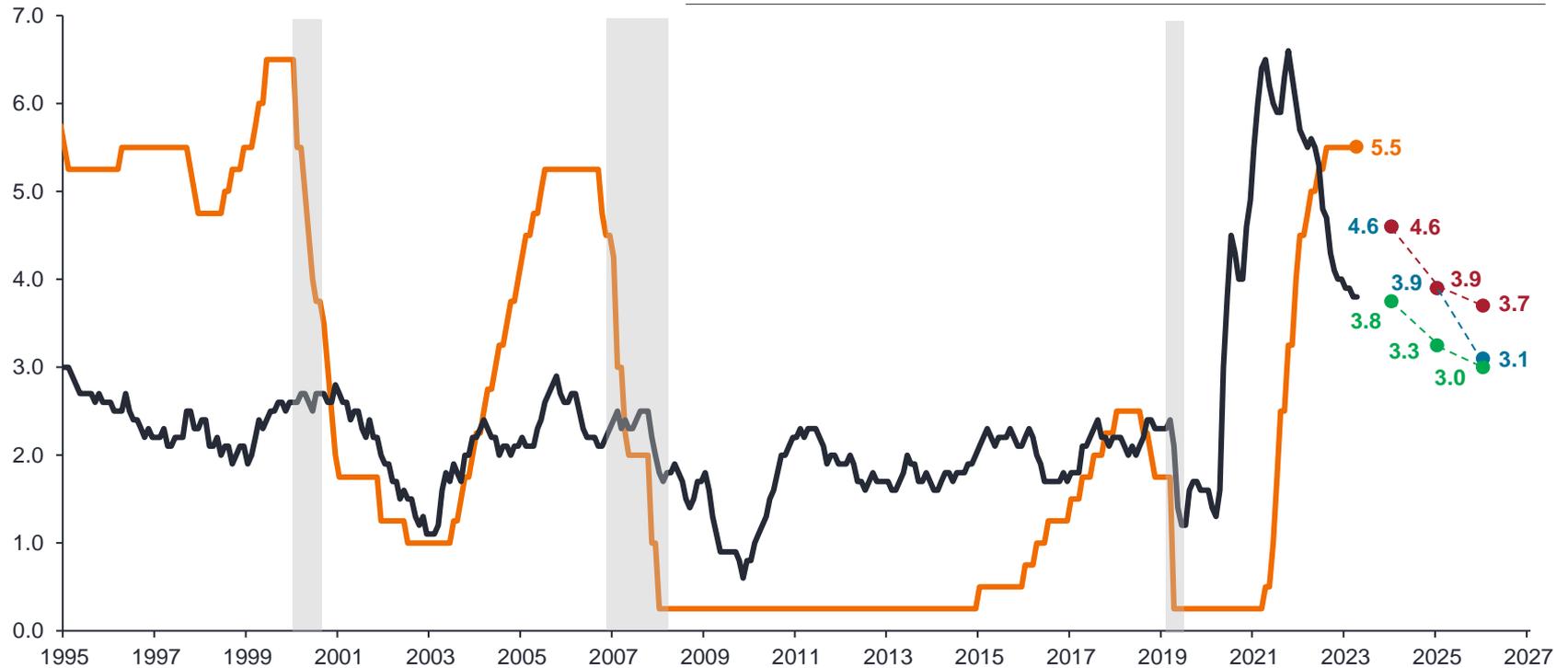
# Fed maintains desire to ease policy

Market reprices to align expectations with the Fed's projection

## FOMC and market expectations for the Federal Funds Rate and Core CPI (YoY)

- Fed Funds Rate
- Core CPI
- Recession
- FOMC Year End Estimates (3/31/24)
- Market Year End Estimates (3/31/24)
- Market Year End Estimates (12/31/23)

| FOMC March 2024 Forecasts (%)    | 2024 | 2025 | 2026 | Long Run |
|----------------------------------|------|------|------|----------|
| Change in Real GDP, Q1 to Q1     | 2.1  | 2.0  | 2.0  | 1.8      |
| Unemployment Rate, Q1            | 4.0  | 4.1  | 4.0  | 4.1      |
| Headline PCE Inflation, Q1 to Q1 | 2.4  | 2.2  | 2.0  | 2.0      |



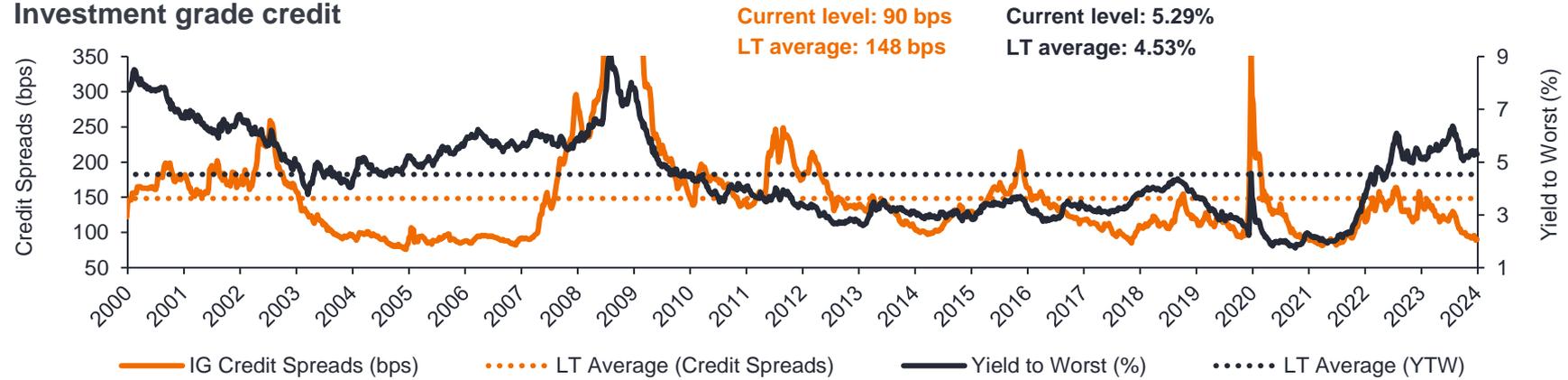
Source: Bloomberg, as of March 31, 2024.

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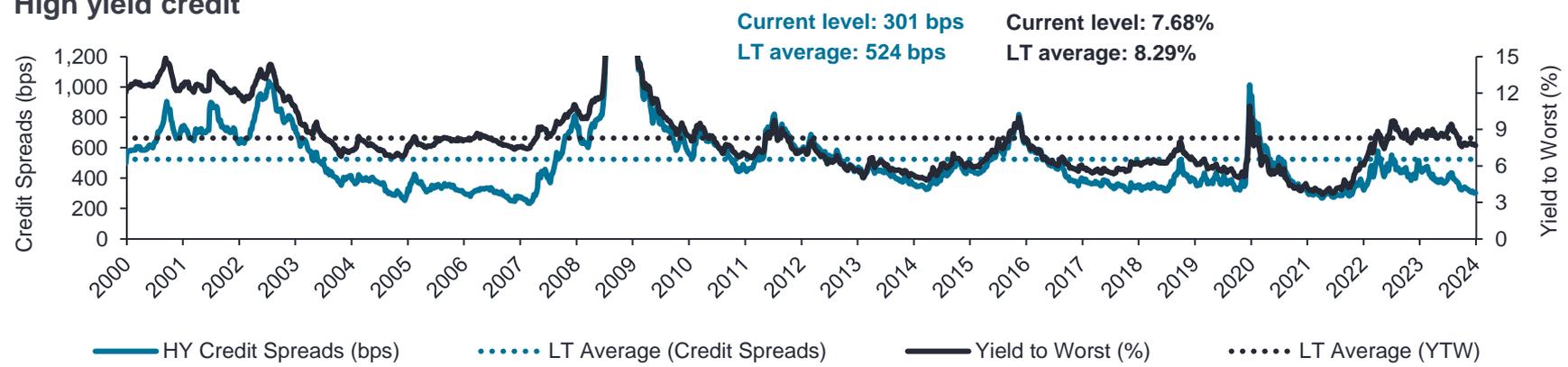
# Corporate credit spreads trading through their long-term averages

Yet yields remain quite attractive on an absolute basis

## Investment grade credit



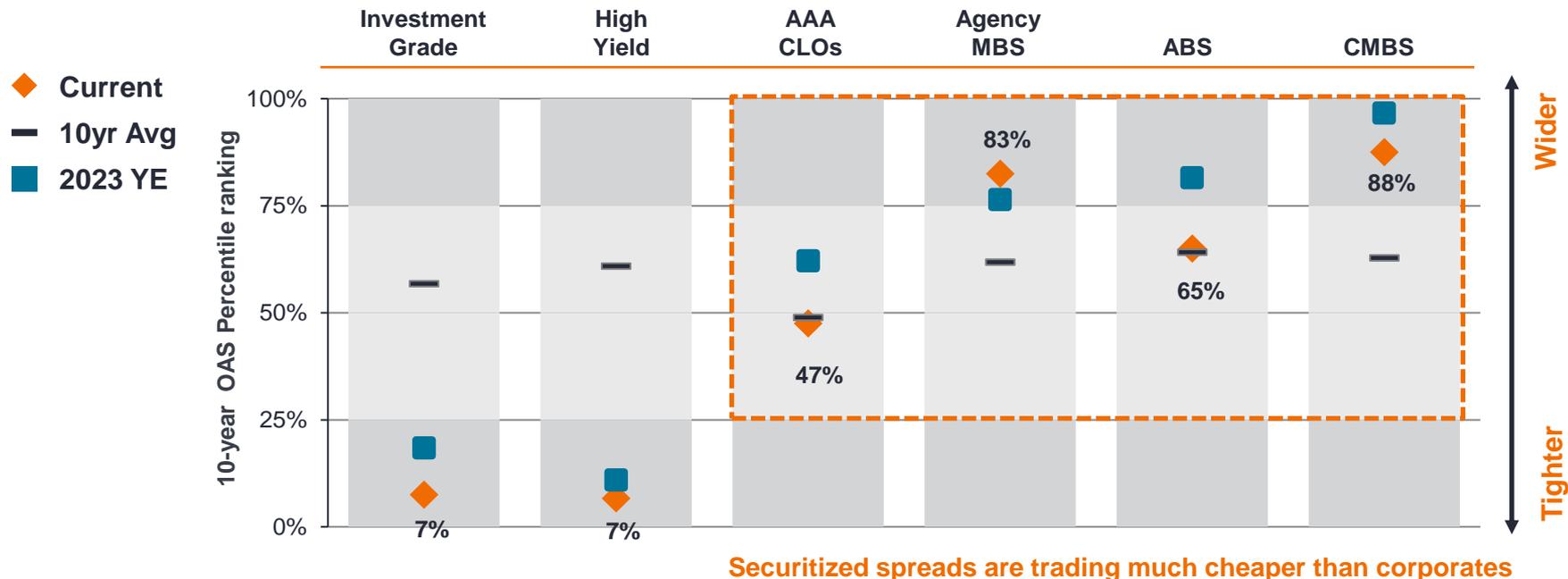
## High yield credit



Source: Bloomberg, as of March 31, 2024.

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# 112 Relative value favors securitized over corporates



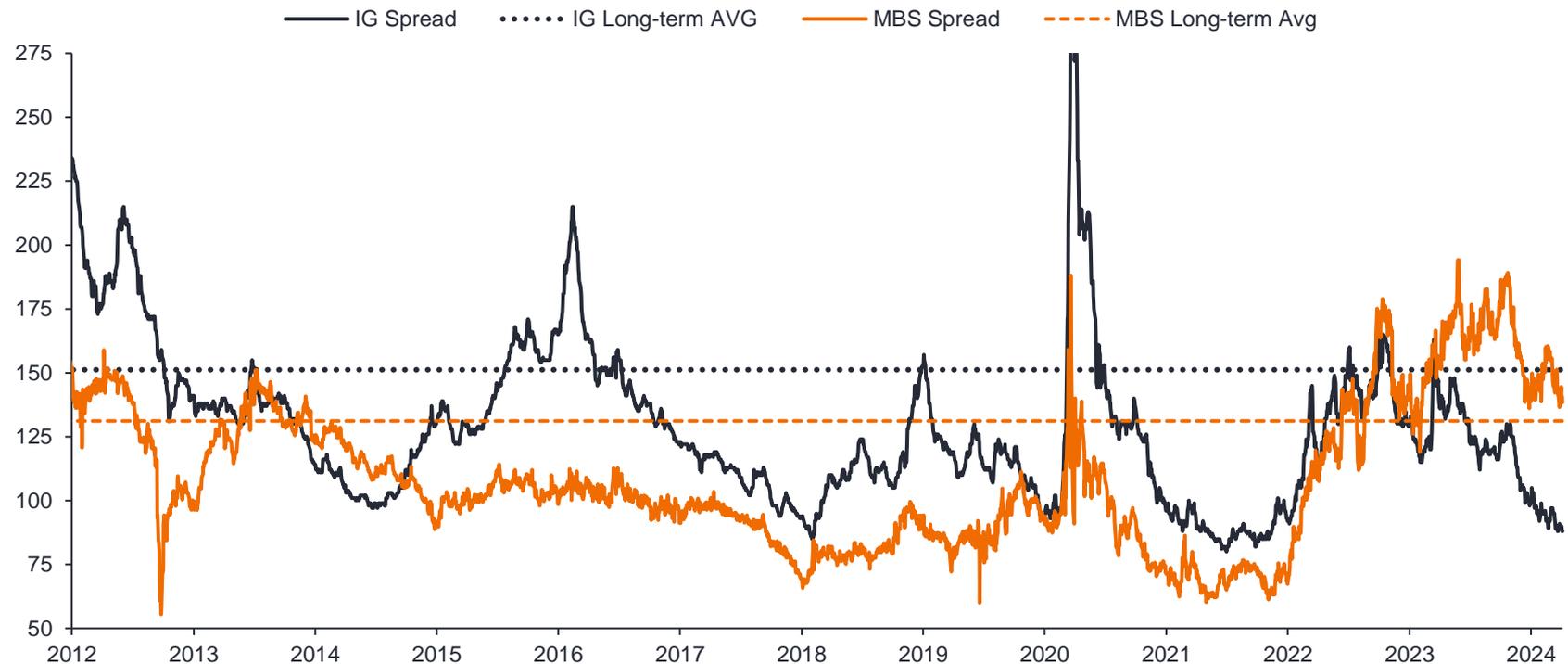
| Metrics        | Investment Grade | High Yield | AAA CLOs | Agency MBS | ABS  | CMBS |
|----------------|------------------|------------|----------|------------|------|------|
| Current OAS    | 90               | 299        | 144      | 49         | 96   | 202  |
| 10yr Tights    | 80               | 268        | 85       | 7          | 53   | 77   |
| 10yr Wides     | 272              | 880        | 268      | 75         | 343  | 263  |
| 10yr Average   | 124              | 426        | 145      | 36         | 55   | 95   |
| Yield to Worst | 5.3%             | 7.7%       | 6.8%     | 5.0%       | 5.7% | 6.5% |

Source: Janus Henderson Investors, Morningstar and Bloomberg using month-end data as of March 28, 2024.  
 Note: "Investment Grade" represents the Bloomberg US Corporate Bond Index, "High Yield" represents the Bloomberg US High Yield Index, "AAA CLOs" represents the JPM CLOIE Index, "Agency MBS" represents the Bloomberg MBS Index, "ABS" represents the ICE Bloomberg ABS Index and "CMBS" represents the ICE BofA US Fixed Rate CMBS Index. High Yield Index and "Bank Loans" represents the Morningstar LSTA Leveraged Loan Index. There is no guarantee that past trends will continue, or forecasts will be realized. AAA CLO spreads (Discount Margin) experienced a one day spread widening of 26bps on June 28, 2023 when J.P. Morgan Transitioned the referenced rate from LIBOR to SOFR.

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# We believe agency MBS are attractive

The spread pick up to corporates is significantly higher than long-term average



Source: Bloomberg, as of March 31, 2024.

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# Fixed Income security selection themes

Ideas spanning corporates and securitized assets

## UP IN QUALITY



- ABS and CMBS predominately allocated to AAA rated and/or most senior tranches
- Corporates allocation focused on investment grade, seeing opportunities for industrial BBB spreads to tightening to As

## SECURITIZED



- Seeing additional opportunities in digital infrastructure such hyperscale data centers seeing strong demand from AI, as well as the top tier of class A retail malls

## RESIDENTIAL MBS



- Residential Mortgage Credit is attractive with positive technicals
- Long Agency MBS risk as spreads still wide, favor specified pools. Improving outlook with Fed pivot, lower rate vol, and curve steepening
- Overweight 2<sup>nd</sup> lien loans, benefiting from attractive spread, better structure, home price appreciation and strong consumer

## INDUSTRY SELECTION



- Dynamic allocation within Banking sector, focused on large systemically important banks, increased allocation given favorable outlook for the sector
- Focused on identifying security selection opportunities with tighter overall spread levels

Source: Janus Henderson Investors, as of March 31, 2024.

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# Portfolio composition

| Characteristics    | 3/31/23 | 3/31/24 | Index | Credit Quality | Public School Fund Investment Board | Bloomberg 1-3 Year Gov't/Credit Index |
|--------------------|---------|---------|-------|----------------|-------------------------------------|---------------------------------------|
| Effective Duration | 1.7     | 2.0     | 1.8   | Aaa            | 16.0                                | 3.9                                   |
| DTS* (spread risk) | 2.1     | 2.3     | 0.3   | Aa             | 37.7                                | 72.7                                  |
| Yield to Worst (%) | 5.2     | 5.8     | 4.9   | A              | 13.5                                | 12.7                                  |
|                    |         |         |       | Baa            | 28.8                                | 10.8                                  |
|                    |         |         |       | Ba             | 2.8                                 | —                                     |

|                          | Public School Fund Investment Board |             |             |             |             |             | Bloomberg 1-3 Year Gov't/Credit Index |             |             |
|--------------------------|-------------------------------------|-------------|-------------|-------------|-------------|-------------|---------------------------------------|-------------|-------------|
|                          | Market Value (%)                    |             | Cont to DTS | % to DTS    | Cont to DTS | % to DTS    | Market Value (%)                      | Cont to DTS | % to DTS    |
|                          | 3/31/23                             | 3/31/24     | 3/31/23     |             | 3/31/24     |             | 3/31/24                               | 3/31/24     |             |
| Treasuries               | 51.3                                | 28.2        | —           | —           | —           | —           | 66.7                                  | —           | —           |
| Inflation Linked         | —                                   | —           | —           | —           | —           | —           | —                                     | —           | —           |
| <b>Total Corporates</b>  | <b>18.9</b>                         | <b>36.4</b> | <b>0.5</b>  | <b>25%</b>  | <b>1.0</b>  | <b>44%</b>  | <b>25.2</b>                           | <b>0.3</b>  | <b>93%</b>  |
| Corporate – IG           | 17.8                                | 34.6        | 0.5         | 23%         | 0.9         | 41%         | 25.2                                  | 0.3         | 93%         |
| Corporate – HY           | 1.1                                 | 1.8         | 0.0         | 2%          | 0.1         | 3%          | —                                     | —           | —           |
| Bank Loans               | —                                   | —           | —           | —           | —           | —           | —                                     | —           | —           |
| Preferred and Converts   | —                                   | —           | —           | —           | —           | —           | —                                     | —           | —           |
| <b>Total Securitized</b> | <b>28.1</b>                         | <b>34.5</b> | <b>1.6</b>  | <b>74%</b>  | <b>1.3</b>  | <b>55%</b>  | <b>—</b>                              | <b>—</b>    | <b>—</b>    |
| MBS                      | 6.1                                 | 6.2         | 0.2         | 9%          | 0.2         | 8%          | —                                     | —           | —           |
| CMO                      | 6.0                                 | 9.8         | 0.6         | 26%         | 0.5         | 22%         | —                                     | —           | —           |
| ABS                      | 7.5                                 | 8.0         | 0.3         | 13%         | 0.2         | 9%          | —                                     | —           | —           |
| CMBS                     | 6.7                                 | 8.7         | 0.4         | 20%         | 0.3         | 13%         | —                                     | —           | —           |
| CLO                      | 1.9                                 | 1.8         | 0.1         | 6%          | 0.1         | 4%          | —                                     | —           | —           |
| Government Related       | 0.3                                 | 0.4         | 0.0         | 0%          | 0.0         | 1%          | 8.0                                   | 0.0         | 7%          |
| Cash & Equivalent        | 1.3                                 | 0.5         | —           | —           | —           | —           | —                                     | —           | —           |
| <b>Total</b>             | <b>100</b>                          | <b>100</b>  | <b>2.1</b>  | <b>100%</b> | <b>2.3</b>  | <b>100%</b> | <b>100</b>                            | <b>0.3</b>  | <b>100%</b> |

Source: Janus Henderson Investors, as of March 31, 2024.

Note: Credit quality ratings reflect the middle rating received from Moody's, Standard & Poor's and Fitch, where all three agencies have provided a rating. If only two agencies rate a security, the lowest rating is used. If only one agency rates a security, that rating is used. Ratings are measured on a scale that ranges from Aaa (highest) to D (lowest). Equity equivalents may include common and preferred stock.

\*Duration Times Spread (DTS) is a method for measuring spread risk. It is calculated by simply multiplying three readily available bond characteristics: the spread-duration, the weight and the credit spread.

The portfolio includes 0.8% securities that are not rated by S&P, Moody's nor Fitch.

# Appendix

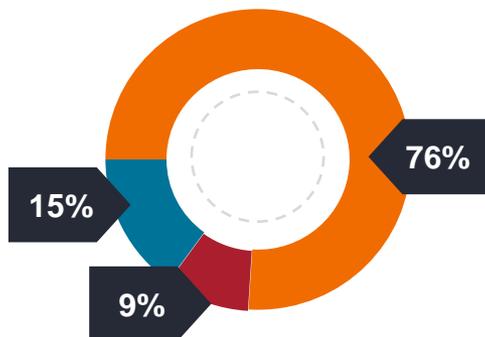
# Short Duration overview

## INVESTMENT PHILOSOPHY



Fixed income benchmarks are inefficient, exposing clients to an undesirable mix of risk factors. We believe diversifying risk factors, dynamically allocating capital, and active security selection results in better client outcomes. Our disciplined, transparent, risk-budgeting-based process is designed to deliver consistent performance.

## EXPECTED SOURCES OF EXCESS RETURN



### ■ Structural foundation

### ■ Security selection

### ■ Dynamic allocation

- Relative sector / Industry
- Duration / Country / Curve
- Tactical spread beta

## STRATEGY OVERVIEW

- **Strategy inception**  
September 1, 1992
- **Investment category**  
eVestment U.S. Short Duration Fixed Income
- **Benchmark**  
Bloomberg 1-3 Year U.S. Gov't/Credit Index
- **Expected information ratio**  
165 bps (gross) over a full market cycle  
143 bps (net) assumes 22 bps fee which is the max rate on fee schedule
- **Expected tracking error**  
195 bps over a full market cycle
- **Duration**  
1.5 – 3.5 years
- **Below-investment grade allocation**  
Typically 0% – 20%, max 35%

Note: **Investing involves risk, including the possible loss of principal and fluctuation of value.** There is no assurance the stated objectives will be met. Actual results may vary, and the information should not be considered or relied upon as a performance guarantee.

The **Structural Foundation (SF)** is designed to represent the management style of the strategy and is the starting point for sector allocation decisions. The SF aligns with the strategy's objectives and seeks to systematically maximize expected risk-adjusted returns by taking advantage of inefficiencies in the fixed income market and traditional benchmarks. The SF incorporates objective criteria and proprietary hedging assumptions. The SF is rebalanced to the neutral allocation monthly and may vary over time with prevailing market conditions. More detail can be provided upon request.

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# Performance attribution – Overview

## Public School Fund Investment Board

Q1 2024 attribution (12/31/23 – 3/31/24)

|  | Attribution (bps) |
|--|-------------------|
| Yield Curve  | 17.3              |
| Total Excess Return  | 50.2              |
| <ul style="list-style-type: none"> <li>▪ Asset Allocation</li> </ul>   | 38.6              |
| <ul style="list-style-type: none"> <li>▪ Security Selection</li> </ul> | 11.6              |
| Other  | 2.4               |
| <b>Total</b>   | <b>69.9</b>       |

## Key Takeaways – Performance Drivers

### Q1 2024 Performance:

Public School Fund Investment Board (gross) 1.11% vs. Bloomberg 1-3 Year Gov't/Credit Index 0.42%

- Our overweight allocation to credit spread risk was the main contributor to performance.
- Positioning to securitized credit (CMBS, ABS, non-Agency MBS and CLOs) was positive.
- Security selection within investment grade corporate bonds contributed to performance. Security selection within Agency MBS detracted.
- Duration and curve positioning contributed.

Source: Janus Henderson Investors analysis, as of March 31, 2024.

Note: Performance attribution and contribution reflect returns gross of advisory fees and do not represent actual returns as they are based on end of day holdings. Attribution is calculated by geometrically linking daily returns for the portfolio and index. Contribution represents the weighted contribution to overall performance for the time period held. Yield Curve reflects performance driven by changes in the yield curve and the effect of yield that comes from the yield curve, as opposed to yield derived from credit risk.

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# Performance attribution

## Excess return by asset class

### Public School Fund Investment Board

Q1 2024 Attribution (12/31/23 – 3/31/24)

| Sectors         | Average Weight (%) |              |            | Total Return (%) |           | Excess Return (bps) |           | Contribution to Return (bps) |           | Relative Performance Effects (bps) |             |             |
|-----------------|--------------------|--------------|------------|------------------|-----------|---------------------|-----------|------------------------------|-----------|------------------------------------|-------------|-------------|
|                 | Portfolio          | Benchmark    | Relative   | Portfolio        | Benchmark | Portfolio           | Benchmark | Portfolio                    | Benchmark | Allocation                         | Selection   | Total       |
| Corporates – IG | 32.1               | 25.2         | 6.9        | 0.9              | 0.8       | 80.6                | 44.1      | 30.6                         | 19.9      | 2.5                                | 11.6        | 14.1        |
| CMBS            | 8.6                | —            | 8.6        | 2.7              | —         | 171.6               | —         | 23.3                         | —         | 13.8                               | —           | 13.8        |
| ABS             | 8.2                | —            | 8.2        | 1.8              | —         | 114.6               | —         | 14.7                         | —         | 8.5                                | —           | 8.5         |
| CMO             | 9.2                | —            | 9.2        | 1.5              | —         | 107.4               | —         | 13.9                         | —         | 8.4                                | —           | 8.4         |
| Treasuries      | 32.0               | 66.5         | -34.5      | 0.9              | 0.3       | 0.0                 | 0.0       | 27.2                         | 18.6      | 4.1                                | 0.0         | 4.1         |
| CLO             | 1.8                | —            | 1.8        | 2.9              | —         | 159.6               | —         | 5.3                          | —         | 2.7                                | —           | 2.7         |
| Corporates – HY | 1.0                | —            | 1.0        | 1.3              | —         | 64.4                | —         | 1.8                          | —         | 0.9                                | —           | 0.9         |
| Gov't. Related  | 0.4                | 8.2          | -7.8       | -0.6             | 0.4       | -8.6                | 4.0       | -0.2                         | 3.6       | 0.6                                | 0.0         | 0.5         |
| TBA Cash Adjust | -0.9               | —            | -0.9       | —                | —         | —                   | —         | —                            | —         | 0.1                                | —           | 0.1         |
| Cash            | 1.4                | 0.1          | 1.3        | 1.4              | —         | 0.0                 | —         | 1.9                          | —         | -0.1                               | 0.0         | -0.1        |
| Agency MBS      | 6.2                | —            | 6.2        | -0.8             | —         | -31.8               | —         | -6.4                         | —         | -2.7                               | —           | -2.7        |
| <b>Total</b>    | <b>100.0</b>       | <b>100.0</b> | <b>0.0</b> |                  |           |                     |           |                              |           | <b>38.6</b>                        | <b>11.6</b> | <b>50.2</b> |

Source: Janus Henderson Investors, as of March 31, 2024.

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**Contact us**

janushenderson.com

**Important information**

**There is no assurance that the investment process will consistently lead to successful investing.**

**Investing involves risk, including the possible loss of principal and fluctuation of value.**

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W-0524-608602-07-30-2024